Bulletin of
Duke University

Undergraduate Instruction
2014-2015
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The information in this bulletin applies to the academic year 2014-2015 and is accurate and current, to the fullest extent possible, as of May 2014. The university reserves the right to change programs of study, academic requirements, teaching staff, the calendar, and other matters described herein without prior notice, in accordance with established procedures.

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Information that the university is required to make available under the federal Clery Act is available by visiting the Records Division, Duke University Police Department, 502 Oregon Street, Durham, NC 27708, or by calling (919) 684-4602. See http://duke.edu/police/news_stats/clery/index.php for more details.

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Duke University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award baccalaureate, masters, doctorate, and professional degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097 or call (404) 679-4500 for questions about the accreditation of Duke University.

May 2014
Contents

Academic Calendar 2014-15 8
University Administration 9
General Information 13
  Duke University 13
  The Mission of Duke University 14
  Resources of the University 14
  Duke as a Residential University 17
  The Duke Community Standard 19
Degree Programs and Academic Credit 21
  Degrees and Academic Credit 21
  Trinity College of Arts & Sciences 21
  The Edmund T. Pratt Jr. School of Engineering 29
Academic Procedures and Information 35
  Entrance Credit and Placement 35
  Transfer of Work Taken Elsewhere 38
  Advising 39
  Registration 40
  Accommodations 41
  Course Load and Eligibility for Courses 42
  Course Audit 43
  Independent Study 43
  Academic Internships 44
  Submission of Term Paper 44
  Declaration of Major in Trinity College of Arts & Sciences 44
  Declaration of Major in the Pratt School of Engineering 45
  Class Attendance and Missed Work 45
  Class Scheduling 45
  Incomplete Coursework 45
  Final Examinations and Excused Absences 46
  Grading and Grade Requirements 46
  Continuation 48
  Academic Warning and Probation 49
  Changes in Status 50
  Academic Recognition and Honors 52
  Notification of Intention to Graduate 54
  Graduation and Commencement 55
  Education Records 55
  The Provision of Academic Information to Parents and Guardians 55
  Procedure for Resolution of Students’ Academic Concerns 55
  Undergraduate Grade Review Procedure 56
  Exclusion of Disruptive Students from a Course 56
  Compliance with Academic Regulations 57
<table>
<thead>
<tr>
<th>Field</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronomy</td>
<td>179</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>179</td>
</tr>
<tr>
<td>Bioethics and Science Policy</td>
<td>179</td>
</tr>
<tr>
<td>Biology</td>
<td>180</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>196</td>
</tr>
<tr>
<td>Biophysics</td>
<td>196</td>
</tr>
<tr>
<td>Canadian Studies</td>
<td>196</td>
</tr>
<tr>
<td>Cell Biology</td>
<td>198</td>
</tr>
<tr>
<td>Chemistry</td>
<td>198</td>
</tr>
<tr>
<td>Child Policy Research</td>
<td>204</td>
</tr>
<tr>
<td>Chinese</td>
<td>206</td>
</tr>
<tr>
<td>Civil and Environmental Engineering</td>
<td>207</td>
</tr>
<tr>
<td>Classical Studies</td>
<td>207</td>
</tr>
<tr>
<td>Greek</td>
<td>212</td>
</tr>
<tr>
<td>Latin</td>
<td>214</td>
</tr>
<tr>
<td>Comparative Literature</td>
<td>217</td>
</tr>
<tr>
<td>Computer Science</td>
<td>217</td>
</tr>
<tr>
<td>Cultural Anthropology</td>
<td>225</td>
</tr>
<tr>
<td>Dance</td>
<td>237</td>
</tr>
<tr>
<td>Documentary Studies</td>
<td>245</td>
</tr>
<tr>
<td>Ecology</td>
<td>253</td>
</tr>
<tr>
<td>Earth and Ocean Sciences</td>
<td>253</td>
</tr>
<tr>
<td>East Asian Studies</td>
<td>261</td>
</tr>
<tr>
<td>Economics</td>
<td>262</td>
</tr>
<tr>
<td>Education</td>
<td>281</td>
</tr>
<tr>
<td>Electrical and Computer Engineering</td>
<td>286</td>
</tr>
<tr>
<td>Energy and the Environment</td>
<td>286</td>
</tr>
<tr>
<td>Energy Initiative</td>
<td>288</td>
</tr>
<tr>
<td>Engineering</td>
<td>290</td>
</tr>
<tr>
<td>English</td>
<td>290</td>
</tr>
<tr>
<td>Environmental Sciences and Policy Program</td>
<td>302</td>
</tr>
<tr>
<td>Study of Ethics</td>
<td>318</td>
</tr>
<tr>
<td>Evolutionary Anthropology</td>
<td>323</td>
</tr>
<tr>
<td>Evolutionary Biology</td>
<td>330</td>
</tr>
<tr>
<td>Film/Video/Digital</td>
<td>330</td>
</tr>
<tr>
<td>Focus Program</td>
<td>330</td>
</tr>
<tr>
<td>French</td>
<td>330</td>
</tr>
<tr>
<td>Genetics</td>
<td>330</td>
</tr>
<tr>
<td>Genome Sciences &amp; Policy</td>
<td>330</td>
</tr>
<tr>
<td>Germanic Languages and Literature</td>
<td>334</td>
</tr>
<tr>
<td>Global Health</td>
<td>342</td>
</tr>
<tr>
<td>Greek</td>
<td>351</td>
</tr>
<tr>
<td>Health, Wellness, and Physical Education</td>
<td>351</td>
</tr>
<tr>
<td>Hebrew</td>
<td>351</td>
</tr>
<tr>
<td>Hindi</td>
<td>351</td>
</tr>
<tr>
<td>History</td>
<td>351</td>
</tr>
<tr>
<td>House Courses</td>
<td>378</td>
</tr>
<tr>
<td>Human Development</td>
<td>378</td>
</tr>
<tr>
<td>Immunology</td>
<td>380</td>
</tr>
</tbody>
</table>
Information Science and Information Studies 380
Innovation and Entrepreneurship 389
International Comparative Studies 389
Islamic Studies 402
Italian 404
Japanese 404
Jewish Studies 405
Korean 407
Latin 407
Latin American Studies 407
Latino/a Studies in the Global South 410
Linguistics 413
Literature Program in Global Cultural Studies 419
Marine Biology 432
Marine Science and Conservation Leadership 432
University Program in Marine Sciences 435
Markets and Management Studies 438
Marxism and Society 442
Mathematics 443
Mechanical Engineering and Materials Science 453
Medieval and Renaissance Studies 453
Military Science—Army ROTC 460
Music 461
Naval Science—Naval ROTC 472
Neurobiology 473
Neuroscience 473
Nonlinear and Complex Systems 481
Pathology 481
Pharmacology 481
Health, Wellness, and Physical Education 481
Persian 485
Philosophy 485
Philosophy, Politics, and Economics 494
Physics 494
Policy Journalism and Media Studies 501
Polish 506
Political Science 506
Portuguese 532
Psychology and Neuroscience 532
Public Policy Studies 547
Religious Studies 564
Romance Studies 577
Russian 604
Study of Sexualities 604
Slavic and Eurasian Studies 606
Balto-Finnic 609
Polish 610
Romanian 611
Russian 611
<table>
<thead>
<tr>
<th>Language</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serbian and Croatian</td>
<td>621</td>
</tr>
<tr>
<td>Turkish</td>
<td>621</td>
</tr>
<tr>
<td>Ukrainian</td>
<td>624</td>
</tr>
<tr>
<td>Uzbek</td>
<td>624</td>
</tr>
<tr>
<td>Sociology</td>
<td>625</td>
</tr>
<tr>
<td>Spanish</td>
<td>634</td>
</tr>
<tr>
<td>Statistical Science</td>
<td>634</td>
</tr>
<tr>
<td>Theater Studies</td>
<td>640</td>
</tr>
<tr>
<td>Visual Studies</td>
<td>648</td>
</tr>
<tr>
<td>Women's Studies</td>
<td>648</td>
</tr>
<tr>
<td>Writing</td>
<td>657</td>
</tr>
</tbody>
</table>

**Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates** 659

<table>
<thead>
<tr>
<th>Subject</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemistry</td>
<td>659</td>
</tr>
<tr>
<td>Cell Biology</td>
<td>660</td>
</tr>
<tr>
<td>Computational Biology and Bioinformatics</td>
<td>661</td>
</tr>
<tr>
<td>Cell and Molecular Biology</td>
<td>661</td>
</tr>
<tr>
<td>Immunology</td>
<td>662</td>
</tr>
<tr>
<td>Molecular Genetics and Microbiology</td>
<td>662</td>
</tr>
<tr>
<td>Neurobiology</td>
<td>663</td>
</tr>
<tr>
<td>Pathology</td>
<td>663</td>
</tr>
<tr>
<td>Pharmacology and Cancer Biology</td>
<td>664</td>
</tr>
<tr>
<td>Structural Biology and Biophysics</td>
<td>666</td>
</tr>
<tr>
<td>University Program in Genetics and Genomics</td>
<td>666</td>
</tr>
</tbody>
</table>

**Pratt School of Engineering** 667

<table>
<thead>
<tr>
<th>Department</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineering</td>
<td>667</td>
</tr>
<tr>
<td>Architectural Engineering</td>
<td>667</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>668</td>
</tr>
<tr>
<td>Civil and Environmental Engineering</td>
<td>677</td>
</tr>
<tr>
<td>Electrical and Computer Engineering</td>
<td>688</td>
</tr>
<tr>
<td>Engineering (Interdepartmental)</td>
<td>698</td>
</tr>
<tr>
<td>Energy Engineering</td>
<td>701</td>
</tr>
<tr>
<td>Energy and the Environment</td>
<td>702</td>
</tr>
<tr>
<td>Mechanical Engineering and Materials Science</td>
<td>702</td>
</tr>
</tbody>
</table>

**Index** 710
### Academic Calendar 2014-15

#### Summer 2014

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 17</td>
<td>Monday. Registration begins for all summer sessions</td>
</tr>
<tr>
<td>May 14</td>
<td>Wednesday. Term I classes begin. The Monday class meeting schedule begins on Thursday, May 15; Drop/Add continues</td>
</tr>
<tr>
<td>May 15</td>
<td>Thursday. Regular class meeting schedule begins</td>
</tr>
<tr>
<td>May 16</td>
<td>Friday. Drop/Add for Term I ends</td>
</tr>
<tr>
<td>May 26</td>
<td>Monday. Memorial Day holiday. No classes are held</td>
</tr>
<tr>
<td>June 11</td>
<td>Wednesday. Last day to withdraw with W from Term I classes</td>
</tr>
<tr>
<td>June 23</td>
<td>Monday. Term I classes end</td>
</tr>
<tr>
<td>June 24</td>
<td>Tuesday. Reading period</td>
</tr>
<tr>
<td>June 25</td>
<td>Wednesday. Term I final examinations begin</td>
</tr>
<tr>
<td>June 26</td>
<td>Thursday. Term I final examinations end</td>
</tr>
<tr>
<td>June 30</td>
<td>Monday. Term II classes begin</td>
</tr>
<tr>
<td>July 2</td>
<td>Wednesday. Drop/Add for Term II ends</td>
</tr>
<tr>
<td>July 4</td>
<td>Friday. Independence Day holiday. No classes are held</td>
</tr>
<tr>
<td>July 28</td>
<td>Monday. Last day to withdraw with W from Term II classes</td>
</tr>
<tr>
<td>August 7</td>
<td>Thursday. Term II classes end</td>
</tr>
<tr>
<td>August 8</td>
<td>Friday. Reading period (Until 7 p.m.)</td>
</tr>
<tr>
<td>August 8</td>
<td>Friday. Term II final examinations begin, 7 p.m.</td>
</tr>
<tr>
<td>August 10</td>
<td>Sunday. Term II final examinations end</td>
</tr>
</tbody>
</table>

#### Fall 2014

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 19</td>
<td>Tuesday. New graduate student orientation begins</td>
</tr>
<tr>
<td>August 19</td>
<td>Tuesday. New undergraduate student orientation begins</td>
</tr>
<tr>
<td>August 20</td>
<td>Wednesday. 11 a.m. Convocation for new undergraduate students; 4 p.m. Convocation for graduate and professional school students</td>
</tr>
<tr>
<td>August 25</td>
<td>Monday. 8:30 a.m. Fall semester classes begin; Drop/Add continues</td>
</tr>
<tr>
<td>September 1</td>
<td>Monday. Labor Day. Classes in session</td>
</tr>
<tr>
<td>September 5</td>
<td>Friday. Drop/Add ends</td>
</tr>
<tr>
<td>September 18/19</td>
<td>Thursday/Friday. 4:30 p.m. Founders’ Day Convocation (exact day TBD)</td>
</tr>
<tr>
<td>October 10</td>
<td>Friday. Last day for reporting midsemester grades</td>
</tr>
<tr>
<td>October 10</td>
<td>Friday. 7 p.m. Fall break begins</td>
</tr>
<tr>
<td>October 15</td>
<td>Wednesday. 8:30 a.m. Classes resume</td>
</tr>
<tr>
<td>November 5</td>
<td>Wednesday. Registration begins for Spring 2015</td>
</tr>
<tr>
<td>November 7</td>
<td>Friday. Last day to withdraw with W from Fall 2014 classes</td>
</tr>
<tr>
<td>November 19</td>
<td>Wednesday. Registration ends for Spring 2015</td>
</tr>
<tr>
<td>November 20</td>
<td>Thursday. Drop/Add begins for Spring 2015</td>
</tr>
<tr>
<td>November 25</td>
<td>Tuesday. 10:30 p.m. Thanksgiving recess begins</td>
</tr>
<tr>
<td>November 25</td>
<td>Tuesday. Graduate classes end</td>
</tr>
<tr>
<td>December 1</td>
<td>Monday. 8:30 a.m. Classes resume</td>
</tr>
<tr>
<td>December 1-8</td>
<td>Monday-Monday. Graduate reading period</td>
</tr>
<tr>
<td>December 5</td>
<td>Friday. Undergraduate classes end</td>
</tr>
<tr>
<td>December 6-8</td>
<td>Saturday-Monday. Undergraduate reading period</td>
</tr>
<tr>
<td>December 9</td>
<td>Tuesday. Final examinations begin (9 a.m.)</td>
</tr>
<tr>
<td>December 14</td>
<td>Sunday. 10 p.m. Final examinations end</td>
</tr>
</tbody>
</table>

#### Spring 2015

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 4-6</td>
<td>Sunday-Tuesday. Undergraduate Winter Forum</td>
</tr>
<tr>
<td>January 7</td>
<td>Wednesday. 8:30 a.m. Spring semester begins: The Monday class meeting schedule is in effect on this day; Regular class meeting schedule begins on Thursday, January 8; Classes meeting in a Wednesday/Friday meeting pattern begin January 9; Drop/Add continues</td>
</tr>
<tr>
<td>January 8</td>
<td>Thursday. Regular class meeting schedule begins</td>
</tr>
<tr>
<td>January 19</td>
<td>Monday. Martin Luther King, Jr. Day holiday: classes are rescheduled on Wednesday, January 7</td>
</tr>
<tr>
<td>January 21</td>
<td>Wednesday. Drop/Add ends</td>
</tr>
<tr>
<td>February 16</td>
<td>Monday. Registration begins for Summer 2015</td>
</tr>
<tr>
<td>February 20</td>
<td>Friday. Last day for reporting midsemester grades</td>
</tr>
<tr>
<td>March 6</td>
<td>Friday. 7 p.m. Spring recess begins</td>
</tr>
<tr>
<td>March 16</td>
<td>Monday. 8 a.m. Classes resume</td>
</tr>
<tr>
<td>March 25</td>
<td>Wednesday. Last day to withdraw with W from Spring 2015 classes</td>
</tr>
<tr>
<td>April 1</td>
<td>Wednesday. Registration begins for Fall 2015; Summer 2015 registration continues</td>
</tr>
<tr>
<td>April 10</td>
<td>Friday. Registration ends for Fall 2015; Summer 2015 registration continues</td>
</tr>
<tr>
<td>April 11</td>
<td>Saturday. Drop/Add begins for Fall 2015</td>
</tr>
<tr>
<td>April 15</td>
<td>Wednesday. Graduate classes end</td>
</tr>
<tr>
<td>April 16-26</td>
<td>Thursday-Sunday. Graduate reading period</td>
</tr>
<tr>
<td>April 22</td>
<td>Wednesday. Undergraduate classes end</td>
</tr>
<tr>
<td>April 23-6</td>
<td>Thursday-Sunday. Undergraduate reading period</td>
</tr>
<tr>
<td>April 27</td>
<td>Monday. Final examinations begin</td>
</tr>
<tr>
<td>April 29</td>
<td>Wednesday. Undergraduate reading period (9 a.m. - 2 p.m.)</td>
</tr>
<tr>
<td>May 2</td>
<td>Saturday. 10 p.m. Final examinations end</td>
</tr>
<tr>
<td>May 8</td>
<td>Friday. Commencement begins</td>
</tr>
<tr>
<td>May 10</td>
<td>Sunday. Graduation exercises; conferring of degrees</td>
</tr>
</tbody>
</table>
University Administration

General Administration
Richard H. Brodhead, PhD, President
Sally Kornbluth, PhD, Provost
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Elizabeth A. Fox, PhD, Associate Dean of Undeclared Students and Director of the Academic Advising Center
Paula E. Gilbert, PhD, Director and Associate Dean for Continuing Studies and Summer Session
Ron Grunwald, PhD, Associate Dean for Natural Sciences and Director of the Undergraduate Research Support Office
Norman C. Keul, PhD, Associate Dean for Humanities and Interdisciplinary Programs
Donna Kostyu, PhD, Associate Dean for Undeclared Students and Natural Sciences
Alyssa Perz-Edwards, PhD, Assistant Dean for Undeclared Students and Natural Sciences
David Rabiner, PhD, Associate Dean for Undeclared Students
Daniel C. Scheirer, PhD, Associate Dean for Natural Sciences and Director of the Office of Health Professions Advising
Baishakhi Banerjee Taylor, PhD, Assistant Dean for Undeclared Students
Sabrina L. Thomas, PhD, Associate Dean for Social Sciences, Director of the Office of Student Returns and Director of the Domestic Exchange Programs
Ingeborg Walther, PhD, Associate Dean of Curriculum and Course Development

Edmund T. Pratt Jr. School of Engineering
Thomas Katsouleas, PhD, Dean
Linda Franzoni, PhD, Associate Dean for Undergraduate Education
Constance E. Simmons, MBA, Associate Dean for Undergraduate Affairs
Lupita Temiquel-McMillian, MEd, Assistant Dean for Undergraduate Affairs
Martha Absher, MLS, Associate Dean for Education and Research Programs
Student Affairs
Larry Moneta, EdD, Vice President for Student Affairs
Zoila Airall, PhD, Assistant Vice President of Student Affairs for Campus Life
Rick Johnson, MBA, Assistant Vice President of Student Affairs for Housing, Dining, and Residence Life
Caroline Nisbet, MA, Assistant Vice President of Student Affairs for Resource Administration
Suzanne Wasiolek, JD, LLM, EdD, Assistant Vice President of Student Affairs and Dean of Students

Admissions and Financial Aid
Christoph O. Guttentag, MA, Dean of Undergraduate Admissions
Alison Rabil, EdD, Assistant Vice Provost and Director of Financial Aid
Photo by Chrislyn Choo, Trinity College of Arts & Sciences, Class of 2016
Duke University traces its roots to 1838 in nearby Randolph County, where local Methodist and Quaker communities joined forces to found a school that they named Union Institute. After a brief period as Normal College (1851-59), the school changed its name to Trinity College in 1859 and became a liberal arts college affiliated with the Methodist Church. The college moved to the growing city of Durham in 1892 when Washington Duke provided financial assistance and another local businessman, Julian S. Carr, donated land. In December 1924, James B. Duke created a family philanthropic foundation, The Duke Endowment. One of The Duke Endowment’s key provisions provided funding for the expansion of Trinity College into Duke University.

As a result of the Duke gift, Trinity underwent both academic and physical expansion. The original Durham campus became known as East Campus and was rebuilt in stately Georgian architecture. West Campus, Gothic in style and dominated by the soaring tower of the Duke Chapel, opened in 1930. East Campus then served as the home of the Woman's College of Duke University until 1972, when the men's and women's colleges merged into the Trinity College of Arts & Sciences. Today, East Campus houses all first-year undergraduate students.

Duke has a long history of educating women. Three young women, the Giles sisters, received Trinity College degrees in 1878, and women entered the college as regular students in 1892. Washington Duke's gift to the school's endowment in 1896 was based on the condition that the college would treat women “on an equal footing with men” by establishing an on-campus residence for them. Today, about equal numbers of undergraduate women and men attend the Trinity College of Arts & Sciences.

Engineering courses were first taught intermittently in the nineteenth century starting in 1882. Engineering became a permanent department in 1910, an undergraduate College of Engineering in 1939, and a School of Engineering in 1966 after the addition of graduate courses. The school was renamed the Edmund T. Pratt Jr. School of Engineering in 1999.

Academic expansion of the university throughout its history has included the establishment of other new graduate and professional schools, as well. The first divinity (BD) degree was awarded in 1927, the first PhD in 1928, and the first MD in 1932. The School of Law, founded in 1904, was reorganized in 1930. The following year, the undergraduate School of Nursing was established, transforming in 1985 to a graduate school. The School of Forestry, which was founded in 1938, became the School of Forestry and Environmental Studies in 1974 and was renamed the Nicholas School of the Environment in 1995. The business school was established in 1969 and renamed The Fuqua School of Business in 1980. In 2009, the Sanford School of Public Policy became Duke University’s tenth school.

Modern times have seen Duke emerge as a major center of learning far removed from its origins in a one-room schoolhouse. Its reach is now global, with international campuses, including one in Kunshan, China, and many students who study and do service abroad. Duke schools and departments are consistently ranked among the nation’s very best, and several have achieved international prominence. The university frequently wins attention for its research achievements and academic innovations, and its faculty often is called upon to provide leaders for academic and professional organizations. Duke continues to work hard to honor James B. Duke's charge to attain “a place of real leadership in the educational world.”
Today, Duke embraces a diverse community of learners, including approximately 6,500 undergraduates and 7,500 graduate and professional students from a multiplicity of backgrounds. Its motto, *Eruditio et Religio*, reflects the university's fundamental belief in the union of knowledge and faith, the advancement of learning, and the defense of scholarship. Duke University has encouraged generations of students to understand and appreciate the world they live in, their opportunities, and their responsibilities. For more historical information, visit [http://library.duke.edu/rubenstein/uarchives](http://library.duke.edu/rubenstein/uarchives).

**The Mission of Duke University**

James B. Duke's founding indenture of Duke University directed the members of the university to “provide real leadership in the educational world” by choosing individuals of “outstanding character, ability and vision” to serve as its officers, trustees, and faculty; by carefully selecting students of “character, determination, and application;” and by pursuing those areas of teaching and scholarship that would “most help to develop our resources, increase our wisdom, and promote human happiness.”

To these ends, the mission of Duke University is to provide a superior liberal education to undergraduate students, attending not only to their intellectual growth but also to their development as adults committed to high ethical standards and full participation as leaders in their communities; to prepare future members of the learned professions for lives of skilled and ethical service by providing excellent graduate and professional education; to advance the frontiers of knowledge and contribute boldly to the international community of scholarship; to promote an intellectual environment built on a commitment to free and open inquiry; to help those who suffer, to cure disease and promote health, through sophisticated medical research and thoughtful patient care; to provide wide ranging educational opportunities on and beyond our campuses for traditional students, active professionals, and life-long learners using the power of information technologies; and to promote a deep appreciation for the range of human difference and potential, a sense of the obligations and rewards of citizenship, and a commitment to learning, freedom, and truth.

By pursuing these objectives with vision and integrity, Duke University seeks to engage the mind, elevate the spirit, and stimulate the best effort of all who are associated with the university; to contribute in diverse ways to the local community, the state, the nation, and the world; and to attain and maintain a place of real leadership in all that we do.

**Resources of the University**

**The Faculty**

Duke University originated as an undergraduate college in the nineteenth century. Its awarding of graduate and professional degrees and its pre-eminence in many fields of research came significantly later. Today, the sustaining of an historic devotion to undergraduate teaching is a major priority for Duke University. Duke commits itself to facilitating a sound education for its undergraduate students, most significantly through its building of a strong faculty with expectations for personal attention to teaching along with dedication to research. Indeed, one of our most highly innovative faculty awards, the Bass Professorship, recognizes and fosters cross-fertilization between research interests and pedagogy.

In recent years, Duke has made major efforts to expand the breadth and quality of the faculty across the spectrum of disciplines. The overall university faculty now contains more than 3,000 full-time members, supplemented by instructors whose expertise in the field has qualified them for teaching. Recognizing that a diverse faculty enriches the curriculum and the overall undergraduate experience, Duke seeks to build its faculty with attention to what the whole person brings to the classroom. Faculty research of international acclaim informs undergraduate coursework, and classrooms commonly serve as incubators for new ideas. Undergraduates interact with senior faculty on a regular basis, including first-year students in the Focus Program with a series of seminars designed just for them. A number of faculty in the professional schools teach and mentor undergraduates, not only in the classroom but also through independent studies. Interdisciplinary teaching and learning are increasingly emphasized at Duke University in order to confront the complex intellectual and cultural challenges of our modern, global society.
The Library System

All Duke libraries, including those at Duke Divinity School, The Fuqua School of Business, Duke Law School, and the Duke University Medical Center, are open to undergraduates. Library services directed especially to undergraduates are available at the Lilly and Music libraries on East Campus, and on West Campus at the William R. Perkins and Bostock libraries and the Rubenstein Rare Book & Manuscript Library. The Duke libraries website, http://library.duke.edu, is a gateway to books, journals, and databases as well as a source of information on topics such as finding images and citing sources.

Duke librarians are available at information desks throughout the libraries, and may also be reached by phone, e-mail, chat reference, and IM, accessible from the library website. In addition, librarians will meet by appointment with students for individual research consultations in which they can help identify useful sources for a research project, discuss effective search strategies, or just offer advice for getting started. Subject specialist librarians are available for research consultations on a particular topic.

Every campus library features wireless and high-speed Internet access as well as access to the online catalogs of materials held by all Duke libraries and the libraries of North Carolina State University, North Carolina Central University, and The University of North Carolina at Chapel Hill. Using a Duke ID, undergraduates can borrow books from any of these libraries and request them online.

Undergraduates are encouraged to become familiar with all the Duke libraries, as each collection has its own character. The Lilly Library on East Campus houses the collections for the visual arts, art history, philosophy, and theater studies, and has services geared toward first-year students. Undergraduates also have access to Lilly’s more than 20,000 feature films and documentaries as well as experimental and animated productions. In addition, Devil DVDs, a collection of current, popular DVDs, is available to students only. The Devil DVDs program is cosponsored by Lilly Library and Duke Student Government. The Music Library, also on East Campus, has a rapidly expanding collection of music scores, books, journals, and music-related media, including more than 14,000 CDs, thousands of LPs (many jazz), and hundreds of DVDs that students can check out.

On West Campus, the Perkins Library and the adjoining Bostock Library and von der Heyden Pavilion form the university’s main research library complex. The collections support the social sciences and humanities, plus biological and environmental sciences, chemistry, engineering, mathematics, physics, statistics, and computer and decision sciences, and reflect Duke’s emphasis on interdisciplinarity and globalization. There are extensive collections from and about East and South Asia, Latin America, Africa, and Europe as well the United States and one of this country’s largest collections of Canadiana. The print collections are complemented by the following electronic resources: tens of thousands of e-journals, databases, and statistical tools. The library offers the Lowell Aptman Prize annually to recognize undergraduates’ excellence in research and their use of the library’s general collections and services. The information commons on the first floor of Perkins and the first floor and lower level of Bostock are outfitted with computers loaded with an array of software. Selected computers have scanning, networking, and web development capabilities. Perkins lower floor 1 houses the Link, a teaching and learning commons where there are interactive classrooms and smaller workshop/studio spaces designed to accommodate six to eight students collaborating in work groups. Perkins and Bostock also offer a variety of study spaces. There are secluded carrels and informal seating as well as large reading rooms, many with spectacular views of the campus. The glass-walled von der Heyden Pavilion, home of the Perk, the library’s café, is a popular destination for study and conversation as well as a cup of coffee.

Duke undergraduates have the opportunity at the Rubenstein Rare Book & Manuscript Library to use unique primary source materials that range from ancient papyri to the records of twentieth-century advertising agencies. The collections support research in a wide variety of disciplines and programs, including African American studies, anthropology, classics, economics, history, the history of medicine, literature, political science, religion, sociology, and women’s studies. Librarians work with individual students and make class presentations to help identify materials related to research projects. To encourage undergraduate use of its holdings, this library annually offers the Middlesworth Award for the best student papers written using materials from the library’s collections. Digital versions of selected materials from the Rubenstein Library are available at the library’s website: http://library.duke.edu/rubenstein. The Duke University Archives, also part of the Rubenstein Library, collects, preserves, and administers the records of the university, including the records of student organizations.

The Pearse Memorial Library is located in Beaufort, North Carolina, at the Duke Marine Laboratory. Its holdings are in marine sciences and policy-related aspects of the marine environment.

The Duke libraries host film screenings, concerts, lectures, author visits, book discussions, and other events throughout the year that are open to students. In addition, the Friends of the Duke University Libraries sponsor
contests and awards for students. The Student Book Collectors Contest is offered in alternating years. Contest
winners receive gift certificates redeemable at the Gothic Bookshop. The Friends’ most popular student event may be
the study break it hosts at the Perkins and Lilly libraries at the end of every semester during exams. Students are
offered homemade baked goods, beverages, and encouragement.

The Medical Center Library & Archives

The Medical Center Library & Archives provides the services and collections necessary to further educational,
research, clinical, and administrative activities in the medical field. Services are available to Duke Medicine faculty,
staff, and students in the School of Medicine, School of Nursing, allied health programs, and graduate programs in
the basic medical sciences. The library also serves the Duke University Health System.

More than 183,513 volumes and approximately 4,391 electronic biomedical journal titles are available. Most
books published before 1995 and journals published before 1985 are stored in the Duke Library Service Center
located off Briggs Avenue. More current print materials are kept within the library facility. The Frank Engel
Memorial Collection consists of a small group of books on health and nonmedical subjects for general reading,
together with some newspapers and popular magazines.

Library services include reference, in-depth consultations, expert searching of databases, customized and
individual group training, online tutorials, circulation, and document delivery services. Work stations for searching
databases and the online catalog are available on Level 2R and Level 3 of the library. A computer classroom for hands-
on training is located on Level 1. Archives provides access to its collections for scholarly research and administrative
work and can assist individuals in locating specific information, photographs, and documents concerning the history
of the medical center.

The Medical Center Library & Archives is located in the Seeley G. Mudd Building above the Searle Center and
connected to the Trent Semans Center for Health Education. Detailed information on services and resources may be
found on the website at http://mclibrary.duke.edu. Additional information about Archives can be found at http://
archives.mc.duke.edu.

The J. Michael Goodson Law Library

The J. Michael Goodson Law Library provides access to rich collections of electronic and print resources for legal
research and scholarship for the Duke Law School, and the entire Duke community. The library staff is highly
knowledgeable in law, legal research, and in the uses of information technology and will assist in all facets of legal
research and use of the law library collections. All Duke students who require access to legal literature are welcome to
use the library, consult with our law-trained reference librarians, and check out circulating materials.

The law library relies increasingly on electronic sources of legal information while continuing to develop and
maintain in-house collections of print resources to support research and scholarship. It is one of the strongest research
collections of legal literature in the region including current and retrospective primary materials from courts,
legislatures, and administrative agencies. In addition to books and treatises, the law library has available journals,
encyclopedias, reference materials, and finding tools on all legal subjects for the United States and foreign
jurisdictions, as well on topics of comparative and international law.

Reflecting Duke’s emphasis on interdisciplinary approaches to scholarship and learning, our collections provide
access to a broad range of resources on law’s intersections with other disciplines. Because nearly every area of legal
study is enhanced by consideration of comparative or international perspectives, the law library maintains strong
foreign and international law collections to support research in these areas and Duke’s focus on internationalization.
The foreign law collection is extensive in coverage, with long-standing concentrations in European law and growing
collections in Asian and Latin American law. The international law collection is strong in primary source materials
and monographs on both private and public international law topics.

For more information, visit the law library website at http://law.duke.edu/lib. Keep up with current news and
announcements by following the Goodson Blogson at http://dukelawref.blogspot.com/.

The Office of Information Technology

The Office of Information Technology (OIT) is responsible for computing and communications services and
support for the university community. OIT’s website, oit.duke.edu, offers software downloads, detailed procedures,
numerous contact points, and many other resources to help students, faculty, and staff make the most of information
technology resources at Duke.
Computing

The entire campus, including all undergraduate residence halls and Central Campus apartments, is equipped with high-speed wireless internet, and residence halls are also wired for access to Duke's computer network. Members of the Duke community are assigned their own e-mail accounts, which they have access to from their own computers or from computers on any Internet-enabled computer. During the first week of school, OIT helps students establish their network connections and get started with Duke’s many IT resources.

Computer Labs, Kiosks, and ePrint

There are more than a dozen general purpose computer labs and kiosks across Duke, as well as two multimedia production facilities, designed to meet a wide spectrum of student needs. Students also have access to a campus-wide system of printers that allows users to send a document to the print queue at one location on campus and retrieve the printout at any station on the network. For additional information, visit oit.duke.edu/comp-print.

The OIT Service Desk

Service Desk staff are available to assist students with Duke-supported software, hardware, and services in person at the Link in Perkins Library and via phone, online chat, e-mail, and web form. See oit.duke.edu/help for more information.

SWAT (Students Workers Assisting with Technology)

One of OIT’s first priorities when students arrive on campus is to make sure they get connected to the Duke network. SWAT, a team of technically trained student consultants, ensures that all students’ personal computers are connected to the network within the first week of classes.

Technology Training

Undergraduate and graduate students can take advantage of training workshops on computer security and popular software applications such as Microsoft Word, Excel, and PowerPoint; and Adobe Photoshop and InDesign. The sessions, typically one hour long, include useful skill-building techniques. For additional information or to register for a workshop, visit oit.duke.edu/comp-print/training.

Telephones

While wired phone service is not offered in the residence halls, Duke has enhanced cell phone coverage for emergency communications. Wireless 911 calls are also routed to local emergency call centers.

Storage and Backup Services

Duke offers services for storing, backing up, and recovering your personal files. For more information, visit oit.duke.edu/comp-print/storage.

Research Laboratories

Undergraduates have the opportunity to pursue collaborative or individual research in an array of environments across the campus, including the medical center; the Levine Science Research Center; the Fitzpatrick Center for Engineering, Medical and Applied Sciences; the French Family Science Center; the Humanities Labs at the Franklin Humanities Institute; the Media Arts + Science Complex; the Duke Collaboratory for Classics Computing; and the Social Sciences Research Institute, as well as the teaching and research laboratories of individual faculty members or departments throughout the College of Arts & Sciences, the Pratt School of Engineering, and the Sanford School of Public Policy.

Undergraduates also have access to other facilities including the Duke University Marine Laboratory in Beaufort, North Carolina; the Duke Forest, adjacent to the campus; the Duke University Lemur Center in Duke Forest; the Triangle Universities Nuclear Laboratory; and the Brain Imaging and Analysis Center in the Medical Center.

Duke as a Residential University

Duke enjoys a long tradition as a residential university and has sought to provide for undergraduates attractive on-campus housing in both residence halls and apartments. While the university was established to provide a formal educational opportunity for students, Duke has always taken the position that education encompasses social and personal development as well as spiritual and intellectual growth. Duke provides a supportive environment substantially anchored in its residential program.
Educational, cultural, recreational, social, and outdoor programming is planned and presented throughout the year for living groups through the cooperative work of Student Affairs, Trinity College of Arts & Sciences, the Pratt School of Engineering, and resident students. There are a number of faculty members who live in residence halls. Seminar rooms are also located in several houses. The goals of these various programs are to enhance the quality of intellectual and social life for the residents on campus, to facilitate student-faculty interaction outside of the formal classroom setting, and to develop a greater sense of community within the individual residence halls as well as within the greater university.

**The Undergraduate College and School**

Undergraduate students in Trinity College of Arts & Sciences and the Pratt School of Engineering take advantage of the rich resources available across the schools and institutes that make Duke such a distinguished research university. Undergraduates learn, engage, and connect with committed professors and mentors whose innovative research is recognized around the world. Trinity and Pratt students interact with these faculty members not only in the classroom and the laboratory, but in a variety of settings, both formal and informal. This gives students the opportunity to exchange ideas with professors, graduate students, and broader communities.

Duke students are empowered to learn, expected to change, and encouraged to lead. A Duke education is based on the understanding that students grow intellectually and personally through successive experiences that are often transformative. Duke provides undergraduates with four years of rewarding learning experiences during which they generate, evaluate, integrate, and apply knowledge; develop fluency across cultures; learn to value diversity and difference; and become active and ethical agents of change in their communities and in the world. This is what President Richard H. Brodhead calls "learning to make a difference."

One of our core values is applying “knowledge in the service of society.” With the schools of the arts and sciences, environment, engineering, and public policy each offering undergraduate instruction, students can approach real-world problems from different fields of inquiry. Duke also offers many service and learning opportunities such as Global Education, DukeEngage, student organizations, and research opportunities that involve students directly with the many major challenges confronting society.

**Trinity College of Arts & Sciences**

Trinity is Duke's liberal arts college. Steeped in academic tradition and infused with a sense of dynamic engagement, the college embraces the enduring philosophy of teaching and learning that empowers students with a broad base of knowledge and a strong sense of values and ethics. The college enhances the liberal arts tradition with robust opportunities to participate in independent research as well as civic and global engagement.

Trinity College provides students with the opportunity to connect directly with the scholarship of our faculty. Faculty mentors guide our undergraduates in their own research, much of it at the cutting edge of scholarship in the humanities, natural sciences, and social sciences. In fact, undergraduates are integral to the production of knowledge as well as artistic productions.

Trinity students learn to communicate persuasively, bring meaning to information, discern competing claims, and develop capacity for reasoning, analysis, and empathy. Students join academic conversations grounded in values of integrity, freedom of inquiry and expression, respect for diversity and difference, and reliance on reason and evidence.

Trinity College’s 640 faculty members teach in thirty-five departments and programs. Many teach and collaborate across traditional disciplinary boundaries, which create distinctive interdisciplinary opportunities for students to learn without limits. The innovative course of study Trinity College students pursue encourages inquiry in and outside the classroom, laboratory, and studio. Global education, service learning, internships, and research opportunities complement classroom instruction to infuse students with the excitement of discovery and the opportunity to use knowledge in the service of society.

**Pratt School of Engineering**

The undergraduate engineering program at Duke University is designed both for students who intend to become professional engineers and for those who desire a modern, general education based on the problems and the promises of a technological society. The environment in which students are educated is as important in shaping their future as their classroom experiences. In the Pratt School of Engineering this environment has two major components: one is modern technology derived from the research and design activities of faculty and students in the
school; the other is the liberal arts environment of the total university, with its humanitarian, social, and scientific emphases.

Engineering is not a homogeneous discipline; it requires many special talents. Some faculty members in the Pratt School of Engineering are designers; they are goal-oriented, concerned with teaching students how to solve problems, how to synthesize relevant information and ideas and apply them in a creative, feasible design. Other engineering faculty members function more typically as scientists; they are method-oriented, using the techniques of their discipline in their teaching and research to investigate various natural and artificial phenomena.

The Duke Community Standard

Duke University is a community dedicated to scholarship, leadership, and service and to the principles of honesty, fairness, respect, and accountability. Citizens of this community commit to reflect upon and uphold these principles in all academic and nonacademic endeavors, and to protect and promote a culture of integrity.

To uphold the Duke Community Standard:
- I will not lie, cheat, or steal in my academic endeavors;
- I will conduct myself honorably in all my endeavors; and
- I will act if the Standard is compromised.
Degrees and Academic Credit

Duke University offers in Trinity College of Arts & Sciences the degrees of bachelor of arts and bachelor of science, and in Pratt School of Engineering the degree of bachelor of science in engineering. Within the curriculum of each college or school, students have the major responsibility for designing and maintaining a course program appropriate to their background and goals. They are assisted by faculty advisors, departmental directors of undergraduate studies, and academic deans. Students must accept personal responsibility for understanding and meeting the requirements of the curriculum.

Credit toward a degree is earned in units called course credits, which ordinarily consist of 3.0 to 4.0 course credits of instruction each week of the fall or spring semester or the equivalent total number of course credits in a summer term. Double (2.0) course credits, half (.5) course credits, and quarter (.25) course credits are also recognized.

Trinity College of Arts & Sciences

A variety of approaches to a liberal education is provided by Program I and II. Either program leads to the bachelor of arts or bachelor of science degree, and each requires 34 course credits to satisfy the requirements for the degree.

Program I

This innovative curriculum is meant to encourage breadth as well as depth and provide structure as well as choice. It reflects Duke’s desire to dedicate its unique resources to preparing its students for the challenging and rapidly changing global environment. The curriculum provides a liberal arts education that asks students to engage a wide variety of subjects: arts, literatures, and performance; civilizations; natural sciences; quantitative studies; and social sciences. It supports a cross-cultural and interdisciplinary approach to knowledge and fosters the development of students’ abilities to read and think critically and in historically and ethically informed ways, to communicate lucidly and effectively, and to undertake and evaluate independent research.

The curriculum has two components: general education and the major.

The general education component includes two interrelated features: Areas of Knowledge and Modes of Inquiry. Since a course may have several intellectual goals and intended learning outcomes, it may potentially and simultaneously satisfy more than one general education requirement, as well as requirements of a major, minor, or certificate program.

Students must complete the requirements of the curriculum listed below—and explained more fully on the following pages—in order to satisfy the requirements for the degree. No degree requirements (including prerequisites), except the requirement for 34 courses credits and continuation requirements, may be met by a course passed under the Satisfactory/Unsatisfactory grading system unless by special permission of the director of undergraduate studies of the respective department or program.
General Education requirements consisting of the following:

**Required Courses**

**Areas of Knowledge.** Two courses (totaling 2.0 course credits) in each of the following five areas:
- Arts, Literatures, and Performance (ALP)
- Civilizations (CZ)
- Natural Sciences (NS)
- Quantitative Studies (QS)—One of the QS courses must be in math, statistical science, or computer science
- Social Sciences (SS)

**Modes of Inquiry.** Courses designated as offering exposures to each of the following inquiries, as indicated below:
- Cross-Cultural Inquiry (CCI): 2.0 course credits.
- Ethical Inquiry (EI): 2.0 course credits.
- Science, Technology, and Society (STS): 2.0 course credits.
- Foreign Language (FL): 1.0 to 3.0 course credits in the same language, determined by level of proficiency. The details of the FL requirement are explained more fully below.
- Writing (W): 3.0 course credits, including Writing 101 in the first year, and two writing-intensive (W) courses in the disciplines, at least one of which must be taken after the first year.
- Research (R): 2.0 course credits.

Advanced Placement credits, international placement credits, and prematriculation credits for college courses taken elsewhere before matriculation in the first-year class at Duke do not count toward the general education requirements.

Independent Study courses do not count toward the general education requirements except for the Research designation, if officially designated as a research independent study course. A maximum of one research independent study (coded R) may count toward the requirement of writing-intensive courses (W) in the disciplines.

Transfer courses and interinstitutional courses may be considered for approval to count toward the Areas of Knowledge.

**Small Group Learning Experiences**
- During the first year: one full-course seminar (i.e., a 1.0 course credit, not partial credit courses).
- After the first year: a total of two (2.0) course credits designated as seminars, tutorials, independent studies, and/or thesis courses. (The total may include partial credit courses.)

**Course Credits**

There are several separate and specific requirements concerning course credits in Trinity College of Arts & Sciences. Thirty-four course credits are required for graduation, not more than two with a grade of D, and including:
- No more than one course credit of physical education activity (i.e., two half-credit activity courses, including military science physical activity courses), 4.0 course credits of dance/American Dance Festival technique/performer (i.e., eight half-credit courses), 2.0 course credits of house courses (i.e., four half-credit house courses), 4.0 course credits in military science, and 1.0 course credit from academic internships.
- No more than 6.0 course credits from Duke graduate and professional school courses that are not listed in the *Duke University Bulletin of Undergraduate Instruction*. These courses include all courses offered by the schools of business, law, divinity, nursing, and all graduate courses numbered 700 and above. These courses are generally not open to undergraduates and require special permission to enroll. Independent Study may not be taken in a professional school, unless listed as a course in the *Duke University Bulletin of Undergraduate Instruction* or offered through a Trinity College of Arts & Sciences department or program. (See policies on Independent Study.)
- No more than four courses taken Satisfactory/Unsatisfactory on an elected basis.

The number of Advanced Placement, international placement credits, and transfer credits allowed varies. (See the sections on Advanced Placement and transfer of work, in the chapter "Academic Procedures and Information" on page 35)

**The Major**

The requirements for majors in the department or program in which a student wishes to obtain a bachelor's degree (see below) are described after the course listings for each department or program.

**The Minor**

Minors are available although not required. They are described after the course listings for each department or program.
Elective Courses

Advanced placement credits, international placement credits, and prematriculation credit for college courses taken elsewhere before entering the first-year class may function only as elective courses and do not satisfy general education components, save counting (with some limitations) toward the 34 course credit requirement. Other courses that a student is using as electives may or may not carry general education designations.

General Education Components

Areas of Knowledge. Historically, the ways in which knowledge has been organized reflect both differences in subject matter and methods of discovery. This delineation is dynamic, marked by increasing differentiation and an array of academic disciplines. Disciplines have traditionally been grouped into three divisions: humanities, social sciences, and natural sciences. Duke has chosen to divide the humanities and natural sciences further to assure that undergraduates engage the full range of substantive concerns and approaches there. Thus, the curriculum adopts the following division of courses (into the five areas of knowledge): arts, literatures, and performance; civilizations; natural sciences; quantitative studies; and social sciences. Through courses in arts, literatures, and performance, students learn about the creative products of the human intellect; courses about civilizations ask students to attend to the analysis and evaluation of ideas and events that shape civilizations past and present. Through courses in natural sciences students learn about the interpretation or application of scientific theories or models of the natural world, while courses in quantitative studies, including computer science, mathematics, and statistical science, help develop skills of inference and analysis. Through courses in the social sciences students learn about the causes of human behavior and about the origins and functions of the social structures in which we operate. Because Duke believes that engagement with each is essential, not optional, for an informed and educated person in the twenty-first century, students must satisfactorily complete two courses in each area.

Modes of Inquiry. The first three of the six required Modes of Inquiry address important cross-cutting intellectual themes that represent enduring focal points of inquiry and involve application of knowledge to which many disciplines speak. Students need to be prepared to engage in a critical analysis of world issues pertaining to cross cultural, ethical, and science and technology matters throughout their lives and careers. Students must take two courses providing exposures in each of these three modes.

• Cross-Cultural Inquiry (CCI). This Mode of Inquiry provides an academic engagement with the dynamics and interactions of culture(s) in a comparative or analytic perspective. It involves a scholarly, comparative, and integrative study of political, economic, aesthetic, social, and cultural differences. It seeks to provide students with the tools to identify culture and cultural difference across time or place, between or within national boundaries. This includes but is not limited to the interplay between and among material circumstances, political economies, scientific understandings, social and aesthetic representations, and the relations between difference/diversity and power and privilege within and across societies. In fulfilling this requirement, students are encouraged to undertake comparisons that extend beyond national boundaries and their own national cultures and to explore the impact of increasing globalization.

• Ethical Inquiry (EI). Undergraduate education is a formative period for engaging in critical analysis of ethical questions arising in human life. Students need to be able to assess critically the consequences of actions, both individual and social, and to sharpen their understanding of the ethical and political implications of public and personal decision-making. Thus, they need to develop and apply skills in ethical reasoning and to gain an understanding of a variety of ways in which, across time and place, ethical issues and values frame and shape human conduct and ways of life.

• Science, Technology, and Society (STS). Advances in science and technology have brought profound changes to the structure of society in the modern era. They have fundamentally changed the world, both its philosophical foundations, as in the Copernican or Darwinian revolutions, and in its practical everyday experience, as in the rise of the automobile and television. In the second half of the last century, the pace of such change accelerated dramatically; science and technology will play an even greater role in shaping the society of the future. If students are to be prepared to analyze and evaluate the scientific and technological issues that will confront them and to understand the world around them, they need exposure to basic scientific concepts and to the processes by which scientific and technological advances are made and incorporated into society. They need to understand the interplay between science, technology, and society—that is, not only how science and technology have influenced the direction and development of society, but also how the needs of society have influenced the direction of science and technology.

The six required Modes of Inquiry also include Foreign Language, Writing, and Research.
• **Foreign Language (FL).** Duke has set internationalization as an institutional priority in order to prepare students to live in an increasingly diverse and interdependent world. By developing proficiency in a foreign language, students can develop cross-cultural competency and become more successful members of their increasingly complex local, national, and international communities. Foreign language study substantially broadens students’ own experiences and helps them develop their intellect and gain respect for other peoples’. Students need an awareness of how language frames and structures understanding and effective communication, and a study of foreign language improves students’ native language skills. To satisfy the foreign language competency requirement students must complete one of the following:

  - For students who enter their language study at Duke at the intermediate level or above, and intend to complete the requirement in the same language:
    Completion of a 300-level course that carries the FL designation is required. Therefore, students who place into the first semester of the intermediate level will take three full courses, students who place into the second semester of the intermediate level will take two full courses, and students who place into the 300 level will take one course.

    Russian requires an official written and oral proficiency examination at Duke for foreign language placement. Students who plan to continue studying Russian should consult with the director of undergraduate studies in that language or see the table “College Board Tests” in the chapter “Academic Procedures and Information” on page 35.

  - For students who begin the study of a foreign language at Duke in an elementary language (first or second semester) course and intend to complete the requirement in that language: The successful completion of three full sequential courses in the same language that carry the FL designation is required. Students must be registered in an FL designated course no later than the first semester of their sophomore year. However, in exceptional circumstances, students may petition their dean for an extension of this deadline. Foreign language courses below the intermediate level cannot be used to satisfy requirements in Areas of Knowledge or other Modes of Inquiry.

• **Writing (W).** Effective writing is central to both learning and communication. To function successfully in the world, students need to be able to write clearly and effectively. To accomplish this, they need to have a sustained engagement with writing throughout their undergraduate career. Thus, students must take at least three writing courses at Duke: a) Writing 101 in their first year and b) two writing-intensive courses (W) in the disciplines, at least one of which must be taken after their first year. Through the latter type of courses students become familiar with the various modes and genres of writing used within an academic discipline and learn how the conventions and expectations for writing differ among the disciplines.

• **Research (R).** As a research university, Duke seeks to connect undergraduate education to the broad continuum of scholarship reflected in its faculty. Such a rich setting provides students with opportunities to become involved in a community of learning and to engage in the process of discovery and move beyond being the passive recipients of knowledge that is transmitted to being an active participant in the discovery, critical evaluation, and application of knowledge and understanding. Engagement in research develops in students an understanding of the process by which new knowledge is created, organized, accessed, and synthesized. It also fosters a capacity for the critical evaluation of knowledge and the methods of discovery. This is important not only for undergraduates who wish to pursue further study at the graduate level, but also for those who seek employment in a rapidly changing and competitive marketplace. Students are required to complete two research exposures; one Research Independent Study (coded R) may be submitted for approval for the Writing in the disciplines (W) designation.

A course may carry up to two Areas of Knowledge and up to three Modes of Inquiry. For students, a course may count toward only one Area of Knowledge, but toward multiple Modes of Inquiry.

**Small Group Learning Experiences.** By supplementing the classroom and lecture methods of instruction, small group learning experience courses assure students opportunities to engage in discussion, develop skills, refine judgment, and defend ideas when challenged. A seminar (indicated by the suffix S) is an independent course of twelve to fifteen (exceptionally to eighteen) students who, together with an instructor, engage in disciplined discussion. The number of meeting hours per term is the same as for regular courses of equivalent credit. A tutorial (indicated by the suffix T) is a group of one to five students and an instructor meeting for discussion which is independent of any other course. For independent study, students pursue their own interests in reading, research, and writing, but meet with an instructor for guidance and discussion. See the section on independent study in the chapter “Academic Procedures and Information” on page 35.
To meet the first-year seminar requirement, students who transfer to Duke with sophomore standing are required to complete a seminar by the end of their sophomore year at Duke or to submit documentation that they completed a seminar course at the college they attended previously.

To meet the first-year seminar requirement, students who transfer to Duke with sophomore standing are required to complete a seminar by the end of their sophomore year at Duke or to submit documentation that they completed a seminar course at the college they attended previously.

While discussion sections (D) and preceptorials (P) do not satisfy the formal Small Group Learning Experience in the college, they offer additional opportunities for students to participate in small classes. A discussion section, with an enrollment limit set by the individual department, is an integral part of a larger regular course, and every member of the class is enrolled. A preceptorial (P) is a group of usually no more than twelve students and an instructor in which discussion is the primary component; it is an additional and optional unit attached to a regular course involving one or more extra meetings per week. No additional course credit is given for discussion sections or preceptorials.

Instructors in all courses that satisfy the requirements for small group learning experiences, including independent study, must meet with the students at least once every two weeks during the spring/fall semesters and at least once every week during the summer terms. The requirements for small group learning experiences are listed under Program I, above.

**Course Credits.** Thirty-four course credits are required for graduation; at least 32 of the 34 course credits must be passed with a grade of C- or better. A maximum of 2.0 course credits passed with a D grade (D, D+, D-) can be used toward the 34 course credits requirement. The 34 course credits may include (1) no more than 1.0 course credit in physical education activity courses; (2) no more than 4.0 course credits in dance/American Dance Festival technique/performance courses; (3) no more than 2.0 course credits in house courses; (4) no more than 6.0 course credits for graduate and professional school courses not listed in the Duke University Bulletin of Undergraduate Instruction; (5) no more than 1.0 course credit in elective academic internships; (6) no more than 4.0 course credits in military science; and (7) no more than four elected courses taken on a Satisfactory/Unsatisfactory grading basis (not including courses offered only on that basis). (American Dance Festival courses are included in the total limitation on dance technique/performance courses as noted above in this paragraph.) Military science courses, like most physical education courses, do not satisfy Area of Knowledge requirements. For limitations on transfer credit and Advanced Placement credit, see the sections on “Advanced Placement” and “Transfer of Work Taken Elsewhere” in the chapter “Academic Procedures and Information” on page 35.

**Residence.** Undergraduates at Duke are expected to complete either the bachelor of arts or the bachelor of science degree in eight semesters of enrollment. This period may be extended for one semester by a student’s academic dean for legitimate reasons. Very rarely, a student will be granted a tenth semester of study. This may be approved by an academic dean when additional time is needed to complete degree requirements. Students are not permitted to enroll at Duke for more than ten undergraduate semesters.

For purposes of establishing the length of residence of a student admitted in transfer, the semesters completed at the institution previously attended are counted as semesters of residence at Duke.

For the minimum residence period, at least seventeen courses must be satisfactorily completed at Duke. If only seventeen courses are taken at Duke, they must include the student’s last eight courses.

**Major, Minor, and Certificate Programs**

**The Major.** Students are expected to acquire some mastery of a particular discipline or interdisciplinary area as well as to achieve a breadth of intellectual experience. They therefore complete a departmental major, a program major, or an interdepartmental major. Majors, including interdepartmental majors, are designed to give students breadth and depth in a particular discipline or interdisciplinary area. The courses required for majors are specified by the department or academic program, and include a progression from lower to upper level courses. Departmental and program majors require a minimum of ten courses; interdepartmental majors require a minimum of fourteen courses. The total number of courses that a department/program may require at any level in the major and related departments may not exceed 17 course credits for the bachelor of arts degree and 19 course credits for the bachelor of science degree. At least half the courses for a student’s major field must be taken at Duke although individual departments and programs offering majors may require that a greater proportion be taken at Duke. Students are responsible for meeting the requirements of a major as stated in the bulletin for the year in which they matriculated in Trinity College, although they have the option of meeting requirements in the major changed subsequent to the students’ matriculation. A student who declares and completes requirements for two majors may have both listed on the official record. A maximum of two majors may be recorded on a student’s record. See the chapter “Academic Procedures and Information” on page 35 for the majors within each degree and for procedures on declaring a major.
Departmental or Program Major. The courses for a departmental major may include introductory or basic prerequisite courses and higher level courses in the major department or in the major department and related departments. Students may also complete work prescribed for a major in approved programs, often interdisciplinary. These departmental and program majors include African and African American studies, art history, art history/visual arts (combined major), Asian and Middle Eastern studies, biology, biophysics, Brazilian and global Portuguese studies, Canadian studies (second major only), chemistry, classical civilization, classical languages, computer science, cultural anthropology, dance, earth and ocean sciences, economics, English, environmental sciences, environmental sciences and policy, evolutionary anthropology, French, German, global cultural studies, global health (second major), history, international comparative studies, Italian studies, linguistics, mathematics, medieval and renaissance studies, music, neuroscience, philosophy, physics, political science, psychology, public policy studies, religion, romance studies, Russian, Slavic and Eurasian studies, sociology, Spanish, statistical science, theater studies, visual arts, visual and media studies, and women’s studies. The courses required for a major are specified by the department or program. The requirements appear in the section following each department or program’s course descriptions in the chapter “Courses and Academic Programs” on page 101.

Interdepartmental Major. A student may pursue an interdepartmental major in two Trinity College departments or programs that offer a major. The student will work with an advisor in each department to adopt an existing interdepartmental major or to design a new one. The courses of study must be approved by the directors of undergraduate studies in both departments who will define a course of study covering core features of each discipline, such as theory, methodology, and research techniques. The criteria must include at least fourteen courses split evenly between the departments. At least four of the seven courses required by each department are to be taught within the department. All courses must be among those normally accepted for a major in the two departments. The directors of undergraduate studies in the two departments must agree to an initial list of courses that the student will take in the two departments and jointly approve any subsequent changes to that course of study. Students proposing an interdepartmental major must present a descriptive title for the major and a rationale for how the program of study will help them realize their intellectual goals.

The Minor. The courses required for a minor are specified by the department/academic program. Minors require a minimum of five courses. Further information about specific minors is available under the description of the individual department/academic programs in the chapter “Courses and Academic Programs” on page 101. Students may not major and minor in the same department/program with the exception of four departments in which multiple majors or concentrations are possible: (1) Asian and Middle Eastern studies, (2) art, art history, and visual studies, (3) classical studies, and (4) romance studies. At least half the courses taken to satisfy a minor must be taken at Duke although individual departments may require that a greater proportion be taken at Duke.

Certificate Programs. A certificate program is a course of study that affords a distinctive, usually interdisciplinary, approach to a subject that is not available within any single academic unit. All certificate programs have a required introductory course as well as a required culminating capstone course. There are two versions of certificate programs: the traditional certificate, consisting primarily of academic coursework (minimum six courses), and the experiential certificate, consisting of a combination of coursework (minimum four courses) and immersive curricular experiences. Eligible undergraduates electing to satisfy the requirements of a certificate program may use for that purpose no more than two courses that are also used to satisfy the requirements of any major, minor, or other certificate program; individual programs may prohibit such double counting or restrict it to one course. At least half the courses taken to satisfy a certificate must be taken at Duke, although individual programs may require that a greater proportion be taken at Duke.

Certificate programs are available in: arts of the moving image; child policy research; documentary studies; East Asian studies; energy and the environment; genome sciences and policy; human development; information science and information studies; innovation and entrepreneurship; Jewish studies; Latin American studies; Latino/a studies in the global south; markets and management studies; marine science and conservation leadership; Marxism and society; policy journalism and media studies; politics, philosophy and economics; and study of ethics. Fuller descriptions of these certificate programs appear in the chapter “Courses and Academic Programs” on page 101.

Restrictions on Majors, Minors, Certificates. A student must declare one major and may declare a second (although not a third) major. The combined number of majors, minors, and certificate programs may not exceed three. Thus, a student may declare as a maximum: two majors and either a minor or a certificate program; a major and two minors; a major and two certificate programs; or a major, a minor, and a certificate program.
Program II

Nature and Purpose. Students in Trinity College who believe that their intellectual interests and talents would be better served outside the regular curriculum options under Program I are encouraged to consider Program II. Students admitted into Program II follow individualized degree programs to explore a topic, question, or theme not available as a course of study within Program I. As degree candidates in Program II, students separate themselves from the requirements and options of Program I including the requirement for a major and the options of multiple majors and minors.

Program II typically best serves the needs of students who find that their intellectual interests cross departmental boundaries or who perceive areas of learning in clusters other than those of the current departmental units of the university. Program II graduates have gone on to graduate and professional schools around the country and to satisfying positions in many areas of employment. They have won important awards, including Rhodes and Fulbright scholarships, and have received national recognition for career success. Among the many topics for Program II have been architectural design, bioethics, dramatic literacy, the epic in music and literature, planetary and evolutionary biology, and US national security. Full information is available on the Program II website at program2.duke.edu.

Admission. If interested in Program II, students should first attend an information session, and confer with the academic dean for Program II. Students will select a regular rank faculty advisor in one of the departments or programs of Trinity College; with approval of the director of undergraduate studies, that department or program will become the sponsor for the student. Application to Program II requires students to propose a topic, question, or theme for the degree program and to plan a special curriculum adapted to their individual interests and talents. The student and faculty advisor together assess the student’s background, interests, and ambitions and evaluate the resources at the university, or outside it, to support those ambitions.

The curricular program proposed by a Program II candidate must address the student’s specific interests and offer a coherent plan for learning rather than a sampler of interesting courses. It should incorporate the depth and breadth of study expected of a liberal education in Trinity College. This is achieved in Program II through carefully selected interdisciplinary coursework focused on the student’s theme. Programs may be proposed for either the bachelor of arts or the bachelor of science degree; in the latter case, the sponsoring department must offer a Program I major within the BS degree option. The program must be approved by the sponsoring department or program and also by the committee on Program II of the Faculty Council of Arts and Sciences.

Upon endorsement by the Program II Committee, the program becomes an obligation assumed by the student. Until formally accepted into Program II, a student should register for courses to satisfy the curricular requirements for Program I. Students who withdraw from Program II for any reason assume all requirements of Program I. Students will be accepted into Program II only after their first semester at Duke; they are ineligible for admission after the midpoint of their junior year. Further information may be obtained from the Academic Advising Center and from the office of the academic dean responsible for Program II.

General Requirements. Apart from the requirements arising from the approved plan of work, a Program II student must satisfy certain general requirements to satisfy the requirements for the degree: thirty-four semester-course credits for graduation; curricular breadth; the regulations on military science, house, professional school, and physical activity and dance courses; and residence, although the regulation relating to the last eight courses may be adjusted to suit the student’s approved plan of work. Graduation with Distinction is available for qualified students in Program II. See the section on honors on page 52.

Combination Programs of Trinity College and Duke Professional Schools

A student interested in attending the Nicholas School of the Environment or the Duke University School of Law may, upon meeting certain requirements, combine the senior year in Trinity College of Arts & Sciences with the first year in the professional school. To qualify the student must (1) successfully complete 26 course credits in Trinity College; (2) fulfill all degree requirements in Trinity College except for eight elective courses; (3) obtain the approval of the appropriate preprofessional advisor and academic dean in Trinity College; and (4) be admitted to the professional school. If the student’s application to the professional school is accepted, the student takes a leave of absence from Trinity College in order to transfer to the professional school for the fourth year and begins work on the professional degree. Upon successful completion of the work in the first year of the professional school, the baccalaureate degree is awarded to the student. The undergraduate record notes the student’s enrollment in the combination program, the name of the professional school, the date of graduation from Trinity College, and the
degree awarded, but it does not include courses taken in the professional school. Counseling and additional information are available from the preprofessional advisors in Trinity College: Dean Donna Kostyu (environment) and Dean Gerald Wilson (law).

**Preparation for Graduate and Professional Schools**

Students planning to enter a graduate or professional school should consult published information from the relevant advising offices for guidance (i.e., Prelaw Advising Office at [http://trinity.duke.edu/prelaw-advising](http://trinity.duke.edu/prelaw-advising), Prebusiness Advising Office at [http://trinity.duke.edu/prebusiness-advising](http://trinity.duke.edu/prebusiness-advising), Pregraduate Advising Office at [www.trinity.duke.edu/pregraduate-advising](http://www.trinity.duke.edu/pregraduate-advising), and Health Professions Advising Office at [http://prehealth.duke.edu](http://prehealth.duke.edu)). For specific information regarding courses and curriculum choices, students should seek input from their faculty advisors and pregraduate and preprofessional advisors where appropriate. Information specific to particular graduate and professional schools can be obtained from the website of each school. Graduate and professional schools require special tests for students seeking admission. Information on the tests can be obtained from the appropriate preprofessional school or pregraduate school advisor in Trinity College of Arts & Sciences.

**Graduate Schools of Arts and Sciences.** Students interested in obtaining a master of science, master of arts, or doctor of philosophy degree should discuss their plans as early as possible with faculty in the proposed field of advanced study and refer to the pregraduate advisor's website. As undergraduates, they should become involved in research which may involve laboratory work, advanced seminars, or independent study. Graduate schools look favorably upon evidence that a student has conducted mentored research such as an honors thesis, leading to Graduation with Distinction. Many graduate schools require a reading knowledge of a foreign language. Information on this and other requirements is available in the bulletins of specific graduate programs and websites. It may also be included in the “Handbook for Majors” for the major department. A research mentor, a faculty advisor, and the PhD advisor in the major department are the best resources for advice about graduate school in the arts and sciences. General advice may be sought from the advisor for pregraduate study, 011 Allen Building.

**Graduate Schools of Engineering.** Students interested in graduate work in engineering should consult the associate dean of Pratt School of Engineering or the director of graduate studies in one of the engineering departments. Most engineering graduate schools require that a candidate have the equivalent of a bachelor of science in engineering degree; however, students in the natural and social sciences may obtain conditional admission if they have a sufficient background in mathematics.

**Graduate Business Schools.** Students seeking information about graduate business schools should consult the Graduate Business Advisor in Trinity College. In preparing for graduate business school, students should gain a good liberal arts background, by choosing courses that will help them develop communication skills and an understanding of human nature. Students should sharpen their analytical and quantitative skills. Most often this is done through courses in calculus, statistics, microeconomics, accounting, and computer science. Calculus, however, is the course of choice. Students should seek to develop their leadership skills through participation in classroom projects and by becoming active in any student organization of their choice. For further information visit the Graduate Business School Advisor in the Academic Advising Center on East Campus.

**Medical and Dental Schools.** Students planning to enter schools of medicine and dentistry can prepare for admission by completing any of the regular departmental majors in Program I or by completing Program II, and by taking those courses required by the professional schools of their choice. Virtually all medical schools and most schools of dentistry require the same basic group of college premedical courses—a year of biology with lab, a year each of inorganic and organic chemistry with lab, and a year of general physics with lab. In addition, many schools require a year of English and courses in the humanities or social sciences. About a fifth of all medical schools require a year of college mathematics and some specify calculus, statistics, or computer science. Most schools are recommending or requiring a course in biochemistry. For a complete listing of these and any additional course requirements set by each school, consult Medical School Admission Requirements, published by the Association of American Medical Colleges or Official Guide to Dental Schools, published by the American Dental Education Association. These and similar resources for schools of optometry and veterinary medicine are located in the Health Professions Advising Office. Students should discuss their programs of study with their major advisors, academic deans, and with an advisor for the health professions. Visit the Office of Health Professions Advising, 011 Allen Building.

**Graduate Programs in the Health Professions.** Students interested in careers as physical therapists, health administrators, or others of the allied health professions should prepare coursework in the natural sciences and behavioral sciences within a liberal arts curriculum. Up-to-date information on allied health professions and programs is best accessed through the Internet. A health professions advisor is available to meet with students interested in allied health professions. Visit the Office of Health Professions Advising, 011 Allen Building.
Law Schools. Students who plan to prepare for law school and a career in law should seek breadth in their undergraduate course program with specialization in one or more areas. They may choose virtually any field for their major work. Though no specific courses are required, prelaw students have often chosen from among the following: African American Studies 251; Cultural Anthropology 208; Economics 21 or 22, 201D,174; History 130D, 377D, 366, 367; Philosophy 48, 150; Political Science 116, 215, 216, 217; Public Policy Studies 155D; Sociology 110D.

For a fuller discussion of undergraduate preparation for the study of law, students should refer to the Duke Prelaw Handbook or the Prelaw Handbook published by the Association of American Law Schools and the Law School Admission Council. For more information visit the Prelaw Advising Office, 04 Allen Building.

Theological Study and Professional Religious Work. Students interested in studying theology are encouraged to enroll in a Duke Divinity School course to explore topics of interest and talk with faculty members and other administrative staff about possibilities for further study. Theological schools often affiliate with a particular denomination and/or specialize in areas of study and practice. If students have a denominational (or other tradition) affiliation, they may wish to confer with representatives prepared to answer questions about theological study and qualifications for professional opportunities.

Preparation for graduate theological study often prioritizes a strong background in the humanities with broad knowledge in the areas of biblical and modern languages; religion, both in the Judeo-Christian and in the Near and Far Eastern traditions; English language and literature; history, including non-Western cultures as well as European and American; and philosophy, particularly its history and its methods. However, students from other fields (such as the natural sciences, both the physical and the life sciences; psychology, sociology, and anthropology; and the fine arts and music) also thrive within theological studies, if they have strong writing skills. Most theological schools do not require languages for admission at the master degree level; however, doctoral programs in theological fields ordinarily require proficiency in two modern languages such as German and French prior to completing the program. Additionally, doctoral programs in biblical studies ordinarily require biblical language skill in Greek and Hebrew as a prerequisite for admission.

While theological degrees have most often been sought by persons desiring training for ordained ministry or other professional religious roles, theological degrees are also pursued by persons in other disciplines such as medicine, nursing, law, business, public policy, environmental studies, and social work to complement their studies and training.

More detailed information about theological study may be obtained from the director of admissions of Duke Divinity School by calling (919) 660-3436 or toll-free (888) GO-2-DUKE, or e-mailing admissions@div.duke.edu.

The Edmund T. Pratt Jr. School of Engineering

Duke University offers in the Edmund T. Pratt Jr. School of Engineering programs of study which lead to the degree of bachelor of science in engineering. Four programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET), http://www.abet.org. These programs are biomedical engineering, civil engineering, electrical and computer engineering, and mechanical engineering. These accredited programs, as well as a new major in environmental engineering, minors in energy engineering and electrical and computer engineering, and special programs of study in interdisciplinary fields, are offered by the departments of biomedical engineering, civil and environmental engineering, electrical and computer engineering, and mechanical engineering and materials science.

For graduation with a bachelor of science in engineering degree, a student must successfully complete a minimum of 34 course credits. These 34 course credits must include the following:

**General Requirements**

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<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing</td>
<td>1.0 c.c</td>
<td>This requirement is met by completing Writing 101.</td>
</tr>
<tr>
<td>Mathematics</td>
<td>5.0 c.c</td>
<td>This requirement is typically met by completing Mathematics 111L, 112L, 212, 216, and 353.</td>
</tr>
<tr>
<td>Natural Science</td>
<td>4.0 c.c</td>
<td>This requirement is met by completing Chemistry 101DL, Physics 151L and 152L, and an additional course in one of the natural science departments which presents fundamental knowledge about nature and its phenomena, preferably including quantitative expression.</td>
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</table>
General Requirements

| Humanities and Social Sciences | 5.0 c.c. | This requirement is met by completion of five courses selected from at least three of the following four areas of knowledge: Arts, Literatures, and Performance (ALP), Civilizations (CZ), Foreign Languages (FL), and Social Sciences (SS). At least one course must be classified SS. In order to provide depth in a subject matter, at least two courses must be selected from a single department and at least one of those courses must be 200-level or above. Courses selected must be those which present essential subject matter and substance of the discipline. No skill courses can be used to fulfill this requirement.d |
| Digital Computation | 1.0 c.c. | Students are expected to have acquired digital-computer programming capability before their sophomore year. The programming capability may be satisfied by passing Engineering 103L. |
| Engineering and Applied Sciences | 4.0 c.c. | This requirement is met by completion of one course from four of the following seven areas: digital systems, electrical science, information and computer science, mechanics (solid and fluid), materials science, systems analysis, and thermal science and transfer processes. The department administering the major field of study will specify this requirement. |

a. No more than 1.0 course credit in physical education activity and 1.0 course credit in music activity can be used to meet bachelor of science in engineering degree requirements. House courses may not be used to meet BSE requirements. A maximum of 2.0 course credits of junior or senior level air science, military science, or naval science coursework may be counted in satisfying the minimum requirements of 34 course credits for a BSE degree. These courses must be included in the 14 course credits listed under departmental requirements. All other courses completed in air, military, or naval science are taken in addition to the minimum program.
b. Students placing out of any of these classes must take a suitable substitute. AP credit can be used as a substitute for Mathematics 111L and Mathematics 112L.
c. Students entering with AP, IPC, and PMC credits for both Physics 25 and 26 must take one of the following physics courses at Duke: Physics 152L, 153L, 264, 361, or 362. The fourth natural science course is determined by departmental major.
d. A maximum of 2.0 Advanced Placement course credits may be used to meet humanities and social sciences requirements for the bachelor of science in engineering degree. Courses must be chosen from humanities and social science departments. Science and engineering courses with SS, CZ, FL, or ALP codes will not count toward this requirement unless cross-listed with humanities or social science courses. Two hundred-level AP credits will not count toward satisfying depth in a humanities or social sciences subject area.

Departmental Requirements

| Departmental Specifications | 14.0 c.c. | The department administering the major field of study will specify this requirement. In general, it will consist of both required courses and electives to be planned in consultation with the departmental advisor. Including the 4 credits in engineering and applied sciences listed under general requirements, a minimum of 13.0 credits in engineering work are required. Individual departmental requirements can be found in the section on “Courses and Academic Programs” for the Pratt School of Engineering beginning on page 667. |
| Total Minimum Requirement | 34 c.c. | |

30 The Edmund T. Pratt Jr. School of Engineering
Residence Requirement
At least 17 course credits must be completed satisfactorily at Duke. This must include the work of the final two semesters, with the following exceptions: the student who has completed more than four full semesters of work at Duke may take the last two courses elsewhere; others may take the last course elsewhere. The courses taken elsewhere must be approved in advance by the student’s major advisor and academic dean.

Grade Requirement for Graduation
Of the 34 course credits which fulfill the specified categories in the bachelor of science in engineering degree requirements, thirty-two or their equivalent in number must be passed with grades of S, C-, or better.

The Pratt First-Year Curriculum
The first year of study in the Pratt School of Engineering is largely common to all engineering students, with seven of the eight first-year courses being required by all engineering majors. The first-year curriculum offers
• a general education in the fundamentals of mathematics, physics, and chemistry, on which the science and practice of engineering are based;
• instruction in modern engineering problem solving skills, including the use of digital technology for both computational and laboratory applications;
• an exposure to the range of career opportunities in engineering; and
• the opportunity to explore intellectual opportunities in Trinity College, through satisfaction of the university writing requirement and selection of a humanities and social sciences elective.

Students predisposed toward a particular Pratt major use the eighth course to begin fulfilling degree requirements for that major as indicated below, while undecided students are encouraged to use this eighth course to aid in their subsequent selection of a major. Engineering 90L (Introduction to Engineering), a first-year colloquium in which both disciplinary and multidisciplinary opportunities in engineering are explored, is also recommended to first-year students to aid in this process of intellectual discovery. The general layout for the curriculum is as follows:

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 111L</td>
<td>1.0</td>
<td>Mathematics 112L</td>
<td>1.0</td>
</tr>
<tr>
<td>Chemistry 101DL</td>
<td>1.0</td>
<td>Physics 151L</td>
<td>1.0</td>
</tr>
<tr>
<td>Writing 101 or Humanities/</td>
<td>1.0</td>
<td>Writing 101 or Humanities/</td>
<td>1.0</td>
</tr>
<tr>
<td>Social Science Elective</td>
<td></td>
<td>Social Science Elective</td>
<td></td>
</tr>
<tr>
<td>Engineering 103L</td>
<td>1.0</td>
<td>Technical Course</td>
<td>1.0</td>
</tr>
<tr>
<td>Engineering 90L&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4.0–4.5</td>
<td>Total</td>
<td>4.0</td>
</tr>
</tbody>
</table>

<sup>a</sup> Half-credit course not required, but recommended, if undecided.

The above assumes no advanced placement credit. In the event that such credit is granted for one or more of the above courses, substitutions of upper level technical requirements can be made or other curricular interest may be pursued (including first-year Focus programs or initiation of a Trinity second major/minor or certificate program).

The first year technical course should be selected according to the student’s intended major:

<table>
<thead>
<tr>
<th>Intended Major</th>
<th>Suggested Technical Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Engineering</td>
<td>Biology 201L</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Civil and Environmental Engineering 160L (Fall) or Engineering 120L (Spring)</td>
</tr>
<tr>
<td>Electrical and Computer Engineering</td>
<td>Electrical and Computer Engineering 110L</td>
</tr>
<tr>
<td>Environmental Engineering</td>
<td>Approved Biology Elective</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>Engineering 121L</td>
</tr>
<tr>
<td>Undecided</td>
<td>Select from all above</td>
</tr>
</tbody>
</table>

After the first year, recommended curricula become more department specific; please refer to the Pratt School of Engineering courses and departmental requirements beginning on page 667.
Second Major

If an engineering student completes simultaneously the requirements for a departmental major in arts and sciences and the requirements for a bachelor of science in engineering degree, or satisfies simultaneously the requirements for two engineering majors, the official record will indicate this fact.

The director of undergraduate study for each major must certify that all major requirements have been met. In Pratt, each major must identify at least nine technical courses fundamental to the discipline of that major that are different from those of the other major. Each major must have at least five of these technical courses fundamental to the discipline that are not used to satisfy the requirement of the other major (free electives excluded). Any of the other fundamental courses may be counted for both majors if the directors of undergraduate study agree they have equivalent technical content. The remaining requirements for each major may be satisfied by taking additional courses associated with the approved academic unit, cross-listed courses, or upon agreement of the directors of undergraduate study, other courses with approved content.

The student must initiate the procedure, by completing a Declaration of Major form (online) in which the second major is declared. It is highly recommended that the student meet with the director of undergraduate studies in the second major to review requirements for that major. The completion of the requirements for the major in this department must be confirmed no later than the time of registration for the final semester.

Minors

Two engineering minors are offered in the Pratt School of Engineering. The energy engineering minor is only open to students with an engineering major. The electrical and computer engineering minor is open to engineering and nonengineering majors. Please see the “Courses and Academic Programs” section for the Pratt School of Engineering beginning on page 667.

A minimum of five technical courses are required for a minor. Courses that are used to fulfill the student’s primary major are excluded from the additional courses counted for the minor; this exclusion also applies to courses with content substantially equivalent to courses in the student’s primary major. As an exception, at most one upper-level elective course cross-listed with the student’s primary major may be counted toward the minor.

If the minor area of study does not otherwise exist as a primary major, then the five technical courses counted for the minor are excluded from courses used to fulfill the student’s major; this exclusion also applies to courses with content substantially equivalent to courses in the student’s major. As an exception, at most one upper-level elective course cross-listed with the student’s primary major may count toward the minor if topically relevant. At least three of the minor courses must be upper-level courses.

For all minors, introductory level courses intended as an early educational experience may not be used to fulfill the minor requirement, unless such courses contain substantial technical content that is a prerequisite for later courses, and that material is not otherwise covered in the student’s primary major. No more than one semester of independent study, supervised by an advisor in the unit offering the minor, may be used for the minimum five course minor requirement.

IDEAS (Interdisciplinary Engineering & Applied Science) Program

Non-ABET-accredited majors that are interdisciplinary in scope and include engineering and applied science are available. These majors are proposed by the student, approved by a faculty committee, and result in a bachelor of science in engineering degree. Programs with a broad foundation in the engineering sciences also may be developed under this program by those who intend to enter nonengineering professions. Although not individually accredited, these programs satisfy the national general engineering accreditation criteria.

Any student, in consultation with their advisor or another faculty member, may propose a unique combination of courses designed to meet particular career objectives. A proposal must be submitted to the associate dean of Pratt School of Engineering and the Engineering Faculty Council for approval; it may be submitted as early as the second semester of the freshman year and must be submitted before the beginning of the senior year. The proposal must include a letter stating the students’ reasons for pursuing the suggested program of study.

Certificate Programs in Engineering

Two certificate programs are offered only to students enrolled in the Pratt School of Engineering. These certificates are the aerospace engineering certificate and the architectural engineering certificate. The aerospace engineering certificate is intended to educate students in the engineering principles related to the conceptualization, design, analysis, and performance of aerospace vehicles and systems. The objective of the architectural engineering
certificate is to provide students with an understanding of the design elements of buildings and construction processes. More information can be found in the section on "Courses and Academic Programs" for the Pratt School of Engineering beginning on page 667.

**Bachelor of Science in Engineering/Master of Science Program**

This 4+1 program provides students with an opportunity to plan a coordinated five-year program of studies in the Pratt School of Engineering leading to both the bachelor of science in engineering and master of science degrees. Application for admission to this integrated program may be made during the senior year. Provisional admission to The Graduate School may be granted when the student enrolls for the semester during which the bachelor of science in engineering degree requirements will be completed. Graduate level courses during this period which are in excess of bachelor of science in engineering requirements may be credited toward fulfillment of the master of science degree requirements.

**Bachelor of Science in Engineering/Master of Engineering Program**

This 4+1 program provides students with an opportunity to plan a coordinated five-year program of studies in the Pratt School of Engineering leading to both the bachelor of science in engineering and master of engineering degrees. Application for admission to this program may be made as early as the spring of the junior year or as late as the spring of the senior year. Although admitted to the master of engineering program while undergraduates, 4+1 students will remain in undergraduate status for four years and will become a master of engineering student in the fifth year. Graduate level credits, where a grade of B or better were earned and which are in excess of the bachelor of science in engineering requirements, may be transferred toward fulfillment of the master of engineering degree requirements.

**Bachelor of Science/Master of Engineering Management**

This 4+1 program provides students with an opportunity to plan a coordinated five-year program of studies in the Pratt School of Engineering leading to both the bachelor of science in engineering and master of engineering management degrees. This program offers engineering students exposure to both business and law as well as advanced engineering and requires completion of an engineering internship, four graduate-level engineering courses, three business courses, and one law course. Specific program requirements and application forms may be obtained from the master of engineering management program office in The Wilkinson Center for Engineering Management, 3120 Fitzpatrick Center (CIEMAS).

**Pratt-Specific Academic Policies**

Please note that some of the academic policies described in the next chapter will differ for Pratt students relative to their counterparts enrolled in the Trinity College of Arts & Sciences. In particular, the following policies vary slightly between undergraduate schools:

- Repetition of Courses, [on page 42](#)
- Declaration of Major, [on page 44](#)
- Annual Continuation Requirements, [on page 48](#)
Academic Procedures and Information

Entrance Credit and Placement

Scores on the tests discussed below and documented previous educational experience are the criteria used to determine a student's qualifications for certain advanced courses. In addition, a limited amount of elective course credit may be awarded in Trinity College of Arts & Sciences on the basis of precollege examination and/or credits earned of the following three types: advanced placement (AP), international placement credit (IPC), and pre-matriculation college credit. Trinity College will record on students’ permanent Duke records courses of these three types completed prior to their matriculation at Duke. The three types of precollege work are regarded as equivalent and may be used for placement into higher-level coursework and to satisfy departmental major and minor requirements at Duke to the extent allowed by the individual departments. Additionally, Trinity College students may be granted up to two elective course credits toward the degree requirement of thirty-four course credits for any combination of AP, IPC, or prematriculation credit. Up to six additional credits may be awarded for acceleration toward the degree. Acceleration is defined as completing the requirements for the bachelor's degree one or two semesters earlier than the original expected graduation date. Specifically, the two electives, as well as up to two acceleration credits, may be included in the graduation total for students graduating in seven consecutive semesters. The two elective credits, as well as up to six acceleration credits, may be included in the graduation total for students graduating in six consecutive semesters. Students may not use acceleration credits in order to compensate for time taken away from their studies due to a leave of absence, voluntary or involuntary withdrawal from the university, or a period of practice-oriented education that does not include credit-bearing coursework taken to satisfy graduation requirements. Students wishing to graduate early must complete an early graduation form, available from their academic dean, by the end of the fifth semester of enrollment. AP, IPC, and prematriculation credits may not be used to satisfy general education requirements—the Areas of Knowledge or the Modes of Inquiry.

The Pratt School of Engineering evaluates AP and IPC credit as Trinity College does. These courses may be used to satisfy general education requirements toward the BSE degree. The criteria for evaluating such work are the same as in Trinity College (see the section on work taken during high school). Enrollment in a course for which AP or IPC credit has been given will cause the AP credit to be forfeited.

Forfeiture of Precollege Credit Awarded

Students who successfully complete a course at Duke for which they received precollege credit may not use that or any higher precollege credit in that subject to satisfy degree requirements, but the precollege work will remain on the Duke transcript. A Trinity College student who enrolls in a course for which precollege credit was awarded and who subsequently fails or withdraws from the course after the Drop/Add deadline will be allowed to apply the precollege credit toward graduation requirements according to the policy governing use of such credits (see above). A Pratt School of Engineering student enrolled in a course for which precollege credit was awarded and who subsequently fails or withdraws from the course after the Drop/Add period will not be allowed to use the precollege credit nor any higher credit in that subject to satisfy degree requirements.
College Board Advanced Placement Program (AP) Examinations

A score of four or five on College Board Advanced Placement Program Examinations, taken prior to matriculation in college, is the basis for consideration of placement in advanced courses in art, art history, studio art, biology, chemistry, Chinese, computer science, economics, English, environmental science, French, German, history, Japanese, Latin, mathematics, music, physics, political science, psychology, Spanish, and statistical science. The Department of Mathematics will also consider a score of three for placement beyond the introductory course. Departmental policies regarding advanced placement may vary. AP scores of four or five in German, Japanese, Latin, French literature, and Spanish literature may result in placement in courses at the 200-400 level; an AP score of five in French or Spanish language may result in placement in courses at the 200-400 level. Approval of the director of undergraduate studies or supervisor of first-year instruction in the appropriate department is required before final placement is made. Scores must be submitted directly from the appropriate testing service to the Office of the University Registrar. The expectation is that they will be sent prior to matriculation.

Advanced Placement in Physics

Neither credit nor advanced placement is given for a score below five on the Advanced Placement (AP) Physics-B exam. Trinity College students with a score of five on the AP Physics-B exam may be placed out of Physics 141L with consultation and approval of the physics director of undergraduate studies, although no credit will be granted for these courses. This option is not available to students in the Pratt School of Engineering.

Entering students with a score of four or five on the AP Physics-C Mechanics exam will receive credit for Physics 25; students with a score of four or five on the AP Physics-C Electricity and Magnetism exam will receive credit for Physics 26. This policy applies to students entering either the Pratt School of Engineering or Trinity College.

For more details about AP course credits and international AP course credits in physics, see http://www.phy.duke.edu/credit-college-board-advanced-placement-ap.Civic.

Advanced Placement courses completed with a score of four or five will be recorded on a student’s permanent Duke record. Students may use all of these courses for placement into higher-level courses and to satisfy departmental major and minor requirements at Duke to the extent allowed by individual departments. In the Pratt School of Engineering, AP or IPC courses count toward the general requirements and the student is required to take one physics course at Duke. If awarded AP, IPC, or PMC credit for Physics 25 and 26, the student must take one of the following physics courses here at Duke: Physics 152L, 153L, 264, 361, or 362. Students have the option of taking Physics 152L which will result in forfeiture of Physics 26L AP. This AP will remain on the transcript. In Trinity College, AP courses do not count toward the general education requirements, i.e., the Areas of Knowledge or the Modes of Inquiry.

International Placement Credit (IPC)

Duke University recognizes the International Baccalaureate Program; the French Baccalaureate; the British, Hong Kong, or Singapore A-Level Examinations; the Cambridge pre-U; the Caribbean Advance Proficiency Examination; the German Abitur; the Swiss Federal Maturity Certificate; the All India Senior School Certificate Examination; the Indian School Certificate examination; and the Israeli Matriculation Certificate. Scores acceptable for consideration are determined by the faculty and evaluated by the university registrar. Course equivalents for these programs may be recorded on a student’s permanent Duke record for placement and credit according to the same policy governing use of AP and prematriculation credits (see above). In Trinity College, these credits do not satisfy the general education requirements and, thus, may not be used for the Areas of Knowledge or the Modes of Inquiry; any combination of two IPC, AP, or prematriculation credits may be used toward the thirty-four required for graduation. Additional IPC, AP and prematriculation credits may be used to accelerate. In the Pratt School of Engineering, these courses may be used to satisfy general education requirements toward the BSE degree.

Prematriculation Credit

First-year Duke students may submit for evaluation college courses taken at another American college or university after commencement of the student’s junior year of high school. (For details concerning transferring this work, see the section on “Work Taken During High School” on page 38.) In Trinity College, prematriculation credits awarded for such work may be used as electives and, thus, may not be used to satisfy the general education requirements—the Areas of Knowledge or the Modes of Inquiry. Any combination of two prematriculation, IPC, or AP credits may be used toward the thirty-four required for graduation (credits do not have to be designated by the
Additional IPC, AP, and prematriculation credits may be used to accelerate if early graduation is intended and if there has been no gap in the student’s studies at Duke. In the Pratt School of Engineering, these courses may be used to satisfy general education requirements toward the BSE degree. No prematriculation credit will be awarded for college coursework completed on a study abroad program undertaken prior to matriculation at Duke.

### College Board Tests

Scores on College Board Tests are the basic criteria for placement in French, German, Spanish (101 and beyond), Latin, and mathematics. Course credit is not given for courses bypassed. The following tables will assist students in making reasonable course selections in the subjects indicated.

<table>
<thead>
<tr>
<th>Subject</th>
<th>College Board Achievement Score</th>
<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>French</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>below 300</td>
<td>French 101 or 111</td>
</tr>
<tr>
<td>b.</td>
<td>300-370</td>
<td>German 101 or 111</td>
</tr>
<tr>
<td></td>
<td>380-450</td>
<td>German 102</td>
</tr>
<tr>
<td></td>
<td>460-580</td>
<td>German 203</td>
</tr>
<tr>
<td></td>
<td>590-620</td>
<td>German 204</td>
</tr>
<tr>
<td></td>
<td>630-650</td>
<td>German 305S</td>
</tr>
<tr>
<td></td>
<td>660-plus</td>
<td>German 306S and beyond</td>
</tr>
<tr>
<td>German</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a.</td>
<td>below 200</td>
<td>Spanish 101 or 111</td>
</tr>
<tr>
<td>d.</td>
<td>200-370</td>
<td>Spanish 101 or 111</td>
</tr>
<tr>
<td></td>
<td>380-450</td>
<td>Spanish 102</td>
</tr>
<tr>
<td></td>
<td>460-580</td>
<td>Spanish 212 or 203</td>
</tr>
<tr>
<td></td>
<td>590-620</td>
<td>Spanish 204</td>
</tr>
<tr>
<td></td>
<td>660-plus</td>
<td>Spanish 300-level course</td>
</tr>
<tr>
<td>Spanish</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>below 200</td>
<td>Latin 101</td>
</tr>
<tr>
<td></td>
<td>200-370</td>
<td>Latin 101</td>
</tr>
<tr>
<td></td>
<td>380-450</td>
<td>Latin 203</td>
</tr>
<tr>
<td></td>
<td>460-580</td>
<td>Latin 204</td>
</tr>
<tr>
<td></td>
<td>590-620</td>
<td>Latin 300-level course</td>
</tr>
<tr>
<td>Latin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f.</td>
<td>below 200</td>
<td>Mathematics 105L</td>
</tr>
<tr>
<td></td>
<td>200-370</td>
<td>Mathematics 105L</td>
</tr>
<tr>
<td></td>
<td>380-450</td>
<td>Mathematics 111L</td>
</tr>
</tbody>
</table>

### Notes

a. In these languages students are permitted to drop back one level without loss of credit (e.g., from 300 to 204 or from 204 to 203, in French; from 305S to 204 or from 204 to 203 in German). No credit will be allowed for courses two levels below the achievement score (e.g., students with a score of 640 in French could not receive credit for 203, but could for 204). In no case will credit be given for French 101 or Spanish 101 to students who have completed more than two years of French or Spanish in high school.

b. Students should also check the Self-Placement Guidelines for French at [http://languages.duke.edu](http://languages.duke.edu).

c. The first semester of a language may not be taken for credit by a student who has completed more than two years of that language in secondary school. In rare cases, an exception may be granted with permission of the director of undergraduate studies in the appropriate department.

d. Students should also check the Self-Placement Guidelines for German at [http://www.german.duke.edu/undergraduate/languag-program/placement](http://www.german.duke.edu/undergraduate/languag-program/placement).

e. Incoming students must take the SAT II before enrolling in a Spanish course.

f. Students should also check the self-placement guidelines at [www.duke.edu/web/classics/ugrads/ latin-greek.html](http://www.duke.edu/web/classics/ugrads/ latin-greek.html).

g. In the absence of an achievement test score, course placement is determined by the SAT score as follows: 670 or below—Mathematics 25L; 680-800—Mathematics 31L.
Newly admitted students who wish to continue the study of French, German, Spanish, or Latin begun in secondary school must take a College Board Achievement Test or College Board Advanced Placement (AP) Examination in that language by June of their senior year in secondary school. In Spanish or French, a score of four or five on the AP literature exam, or a score of five on the AP language exam qualifies students to enroll in a 200-400-level course. Students who plan to take mathematics at Duke are expected to present College Board Scholastic Achievement Tests (SAT), Mathematics Achievement (Level I or Level II), or Advanced Placement Program (AP, either level AB or level BC) scores. Placement testing in mathematics is not offered during New Student Orientation.

All students who plan to take mathematics during their first semester at Duke, and who do not submit the College Board SAT or Achievement Test or Advanced Placement Program score in mathematics, should refer to the placement guidelines on the website of the Department of Mathematics, or consult with the supervisor of first-year instruction in mathematics during New Student Orientation. New students who have been placed in Mathematics 105L or 111L on the basis of College Board SAT, Achievement, or Advanced Placement Examinations but who believe that their background in mathematics justifies a higher placement, should also confer during New Student Orientation with the supervisor of first-year instruction or with the director of undergraduate studies in the Department of Mathematics.

Placement in Languages Other Than French, German, Spanish, and Latin

Students who wish to continue in any language other than French, German, Spanish, or Latin should consult with the appropriate director of undergraduate studies. In the case of Russian, Polish, and Turkish, the department offers a written examination and oral interview, which are used in conjunction with other criteria for placing students at the appropriate level. In the case of Asian and African languages as well, students should consult with the appropriate language coordinators.

Reading Out of Introductory Courses

Students demonstrating academic ability may be granted the option of reading out of an introductory or prerequisite course in order to allow them to advance at their own pace to upper-level work. No course credit may be earned by reading out. Reading for a course and auditing are mutually exclusive procedures. Students should consult with the appropriate directors of undergraduate studies who must approve the proposed program of reading. Students may be certified for advanced coursework by passing a qualifying examination prepared by the department. When an advanced course is completed, an entry is made on the permanent record that the qualifying examination was passed, but no course credit is awarded.

Transfer of Work Taken Elsewhere

Work Taken During High School

College-level courses taken elsewhere prior to matriculation at Duke may be considered for prematriculation credit provided they meet each of the following criteria: were taken after the commencement of the junior year of high school and yielded a grade of B– or better, not used to meet high school diploma requirements, taken on the college campus, taken in competition with degree candidates of the college, taught by a regular member of the college faculty, part of the regular curriculum of the college, not taken on a study abroad program completed prior to matriculation at Duke, and not precalculus or English composition courses. Formal review of courses meeting these criteria will proceed after an official transcript of all college courses taken and documentation pertaining to these criteria are received by the university registrar. (See also the section on entrance credit in this chapter for a discussion of the number of prematriculation credits that can transfer and how they may be used at Duke.)

Work Taken After Matriculation at Duke

After matriculation as a full-time candidate at Duke, a student in Trinity College may receive transfer credit for no more than two courses taken at another accredited four-year institution, whether in the summer, while withdrawn from the college, or while on leave of absence for personal, medical, or financial reasons. A student in the Pratt School of Engineering is limited to four of these types of transfer courses. In cases that involve transferring study abroad credit, a student in Trinity or Pratt may transfer up to eight credits for a full year, plus two for a summer. In no instance, however, may a student transfer more than ten courses when combining study abroad and the allowable
number of transfer courses. No credit will be accepted for coursework taken while a Duke student is withdrawn involuntarily.

Only those courses taken in which grades of C- or better have been earned are acceptable for transfer credit; courses taken at other institutions with P/F grading or the equivalent will not be accepted for transfer credit. The course credit unit of credit awarded at Duke for satisfactorily completed courses cannot be directly equated with semester-hour or quarter-hour credits. Credit equivalency is determined by the university registrar. Courses for which there is no equivalent at Duke may be given a 100 or a 300 number, lower to upper level. All courses approved for transfer are listed on the student’s permanent record at Duke, but grades earned are not recorded. Once the limit of transferred credit has been reached, no additional transferred work will be displayed on the record or used as a substitute for a previously transferred course. Further information is available from the university registrar.

Courses taken at other institutions that, upon evaluation, yield transfer credit at Duke may be given Areas of Knowledge but not Modes of Inquiry. (The same is true of courses taken as a part of a study abroad program, with the exception of the FL Mode of Inquiry, for which students may apply upon completion of the course). They could count toward the major, minor, or certificate if approved by the relevant academic unit. For purposes of this regulation, interinstitutional credits (see the section on agreement with neighboring universities) are not considered as work taken at another institution.

At least half of the courses submitted toward fulfillment of a student’s major field must be taken at Duke, but departments may make exceptions to this rule in special circumstances. No credit is given for work completed by correspondence, and credit for not more than 2.0 course credits is allowed for extension courses.

Approval forms for Duke students taking courses at institutions other than Duke may be obtained online or from the offices of the academic deans. Students wishing to transfer credit for study at another accredited college while on leave or during the summer must present a catalog of that college to the appropriate dean and director of undergraduate studies and obtain their approval prior to taking the courses. Students wishing to receive the FL Mode of Inquiry code for transfer coursework taken in study abroad must apply for the FL code using the Transfer Course FL Mode of Inquiry Request Form available at http://trinity.duke.edu/academic-requirements.

Transfer Credit for Students Transferring to Duke

Students transferring from a degree program in another accredited institution may be granted credit for up to 17 course credits. Courses accepted for transfer in this circumstance may be given, upon evaluation, Area of Knowledge and Modes of Inquiry codes. They may count toward a major, minor, or certificate program if approved by the relevant academic unit. See the section above for information on the evaluation of courses for transfer and the limitation on transfer courses for the major.

Transfer Credit and the Foreign Language Requirement

The same rules that apply to the transferring of courses to meet other curriculum requirements apply to foreign language courses.

Foreign language courses taken elsewhere and approved for transfer as credit to Duke may be used for language placement. Students who request placement on the basis of non-Duke courses will be required to show their work (including books, syllabus, writing samples, exams) to the director of undergraduate studies in the department of that language, and/or to pass an in-house proficiency exam appropriate to the level.

Advising

Students are required to confer with their academic advisor at least once per semester before registration, but are encouraged to meet more regularly in order to discuss academic goals, plans for achieving them, and any considerations pertaining to academic progress. Students in Trinity College complete the major declaration process during their fourth semester of enrollment in consultation with their academic advisor. Upon declaring a major, the student is assigned a faculty advisor in their major; the academic dean for that division is also available for consultation. In the Pratt School of Engineering, the advisor’s approval is necessary for registration and all course changes. Good advising can be informal and often occurs in conversation with members of the faculty. Students have the responsibility to understand and meet the requirements for the curriculum under which they are studying and should seek advice as appropriate. Students in the Pratt School of Engineering may declare their major as early as the end of their first year.
Registration

Students are expected to register at specified times for each successive term. Prior to registration each student receives instructions via e-mail. Students prepare a course program via ACES, and discuss it at an appointed time with their advisor. In the Pratt School of Engineering, the schedule must be approved by the advisor.

Students who expect to obtain certification to teach in secondary and elementary schools should consult an advisor in the education program prior to each registration period to ensure that they are meeting requirements for state certification and that they will have places reserved for them in the student teaching program.

Those who register late are subject to a $50 late registration fee. In the case of students enrolled in continuing education, late fees are assessed after the first day of classes. Students who fail to register for the fall or spring semester are administratively withdrawn and must apply for readmission if they wish to return. Those students who have not paid any fees owed to or fines imposed by the university (such as laboratory fees, library fines, and parking fines) by the date specified for registration for the following term will not be permitted to register for the following term until such fees and fines have been paid in full, notwithstanding the fact that the student may have paid in full the tuition for the following term.

Students planning to register for a course under the interinstitutional agreement must have the course approved by the appropriate director of undergraduate studies and their academic dean. Further information about registration procedures may be obtained from the Office of the University Registrar, and at its website at registrar.duke.edu. See the chapter “Special Study Centers, Programs, and Opportunities” on page 59 for information regarding the reciprocal agreement with neighboring universities.
Duke Identification Card and Term Enrollment

Undergraduate students are issued an identification card (DukeCard) which they should carry at all times. The card is a means of identification for library privileges and provides access to many university facilities, functions, and services available to currently enrolled students. Students are expected to present their card on request to any university official or employee. The card is not transferable, and fraudulent use may result in loss of student privileges or suspension. Loss of the card should be reported immediately to the DukeCard Office at (919) 684-5800. A replacement fee will be charged for lost or stolen cards. Official enrollment is required for admission to any class.

Concurrent Enrollment

A student enrolled at Duke may not enroll concurrently in any other school or college. See, however, the statement regarding the reciprocal agreement with The University of North Carolina at Chapel Hill, North Carolina Central University, North Carolina State University, The University of North Carolina at Charlotte, and The University of North Carolina at Greensboro.

Course Changes After Classes Begin in the Fall and Spring Terms

During the Drop/Add period changes may be made in course schedules through ACES. Students may drop and add courses during the first week of classes in the fall and spring terms at their own discretion; during the second week of the semester they may drop courses at their own discretion, but a permission number provided by the appropriate instructor or department is required for adding a course. After the Drop/Add period no course may be added; also, a course may not be changed to or from the audit basis. Students have until one week after the Drop/Add period ends to secure permission to take a course on a Satisfactory/Unsatisfactory grading basis. Students who have elected to register for a course on a Satisfactory/Unsatisfactory grading basis may subsequently change to a letter grade basis by filing a request with the university registrar up to the first day of the final four weeks of classes. To withdraw from a course, students must obtain permission from their academic dean. After the Drop/Add period, students permitted to withdraw receive a designation of W on their academic record. Coursework discontinued without the dean’s permission will result in a grade of F.

When students note errors in their course schedules, they should immediately consult with their academic dean during the schedule correction period that occurs immediately after Drop/Add ends.

Course Changes for the Summer Terms

Course changes during the summer term are accomplished through ACES. Duke students who are blocked from continuing into a summer term must see their academic dean.

Courses may be added before or during the first three days of the term. After the third day of the term, no course may be added. Prior to the first day of the term, students may drop a course or courses for which they have registered without penalty. During the first three days of the term, students will be charged $150 per course for dropping a course or courses if this results in any reduction in course load for the term. With the permission of the academic dean, students with compelling reasons may withdraw from a course through the twentieth day of a regular term (sixteenth day at the Marine Laboratory); and a designation of W will be recorded on their academic record. Coursework discontinued without the approval of the dean will result in a grade of F. (See also the section on withdrawal charges and refunds.)

Accommodations

The Duke University Student Disability Access Office assists students with disabilities who are enrolled in Trinity College of Arts & Sciences and Pratt School of Engineering. In order to receive consideration for reasonable accommodations under Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990 (ADA), and the ADA Amendments Act of 2008, a student must have a physical or mental impairment that substantially limits one or more major life activities.

Students requesting accommodations under the provisions of the ADA, ADA Amendments Act of 2008, and Section 504 of the Rehabilitation Act of 1973 (e.g., academic, accessibility, housing) must contact the director of the Student Disability Access Office at (919) 668-1267, to explore possible coverage. Students with other medical conditions that may require special assistance (e.g., housing, dining) must contact Duke Student Health Service at (919) 684-3367 for further information. For academic assistance available to all Duke undergraduate students, please refer to the Academic Resource Center section of this bulletin.
Course Load and Eligibility for Courses

Students are reminded that it is their responsibility to be certain that their course load conforms with academic requirements. In fall and spring terms, students must enroll in at least four course credits. In their first semester, students are limited to a maximum of 4.5 course credits. After their first semester, students can enroll in a maximum of 5.5 course credits per semester without special permission from their academic dean. With permission of their academic dean, a student can enroll in a maximum of 6.0 course credits. Seniors may request an underload, including part-time status, for the last semester (see the section on Full-Time and Part-Time Degree Status on page 51 in this chapter). Students may make a request to their academic dean to be in an underload (defined as a course load between 3.0 and 3.75 course credits) twice during their time at Duke. That is, the number of semesters a student may be in an underload may not exceed two semesters. Students should take note that two additional course credits are needed in order to meet the 34 course credit requirement for graduation. During the Drop/Add period, students in Trinity College may ordinarily register for up to 5.5 course credits. Students on academic probation may register for no more than 4.0 course credits, and the academic dean may also limit the course load for a student who has previously received an academic warning. Registration for 6.0 course credits requires the approval of the student’s academic dean. During the same period, students in the Pratt School of Engineering may register for up to 5.0 course credits, and up to 5.5 or 6.0 course credits with the approval of their academic dean. In no case will students be allowed to register for more than 6.0 course credits. Students must be enrolled in at least 3.0 course credits per semester in order to be considered in full-time status for loan deferment and athletic eligibility purposes.

The maximum course program for one term of the summer session is two courses, one of which may be a laboratory course. Students in Pratt School of Engineering may enroll in two laboratory courses. In addition, a student may enroll in a physical education activity or technique/performance activity course for half-credit course.

Eligibility for Courses

The rules established by The Graduate School provide that sophomores who have declared a major, juniors, and seniors may enroll in a 500-600-level (senior/graduate) course. Undeclared sophomores wishing to enroll in a 500-600-level course must secure permission of the instructor of the course and of their academic dean. Juniors and seniors are normally not allowed to enroll in 700-900-level courses. Under exceptional circumstances, however, permission to do so may be granted, provided the instructor, the director of graduate studies, their academic dean, and the dean of The Graduate School give their signed permission.

Students are responsible for ensuring that they have the stated prerequisites for a course. ACES prevents registration for some, but not all, courses when the prerequisite is not fulfilled. Students must check the course description to determine if they have taken the necessary prerequisites before enrolling in the course.

In certain subjects, such as the sciences, mathematics, and the foreign languages (particularly at the introductory and intermediate levels), some lower level courses must be taken in sequence because the content presented at one level is necessary for successful work at the next level. Given this circumstance, it follows that students who complete a higher level course in a sequence may not subsequently enroll in a lower one in that sequence. Information about course eligibility is often contained in the official description of the course (see the chapter “Courses and Academic Programs” on page 101). Students may direct additional questions about course sequencing to their academic dean.

Seniors who, at the beginning of the final term, lack no more than 3.0 course credits toward the fulfillment of the requirements for the bachelor of arts or bachelor of science degree may enroll in graduate courses, for a maximum course load of 5.0 course credits. Admission to The Graduate School is necessary.

Students may not register for two courses officially listed as meeting at the same time. No course may be repeated for credit or a grade if a C- or higher has been earned previously, except where noted in the course description. Furthermore, a course taken at another institution with a grade of C- or above and not transferred to Duke may not be repeated at Duke. If it is determined such a course has been taken elsewhere and repeated at Duke, the Duke course will be removed from the academic record. A course previously passed at another educational institution, however, may be audited at Duke. Physical education activity courses may be repeated, but only one full credit of these courses counts toward graduation.

Students who receive a D-, D, or D+ in any course in Trinity College are allowed to repeat the course only at Duke and with permission of their academic dean. The grade earned in the repeated course as well as the grade earned originally appear on the transcript, the former identified as a repeat; both grades count in the grade point average, but the credit for only one counts toward the required number of courses for continuation and the thirty-four courses
required for graduation. Course repeat request forms are available online at [http://trinity.duke.edu/academic-requirements?p=repeating-a-course](http://trinity.duke.edu/academic-requirements?p=repeating-a-course).

An engineering student who has earned a grade of D-, D, or D+ in a required mathematics, science, or a required engineering course may, with permission of his or her advisor, director of undergraduate studies, and academic dean, repeat the course. Both grades will remain on the student’s record. Only one credit may be counted toward satisfying continuation requirements and toward fulfilling graduation requirements.

### Course Audit

Students who audit a course submit no daily work and take no examinations, but are expected to attend class sessions. They do not receive credit for the course. With the written consent of the instructor, a full-time degree student is allowed to audit one or more courses in addition to the normal program. Students must register for audit courses by submitting a signed permission note from the instructor to the Office of the University Registrar. The prohibition against registering for two courses meeting at the same time applies. After the Drop/Add period in any term, no student classified as an auditor in a particular course may take the course for credit, and no student taking a course for credit may be reclassified as an auditor. Physical education activity, studio art, applied music, and dance technique/performance courses may not be audited. In the fall or spring term, a part-time degree student may audit courses by payment for each course audited. A student in a summer term carrying less than a full program for credit may secure permission to audit (above exceptions apply) but is required to pay an audit fee for the course. A student may not repeat for credit any course previously audited.

Courses may be audited by faculty members, staff, alumni, employees and their spouses, as well as spouses of currently enrolled students, and members of the Osher Lifelong Learning Institute at Duke, and other members of the Triangle community. Undergraduates who have been dismissed, suspended or placed on a leave of absence may not audit or enroll in a course for credit at Duke.

Formal application is not necessary; written permission from the instructor must be obtained and an approval form must be signed by the director of the Office of Continuing Studies. Consult the chapter “Financial Information” on page 89 for the appropriate fee schedule. Additional information about auditing by community members can be found at [www.learnmore.duke.edu/academics/auditing](http://www.learnmore.duke.edu/academics/auditing).

### Independent Study

Independent study enables a student to pursue for course credit individual interests under the supervision of a faculty member. Independent study is of two types: Independent Study (nonresearch) and Research Independent Study. Both require approval of the instructor involved as well as the director of undergraduate studies in the relevant department or program; student-faculty meetings at least once every two weeks during fall or spring semester and once each week during summer semester; completion of a final product to be completed during the semester for which a student is registered for the course; evaluation by the instructor of the work, including the final product, associated with the independent study. The independent study form is available at [http://trinity.duke.edu/academic-requirements](http://trinity.duke.edu/academic-requirements).

Courses entitled Independent Study are individual nonresearch directed study in a field of special interest on a previously approved topic taken under the supervision of a faculty member and resulting in an academic and/or artistic product. Such independent study courses do not bear a Research (R) code and do not satisfy any general education requirement. Courses entitled Research Independent Study are individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Such research independent study courses bear a Research (R) code and satisfy general education Research requirements. One research independent study may be submitted and approved for a Writing (W) code in addition to the R code designation, but no other curriculum code designations are permitted for research independent study courses. Students who wish to request a W code for one research independent study course must take the appropriate form to 011 Allen Building by the end of the Drop/Add period of the semester they are enrolled in the course. The request form is available at [http://trinity.duke.edu/academic-requirements](http://trinity.duke.edu/academic-requirements).

Students in the Pratt School of Engineering should consult their Academic Dean and departmental office for information about completing an Independent Study.
**Academic Internships**

In Trinity College course credit can be earned for internships only when they include an academic course of instruction as a component. Academic internships must be offered under the auspices of an academic unit in Trinity College. Each student’s internship must be sponsored by a departmental/program faculty member and approved by the director of undergraduate studies. Such internships typically draw upon work experience to investigate a research problem from one or more intellectual/disciplinary perspectives. They thus have an experiential component and a formal intellectual component leading to submission of a substantive research paper. Academic internships are of two types: 1) those that are required for an existing major and are required in programs designed to meet state teaching certification standards; 2) all others are considered to be electives. Only one course credit from these elective academic internships may count toward the thirty-four course credits required for graduation. Further information about procedural requirements may be obtained from the academic deans.

The Pratt School of Engineering does not give course credit for internships.

**Submission of Term Paper**

Students who wish (under unusual circumstances) to submit a single paper for credit in more than one course must receive prior written permission from each course instructor. The student must indicate the multiple submission on the title page of the paper.

**Declaration of Major in Trinity College of Arts & Sciences**

All students entering Trinity College enter as undeclared majors and are assigned an academic advisor and academic dean. Before declaring a major in Trinity College, students work with their academic advisors and with other members of the faculty and staff to develop a long-range academic plan which outlines progress and academic goals for the future. The plan should describe the proposed major program, related curricula and cocurricular experiences, and the general pattern of elective courses, as well as the means by which the student will meet established college requirements for graduation. Although students may declare a major as early as the spring of the first undergraduate year, all students must secure formal approval of their long-range plans and declare a major no later than the last day of class prior to the mid-semester break of their fourth semester. Students who do not declare their major may be prevented from registering for classes for their fifth undergraduate semester and from participating in a semester or year-long study abroad program. The long-range plan is available on ACES.

After declaring a major, students are assigned an advisor in the department of the major and an academic dean in that division. Students who, having already declared a major, wish to change it should do so in the Office of the University Registrar. Any changes in majors or minors made after the end of the Drop/Add period in the senior year must be made through the graduation clearance office in Trinity College.

A student may declare an interdepartmental major in two Trinity College departments or programs that offer a major after receiving the approval of the directors of undergraduate studies of the departments involved. The interdepartmental major must be planned early in the undergraduate career. It must consist of fourteen or more courses; the courses must be split evenly between the two departments; at least four of the seven courses required by each department must be taught within the department. While one of the departments must be identified as the department primarily responsible for the advising for the student’s interdepartmental major program, the student must have an advisor in both departments. A student who has not yet declared a major and is interested in an interdepartmental major should consult the Academic Advising Center as part of the process of completing the long-range plan and declaring the interdepartmental major. A student who has already declared a major and is interested in changing to an interdepartmental major should consult the academic dean responsible for students completing an interdepartmental major. Students proposing an interdepartmental major must present a written plan that has the signed approval of the two directors of undergraduate studies to the academic dean for interdepartmental majors; the plan must include a descriptive title and rationale as well as a list of courses that will be taken in both departments. Any subsequent changes to the course of study must be jointly approved by the directors of undergraduate studies.

A student who has already declared one major and then wishes to declare a second major may do so in the Office of the University Registrar. Only one undergraduate degree may be earned; however, a notation of the second major will appear on the transcript. A student may not declare more than two majors. Majors offered within each degree are listed below:
Bachelor of Arts. African and African American studies, art history, art history/visual arts (combined), Asian and Middle Eastern studies, biology, biophysics, Brazilian and global Portuguese studies, Canadian studies (second major only), chemistry, classical civilization, classical languages, computer science, cultural anthropology, dance, earth and ocean sciences, economics, English, environmental sciences and policy, evolutionary anthropology, French studies, German, global cultural studies, global health (second major only), history, international comparative studies, Italian studies, Latin American and Latino/a studies, linguistics, mathematics, medieval and Renaissance studies, music, neuroscience, philosophy, physics, political science, psychology, public policy studies, religion, romance studies, Russian, Slavic and Eurasian studies, sociology, Spanish, statistical science, theater studies, visual arts, visual and media studies, and women's studies

Bachelor of Science. biology, biophysics, chemistry, computer science, earth and ocean sciences, economics, environmental sciences, evolutionary anthropology, mathematics, neuroscience, physics, psychology, and statistical science

Declaration of Major in the Pratt School of Engineering

A Pratt student is urged to declare a major before registration for the first semester of the sophomore year, and is required to do so by the time of registration for the first semester of the junior year. Declaration of major is accomplished by completing an online form available at http://www.pratt.duke.edu/forms/declaration-of-major.

Class Attendance and Missed Work

Responsibility for class attendance rests with individual students, and since regular and punctual class attendance is expected, students must accept the consequences of failure to attend. Instructors may refer to their academic dean students who are, in their opinion, absent excessively.

Missed work associated with absence from class is accommodated in three circumstances: 1) illness or other extraordinary personal circumstance, 2) religious observance, and 3) varsity athletic participation. Detailed information about the policy and the notification procedure is available at http://trinity.duke.edu/academic-requirements for students in Trinity College, or for students in the Pratt School of Engineering at http://www.pratt.duke.edu/undergrad/policies/3486.

Missed work associated with any other absence is not covered by this policy. In courses where a defined number of absences is permitted, students should make judicious use of them and save them for unavoidable circumstances. Students are encouraged to discuss any absence, planned or unexpected, with their instructor to determine whether accommodation is possible. The nature of the accommodation, if any, is to be determined by the faculty member in accordance with their attendance policy as outlined in the course syllabus.

Class Scheduling

Class times are officially scheduled at registration unless designated “to be arranged” (TBA). After registration begins, no class time may be changed without prior permission of the chair of the University Schedule Committee. Within-class tests (except for the final) are to be given at the regular class meeting times. Exceptions are made for block tests that have been approved by the chair of the University Schedule Committee.

Incomplete Coursework

If, because of illness, emergency, or reasonable cause, a student cannot complete work for a course, the student may request in writing to his or her academic dean the assignment of an I (incomplete) for the course. (Forms are available at http://trinity.duke.edu/academic-requirements; Pratt students must see their Academic Dean for a form.) If the request is approved by the instructor in the course and by the student’s academic dean, then the student must satisfactorily complete the work by the last class day of the fifth week of the subsequent regular semester (or earlier if there is a question of the student’s continuation in school). Professors may also establish earlier deadlines. An I assigned in the fall, spring, or summer terms must be resolved in the succeeding spring or fall term, respectively. If the I is not completed by the deadline, it will convert to an F grade. If a student whose work is incomplete is also absent from the final examination, an X is assigned for the course (see below). A student not enrolled in the university or studying away during the semester following receipt of an I or X will have until the end of the fifth week of classes of the next semester (fall or spring) of matriculation to clear the I or X unless an earlier due date is
established by the instructor and/or the academic dean. Students may not complete work in a course after graduation. Once recorded, a notation of the I or X will remain permanently on the student's record, even after the final grade is assigned for the course. In addition, an I cancels eligibility for Dean's List and Dean's List with Distinction. Finally, students who receive an I or X during a semester in which they experience a voluntarily or involuntarily separation from Duke, may, at the discretion of their academic dean, be required to complete the outstanding work prior to returning to school.

Final Examinations and Excused Absences

The times and places of final examinations for the fall and spring terms are officially scheduled by the University Schedule Committee, generally according to the day and hour of the regular course meeting; changes may not be made in the schedule without the approval of the committee. If a final examination is to be given in a course, it will be given at the time scheduled by the University Schedule Committee. Take-home examinations are due at the regularly scheduled hour of an examination, based on the time period of the class. In courses in which final examinations are not scheduled, an exam that substitutes for a final examination may not be given in the last week of classes. Hourly tests may be given in the last week of classes, whether or not a final examination is administered during the exam period. In the summer session, final examinations are held on the last two days of each term and may not be scheduled within the last three days before the examination period. Final examinations for short courses are held on the last day of the course.

No later than the end of the first week of classes of the fall and spring term, the instructor is required to announce plans for the final examination exercise. Unless departmental policy stipulates otherwise, the form of the final exercise is determined by the instructor. However, a final written examination may not exceed three hours in length and a final take-home examination may not require more than three hours in the actual writing.

If a student is absent from a final examination, an X is given instead of a final grade unless the student's grade in the class is failing, in which case the instructor may submit an F. The student must present an acceptable explanation for the absence to the appropriate academic dean within forty-eight hours after the scheduled time of the examination. Because end-of-the-semester travel arrangements are not the basis for changing a final examination, students are advised to consult the final examination schedule when making such arrangements. Deferral of a final examination will not be authorized by the academic dean if it is ascertained that the student has a history of excessive absences or failure to complete coursework in a timely fashion in the course in question. The X is converted to an F if the academic dean does not approve the absence. If the absence is excused by an academic dean, the student arranges with the dean and the instructor for a make-up examination to be given at the earliest possible time. It should be noted that uncleared grades of X may have significant ramifications regarding continuation in the university. (See Grading and Grade Requirements below.) An excused X not cleared by the end of the fifth week of the following semester is converted to an F. Once recorded, a notation of the X will remain permanently on the student's record, even after the final grade is assigned for the course. A student not enrolled in the university or studying away during that following semester has until the end of the fifth week of the next semester of enrollment to clear the X unless an earlier deadline has been established by the instructor and/or the academic dean.

Grading and Grade Requirements

Final grades on academic work are provided to students via ACES after the examinations at the end of each term. Midterm advisory grades for first-year students are issued in the fall and spring, and are provided to students via ACES.

Passing Grades

Passing grades are A, exceptional; B, superior; C, satisfactory; S, satisfactory (see Satisfactory/Unsatisfactory option below); and D, low pass. These grades (except S) may be modified by a plus or minus. A Z grade may be assigned for the satisfactory completion of the first term of a two-course sequence, and the final grade for both courses is assigned at the end of the second course of the sequence.

Although the D grade represents low pass, not more than two courses passed with D grades may be counted among those required for year-to-year continuation or among the thirty-four course credits required for graduation. Courses for which a D grade is earned, however, satisfy other requirements. For information on repeating a course with a D grade, see the section on course load and eligibility for courses on page 42.
Failing and Unsatisfactory Grades

A grade of F or U (see Satisfactory/Unsatisfactory grading system below) indicates that the student has failed to meet the requirements for the course. The grade is recorded on the student’s record. If the student registers for the course again, a second entry of the course and the new grade earned are made on the record, but the first entry is not removed. All grades that appear on the record, with the exception of S and U, are included in the calculation of the cumulative grade point average.

Grade Point Average

The grade point average is based on grades earned in courses offering credit at Duke and may be calculated based on the following numerical equivalencies to the grading system:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.0</td>
</tr>
<tr>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>C-</td>
<td>1.7</td>
</tr>
<tr>
<td>D+</td>
<td>1.3</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>D-</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
</tr>
</tbody>
</table>

With Satisfactory/Unsatisfactory courses, neither S nor U are calculated into the grade point average. The semester and cumulative grade point averages are determined at the end of each semester and displayed for students on the academic history reports made available to them via ACES.

Satisfactory/Unsatisfactory Grading System

With the consent of the instructor and academic dean a student may register for grading on a Satisfactory/Unsatisfactory (S/U) basis in one course each semester and summer session, although only four courses taken on this basis may be counted toward the thirty-four courses required for graduation. The limit of four does not apply to courses that are only offered on the S/U basis. A grade of S will be awarded if the student has earned the equivalent of a letter grade of C- or better, while a U will be awarded for the equivalent of a D+ or worse grade. Neither an S nor a U will be factored into the grade point average. Students who receive a U will receive no credit for the course and will be ineligible for Dean’s List in that semester. Courses taken on an S/U basis (whether offered only on this basis or elected by the student) do not count toward general education requirements, except the requirement for thirty-four course credits and continuation requirements. Additionally, no other degree requirements (major, minor, certificate, including prerequisites) may be met by a course passed under the S/U option, unless by special permission from the director of undergraduate studies of the department or program. Taking a course on the S/U basis may make one ineligible for the Dean’s List (see the section on academic honors in this chapter). Students studying abroad or on domestic study away programs may not receive credit for courses taken on an S/U or Pass/Fail basis.

Students who wish to take a course on an S/U basis must obtain permission from the instructor and their academic dean. Students have until one week after the Drop/Add period ends in the fall or spring semester to secure permission to take a course on the S/U basis. (Summer term students must do so by the end of the Drop/Add period.) Students who have elected to register for a course on an S/U basis may subsequently change to a letter grade basis by filing a request with the Office of the University Registrar up to the first day of the final four weeks of classes. An S grade earned in a course may not be converted subsequently to a letter grade, and the course may not be retaken.

Students who, via accommodation by the Student Disabilities Access Office (SDAO), register for three credits per semester may take a maximum of one S/U course per semester.

Grades When Absent from Final Examination

See the section on final examinations and excused absences on page 46.

Effects of Incomplete Work

For purposes of determining satisfactory progress each term and toward graduation, incomplete work in a course indicated by a grade of I or X is not presumed to be satisfactory performance in that course. Furthermore, an incomplete (I grade) during the academic year cancels eligibility for semester honors in the term the I or X grade was
issued; i.e., Dean’s List and Dean’s List with Distinction. See the section on incomplete work on page 45.

The W and WA Designations

The designation W is recorded when a student officially withdraws from a course after the Drop/Add period. (See the sections on course changes in this chapter.) WA indicates withdrawal from an audited course.

Continuation

Students must achieve a satisfactory record of academic performance each term and make satisfactory progress toward graduation each year to continue at Duke University. Students who fail to meet the minimum requirements to continue must leave the university for at least two semesters. (A summer session may be counted as a semester.) Those desiring to return after the dismissal period may apply for readmission through the Office of Student Returns. Please visit http://trinity.duke.edu/OSR for more information. If after readmission the student fails again to meet minimum requirements, the student will be ineligible, except in extraordinary instances and after a minimum of five years, for readmission to the college. Students admitted to degree programs from continuing education should consult their academic dean concerning continuation.

Satisfactory Performance Each Term (Semester Continuation Requirements)

A student who does not receive a passing grade in all courses must meet the following minimum requirements or be withdrawn from the college.

In the Fall or Spring Semester

(1) In the first semester of enrollment at Duke, a student must pass at least 2.0 course credits; (2) after the first semester at Duke, a student must pass at least 3.0 course credits; (3) a student taking an authorized underload after the first semester at Duke must earn all passing grades. Students may not carry an underload without the permission of their academic dean. For the purposes of continuation, incomplete work in any course is considered a failure to achieve satisfactory performance in that course. Therefore, where continuation is in question, incomplete work in any course must be completed with a passing grade in time for final grades to be submitted to the Office of the University Registrar no later than the weekday preceding the first day of classes of the spring semester, or one week prior to the first day of classes of the second term of the summer session, as appropriate. In the case of incomplete work in the spring semester, this requirement applies whether or not the student plans to attend one or more terms of the summer session. The student, however, may not enroll in a summer term at Duke unless the requirement of satisfactory performance each semester has been satisfied.

In the Summer Session

To continue enrollment at Duke in the fall, a student enrolled at Duke in any previous semester must not fail more than one full course taken during that summer. For purposes of continuation, incomplete work is considered failure to achieve a satisfactory performance in that course. Therefore, when eligibility to continue from the summer session to the fall is in question, incomplete courses must be satisfactorily completed in time for a passing grade to be submitted to the Office of the University Registrar no later than the weekday preceding the first day of fall classes.

Any student excluded from the college under the provisions of these regulations may on request have the case reviewed by the senior associate dean of Trinity College of Arts & Sciences.

Satisfactory Progress Toward Graduation (Annual Continuation Requirements)

Each year prior to the beginning of fall term classes, a student must have made satisfactory progress toward fulfillment of curricular requirements to be eligible to continue in the college; i.e., a certain number of courses must have been passed at Duke according to the following schedule:

<table>
<thead>
<tr>
<th>For students in Trinity College:</th>
<th>A student must have passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>To be eligible to continue to the</td>
<td>2.0 course credits at Duke</td>
</tr>
<tr>
<td>2nd semester at Duke</td>
<td>6.0 course credits at Duke</td>
</tr>
<tr>
<td>3rd semester at Duke</td>
<td>10.0 course credits at Duke</td>
</tr>
<tr>
<td>4th semester at Duke</td>
<td>14.0 course credits at Duke</td>
</tr>
</tbody>
</table>
For students who have interrupted their university studies, the continuation requirement must still be satisfied before the beginning of each fall term. For such students, the number of courses needed to satisfy the continuation requirement is determined from the table above, based on which semester they will enter in the fall term. Courses taken in the summer term at Duke may be used to meet this requirement; except as noted, advanced placement may not be used to satisfy it. AP credits are not counted when determining annual continuation, however, they are counted toward graduation requirements. No more than two courses completed with D grades, one total course credit of PE; one course credit of activity courses (no house courses); two course credits of military science (jr/sr year only); and six course credits of professional or graduate school courses may be counted toward fulfilling this annual continuation requirement.

### Academic Warning and Probation

A student whose academic performance satisfies continuation requirements (see above), but whose record indicates marginal scholarship, will be subject either to academic warning or academic probation. Failure to clear probationary status in the semester of probation will result in a student's dismissal for academic reasons. (See the section “Continuation” on page 48 for information concerning dismissal.) Students admitted to degree programs from continuing education should consult their academic deans concerning warning and probation.

In determining whether a student should be placed on academic warning, probation or dismissed for academic reasons, a grade of U earned in a course, whether that course is offered only S/U or the student elects to take it on the S/U basis, is considered equivalent to a grade of F.

### Academic Warning

A student who receives a single grade of F while enrolled in four or more courses or a second (or more) D will be issued an academic warning by the academic dean.

### Academic Probation

For a student enrolled in 4.0 or more course credits, the following grades will result in academic probation for the succeeding semester: during the first semester of the freshman year, grades including DD, DF, or FF; during any subsequent semester, grades including DDD, DF or FF (as long as the student has passed three other course credits); and during two consecutive semesters, grades including DDDD, DDDF, or DDFF. For a student enrolled in an authorized underload (i.e., fewer than four course credits), the following academic performance will result in

<table>
<thead>
<tr>
<th>For students in Trinity College:</th>
<th>A student must have passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>To be eligible to continue to the</td>
<td>19.0 course credits at Duke</td>
</tr>
<tr>
<td>6th semester at Duke</td>
<td>22.0 course credits at Duke, plus two additional course credits(^a)</td>
</tr>
<tr>
<td>7th semester at Duke</td>
<td>26.0 course credits at Duke, plus two additional course credits(^a)</td>
</tr>
<tr>
<td>8th semester at Duke</td>
<td>26.0 course credits at Duke</td>
</tr>
</tbody>
</table>

\(^a\)The additional courses may be earned through advanced placement and/or transferred courses.

<table>
<thead>
<tr>
<th>For students in the Pratt School:</th>
<th>A student must have passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>To begin enrollment in the</td>
<td>2.0 course credits at Duke</td>
</tr>
<tr>
<td>2nd semester at Duke</td>
<td>6.0 course credits at Duke</td>
</tr>
<tr>
<td>3rd semester at Duke</td>
<td>10.0 course credits at Duke</td>
</tr>
<tr>
<td>4th semester at Duke</td>
<td>13.0 course credits at Duke</td>
</tr>
<tr>
<td>5th semester at Duke</td>
<td>17.0 course credits at Duke</td>
</tr>
<tr>
<td>6th semester at Duke</td>
<td>22.0 course credits at Duke(^a)</td>
</tr>
<tr>
<td>7th semester at Duke</td>
<td>26.0 course credits at Duke</td>
</tr>
</tbody>
</table>

\(^a\)The Pratt School of Engineering will count up to four post-matriculation transfer course credits (in addition to study abroad) for students entering the 7th or 8th semester of Annual Continuation Requirements.
academic probation: during the first semester of the freshman year, grades of DD or F; during any subsequent semester, grades including DDD or DF (as long as 3.0 course credits have been passed in that semester); and during two consecutive semesters, grades including DDDD, DDDF, or DDFF. In a case where probation may be in question because of an incomplete grade, the student will be notified by the dean of the need to have the incomplete replaced by a satisfactory grade in order to avoid probation.

The probation status will be reflected on those academic records used for internal purposes only. Students placed on academic probation must acknowledge their probationary status in writing to their academic dean in order to continue in the college. They are also expected to seek assistance from campus resources, have their course selection approved by their academic deans and meet periodically with them. They may not study abroad during the probation period. Students are expected to clear their probationary status during the semester of probation. In order to do so, they must enroll in four full-credit courses, of which no more than one may be taken on a Satisfactory/Unsatisfactory basis. Grades of C-, S, or better must be earned in each course, or a C average must be achieved in that semester.

Probationary status cannot be cleared in a semester in which students seek permission and are allowed to withdraw to an underload. In such cases, the probationary status continues through the next semester of enrollment or in both terms of the summer session. Students on probation, whether in a normal load or an underload, are required to meet continuation requirements. Students whose probationary status for reason of an underload continues to a second semester must adhere to the conditions and standards previously outlined for clearing probation. Failure to do so will result in academic dismissal.

Changes in Status

Withdrawal and Readmission

Students who wish to withdraw from the college must give official notification to their academic dean. Notification must be received prior to the beginning of classes in any term, or tuition will be due on a pro rata basis. (See the section on refunds in the chapter “Financial Information” on page 89.) For students withdrawing on their own initiative after the beginning of classes and up to the first day of the last four weeks of regular classes in the fall or spring term, or before the last two weeks of regular classes in a summer term, a W is assigned in lieu of a regular grade for each course. After these dates an F grade is recorded unless withdrawal is caused by an emergency beyond the control of the student, in which case a W is assigned by the student’s academic dean. Withdrawals from the university during a semester will not be approved after the last day of classes. Students who withdraw voluntarily during the last four weeks of classes may not apply for readmission for the subsequent semester.

Students may be involuntarily withdrawn for academic reasons, financial reasons, violation of academic regulations, disciplinary reasons, as well as administratively. Their withdrawal will be noted accordingly on the official academic record. The expectations pertaining to each are found in the chapters “Degree Programs and Academic Credit,” “Financial Information,” “Campus Life and Activities,” and this chapter, “Academic Procedures and Information.” Students with a dismissal pending are not in “good standing” and therefore are ineligible to undertake coursework scheduled to be taught during the pending dismissal period. Students who received an I or X during a semester in which they experienced a voluntarily or involuntarily separation from Duke, may, at the discretion of their academic dean, be required to complete the outstanding work prior to returning to school.

Applications for readmission are made to the appropriate school or college through the Office of Student Returns (OSR). Each application is reviewed by officers of the school or college to which the student applies, and a decision is made on the basis of the applicant’s previous record at Duke, evidence of increasing maturity and discipline, and the degree of success attendant upon activities during the time away from Duke. Students who are readmitted are eligible to live in on-campus housing unless they have been deemed ineligible due to a university sanction.

Applications for readmission must be completed by November 1 for enrollment in the spring, by April 1 for enrollment in the summer, and by July 1 for enrollment in the fall. For more information, visit the Office of Student Returns website at http://trinity.duke.edu/OSR.

Leave of Absence

Most leaves of absence are granted for two reasons: personal or medical. After reaching the second semester of the first year, students in good standing may request a personal leave of absence for one or two semesters by completing a
leave request form and submitting it to their academic dean prior to the first day of classes of the term in which the
leave is granted. A personal leave of absence starts after one semester ends and before the next semester begins. A
personal leave of absence is not granted for a term in which classes have begun.

A medical leave of absence with proper documentation may be granted at any time but with one restriction.
Students requesting a medical leave of absence during a current term must file the leave of absence forms with their
academic dean prior to the end of the last day of classes of that term. Students who request a medical leave of absence
for a current term and submit their leave request prior to the last day of classes will be assigned W in lieu of a regular
grade for each course. A medical leave of absence will not be retroactively granted for a term for which the last day of
classes has already occurred. Ordinarily, students who take a medical leave of absence are required to be away for two
terms beyond the term in which the medical leave was granted. A full summer session counts as one term.

Registraion information will be provided by the university registrar to all students who are approved to return
from a leave of absence. All returning students must register prior to the first day of classes for the term of intended
enrollment. Students returning from approved leaves and desiring housing on campus will be placed in the general
housing lottery, provided they have submitted the appropriate information to the Office of Housing, Dining &
Residential Life by its published deadline and provided that they lived on campus before taking their approved leave.
Students who fail to return as expected will be withdrawn from the university and will have to apply for readmission.
Detailed information about requesting and returning from a leave of absence is provided on the request form
available in the academic deans' offices and on the respective websites. Students returning to Trinity College of Arts
& Sciences, or the Pratt School of Engineering should visit the Office of Student Returns website at http://
trinity.duke.edu/OSR.

Students who undertake independent study under Duke supervision and for Duke credit are not on leave of
absence even if studying elsewhere. Students register at Duke as a nonresident student and pay the appropriate fees or
tuition at Duke. This policy also applies to Duke programs conducted away from the Durham campus.

**Transfer Between Duke University Schools**

Students in good standing may be considered for transfer from one Duke undergraduate school or college to
another, upon completion the transfer process found at advising.duke.edu/trinity-to-pratt for Trinity students, and at
www.pratt.duke.edu/undergrad/policies/3537 for Pratt Students. The review of requests to transfer involves
consideration of a student’s general academic standing, citizenship records, and relative standing in the group of
students applying for transfer. The school or college to which transfer is sought will give academic counseling to a
student as soon as intention to apply for transfer is known, although no commitment will be implied. A student may
apply to transfer at any time prior to receiving a baccalaureate degree, but transfers may become effective as early as
completion of the first semester. A student transferring to Trinity College of Arts & Sciences from Pratt School of
Engineering, prior to receiving a baccalaureate degree, may not use more than six professional school credits toward
the bachelor of arts or bachelor of science degree. If admitted to either Trinity College or Pratt School of Engineering
after having earned a baccalaureate degree at another institution, a student must complete in the new school/college
a total of seventeen additional courses and fulfill degree requirements in order to be eligible for a second
undergraduate degree at Duke.

**Transfer from Duke to Another Institution**

Students who enroll at Duke and subsequently transfer to another institution as degree-seeking students, will be
eligible to apply for readmission to Duke within one academic year of their original withdrawal date. One academic
year is defined as one fall term and one spring term, not including summer terms. Former Trinity College students
cannot transfer more than the equivalent of two domestic transfer credits back to Duke. Former Pratt School of
Engineering students cannot transfer more than the equivalent of four course credits back to Duke. For both Trinity
and Pratt students, any transfer credits will count toward the maximum allowable transfer credits from another
institution as stipulated under the policy “Work Taken After Matriculation at Duke” on page 38. Students
considering transferring to another institution should discuss this with their academic dean in the early stages of
their planning.

**Full-Time and Part-Time Degree Status**

Candidates for degrees must enroll in a normal course load (i.e., at least 4.0 course credits) each semester unless
they are eligible and have received permission from their academic dean to be enrolled in fewer than 4.0 course
Academic Recognition and Honors

In determining a student's eligibility for academic recognition and honors, only grades earned in Duke courses, including those earned in Duke Study Abroad programs and in courses covered by the interinstitutional agreement (see index) are considered.

Dean's List accords recognition to academic excellence achieved during each semester. To be eligible for this honor, undergraduates in Trinity College of Arts & Sciences must earn a grade point average for a semester that places them in the highest third of undergraduates in their respective college and in addition must (1) complete at least four course credits, including at most two academic half courses (excluding dance performance/technique, physical education activity, music activity, and house courses) for a regularly assigned grade (i.e., no Satisfactory/Unsatisfactory courses); and (2) receive no incomplete or failing grades. Undergraduates who in addition earn semester grade point averages that place them in the highest ten percent of undergraduates in their respective college will receive the Dean's List with Distinction honor, while the remainder of those placing in the highest one third will receive the Dean's List honor as noted above.

In Pratt School of Engineering, undergraduates must earn a grade point average placing them in the highest one third of their class and in addition must: (1) complete at least four course credits, including at most two academic half courses (excluding dance performance/technique, physical education activity, music activity, and house courses) for a regularly assigned grade (i.e., no Satisfactory/Unsatisfactory courses); and (2) receive no incomplete or failing grades. Undergraduates who in addition earn grade point averages that place them in the highest ten percent of their class also will receive the Dean's List with Distinction honor, while the remainder of those placing in the highest one third will receive the Dean's List honor as noted above.

Graduation with Distinction accords recognition to students who achieve excellence in their major area of study as determined by the departments and who demonstrate excellence on the basis of a thesis or other substantive scholarly project not anchored in a major but rather in a certificate program, a minor, or any other elective field of study. In Trinity College all academic units offering a major have eligibility requirements and procedures leading to Graduation with Distinction, as does Program II. Some may offer a double honors option, that is, honors in two academic units for a single thesis, though this is expressly precluded in the case of students pursuing Graduation with Distinction based on a project not associated with a major. Graduation with Distinction is separate and distinct from Latin Honors (see below). Interested students should consult the relevant directors of undergraduate study or Program II dean for information about specific requirements of and eligibility for Graduation with Distinction. In general, students seeking to graduate with distinction will participate during their junior and/or senior years in a seminar and/or a directed course of reading, laboratory research, or independent study that results in substantive
written work. Each student’s overall achievement in the major or in Program II, including the written work, is assessed by a faculty committee. Graduation with Distinction may be awarded at one of three levels: highest distinction, high distinction, or distinction, though not all academic units offer all levels.

In the Pratt School of Engineering, students in biomedical engineering, civil and environmental engineering, electrical and computer engineering, and mechanical engineering must have a 3.5 grade point average and complete a significant independent study project during their senior year. The results of the research project must be summarized in a formal written report and defended in an oral presentation before a committee of faculty members. Departmental requirements for an oral presentation and written report may vary.

**Latin Honors by Overall Academic Achievement** accords recognition for academic excellence achieved over the duration of an entire undergraduate career. Unlike the Dean’s List honor which recognizes academic excellence achieved over the short term (one semester), eligibility for the three categories of Latin Honors (summa cum laude, magna cum laude, and cum laude) is based on the cumulative grade point average for all work at Duke. Recipients are determined by the following procedure: The grade point average included within the highest five percent of the previous year’s graduating class is used to specify the grade point average needed by those students of the current graduating class to be awarded the summa cum laude honor. The grade point average included within the next highest ten percent of the previous year’s graduating class is used to determine the grade point average needed by those students who will graduate with the magna cum laude honor. Finally, the grade point average included within the next ten percent of the previous year’s graduating class will be used to determine those students eligible for graduating with the cum laude honor. Thus, about 25 percent of each graduating class will receive Latin Honors.

**Other Honors**

Trinity College of Arts & Sciences and the Pratt School of Engineering officially recognize the following national academic honor societies, each of which has a long and distinguished reputation at Duke and throughout the United
States. Because the past several years have seen a proliferation of academic societies in America, undergraduates at Duke should be careful to scrutinize invitations to join national honor societies with which they are unfamiliar.

**Phi Beta Kappa**

Phi Beta Kappa, the national academic honor society founded at William and Mary on December 5, 1776, elects undergraduate students in Trinity College and Pratt School of Engineering each fall and spring. Eligibility for election is determined not by the university but by the bylaws of the local chapter (Beta of North Carolina) on the basis of outstanding academic achievement and high moral character. Reviews of the academic record of all prospective candidates are conducted in the junior and senior years. The academic record must not contain an unresolved incomplete (I). For early election, students must have completed at least eighteen but fewer than twenty-four graded courses taken at Duke. Regular election requires at least twenty-four graded courses taken at Duke. Transfer students and other students who do not qualify under the preceding requirements may be eligible for deferred election; such students must also have achieved a superior academic record in graded courses at Duke, especially over the past sixteen courses. Students who have graduated magna cum laude and who have been awarded Graduation with Distinction in their first or second major through a vote of at least three faculty members may be nominated for election to Phi Beta Kappa by a faculty member in the distinction department. The nomination must be received by the end of the semester following the student's graduation. Additional information is available on the honors website. The total number of persons elected annually is limited by chapter bylaw to no more than 10 percent of the graduating class, of whom no more than 1 percent can be selected by early election. Eligibility requires a course of study with the breadth that characterizes a liberal education. The Program I curriculum meets those expectations; Program II and engineering students must demonstrate comparable breadth in order to be eligible. Inquiries concerning distribution requirements for students in Pratt School of Engineering should be directed to Professor Michael Gustafson, Department of Electrical Engineering. All other inquiries may be directed to the Secretary of Phi Beta Kappa, care of The Office of Undergraduate Scholars and Fellows at phi-beta-kappa@duke.edu.

**Sigma Xi**

The Scientific Research Society, Sigma Xi, is an honor society for engineers and natural, physical, chemical, and social scientists that recognizes scientific achievement. Undergraduates who have shown potential as researchers may be invited to join as associate members. Alternatively, an undergraduate student who is interested in membership in Sigma Xi and who has completed a significant research project in a pure or applied science may inquire about membership procedures through the Duke Chapter Office (sigmaxi@duke.edu). Full membership is conferred upon those who have demonstrated noteworthy research achievements, through peer-reviewed publications. A dues-paying student member of Sigma Xi or a student whose project advisor is a dues-paying member of Sigma Xi is eligible to apply for research support to the Society's Grants-in-Aid of Research program. More information is available from the Undergraduate Research Support Office at Duke or through the chapter's website at www.duke.edu/web/sigmaxi/ or the society's website at www.sigmaxi.org.

**Tau Beta Pi**

Elections to the national engineering honor society, Tau Beta Pi, are held in the fall and spring. Eligibility is determined on the basis of distinguished scholarship and exemplary character. Engineering students whose academic standing is in the upper eighth of the junior class or the upper fifth of the senior class have earned consideration by their local chapter. Inquiries may be directed to the Advisory Board, Tau Beta Pi, Pratt School of Engineering, Box 90271, Duke University, Durham, NC 27708.

**International Postgraduate Scholarships**

Students interested in various prestigious fellowships for graduate study (for example, the Fulbright, Luce, Marshall, Rhodes, and Winston Churchill) should visit www.ousf.duke.edu/post-graduate-scholarships. Specific information about deadlines and procedures for the individual scholarships and fellowships is available through that site. Students with questions should contact the Office of Undergraduate Scholars and Fellows by e-mailing ousf@duke.edu.

**Notification of Intention to Graduate**

The Diploma Form submitted by students in Trinity College of Arts & Sciences and Pratt School of Engineering is official notification that they expect to have completed all requirements for the degree and to receive the diploma on a particular graduation date. They will be confirmed for that specific graduation if basic requirements, i.e. general
education and one major, have been completed. Duke confers only one undergraduate degree to a student, that which is confirmed by the department of the first major. Students wishing to change expected graduation terms in order to complete additional requirements for second majors, minors, or certificates, must notify their academic deans by the end of the final exam period. It is the responsibility of students to submit the form on or before established deadlines. For students in Trinity College and Pratt School of Engineering, information regarding the location and date of availability of the online diploma form is sent to prospective graduates at their Duke e-mail address.

Graduation and Commencement

Commencement exercises are held once a year in May when degrees are conferred upon and diplomas are issued to those who have completed degree requirements by the end of the spring term. Students who complete requirements by the end of the summer term or by the end of the fall term receive diplomas dated September 1 or December 30, respectively. Students who are within four course credits of graduation at the end of the spring term may request to participate in the annual commencement exercises. The request must be made in writing and submitted to their academic dean by February 3.

Education Records

Duke University adheres to a policy permitting students access to their education records and certain confidential financial information. Students may request review of any information which is contained in their education records and may, using appropriate procedures, challenge the content of these records. An explanation of the complete policy on education records may be obtained from the Office of the University Registrar.

No information, except directory information (see below) contained in any student records is released to unauthorized persons outside the university or to unauthorized persons on the campus, without the written consent of the student. It is the responsibility of the student to provide the Office of the University Registrar and other university offices, as appropriate, with the necessary specific authorization and consent.

Directory information includes name, addresses, e-mail addresses, telephone listing, photograph, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and most recent previous educational institution attended. This information may be released to appear in public documents and may otherwise be disclosed without student consent unless a written request not to release this information is filed in the Office of the University Registrar.

The Provision of Academic Information to Parents and Guardians

Duke University complies with the policies set forth in the Family Educational Rights and Privacy act of 1974 concerning confidentiality, privacy, and release of information as they pertain to students’ educational records. It is primarily the responsibility of students to keep parents and guardians informed of their academic standing and progress as well as any difficulties which may affect their performance. The Office of the University Registrar does not release end of term or midterm grade information to parents and guardians without students’ written permission. If a student’s academic standing at the university changes, the Office of the Dean may notify parents and guardians in writing. Parents and guardians may also be alerted to emergency and extraordinary situations which may impinge upon a student’s well being.

Procedure for Resolution of Students’ Academic Concerns

Trinity College provides formal educational opportunities for its students under the assumption that successful transmission and accumulation of knowledge and intellectual understanding depend on the mutual efforts of teachers and students. Ideally, the college offers a range of learning experiences in which students strive to learn enough to be able to test their ideas against those of the faculty, and faculty, through the preparation of course materials and the freshness of view of their students, discover nuances in their disciplines.

Sometimes, however, student-faculty interrelationships in certain courses give rise to concerns that, for whatever reason, can inhibit successful teaching and learning. When this occurs, students often need assistance in resolving the issues.
The faculty and administration of Trinity College attempt to be genuinely responsive to all such matters and a student should not hesitate to seek assistance from faculty and administrative officers in resolving problems.

Questions about course content, an instructor's methods of presentation, the level of discourse, criteria for evaluation of students, or administrative procedures in a course should be directed to the instructor of the course. (See the following section, Undergraduate Grade Review Procedure, when concerned about a grade.) If a student believes that productive discussion with the instructor is not possible, courtesy requires that the instructor be informed before the student refers questions about the course to the director of undergraduate studies or, in his or her absence, to the chair of the department. If a student's concern involves a departmental policy rather than an individual course, the student should first confer with the director of undergraduate studies in the department. A list of the names, addresses, and telephone numbers of the various directors of undergraduate studies can be found in the University Directory. Staff members in the department offices can assist in arranging appointments with the directors. When necessary, directors of undergraduate studies may refer students to the department chair.

Students in doubt about how to proceed in discussing a particular problem, or who seek resolution of a problem, are encouraged to confer with their academic dean in Trinity College or Pratt School of Engineering.

In those exceptional cases where a problem remains unresolved through informal discussion, a formal procedure of appeal to the senior associate dean of Trinity College or the associate dean for education in Pratt School of Engineering is available. A student may initiate this more formal appeal procedure by bringing his or her problems with assurance of confidentiality, if requested, to the attention of the senior associate dean of Trinity College or the senior associate dean for education in Pratt School of Engineering, who will request information about the nature of the issue and about the earlier efforts made to deal with it. If the problem concerns a specific course, it should be directed to the appropriate senior associate dean in the college or school in which the course is taught.

Undergraduate Grade Review Procedure

A student who questions a final grade received in a course should first discuss the matter with the instructor within thirty days of receiving the grade. After meeting with the instructor, if the student still believes the instructor has assigned an inaccurate or unjustified grade, the student should discuss the matter with the director of undergraduate studies in the department or program concerned. If no satisfactory resolution is reached, the student may make a formal complaint to the director of undergraduate studies in the department or program concerned.

The director of undergraduate studies will present the case to the chair of the department or program director, and the two of them will review the case with the instructor involved. If the chair or the director of undergraduate studies agrees with the instructor that there are no legitimate grounds on which to change the grade, the grade stands as recorded. If the director of undergraduate studies and chair believe there are grounds to consider a change and the instructor is unwilling to change the grade, the director of undergraduate studies will notify the student that he or she may request a review of the case by writing to the dean of arts and sciences or the dean of Pratt School of Engineering, depending on which college or school offered the course in question. A written request must be submitted before the end of the Drop/Add period of the semester following that in which the instructor recorded the grade.

The dean will review the case and decide whether there are grounds to convene an ad hoc Committee for Review of Grade. If the dean decides there are no grounds, then the grade is not changed. If the dean decides that there are grounds to proceed, the dean will charge and convene an ad hoc Committee for Review of Grade. The committee shall consist of the dean and two regular rank faculty members from the same division but not the same department (or from different departments in Pratt School of Engineering). The two faculty members of the committee are to be nominated by the appropriate faculty council, either the Executive Committee of the Arts and Sciences Council or the Engineering Faculty Council. This committee will then evaluate and review the case, and the dean may initiate a grade change if that is the recommendation of the committee.

Exclusion of Disruptive Students from a Course

The successful conduct of courses depends upon a basic spirit of mutual respect and cooperation among the participants. If a student disrupts a class in such a way that it seriously compromises the educational experience of the course for other students or prevents the instructor from accomplishing the goals of the course as outlined in the syllabus, the instructor may ask the student to leave the class meeting.
The instructor and the student are then expected to meet to discuss and prepare in writing the conditions under which the student may return to the course. If the disruptive behavior continues, the instructor may report the matter to the student’s academic dean. The academic dean will investigate the matter to determine whether the student should be referred to the Office of Student Conduct for consideration of formal charges of violation of university policies including “Classroom Disruption,” “Disorderly Conduct,” and/or “Failure to Comply.” If “probable cause” resulting in further judicial action is not found, the matter is to be referred to the student’s academic dean who will make a decision concerning the status of the student in the course.

If the student or the faculty member wishes to appeal the decision of the academic dean, an appeal is to be directed to the senior associate dean of Trinity College, the academic appellate officer for the college. The decision of the senior associate dean in such a case is final. If the student is permanently excluded from the course, a notation of W will be recorded on the student's academic record.

Compliance with Academic Regulations

Under no circumstances may students ignore official rules and requirements, as this is a breach of the Duke Community Standard and a “failure to comply” as described in the *The Duke Community Standard in Practice: A Guide for Undergraduates*. Students who ignore official rules and requirements will at the least have their registration for the next academic semester blocked by their academic dean until after the close of the last window of that registration period. They could also be subject to involuntary withdrawal for a period of two semesters and/or referred to the Undergraduate Student Conduct Board for possible disciplinary action.
Special Study Centers, Programs, and Opportunities

Campus Centers and Institutes

International and Area Studies Programs

Duke University Center for International Studies (DUCIS)

Located in the John Hope Franklin Center for Interdisciplinary and International Studies, DUCIS supports a wide range of global thematic activities, many of which are open to undergraduates. The center has an annual competition for undergraduate summer research grants and offers support for studying less-commonly-taught languages. An important component of DUCIS's work is funding faculty to develop new international courses from global health to global baseball. DUCIS also supports instruction in less-commonly taught languages such as Haitian/Creole.

Every four years, DUCIS revises its global thematic focus. Current topics through 2014 are globalization, governance, and development; climate change; global health; documentary studies; and globalization, science and technology. Many of these themes are connected to seminars that meet every two to three weeks.

It is an established goal of DUCIS to insure that our faculty and students have access to leading scholars and government officials from around the world. It does this through a range of activities from single lectures to semester-long visiting appointments. DUCIS regularly hosts a Diplomat in Residence from the US Department of State who advises students seeking careers in the foreign service. In addition, DUCIS sponsors a wide range of campus activities including film series, art exhibitions, readings, and performances.

Historically, DUCIS was instrumental in developing new area studies centers at Duke. In recent years, it has concentrated on creating long-term initiatives with strong interdisciplinary and interregional emphases. The global governance and global health seminars are two examples. The DUCIS global health project was one of the university initiatives that led to the founding of the Duke Global Health Institute.

In recognition of its commitment to international studies, DUCIS has been designated a Comprehensive National Resource Center for International Studies by the US Department of Education. It is also the recipient of numerous grants from other federal agencies and private foundations.

Asian/Pacific Studies

The Asian/Pacific Studies Institute supports and encourages the study of Asian societies within the Pacific region, with emphasis on China, Japan, and Korea. Courses offered cover a range of disciplines including Chinese, Japanese, and Korean (language and literature); art history, cultural anthropology, history, law, political science, psychology, religion, and sociology. The institute provides support for visiting speakers and conferences, library resources and research clusters. Scholarships and fellowships, including FLAS fellowships, are available annually. Study abroad opportunities are available in China (Duke credit) and Japan (transfer credit). Majors are available at the undergraduate level through the International Comparative Studies program (East Asian concentration) or through
Center for Canadian Studies

The Center for Canadian Studies administers the Canadian Studies Program, which offers courses introducing students to various aspects of Canadian life and culture. Courses and lectures in a wide range of disciplines in the humanities and the social sciences are designed to increase students’ knowledge and understanding of Canada. Special emphasis is placed on current issues in North America such as energy, trade, and security. Concentrations in Canadian studies are described in the chapter “Courses and Academic Programs,” under “Canadian Studies” on page 196. Study abroad opportunities are available.

Center for Latin American and Caribbean Studies

The center coordinates undergraduate and graduate education in Latin American and Caribbean Studies and promotes research and dissemination of knowledge about the region. CLACS offers an interdisciplinary undergraduate certificate in Latin American studies, which students can earn in conjunction with their bachelor’s degree. Additional information about this certificate program can be found in the chapter “Courses and Academic Programs.” Faculty associated with the center offer a wide range of courses in the humanities, social sciences, environmental sciences, Portuguese, Spanish, French, and Haitian Kreyol. The center also sponsors visiting professors from Latin America, speakers series, conferences, summer research grants, and DukeEngage programs throughout the region. In addition, CLACS and the Institute for the Study of the Americas at The University of North Carolina at Chapel Hill sponsor the Consortium in Latin American Studies that includes occasional exchanges of faculty members from each institution and joint undergraduate and graduate student working groups as well as the annual Latin American Film Festival and consortium conference. For more information consult the assistant director at Room 134 Franklin Center, Box 90254, Durham, NC 27708-0254; (919) 681-3981; las@duke.edu; http://clacs.aas.duke.edu/.

Center for Slavic, Eurasian, and East European Studies

The center is devoted to promoting coursework, comparative research, teacher training, and graduate student and undergraduate student training in the social sciences and humanities associated with Russia, the former Soviet Union, Eastern and Central Europe, and Eurasia. Faculty associated with CSEEES offer over 350 courses each year in a broad range of disciplines, including history, economics, cultural anthropology, political science, literature, linguistics and languages. CSEEES works closely with UNC-Chapel Hill within a joint Title VI center. CSEEES supports programs and courses in six BA degrees, five minors, two MA certificates, two MA degrees and several PhD programs. CSEEES provides FLAS fellowship funding for graduate students across thirteen languages at Duke and UNC. Center language initiatives include active support of Polish, Romanian, Russian, Turkish, and Uzbek languages.

Slavic and Eurasian Languages Resource Center

The Slavic and Eurasian Languages Resource Center (formerly Slavic and East European) combines the resources of Duke University with outstanding research teams drawn from universities and government agencies across the US SEELRC focuses on the languages of thirty-four countries with a combined population approaching two billion people and most of these languages fall into the category of less commonly taught languages (LCTLs). The cardinal purpose of SEELRC is to improve the national capacity to meet strategic US needs in teaching and learning the LCTLs of Eurasian (including but not restricted to Eastern and Central Europe, and the former Soviet Union). SEELRC provides teacher training in proficiency testing and certification and technologies, conducts research with direct outcomes with a focus on the advanced level in the languages of the region, and develops authentic language instructional materials in multi-platform technological formats and diagnostics.

Center for European Studies

The mission of the Duke Center for European Studies (CES) is to encourage interdisciplinary study, debate, and discussion regarding Europe. The CES cultivates and supports all manner of intellectual life focused on Europe at Duke, acts as a catalyst for scholarship on Europe, and provides a unifying community for scholars of Europe at Duke. The CES has a broad reach with over 145-affiliated faculty across the humanities, social sciences, and several professional schools, and over eighty-five-affiliated students (undergraduate, graduate, and professional) and post-docs, and a larger network of scholars in institutions across the Triangle and North Carolina. It has a strong presence in the regional seminars network, as well as administers several exchange programs and collaborates closely with...
international scholars and partner institutions. The CES sponsors and coordinates events and speakers, hosts visitors, and subsidizes European-focused scholarly activities at Duke and in Europe. Additionally, it offers an interdisciplinary European studies certificate for graduate students, who are also encouraged to participate in the Society of European Scholars to further discuss their research and develop interdisciplinary perspectives and approaches to their work.

Center for Documentary Studies

The Center for Documentary Studies (CDS) at Duke University offers an interdisciplinary program in the documentary arts—photography, audio, film/video, narrative writing, and other means of creative expression—that emphasizes active engagement in the world beyond the university campus. Much more than a traditional educational center, CDS encourages experiential learning in diverse environments outside the classroom, with an emphasis on the role of individual artistic expression in advancing broader societal goals. Programs range widely to include university undergraduate courses, popular summer institutes that attract students from across the country, international awards competitions, award-winning book publishing and radio programming, exhibitions of new and established artists in our own galleries, nationally recognized training for community youth and adults, and fieldwork projects in the United States and abroad.

At CDS students from any discipline may choose between the certificate in documentary studies program, which requires completion of six courses and a major documentary project, or a variety of individual courses. In seminar-style courses, students merge theory and practice in the making of original documentary work: artistic fieldwork projects capturing the compelling stories of contemporary life. Many of these projects, presented locally at CDS and in other settings, enjoy recognition in larger arenas—at film festivals, on public radio, and in off-site galleries. In addition, CDS provides darkrooms, multimedia labs, screening rooms, and galleries for the creation and presentation of student work in conjunction with lectures and workshops involving prominent contemporary photographers, filmmakers, and other documentarians.

The program’s instructors include faculty members, visiting artists, and practicing professionals in the field. As part of its undergraduate program, CDS created and hosts the Lehman Brady Visiting Joint Chair Professorship in Documentary Studies and American Studies at Duke and The University of North Carolina at Chapel Hill, which brings distinguished documentarians to teach on both campuses each year.

CDS also offers a variety of internship, fellowship, and volunteer opportunities, including the John Hope Franklin Student Documentary Awards (competitive grants available to undergraduates for conducting summer documentary fieldwork projects), the Lewis Hine Documentary Fellows Program (placing post-graduate fellows for ten months with nonprofit organizations), Documentary Arts Institutes, and the Full Frame Documentary Film Festival Student Fellows program.

For more information, visit documentarystudies.duke.edu or contact the Undergraduate Education Director, Christopher Sims (csims@duke.edu) Center for Documentary Studies, 1317 West Pettigrew Street, Durham, NC 27705; (919) 668-3357.

Dewitt Wallace Center for Media and Democracy

The DeWitt Wallace Center for Media and Democracy in the Sanford School of Public Policy focuses on the study of communications, mass media, and journalism as they relate to a globalized and interconnected world. The center administers the Policy Journalism and Media Studies Certificate. The center’s approach to education emphasizes the analysis of issues relating to media and democracy. It also offers courses in effective media writing and production. Undergraduates interested in this field of study register for courses through the Department of Public Policy. Students enrolled in the certificate program gain a thorough understanding of the press in the policymaking process and engage in courses and internships to learn about the practice of journalism, while mastering the broader background of studies in public policy, politics, economics, history, and other liberal arts. Through the center, students have the opportunity to study with leading research scholars, practicing journalists and commentators, and media pioneers. In addition, the center sponsors the undergraduate Melcher Family Award for Excellence in Journalism. For further information about the center or the certificate, visit www.dewitt.Sanford.duke.edu or e-mail shelley.stonecipher@duke.edu. See also the sections on the certificate program and on public policy studies on page 528 in the chapter "Courses and Academic Programs."
DukeEngage

DukeEngage is a program for undergraduates who want to pursue a summer of intensive field-based work that contributes to the public good. Duke provides funding and administrative support to eligible students who want to address societal issues locally, nationally, or abroad. Students tackle real-world problems and develop valuable skills and self-knowledge that result from an immersive service experience.

DukeEngage includes three different types of learning opportunities:

• those that are sponsored and organized by Duke;
• those that Duke coordinates with outside providers that specialize in organizing student internships or volunteer work in the United States and/or abroad; and
• those that are initiated by students through grant proposals.

For more information, visit http://dukeengage.duke.edu/.

The Duke Center for Civic Engagement

The Duke Center for Civic Engagement (DOCE), the hub of civic engagement at Duke, supports the myriad ways Duke students, faculty, and staff collaborate with their communities to address pressing social issues.

The DOCE promotes civic engagement on campus in the following ways:

• Incubate: Support faculty, staff, and students as they develop nascent ideas and initiatives related to public scholarship and civic engagement, by providing meeting space, seed funding, and administrative coordination
• Coordinate through various forums and convocations, existing and emergent civic engagement programs and initiatives at Duke
• Amplify existing on- and off-campus resources related to civic engagement and public scholarship through various forms of media, including Duke’s Civic Engagement website.

The DOCE sponsors several speaking events featuring national leaders in civic engagement, including an annual Distinguished Lecturer. The office administers Duke's memberships in several national civic engagement initiatives, including the Clinton Global Initiative University, a student social entrepreneurship program.

For more information, visit http://dcce.civic.duke.edu/.

Academic Resource Center

The Academic Resource Center (ARC) is composed of three programs—the Academic Skills Instructional Program, the Peer Tutoring Program, and the Program for Students with Learning Disabilities and ADHD. The ARC was established in 1984 to offer learning assessment services and academic support to all undergraduate students. The staff consists of professionals from a wide range of disciplines who are dedicated to enhancing the academic lives of the students they serve. Services are designed to assist students in their coursework and to help them to develop the broad academic skills necessary for success. All services are offered without additional university fees and carry no course credit.

The Academic Skills Instructional Program (ASIP). Students may arrange one-on-one college study skills conferences with an ASIP learning specialist. Students are encouraged to gain a greater understanding of their strengths and weaknesses and to develop strategies useful in managing the large amount of reading, writing, and problem-solving they are expected to accomplish at Duke. Areas to be explored include time-task management, reading efficiency, note-taking, test-preparation, and test-taking. ASIP also offers special academic programs throughout the semester. Students should call the Academic Resource Center to schedule an individual appointment or for more information about special programming.

The Peer Tutoring Program (PTP) provides free peer tutoring in introductory-level mathematics, chemistry, physics, biology, economics, computer science, engineering, and languages. Walk-in tutoring services are also available for select courses.

Services for Students with Learning Disabilities and ADHD. Duke University, through the Academic Resource Center, offers academic interventions to undergraduate students with diagnosed learning disabilities and attention deficit disorders. The clinical director reviews a student’s clinical documentation and evaluates the need for interventions and support within the context of the Duke undergraduate curriculum. Academic interventions and support services include, but are not limited to, the following: testing interventions, classroom interventions, classroom support, and one-on-one academic support via the ASIP.

Students who wish to be evaluated for eligibility for academic interventions and/or support services may submit clinical assessment documentation directly to the Academic Resource Center or request that any party in possession
of the documentation forward the materials to the ARC on their behalf. Submissions should be addressed to the clinical director. For more information, call the ARC at (919) 684-5917.

**Continuing Studies**

**Academic Study.** Local adult residents are encouraged to pursue academic study at Duke (1) as potential degree candidates, for those who have not been full-time college students for at least four years and are now resuming or beginning a bachelor's degree; (2) as nondegree students, for those with baccalaureates who now seek a sequence of undergraduate credit courses; and (3) as students completing the last year of work toward a degree at another institution. These students are given academic counseling by the Office of Continuing Studies and Summer Session and are subject to most of the regulations set forth for degree candidates. A junior or senior who is enrolled at another accredited US college or university and desires to study an academic discipline unique to Duke University may apply through the Office of Continuing Studies for admission as a nondegree, full-time visiting student for one or two semesters. Applications may be obtained from the Office of Continuing Studies (the Bishop House on East Campus or (919) 684-2621) and must be returned to that office, accompanied by a $35 application fee, by August 1 for the fall semester, December 1 for the spring semester, April 15 for Term I of the summer session, and June 1 for Term II of the summer session.

**Certificate Programs.** Professional certificate programs offered include human resource management, management accounting, internal auditing, sustainable community development, technical communications, paralegal studies, financial planning, internal auditing, event development, and legal nurse consulting.

**Nonprofit Management Program.** Students interested in the nonprofit sector or in community development are invited to explore the noncredit course offerings of this program. Taught by experts and practitioners, these short courses offer instruction concerning financial and resource management, management of personnel and volunteers, leadership development, fundraising, planning and evaluation, board development/governance, and media relations.

**Osher Lifelong Learning Institute (OLLI) at Duke.** OLLI at Duke began in 1977 as the Duke Institute for Learning in Retirement. Since 2004 the membership organization has been a member of the Osher Lifelong Learning Network, a group of more than 120 institutes across the country dedicated to meeting the needs of older learners and extending the demographic served by traditional universities. OLLI sponsors noncredit course offerings in the fall, winter, and spring as well as fall and spring retreats, language tables, reading groups, lecture series, and volunteer opportunities.

**Duke Youth Programs.** For more than twenty-five years, Duke Youth Programs has offered academic enrichment opportunities for middle and high school students in the summer. Current offerings range from camps in biosciences and engineering, computing, math, creative writing, theater and musical arts, science explorations for young women, academic writing and research, to constructing the college experience. Preparation courses for the SAT and ACT are scheduled in both the fall and spring.

For brochures on each program and for more information, write or call the Office of Continuing Studies and Summer Session, Duke University, Box 90700, Durham, NC 27708-0700; (919) 684-6259; learnmore@duke.edu; or www.learnmore.duke.edu.

**Specialized Programs**

**The Focus Program**

The Focus Program offers first-year students a variety of interdisciplinary course clusters in the fall semester only where students take two courses, each course is centered on a common theme. The Focus Program at Duke is distinct from other living/learning community programs in several respects. The primary concentration of each cluster encourages study in the social sciences, natural sciences, engineering, and humanities as well as analysis of the social, historical, economic, and political roots and problems of the topics. The broader interdisciplinary discussion courses impart a cross-disciplinary perspective to the course of study.

The Focus Program draws its offerings from courses taught by more than sixty Duke University professors in twenty-nine cooperating departments and centers within two institutes and four schools. Courses have been designed specifically for the program to help place the topics chosen for specialization in a broad interdisciplinary and global perspective. Classes are small, interrelated, and mutually reinforcing; they provide opportunities for discussion and
individualized research. The program is administered by a faculty director, program staff, and a faculty advisory committee representing the various clusters.

Since one of the aims of the Focus Program is to encourage the integration of academic life with residential life, participants of each cluster live in the same residence hall together with other first-year students. Focus Program participants may choose their own roommates and make other residential requests through the Residential Life and Housing Services office.

**Student Schedules**

The Focus Program requires participants to enroll in two seminar courses from the three or four courses offered with the assigned cluster and a half-credit discussion course. Remaining elective courses are chosen by the student according to his/her academic interests. Courses in the program satisfy the general curriculum first-year seminar requirement. Courses will also fulfill other general curriculum requirements (Areas of Knowledge and Modes of Inquiry).

**Mentoring Program**

The Focus Mentoring Program has a wonderful group of former Focus students who are eager to share their experiences and impressions with new students interested in the program and who serve as mentors for future Focus students. If you would like to be connected to a Focus mentor, please e-mail focus@duke.edu.

**REFOCUS**

The Focus Program hosts lectures and field trips in the spring semester for former Focus students. Current information on these events can be found under Refocus on the Focus website at focus.duke.edu/about/refocus.

Current Focus Program information may be found on the program website at focus.duke.edu. Questions and comments may be directed to the Focus Program office, 225–227 Academic Advising Center, (919) 684-9370, fax: (919) 684-4515, e-mail: focus@duke.edu.

**Reserve Officer Training Corps**

Duke University and the military services cooperate in offering officer education programs to provide opportunities for students to earn a commission in the United States Air Force, Army, Navy, or Marine Corps. These programs are described below, and detailed information on scholarships, entrance requirements, and commissioning requirements is available from the offices of the Department of Aerospace Studies (Air Force), the Department of Military Science (Army), and the Department of Naval Science (Navy and Marine Corps). Courses offered in these departments are described in the chapter “Courses and Academic Programs” on page 101 in this bulletin.

**The Air Force Reserve Officer Training Corps (AFROTC)**

AFROTC selects, trains, and commissions college men and women as officers in the US Air Force. AFROTC offers anywhere from a two-year to four-year curriculum leading to a commission as a second lieutenant. The program consists of both the General Military Course (GMC), a course sequence normally taken during the freshman and sophomore years, and the Professional Officer Course (POC) taken during the junior and senior years. Entry into the POC is competitive and requires successful completion of a field-training encampment during the summer between the sophomore and junior years.

The GMC is open to freshmen and sophomores. Students who complete both the freshman and sophomore years of the program and successfully compete for entry into the POC will attend a four-week training encampment. All other successful POC applicants will attend an extended encampment. During summer breaks, cadets are given the opportunity to volunteer for advanced training in a variety of different areas.

Students may compete for various types and lengths of scholarships. These scholarships pay up to full tuition, a monthly tax-free stipend of $250-$400, and an annual book allowance. All members of the POC receive the nontaxable stipend even if not on scholarship. Upon graduation all cadets are assigned to active duty with the US Air Force for a period of at least four years. Direct inquiries to the Department of Aerospace Studies, 265 Trent Building, (919) 660-1860 or visit www.duke.edu/afrotc.

**The Army Reserve Officers’ Training Corps (AROTC)**

Army ROTC provides students of strong character with an opportunity to develop themselves as scholar/athlete/leaders and earn a commission as an Army officer. Two programs are available, the three- or four-year progression program and the two-year lateral entry program.
A three- or four-year program consists of the Basic Course (freshman and sophomore years) and the Advanced Course (junior and senior years). Direct entry into the Advanced Course (a two-year program) is possible by attending a four-week Leadership Training Course (LTC) during the summer or the successful completion of basic training. Students wishing to join the two-year program must confer with the Department of Military Science not later than March 1 of their sophomore year in order to qualify for a summer internship and two-year scholarship. There is one mandatory summer training requirement, Leadership Development and Assessment Course (LDAC), which takes place over a five-week period between the junior and senior years. All uniforms and some texts are provided.

Detailed information is available from the Department of Military Science, 06 West Duke Building, East Campus, Box 90752, (919) 660-3090, or (800) 222-9184.

The Naval Reserve Officer Training Corps (NROTC)

The Department of Naval Science offers students the opportunity to become Navy and Marine Corps officers upon graduation. Selected students will receive up to four years of tuition, fees, uniforms, and textbooks at government expense under the auspices of the Scholarship Program. In addition, scholarship students receive subsistence pay and summer active duty pay of approximately $3,000 a year. Each summer they participate in four weeks of training either aboard ship or at naval shore facilities to augment their academic studies. A minimum of five years of active duty service is required upon graduation.

A two-year program is available to rising juniors and is made possible by attending a six-week program at the Naval Science Institute (NSI) in Newport, Rhode Island. Students wishing to join the two-year program must meet with the Department of Naval Science no later than March 1 of their sophomore year in order to qualify for the summer training and two-year scholarship, which covers full tuition, fees, uniforms, and textbooks.

Nonscholarship students wishing to join the NROTC Battalion may be enrolled in the College Program at any time before the spring semester of their junior year. They take the same courses and wear the same uniforms, but attend the university at their own expense. Uniforms and Naval Science textbooks are provided by the government.

College Program students may compete for scholarship status through academic performance, demonstrated aptitude for military service, and nomination by the professor of Naval Science. Students in either program may qualify for a commission in the United States Marine Corps through the Marine Corps Option Program.

For further information on the NROTC program, contact the Department of Naval Science, (919) 660-3700, Trent Hall, Trent Drive, Room 361 or visit www.duke.edu/nrotc.

Agreements with Other Universities

Neighboring Universities

Under a plan of cooperation—the interinstitutional agreement among Duke University and The University of North Carolina at Chapel Hill, North Carolina State University, North Carolina Central University, The University of North Carolina at Charlotte, and The University of North Carolina at Greensboro—a student regularly enrolled in Duke University as a degree-seeking student and paying full fees may enroll for one approved course each semester at one of the institutions in the cooperative program unless an equivalent course is offered at Duke in the same academic year. Under the same conditions, one interinstitutional course per summer may be taken at a neighboring institution participating in this agreement provided that the student is concurrently enrolled at Duke for one full course credit. This agreement does not apply to contract programs such as the American Dance Festival or to study abroad programs.

Approval forms for courses to be taken at these neighboring institutions may be obtained from the offices of the academic deans and the university registrar. Forms are also available online at the Office of the University Registrar website (registrar.duke.edu), in the “Registration” section. Only those courses not offered at Duke will be approved. Approval must be obtained at Duke from the director of undergraduate studies of the subject of the course and the student’s academic dean. Credit so earned is not defined as transfer credit since grades in courses taken under the interinstitutional agreement are entered on the official record and used in determining the grade point average. The courses may be eligible for Area of Knowledge and Modes of Inquiry coding. The student pays any special fees required of students at the host institution.

Courses taken at The University of North Carolina at Chapel Hill by Duke students in the Robertson Scholarship Program (a joint scholarship program for students at Duke and The University of North Carolina at Chapel Hill) are interinstitutional courses. However, the restriction on the number of courses and the kind of courses (i.e., those not offered at Duke) permitted does not always apply. Robertson Scholars should refer to program materials for specific regulations.
Domestic Exchange Programs

Trinity College has exchange programs with two domestic institutions: Howard University in Washington, DC, and Spelman College in Atlanta, Georgia. Duke students may study for a semester at either institution, while students from these institutions enroll for the same period at Duke. Students may enroll in a wide variety of courses at either Howard University or Spelman College for which they will receive transfer credit at Duke.

Duke/Howard Exchange

Students must have completed two semesters of coursework at Duke. On-campus housing will be guaranteed to students participating in the exchange program although it is not required. Application deadline is November 1 (spring term) and April 1 (fall term).

Duke/Spelman Exchange

Students must have completed four semesters of coursework at Duke. On-campus housing will be guaranteed and is required for students participating in the exchange program. Spelman is a liberal arts women’s college. Application deadline is April 1 for both the fall and spring term.

For more information about these programs, visit 011 Allen.

Duke in Chicago

The Department of Theater Studies, the Innovation and Entrepreneurship Initiative, and the Global Education Office for Undergraduates (GEO) of Duke University offer a six-week, two-course summer program. Duke in Chicago stARTup Arts Entrepreneurship is an interdisciplinary program for students interested in the intersection of arts and business, who wish to learn how to become arts entrepreneurs. The program welcomes students in the performing and visual arts, and also students interested in business and management, economics and computer science, to Chicago: a thriving global center of international trade and commerce, unique as an arts center because of its booming storefront scene of countless small start-up companies. Students take two courses: stARTup Project, and a guest speaker course: The Economics of Art (The Chicago Scene). This second class includes an internship in arts administration, marketing, or development; or a performance/writing class; and participation in Duke Global Entrepreneurship Networking events. Students live in residence halls.

Duke in DC—Policy, Leadership, and Innovation

Based in the nation’s capital city, the Duke in DC: Policy, Leadership, and Innovation program provides students with the unique and exciting opportunity to live, work, and study in Washington, DC. Students will have real-world policy experiences through a combination of coursework, independent research, small group work, an internship, interaction with Duke alumni working in the DC area, and a group living experience. Students will connect with leaders in public policy, government, and business and participate in a variety of cultural, professional, and social opportunities unique to Washington.

Duke in New York Arts and Media Program

Duke in New York Arts and Media is a fall program that introduces students to the exciting world of theater, music, film, dance, writing, museums, galleries, publishing, television, advertising, and other media within businesses and not-for-profits. Through internships that receive Duke credit and are part of an integrated Duke program, students get to experience living and working in New York. It’s experiential learning and the opportunity to acquire a hands-on knowledge of the city. In addition to the internship, students take a class run as a seminar called “Engaging New York for the Twenty First Century” (ALP, R, W) and a guest speaker course, “Making Media” (ALP and STS) with Duke faculty who come to the city. Students also take either a Duke elective whose subject will vary from year to year or a course at New York University in areas that may cover subjects not available at Duke or satisfy some special need. “Engaging New York for the Twenty First Century” explores the history, neighborhoods, literature and movies about the city, as well as secret histories and major challenges the city faces for the twenty-first century. It takes students to—and teaches them about—one to two events a week that illustrate these themes, ranging from a major Broadway play to a tiny Soho dance venue, from a tour of the Museum of Modern Art to a comedy club. Students should end the program with a definite feeling for New York’s vibrant history, institutions, and cultural life. They should also develop a sense of professional life in the city, with introductions to Duke alumni and others producing the arts and creating media in New York. The program runs in association with Global Education Office for Undergraduates.
Duke in New York Summer Internships in the City

The Summer Internships in the City Program is part of the Duke in New York Arts and Media Program and, like it, features an internship for Duke credit in a context that allows for an educational, safe, and convenient summertime experience in New York. During Summer Session I, students take a class run as a seminar called “Summer in the City” (ALP, R, and W credit) that introduces them in a compact way to neighborhoods, cultural institutions, businesses, and the demographics of New York and, through a series of carefully calibrated assignments, allows them to complete a final project that draws upon their classes, training, creativity, and professional interests. The seminar lasts six weeks; students stay on during Summer Session II, with a Duke faculty member in residence, to complete their internships. Because of the compact length of Summer Session I, there is no guest speaker course or extra elective or New York University course and a smaller number of events is included than in the Fall Duke in New York Arts and Media program. But students still get an enviable taste of theater, dance, museums, and music in the city and an educational summer informed by the experience of living and working in New York. The program runs in association with Global Education Office for Undergraduates.

Duke in New York Financial Markets and Institutions

The Duke in New York Financial Markets and Institutions Program introduces students to the financial services industry. They will gain firsthand knowledge of financial regulations and institutions both through coursework and personal interactions with Duke alumni in the industry. The program is offered in the spring of each year, and is jointly administered by the Department of Economics and the Global Education Office for Undergraduates. It incorporates four full-credit courses taught on New York University’s campus, mentoring from Duke alumni in the industry, guest lectures and panels, visits to trading floors, and socials hosted by financial institutions.
The program aims to give students interested in finance a fuller picture of the opportunities available—academic, public, and private. Students should leave the program with practical knowledge in the finance field, and professional contacts in their area of interest. Moreover, students will have a sense of the community of Duke alumni and other professionals in the finance industry. For more information, visit http://globaled.duke.edu/Programs/Semester/Duke_in_NY_Financial_Markets.

Duke in Los Angeles

Duke in LA is a spring semester program, based at the University of Southern California (USC) in Los Angeles, California. This four-course, intensive, interdisciplinary program includes courses in film production and media, as well as a course focusing on issues relating to LA’s status as a global city and the United States’ second largest metropolis.

This program offers a credit-bearing internship with a business or organization that counts as one of the courses on the program. In addition to coursework, this program features field trips to notable events and locations in Los Angeles, exposure to the diverse cultures of Southern California and the opportunity to make connections with people in various fields. For more information, contact the Global Education Office for Undergraduates at globaled@duke.edu or visit the Duke in LA website at http://globaled.duke.edu/Programs/Semester/Duke_in_LA.

Duke in Silicon Valley

Duke in Silicon Valley is an intensive four-week summer program in which students learn about the process of creating and developing a successful new venture. Through a combination of classroom instruction, mentorship, and observation of the venture creation process in action, students will develop many of the skills necessary for a successful launch. Students will tour research facilities and company headquarters throughout the Bay Area and interact with the founders and leaders of some of the country’s most innovative companies. Students earn one course credit.

Duke University Marine Laboratory
(Nicholas School of the Environment)

The Marine Laboratory of Duke University, located on Pivers Island in the historic town of Beaufort, North Carolina, is a fifteen-acre campus with research laboratories, classroom buildings, dormitories, a dining hall, and boats. The situation of the Duke Marine Lab provides easy access to marine habitats, including coastal settings with contrasting degrees of development. The Rachel Carson National Estuarine Research Reserve and undeveloped Outer Banks stretch to the east of Pivers Island; to the west is Bogue Banks, a spit of heavily developed land. Shallow waters of the Pamlico, Albemarle, and Bogue Sounds are rich with estuarine life and fringed by expansive salt marshes. The marine lab serves students in the biological and environmental sciences as well as those in social science, humanities, and engineering. Residential undergraduate courses are offered year-round (Fall, Spring, Summer Sessions I and II). Fall and Spring courses include Beaufort Signature Courses, which offer students opportunities for extended travel with Duke faculty to places such as Bahamas, Gulf of California, Panama, Puerto Rico, and Singapore. Small class sizes and an island setting facilitate rewarding student-faculty interactions. Duke students in good standing are automatically accepted to the Marine Lab’s academic programs.

For additional information, contact the Academic and Enrollment Services Office, Duke University Marine Lab, 135 Duke Marine Lab Rd., Beaufort, NC 28516; (252) 504-7502; ml_enrollment@nicholas.duke.edu or visit http://www.nicholas.duke.edu/marinelab.

Undergraduate Research Support Office

Duke University encourages connections between the academic experience and the research endeavors of its faculty scholars and investigators. The Undergraduate Research Support (URS) Office in Trinity College promotes student involvement in research by advising and by providing financial support for research engagements in many disciplines. The office provides research assistantships and grants through the academic year, research grants and fellowships for the summer, and travel grants for presentations at professional conferences. The URS Office also organizes symposia of undergraduate research and it administers summer research programs. For detailed information, visit http://trinity.duke.edu/undergraduate-research.
Study Abroad

(Global Education Office for Undergraduates)

A Duke student may earn credit for approved work completed during the academic year at a university or for an approved program abroad sponsored by Duke or by another approved American college or university in the fall, spring, and summer. No prematriculation credit will be awarded for college coursework completed on a study abroad program undertaken prior to matriculation at Duke. Approved non-Duke programs earn transfer credit. To receive the maximum amount of transfer credit at Duke—generally four course credits for a full semester, eight for a full academic year, two for a summer—a student is expected to take a full, normal course load, as defined by the Global Education Office for Undergraduates (GEO). The responsible Duke departments, however, make the final decision on the final number of credits transferable. Students attending certain British, Irish, and Japanese universities for the full academic year can transfer a maximum of eight courses. However, at certain British, Irish, and Japanese universities which are on the trimester system, only three course credits may be transferred for the single fall trimester. Students attending such universities in the spring are required to attend the two remaining trimesters and may transfer a maximum of five credits. No additional study abroad transfer credit will be awarded for a course overload.

Trinity international students may receive a total of two, and Pratt international students up to four, domestic transfer credits for study in their home country. For study during the academic year, they will be given a personal leave of absence upon approval by their academic dean.

A student who wishes to receive credit for study abroad should take into account the following criteria established by the faculty and administered by the Global Education Committee for Undergraduates:

- A scholastic grade point average of at least 2.7 for semester or academic year study abroad—a student lacking this average may petition his academic dean if there are unusual circumstances;
- Approval, obtained before leaving Duke, of the appropriate directors of undergraduate studies for the courses to be taken abroad, as well as approval of the program and the courses by the dean responsible for study abroad and by the student’s academic dean.

A student on academic or disciplinary probation or one who does not meet academic continuation requirements will not be permitted to study abroad, regardless of the student’s acceptance to a program. Students who have been dismissed for any disciplinary reason must complete at least one regular semester with no further infractions on campus prior to being eligible for study abroad. Similarly, students who have been dismissed for any academic reason must successfully complete a full semester on campus prior to being eligible for study abroad.

Transfer credit will be awarded for work satisfactorily completed in Duke-approved programs abroad in accordance with GEO policies and procedures. Transfer credit courses may, upon evaluation, carry Area of Knowledge codes. The foreign language (FL) mode of inquiry is only available to transfer courses through a petition process upon return.

When studying abroad, only students who study abroad for the full academic year in the same program are allowed to enroll in an independent study course at a foreign institution and only in the second semester of the study abroad sojourn. Detailed information about independent study while abroad may be found at http://globaled.duke.edu/ and in the Duke Abroad Handbook. Some Duke academic departments may restrict credits earned for independent study courses.

To determine eligibility to earn recognition for honors such as Dean’s List while studying abroad, consult the section on “Academic Recognition and Honors” on page 52 or your academic dean. Arrangements are normally made for students to register, while abroad, for the term in which they plan to return. Seniors planning to spend their final semester abroad are subject to the residence requirement and may face postponed graduation because transcripts from abroad are often delayed. Students studying abroad on semester programs not administered by Duke will be charged a study abroad fee. See the chapter “Financial Information” on page 89 for information concerning fees for studying abroad on Duke-approved semester programs.

Semester and Academic Year Programs

Duke currently administers and supervises a number of its own study abroad programs. In these programs, Duke faculty are directly involved and the courses receive Duke credit, as courses on campus do, unless otherwise noted. Information on these programs is available from the GEO-U at http://globaled.duke.edu/. The Duke-administered programs are as follows:
China, Kunshan

Located on Duke Kunshan University (DKU) campus in Kunshan, China, the DKU Global Learning Semester is an innovative liberal arts semester-long education program for undergraduate students from around the world who seek interactive classroom discussions, thrive on engagement with faculty and peers outside the classroom, and display a natural curiosity about the diversity of the world’s cultures. The language of instruction is English, but Chinese language courses at all levels are available. Students enroll in four courses and receive Duke credit. Accommodations are in residence halls on the DKU campus.

Costa Rica

These fall and spring programs are cosponsored by Duke and the Organization for Tropical Studies. In the tropical biology program, students take four courses in tropical biology, ecology, and Spanish language. In the Tropical Medicine program, students study tropical medicine and public health, field ethnobiology, and Spanish language. Both programs stress full immersion in hands-on scientific and language-cultural studies. Students live with families and at research stations.

France, Paris

In cooperation with Cornell, Emory, and Tulane universities, Duke offers a semester or academic year program in Paris, under the name EDUCO. In addition to the EDUCO courses, students are able to select courses from the offerings of the Universities of Paris I, IV, and VII, and with special permission the Institut D’Etudes Politiques (Sciences Po). Applicants must have completed French through the 300-level or equivalent. Students live in French households, and foyers. Students earn Duke credit for program-administered courses and transfer credit for courses taken at the French universities.

Germany, Berlin

Duke students study at the Humboldt University of former East Berlin (fall) and at the Free University of former West Berlin or the Technical University of Berlin (spring). In the fall semester they take specially arranged courses in German language, the humanities, and the social sciences for Duke credit. In the longer spring semester, up to five courses may be taken, up to two of which may be transfer credit chosen from the regular course offerings of the Free University and/or the Technical University of Berlin. Fall, spring, and academic year programs at the Humboldt and Free Universities are open to German language learners at all levels, including beginners. Engineering students who enroll for the spring term are required to have one year of German to be eligible for the spring program if they take the special Intensive German for Engineers class in January, for an additional course credit. Students earn Duke credit for program-administered courses and transfer credit for courses taken at the German Universities. Students live with families for the semester or the year.

India

The Duke Semester in India program is a fall semester-only program featuring four courses on development and global health taught from rural and urban perspectives. Udaipur and Bangalore serve as the program bases in this multi-site program. Students conduct research and visit local NGO’s. Accommodations are in hotels and homestays.

Italy, Rome

As the administering institution of the Intercollegiate Center for Classical Studies in Rome, Duke University may send classics majors and other students with strong classical interests for admission to a semester’s work at the center, usually in the junior year. Instruction is offered in Greek, Latin, ancient history, ancient art, and archaeology. Some scholarship help is available. Students are housed at the program center.

Italy, Venice

This program is based at Venice International University, located on the island of San Servolo. VIU is an association of universities and organizations from around the world: Università Ca’ Foscari di Venezia, Università IUAV, Duke University, Ludwig Maximilians Universität (Munich, Germany), Tel Aviv University (Israel), Universitat Autònoma de Barcelona (Spain), Waseda University (Tokyo, Japan), Tsinghua University (Beijing, China), Boston College, Consiglio Nazionale dell Ricerche (CNR –Italy), Tongji University of Shanghai (China), Fondazione di Venezia (Italy), Ministerio dell’Ambiente e della Tutela del Territorio e del Mare (Italy), Provincia di Venezia (Italy), and Universita di Padova (Italy). Faculty from all partner universities offer courses at VIU, providing students from all partner universities the opportunity to take courses from a variety of international scholars. Previous Italian language study is encouraged but not required. All other courses are taught in English. Students live in dormitories on the island of San Servolo or in the city of Venice in apartments.
Russia, St. Petersburg

This fall or spring semester program is offered for undergraduate and graduate students who have studied Russian for two years at the college level. Students are enrolled in the St. Petersburg State University and have the opportunity to improve their language skills in a living-learning environment. All courses are taught in Russian. Students are housed with families.

Scotland, Glasgow

The Sanford School of Public Policy offers the opportunity to study during the fall semester at the University of Glasgow. Founded in 1451, the University of Glasgow is the fourth-oldest university in the English-speaking world and is famous for its contributions to political economy and moral philosophy, making it a particularly good location for students to engage in public policy studies. Students take the program’s seminar in public policy in addition to transfer credit electives from the general university curriculum. Students live in residence halls. The program is also open to students in other majors.

South Africa

This fall and spring semester program is cosponsored by Duke and the Organization for Tropical Studies. Students take four core courses in South African ecosystems, field research, conservation, and history and culture. The program is based in Kruger National Park and includes one extended field trip to Cape Town.

Spain, Barcelona

The Consortium for Advanced Studies in Barcelona, known at Duke as Duke in Barcelona/CASB, is a collaborative initiative involving eight other US institutions that provides students with a unique opportunity to study at four universities in Barcelona. The program features a full course of studies across the disciplines, in Spanish and/or Catalan, and is aimed at students at the 300-level or higher in Spanish. Students live in private residence halls.

Spain, Madrid

Duke University offers a semester or academic year program at the Universidad Carlos III de Madrid. Aimed at 300-level Spanish students, the program aims at improving participants’ Spanish fluency and deepening their understanding of Spain and its many cultures within a global context. Subject areas for courses include literature, art history, economics, anthropology, history, and political science. Engineering students may take one engineering course in English in the spring semester; otherwise, the language of instruction is Spanish. Students live with host families arranged by the program. Academic year students have the option of independent housing in the spring semester.

Turkey, Istanbul

The interdisciplinary curriculum of this program, based at Bogazici University, introduces cultural, historical, and religious issues emerging at the intersection of Europe and the Middle East, with particular attention to the unique position of Turkey within the global context. Students are required to take one course with the Duke program for Duke credit and one course in Turkish language. The remaining two classes are transfer credit electives chosen from the departments of history, philosophy, sociology, anthropology, engineering, economics, and political science, among others. Students live in a residence hall, in suites shared with Turkish and other international students. No prior knowledge of Turkish language is required.

A number of approved programs sponsored by other institutions are also available to Duke students for study abroad. Further information concerning semester and academic year programs may be obtained at the GEO, Bay 6, Second Floor, Smith Warehouse, or at http://globaled.duke.edu/. Duke-approved programs sponsored by other institutions are not administered by Duke University and all credits earned are transfer credits. To ensure credit from these programs, and to retain enrollment status at Duke, all Trinity College and Pratt School of Engineering students are responsible for following the procedures and meeting the deadlines set forth in materials available from the GEO website. In all cases, GEO must be informed in advance about a student’s plans. Students who do not follow the proper procedures will not be guaranteed credit for their study abroad experience.

Duke Summer Programs Abroad

The Global Education Office for Undergraduates, in cooperation with several university departments, provides many opportunities for students to study abroad during the summer while earning Duke University credit. Information about Duke summer programs abroad and about the time they will next be offered can be obtained from the GEO website. The following programs have been offered in previous years.
Australia, Sydney
This four-week, one-course program focuses on Australian biogeography and culture and is based at the University of New South Wales in Sydney. The program includes excursions to locations such as the Northern Territory, the Great Barrier Reef, and the tropical rain forest of northern Queensland.

Belgium/Netherlands
This six-week, two-course program focuses on a contextual study of late medieval, renaissance, and baroque art and culture in Belgium and the Netherlands. The double-credit course, History of Netherlandish Art and Visual Culture in a European Context, is taught in English by a Duke faculty member with Dutch and Flemish guest lecturers, and art specialists. The program is based for the first two weeks in Amsterdam (Netherlands) and for the remaining four weeks in Ghent (Flanders). Participants visit numerous Dutch and Flemish cities and museums. Accommodations are in hotels.

Brazil, Rio de Janeiro and Belem
This four-week, one-course summer program provides intensive Portuguese language instruction while exposing students to the reality of social issues in Rio de Janeiro and environmental issues in the Brazilian Amazon. In both locations, students interact with nongovernmental organizations (NGOs) that engage on issues of civics, citizen’s rights, culture, and sustainable development. Students live with host families and make several excursions of cultural significance.

Canada, Montreal
This four-week, one-course program explores the intersection of marketing and cultural identity in Montréal and Québec City. Together with government officials, business leaders, and local artisans, students examine how globalization impacts cultural identity and how Québec markets have adapted to these challenges. Coursework and site visits are conducted in French. Students may earn credit in French, markets and management studies (MMS), and Canadian studies. Accommodations are in student apartments.

China, Beijing
This eight-week, two-course program, based at the University of International Business and Economics, provides students with the opportunity to learn the equivalent of one year of Chinese in a single summer program. Participants must have at least one year of Chinese language to be eligible for the program. Students are housed in dormitories. A host family option is available for students who have had more than two years of Chinese before the start of the program.

Costa Rica, OTS Field Stations
The Organization for Tropical Studies (OTS) offers a four-week, one-course field studies summer program in Costa Rica, focusing on tropical biology. One year of college-level biology is required. Students live at the OTS field stations, Las Cruces, La Selva, and Palo Verde, each located in a distinct ecosystem.

Costa Rica, Turrialba
Duke in Costa Rica is a four-week, one-course program focused on language and culture as it intersects with health settings in Costa Rica. The program is appropriate for 300-level Spanish learners. Students live with host families.

Egypt/Morocco
This six-week, two-course program sponsored by Duke University’s Department of Asian & Middle Eastern Studies (AMES) and Global Education Office for Undergraduates (GEO) provides students with the opportunity to explore not only the socio-political development and intricacies of the Arabia region while studying Arabic, but also to gain real life experiences through interaction, observation, and field visits in both Morocco and Egypt.

France, Paris
Duke in Paris is a six-week, two-course program that provides the opportunity to take Duke courses in Paris. The language of instruction is French. Applicants must have completed French 204 or the equivalent. Students live in homestays.
France, Paris

Duke Neurohumanities in Paris is a six-week, two-course program focusing on the crossroads between neuroscience and the humanities. Taught with a collaborative and/or “modular” team faculty, the program unfolds in the context of deepening local knowledge of the history of cognitive science and of humanities that are germane to cognitive analysis. No knowledge of French is required; coursework is conducted entirely in English. Students live in residence halls and hotels.

Germany, Berlin

This six-week, two course program is offered in cooperation with Rutgers University and features faculty from both institutions. In addition to German language courses ranging from elementary to advanced levels, content courses in English, which have a substantial focus in German politics, history, and culture, are offered. German majors are encouraged to enroll in two German language courses. Non-German studies students may enroll in two elective courses taught in English, or take one course in German and one in English, the most popular option. Students live in shared apartments.

Ghana, Accra

Based at the University of Ghana at Legon, just outside Accra, the program includes extensive field trips and excursions to rain forests and the dry northern savannah, coastal fishing towns, and rural farming villages; tours to a former slave fort at Cape Coast and Elmina; and museums and craft villages near Kumasi. The six-week, two-course program provides a comprehensive look at Ghanaian culture, history, and politics. A major research project based on independent fieldwork is required. Accommodations are in hostels, hotels, and with host families.

Greece, Athens and Islands of the Aegean

This four-week, one-course program offers a study of the Classical Greeks’ pronounced emphasis on the rational aspect of human nature which enabled them to lay the foundations for subsequent intellectual developments in western thought. Concentration is on Athens, northern and southern Greece, as well as the Cycladic Islands. Accommodations are in hotels and onboard boats.

Greece, Crete

The Duke University Department of Classical Studies and the Global Education Office (GEO) in association with the Consortium for Classical and Mediterranean Archaeology offer a seven-week, two-course field school course in classical archaeology. Students are introduced to many diverse aspects of archaeological excavation in Greece including stages of recovery, processing, and primary study of artifacts and interpretation of objects. In addition, students have the opportunity to attend regular afternoon lectures and presentations by instructors and specialist staff, including field archaeologists and scientific and technical staff. Students earn two credits for the course.

Italy, Rome

This four-week, one-course program in Rome explores the history and culture of Rome and includes visits to historical sites and museums, walking lectures, and readings. The course examines the history of the city from the earliest times through the Baroque and modern periods. The course is taught in English. Students reside at the Intercollegiate Center for Classical Studies, and in hotels during field trips that take them away from Rome. This program is offered every other year.

Italy, Venice, including the Bay of Naples

This four-week, one-course program generally focuses on Venetian culture, history, art, and literature. The course is taught in English under the direction of a Duke professor. Museum visits, theater and musical performances, and local festivals may be included. Students live in a dormitory of the Venice International University on San Servolo Island.

Russia, St. Petersburg

This program offers two Russian language and culture courses in St. Petersburg. Russian language study at different levels is offered. Classes are taught at St. Petersburg State University by faculty members of the university. A minimum of two semesters of college-level Russian is suggested. Students are housed in an apartment-hotel.

Singapore

The Duke University Global Education Office (GEO) in cooperation with the Nicholas School of the Environment at Duke and the National University of Singapore (NUS), offer this six-week, two-course summer program focusing on conservation and environmental themes. Based at NUS, the first three weeks of the program...
entails a field trip to nearby Malaysia, visiting environment and conservation groups and locations. The remaining three weeks of the program entails several field trips to locations and groups in Singapore. Students live in residence halls and hotels.

**South Africa**

The GEO, in collaboration with the Organization for Tropical Studies (OTS), offers a four-week, one-course summer program in South Africa, which integrates classroom and field instruction to introduce students to the fundamental principle of South African medicine and public health systems. The program incorporates visits to primary health care facilities in both urban and rural areas. Accommodations are a combination of homestays, research stations, and lodges.

**Spain, Alicante**

The Duke Intensive Spanish in Alicante program is a summer language program geared for beginning to low-intermediate students. Courses offered are Spanish 140A Intensive Elementary Spanish, which combines coursework currently offered at Duke in Spanish 101 and 102, and Spanish 240A Intensive Intermediate Spanish, which covers material included in Spanish 203 and 204. Both are double-courses valued at two-course credits. Immersion into Spanish society is enhanced by increased exposure to language and culture. Excursions to important historical sites, along with local city tours complement the program.

**Spain, Madrid**

This six-week, two-course program in Madrid offers advanced Spanish students further language training as well as the opportunity to study Spanish culture, history, and politics. Sample excursions include Barcelona, Salamanca, Toledo, Segovia, Granada, Sevilla, and Cordoba. Both courses are conducted in Spanish, and students live with Spanish families. Applicants must have completed Spanish 204 or the equivalent.

**Switzerland, Geneva**

This six-week, two-course program in Geneva focuses on globalization issues in business and international management. Students are housed in residence halls at the Cité Universitaire of the University of Geneva. The courses are taught in English. A field trip to Berlin is also included in this program.

**Turkey**

Located on the strikingly beautiful campus of Bogazici University, perched on a hill overlooking the Bosphorus, this six-week program exposes participants to various aspects of Turkish history and culture. All coursework is in English and the program is open to all majors. Students live in a residence hall.

**United Kingdom, London-Drama**

This six-week, two-course program offers the opportunity to study drama using the resources of London's theaters in conjunction with study of dramatic texts. The courses are Theater in London: Text, and Theater in London: Performance. Both courses are taught jointly by faculty of Duke and a distinguished group of British theater practitioners from London. The group attends more than twenty theater productions in London and Stratford-upon-Avon. Accommodations are in a residence hall.

**United Kingdom, London-Finance**

This six-week program based in London offers immersion in both academic and practical finance, with two courses taught by Duke faculty, as well as visiting speakers from the financial markets and site visits to financial firms in the city. London is an ideal setting in which to study these topics given the city’s role as a center for financial transactions throughout Europe, as well as its links to the United States, Asia, and emerging markets. Students live in residence halls.

**United Kingdom, Oxford**

This six-week, two-course program at New College, University of Oxford, utilizes the Oxford tutorial system of education supplemented by lectures given at the University of Oxford’s International Graduate Summer School by noted British scholars. Areas of study include Shakespeare, Victorian literature, British history, politics and government, classical and contemporary political philosophy, and science, ethics and society.
Special Summer Programs

Duke Summer Festival of the Arts

The Duke Summer Festival of Creative Arts is administered jointly by the Summer Session Office, Duke Performances, the Sarah P. Duke Gardens, and the University Union. The festival presents special events throughout the summer including North Carolina-based independent rock, jazz, world music, chamber music, outdoor films, and an indoor film series. All of these are offered to Duke students and others at a very low cost.

The American Dance Festival

The six-week program offers a wide variety of classes, performances, and workshops. For a catalog, write to the American Dance Festival, Duke University, Box 90772, Durham, NC 27708-0072, or call (919) 684-6402.
Student Affairs

The Division of Student Affairs is critically engaged in all aspects of students' lives and collaborates with students, faculty, staff, alumni, parents, and many others in the delivery of key services and support to students and all whom the division serves.

Student Affairs provides programs and services that support the optimal growth of Duke students, enhance their intellectual, social, cultural, and physical development, and complement Duke's academic excellence by providing opportunities for students to experience education and explore interests beyond the classroom.

Overseen by Vice President for Student Affairs Larry Moneta, our education and direct service departments include:

- Campus Life—Center for Sexual and Gender Diversity; Center for Multicultural Affairs; Fraternity & Sorority Life; International House; Jewish Life at Duke; Mary Lou Williams Center for Black Culture; Muslim Life at Duke; University Center Activities & Events; and Women’s Center.
- Career Center
- Dean of Students—Office of Case Management; Duke Student Wellness Center; Family Programs; Student Conduct; Student Health; and Counseling & Psychological Services
- Office of the Vice President
- Housing, Dining & Residence Life—Residence Life; Community Housing; Dining Services; and New Student Programs
- Resource Administration—Finance; Human Resources; Information Technology Services; and Event Management

Campus Life

Campus Life ([www.studentaffairs.duke.edu/campuslife](http://www.studentaffairs.duke.edu/campuslife)) provides education, advocacy, and support for Duke students through advising, leadership development, and experiential education. Campus Life is composed of nine departments that work with a multicultural campus community to promote intellectual understanding, acknowledgement, and appreciation of their differences and similarities; advocate for equal access for students and student groups to participate in campus activities, including an equitable distribution of support resources for those activities; and promote a seamless integration of the academic and cocurricular sides of the university to promote a holistic, educational experience for students.

Outreach programs and services are designed to foster an equitable and engaged university community as well as a culture of broad social and civic understanding.

The Center for Sexual and Gender Diversity (CSGD) provides education, advocacy, support, mentoring, academic engagement, and space for lesbian, gay, bisexual, pansexual, transgender, transsexual, intersex, questioning, queer, and allied students, staff, and faculty at Duke. The Center for Sexual and Gender Diversity also serves and supports Duke alumni and the greater LGBTQ community. Through its services, the center encourages critical thinking about the intellectual, cultural, and political ramifications of sexual and gender diversity at Duke and beyond. Visit [www.studentaffairs.duke.edu/csgd](http://www.studentaffairs.duke.edu/csgd).
The Center for Multicultural Affairs offers educationally based cross-cultural programs to Duke students, and provides technical support on multicultural issues for the university community. CMA is dedicated to helping multicultural students, and all Duke students, receive the benefits of a first-rate multicultural educational experience by providing programs, services, and connections with faculty, staff, and alumni to deliver a sound diversity agenda. Visit the Center for Multicultural Affairs website at www.studentaffairs.duke.edu/cma.

Fraternity & Sorority Life, in partnership with faculty, staff, alumni, families, and (inter)national organizations, advises, serves, and supports thirty-eight nationally affiliated chapters and the general Greek community. F&SL promotes students’ personal and group development, leadership development, cultural awareness, scholarship, and civic responsibility. Visit the F&SL website at www.studentaffairs.duke.edu/greek.

International House assists international undergraduate, graduate, and professional students and their families with orientation and acclimation; enhances cross-cultural interaction among students, faculty, and staff through events, programming, and community outreach; and provides advocacy and support for the Duke international community on a broad range of issues. Visit the International House website at www.studentaffairs.duke.edu/ihouse.

Jewish Life at Duke is composed of the Freeman Center and the Rubenstein-Silvers Hillel. The Freeman Center provides a home for Jewish life on campus while the Rubenstein-Silvers Hillel provides exciting and innovative programming throughout the Duke community. The combination works to foster and enrich Jewish life for students, faculty and staff through social, educational, religious and cultural activities. Visit the Jewish Life website at www.studentaffairs.duke.edu/jewishlife.

The Mary Lou Williams Center for Black Culture promotes racial understanding, builds community, and fosters an appreciation for and increased knowledge of black people, black history, black culture, and the vast contributions of people of the African Diaspora. MLWC provides programs and services that contribute to the successful academic and personal development of black students at Duke, and positively impact the lives of all those whom they encounter. Visit the Mary Lou Williams Center website at www.studentaffairs.duke.edu/mlw.

Muslim Life at Duke is committed to enriching the lives of Duke's Muslim students through programs and services that cater to their spiritual, social, and intellectual needs. Through the combined efforts of the Muslim Chaplain and the Muslim Student Association, Muslim Life at Duke provides interfaith, community service, and social activism opportunities that allow students to discuss and practice topics related to faith, peace, compassion, and understanding in a warm and enriching setting. These events and activities are open to all members of the Duke community as well as the Triangle community. Visit the Muslim Life website at www.studentaffairs.duke.edu/muslimlife.

The University Center Activities and Events supports student programming, leadership exploration, and facility operations for student life, and more than 400 registered student groups on campus. UCAE provides services, support, and opportunities for students to engage in cocurricular experiences that lead to personal development, lifelong skills, and meaningful connections with other students, faculty, staff, alumni, and others connected to the Duke community. Visit the UCAE website at www.studentaffairs.duke.edu/ucae.

The Women’s Center works to improve the status of women in higher education at Duke. By educating the university community about gender-related issues, addressing matters of particular concern to women, and promoting a campus climate that is safe, healthy, and respectful of all people, the Women’s Center enhances all students’ academic experiences. In collaboration with student groups and faculty and staff colleagues, the Women’s Center offers information, advocacy, technical assistance, referrals, and programming on a variety of gender-related issues, including safety, health, personal and professional development, sexuality, discrimination, harassment, and sexual assault support services. Visit the Women’s Center website at www.studentaffairs.duke.edu/wc.

Career Center

The Career Center (www.studentaffairs.duke.edu/career), working in partnership with faculty and colleagues, provides career advising to all Duke undergraduates, graduate students, and alumni. Recognizing the unique talents and needs of each individual, the Career Center encourages students to make the most of their Duke experience by accessing relevant campus resources, developing career interests and values, and establishing and maintaining important human relationships with their peers as well as Duke faculty, staff and alumni. The Career Center works to build and maintain relationships with alumni and employers who can provide internships and learning opportunities, entry-level positions and opportunities for experienced professionals.
Housing, Dining and Residence Life (HDRL)

Housing, Dining and Residence Life (www.studentaffairs.duke.edu/hdrl) manages all aspects of the university’s three-year undergraduate residency requirement. Residential programs are designed to build positive communities that value learning, create new opportunities for faculty engagement, and generate positive social connections. HDRL, student residents and others in the Duke community develop and maintain environments that support classroom learning and encourage students to seek learning opportunities in the world around them. HDRL
promotes opportunities for students to connect with others and develop a strong and enduring sense of belonging; and intentionally provide opportunities for students to grow and develop as they continue to negotiate developmental issues related to identity, autonomy, and responsibility. HDRL programs are rooted in the concepts of mutual respect and civility, and recognize and celebrate the dignity and self-worth of all members.

HDRL also manages the facilities operations of all university student residences, which comprise approximately 25 percent of all university space. These responsibilities include all long-range planning, renovations, and major projects, managing housekeeping and maintenance efforts, and ensuring that all residence options are safe, secure, comfortable, and well-maintained.

Dining Services manages more than forty restaurants, cafes, and food carts across campus, as well as catering options. These food options are open to students, faculty, staff, and visitors, and are an integral, innovative, and award-winning part of the overall Duke experience. Dining Services' goal is to provide healthy and enjoyable food and eating venues, for students of all dietary needs and independent of their residential assignment. Visit www.studentaffairs.duke.edu/dining for more information.

Resource Administration

Resource Administration (www.studentaffairs.duke.edu/ra) is a collection of central service units including finance, human resources, information technology, professional development, assessment, and event management. These central services support the work of Student Affairs departments through strategic resource management, collaboration and partnerships with staff and other key stakeholders. Resource Administration staff, services, and activities are focused on strategic planning, budgeting, financial operations, payroll, information technology services, communications, staff recruitment, professional development programs, employee relations, organizational development, and management of administrative facilities.

Dining Facilities

All students living in campus residence halls are required to participate in a dining plan. Several dining plans are available that allow a student to make purchases in the various dining locations by accessing a prepaid account carried on the student identification card, or DukeCard (see the section on food and other expenses in the chapter “Financial Information” on page 89). First-year plans include both board and debit accounts; plans for upperclassmen are debit accounts.

On West Campus, the new Penn Pavilion offers a wide variety of foods, all in one location, featuring authentic cuisine. Just off the Bryan Center plaza, JB’s Gourmet Dogs and More offers a variety of hot dogs, soft drinks, and assorted snacks. Loco Pops offers popsicles like no other and the Greek Devil is a must for gyros. Also off of the Bryan Center Plaza is Panda Express, offering traditional Chinese favorites and Joe Van Gogh featuring coffees and pastries. In the Bryan Center, also on West Campus, Au Bon Pain provides breakfast options, assorted coffees, sandwiches, fresh salads, and pastries. The Loop Pizza Grill features both thin-crust and Chicago-style pizza, gourmet salads, fresh grilled fish, burgers, sandwiches, wraps, soups and desserts. Another new addition to the Bryan Center is Red Mango, opening fall 2013 and offering frozen yogurt and smoothies.

Another West Campus operation includes the Sanford Deli in the Sanford School of Public Policy. Quenchers Juice Bar in the Wilson Center offers refreshing drinks that complement a healthy lifestyle. Saladelia at The Perk (Perkins Library) is a traditional coffee bar offering coffees, sandwiches, and pastries. Bella Union, in West Edens Link, serves coffee, assorted hot and cold beverages, pastries, and ice cream. The Terrace Café in the Duke Gardens features delicious baked goods as well as salads, wraps, and assorted beverages. Divinity Café, an environment-friendly eatery, is located in the Duke Divinity School and serves breakfast and lunch. Twinnie’s is located in the engineering complex and offers breakfast pastries, made-to-order sandwiches and fresh entrée salads. Blue Express is located in the Levine Science Research Center and offers a Mediterranean menu, including hot and cold sandwiches, hearty entrees, fresh salads and desserts. Grace’s Café, located in Trent Hall, features authentic Asian cuisine as well as a selection of American breakfast and lunch fare. Dolce Vita, located in the French Science Center offers a full-service coffee bar and Pitchfork Provisions, located in McClendon Tower offers twenty-four hours of a variety of great food.

Food Factory at Devil’s Bistro, is located on Central Campus and offers sandwiches, salads, pizza, burgers, and grab ’n go for lunch, dinner, and late-night. Also on central campus the Freeman Center offers a Kosher dinner Monday through Friday and the Nasher Museum Café features a variety of organic and locally-grown dishes.
On East Campus, the Marketplace carries an array of choices including pasta, pizza, deli, rotisserie and grill stations, and a soup and salad bar. Trinity Café has a diverse selection of quality coffees, pastries, bakery items, and snacks.

Students may also use their dining plan points to purchase food items in three campus convenience stores: Uncle Harry’s General Store on Central Campus, the East Campus Store on East Campus, and the Lobby Shop on West Campus as well as concessions at athletic events; sodas and snacks from vending machines; and late night pizza and sub delivery from approved local vendors. In addition, food points may be used for our Merchants-on-Points and dining trucks. Please visit the Duke Dining website at http://studentaffairs.duke.edu/dining for more information.

Services for Students with Disabilities

Duke University is prepared to make reasonable accommodations to allow students with disabilities full participation in the same programs and activities available to students without disabilities. The Student Disability Access Office (SDAO) assists students with disabilities who are enrolled in Trinity College and Pratt School of Engineering. In order to receive consideration for reasonable accommodations under Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990 (ADA) and the ADA Amendments Act of 2008, a student must have a physical or mental impairment that substantially limits one or more major life activities. Substantially limiting refers to an impairment that prevents an individual from performing a major life activity or significantly restricts the condition, manner, or duration under which an average person can perform a major life activity.

Students requesting accommodations under the provisions of the ADA (e.g., academic, housing) must contact the director, Student Disability Access Office, at (919) 668-1267, to explore possible coverage. Students with medical conditions not covered under the provisions of the ADA and the ADA Amendment Act may wish to contact Duke Student Health Service at (919) 684-3367 for further information.

In the interest of providing reasonable accommodations under the Americans with Disabilities Act, Trinity College and Pratt School of Engineering will accommodate students who have a documented disability that prevents them from carrying a full course load. For these students, provided they are able to function academically, an underload/part-time course load will be authorized by the respective student’s academic dean upon the recommendation of the director of the Student Disability Access Office. Students so authorized (and for as long as they continue to enroll in a course underload) are exempted from meeting normal continuation requirements.

Students who wish to petition a reduced course load (fewer than four courses) prior to the beginning of a semester must have their request reviewed and approved by the SDAO prior to the beginning of the semester. These students must pass at least five of six consecutive courses while on a course underload.

Students who wish to petition a part-time course load (fewer than three courses) must have their request reviewed and approved by the SDAO prior to the beginning of the semester. These students must pass at least three of four consecutive courses taken while enrolled on a part-time basis.

Failure to meet this standard of academic performance will result in a withdrawal for academic reasons. Students approved for a part-time course load are eligible for financial aid in accordance with federal, state, and university guidelines. Students approved for a part-time course load are also eligible for university housing. All students accommodated under this policy must have their request reviewed prior to the beginning of each semester and are expected to return to full enrollment when/if their health or physical condition improves sufficiently. For further information regarding this policy, please contact the director, Student Disability Access Office, at (919) 668-1267. For other academic assistance available to all Duke undergraduate students, see the section on the Academic Resource Center on page 68.

The vice-president for institutional equity is the designated compliance officer for the Americans with Disabilities Act of 1990 (ADA), the ADA Amendments Act of 2008, and the Rehabilitation Act of 1973. The compliance officer can be reached at (919) 684-8222. Section 504 of the Rehabilitation Act states: “No qualified [disabled] person shall, on the basis of [disability], be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity that receives benefits from federal financial assistance.” (Appendix II, section 51.51(a))
Student Organizations

Duke Student Government

The Duke Student Government (DSG) is the voice of the undergraduate student body of Duke University. DSG is responsible for articulating undergraduate student thought on issues relevant to the university and for working to improve the educational process and university environment. The working philosophy of DSG is that students have the right to participate in the university’s decision-making process on matters that affect the student body. Coordinating the efforts of individuals and organizations, DSG lobbies university administrators on practices and policies which govern all facets of life at Duke.

DSG offers the opportunity for students to have input in university planning and policy development through the legislature, through university-wide committees, and through many unique student services. DSG's services seek to aid every undergraduate during his/her Duke career. For more information, see the website at http://dsg.oit.duke.edu.

DukeGroups

Duke University has approximately 370 student organizations, which foster student interaction and exchange, exploration of a variety of interest areas, understanding of the principles of organizational structure and management, and development of valuable collaboration, leadership, and communication skills. Student organization information is housed in the DukeGroups database at http://www.dukegroups.com.

Cultural and Social Organizations

The scope of the more than 300 student organizations is suggested by a partial listing of their names: Alpha Phi Omega service fraternity, Black Student Alliance, Baptist Student Union, Cheerleaders, International Association, Duke Ice Hockey, Outing Club, Sailing Club, Model United Nations Club, Photography Group, and the NC Rural Health Coalition. There are thirty-five nationally affiliated Greek chapters on Duke’s campus. About 37 percent of undergraduates are Greek-affiliated; more than 40 percent of women belong to sororities and nearly 30 percent of men are fraternity members.

Many opportunities are provided on campus in the areas of music and drama. The Chorale, United in Praise, Chapel Choir, Wind Symphony, Marching Band, Symphony Orchestra, and Collegium Musicum are examples of musical organizations. Duke Drama provides opportunities for nondrama majors to perform established and experimental drama; Hoof ‘n’ Horn presents musical comedy; Karamu performs drama related to the black experience.

Several academic departments sponsor organizations and programs for students with special academic or professional interests. There are more than twenty academic department majors unions on campus. There are also academic and leadership honorary societies.

Media

*The Chronicle*, the campus newspaper, publishes four issues weekly and is a separate not-for-profit organization. A humor magazine (Carpe Noctem), a literary magazine (the Archive), a science magazine (Vertices), a photography magazine (Latent Image), a journal of campus news and opinion (Duke Blue), and Eruditio, a social science journal, are published on a regular basis by students. In addition, a comprehensive yearbook, the Chanticleer, is produced each year. These publications are under the direction of the Undergraduate Publications Board, which chooses the editors and business managers and reviews the financial budgets. The DukEngineer, the official student magazine of Pratt School of Engineering, appears twice each year and contains articles on technical and semitechnical topics as well as other matters of interest to the school. *VOICES* magazine, published by the Women’s Center, addresses issues of gender, ethnicity, and sexual orientation. Additionally, there are a number of independent publications on a variety of topics published by students and distributed on campus. WXDU 88.7 FM is the student-managed and programmed radio station, broadcasting to the Duke and Durham communities. Duke Student Broadcasting (formerly Cable 13) is operated by students and produces programs that are broadcast online.
Intercollegiate Athletics

The Athletic Department fosters intercollegiate athletics by striving for excellence and by providing the best possible framework within which highly accomplished student athletes can compete. The department has a dual responsibility to provide a high-quality athletic program and environment so that all students have the opportunity to compete to the fullest extent of their abilities. Duke is a member of the National Collegiate Athletic Association (NCAA) and the Atlantic Coast Conference (ACC). As of July 1, 2013, the ACC consists of Boston College, Clemson University, Duke University, Florida State University, Georgia Institute of Technology, University of Maryland, College Park, University of Miami, The University of North Carolina at Chapel Hill, University of Notre Dame, North Carolina State University, University of Pittsburgh, Syracuse University, University of Virginia, Virginia Polytechnic Institute and State University, and Wake Forest University.

The intercollegiate program for men includes football, soccer, basketball, cross country, swimming, fencing, wrestling, indoor and outdoor track, baseball, golf, tennis, and lacrosse. The women’s athletic program provides intercollegiate competition in basketball, fencing, field hockey, golf, lacrosse, soccer, swimming, tennis, volleyball, rowing, indoor and outdoor track, and cross country. Freshmen may participate on all varsity teams.

The director of athletics and associate director of athletics provide departmental leadership and coordinate all athletic policies with the University Athletic Council. The council consists of representatives from the undergraduate student body, the faculty, the administrative staff, the trustees, and the alumni. The council meets with the director of athletics periodically during the school year. The chair of the council is the official university representative at national and conference athletic meetings.

University Regulations and the Disciplinary Process

Duke University has high expectations for students’ scholarship and conduct. Each student is subject to the rules and regulations of the university currently in effect, or which are put into effect from time to time by the appropriate authorities of the university. At the same time, the individual is responsible for decisions and choices within the framework of the regulations of the community, as Duke does not assume in loco parentis relationships.

Students, in accepting admission, indicate their willingness to subscribe to and be governed by these rules and regulations. They acknowledge the right of the university to take disciplinary action, including suspension or expulsion, for failure to abide by the regulations or for other conduct adjudged unsatisfactory or detrimental to the university community.

Responsibility for prescribing and enforcing rules and regulations governing student conduct rests ultimately with the Board of Trustees of Duke University and, by delegation, with administrative officers of the university. In the undergraduate schools, and in the university as a whole, many of these rules have been established over the years by cooperative action between students, faculty, and administrative officers. Representative student organizations, such as student governments and conduct boards, and more recently, community-wide bodies of students, faculty, and administrators, have initiated proposals for policies and rules necessary to assure satisfactory standards in academic and nonacademic conduct. These proposals have been accepted by university officers and have become a substantial, if not all-inclusive, body of rules governing student life at Duke. For current regulations, refer to the The Duke Community Standard in Practice: A Guide for Undergraduates.

Students in Trinity College of Arts & Sciences and in Pratt School of Engineering constitute an undergraduate community whose members are subject to the rules and regulations of the Undergraduate Community. Violations of any published policy by individuals and residential or nonresidential cohesive units may be adjudicated under the procedures set forth in the The Duke Community Standard in Practice: A Guide for Undergraduates.

Student Obligations and Requirements

Students are expected to meet academic requirements and financial obligations, as specified elsewhere in this bulletin, in order to remain in good standing. Nonacademic rules and regulations must be observed also, including accepting responsibility for behavior that is disruptive or threatening to the safety of self or others. Failure to meet these requirements may result in dismissal by the appropriate officer of the university.
Admission

Principles of Selection

James B. Duke, in his Indenture of Trust, requested that “great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination, and application evincing a wholesome and real ambition for life.” Therefore, in considering prospective students, Duke University looks beyond the basic characteristics of academic competence possessed by the majority of applicants. It seeks, regardless of race, color, religion, national and ethnic origin, gender, handicap, sexual orientation, or age, not only evidence of intellectual promise and maturity of judgment, but also a sense of life beyond the classroom. Often, this is expressed in the form of special talents and accomplishments; it is seen consistently in a student’s determination to make creative use of the opportunities and challenges posed by Duke University.

Requirements for Application

As there are occasionally changes in admission policies or procedures after the printing deadline for the Bulletin of Undergraduate Instruction, candidates are urged to consult the Duke Admissions website at admissions.duke.edu for specific admissions information, dates, and policies.

Degree Status

Although there are no inflexible requirements as to subject matter, students are urged to choose a broad and challenging high school program. Candidates for admission should present a minimum of four years of English and at least three of mathematics, natural sciences, a foreign language, and social studies. Applicants to Pratt School of Engineering are strongly advised to take four years of mathematics and four years of science, including physics and chemistry. Calculus is a prerequisite for admission to Pratt School of Engineering. All candidates for first-year standing must complete either the SAT Reasoning Test, or the ACT with the optional writing portion. Those students who choose to take the three-part SAT should also complete two SAT Subject Tests. Applicants to Pratt School of Engineering should take one SAT Subject Test in mathematics (level 1 or 2). Students wishing to continue study or gain course exemption in a foreign language should complete an SAT Subject Test or Advanced Placement exam in that language. Even though the foreign language SAT Subject Test is not required for admission, we strongly recommend that students take the test before leaving high school. Students should refer to the Duke Admissions website at admissions.duke.edu and follow the appropriate undergraduate admissions links for the most recent information on SAT Subject Test requirements for incoming students. The SAT Reasoning and Subject Tests should be taken by October of the senior year for Early Decision applicants and by January of the senior year for Regular Decision applicants. Students choosing to take the ACT will not be required to submit SAT Reasoning or Subject Test scores; however, the ACT will be used for admission only, not for placement or exemption. The ACT should be taken by October of the senior year for Early Decision applicants and by December of the senior year for Regular Decision applicants.
Nondegree Status

Summer Session

Persons who are or were at the time of leaving their home institutions in good standing in accredited colleges or universities may be admitted for summer study only by the director of the summer session. Students who are “on leave” or who have been involuntarily withdrawn from the university are not eligible to enroll in courses during summer session or fall and spring terms.

Continuing Studies

Admission as a continuing studies student at Duke is limited to adults who live in the Triangle area; Duke graduates; persons who will be moving into the area and plan to reside here for a substantial period of time, for family and work reasons; visiting college students desiring a course of study particular to Duke; and local high school seniors. These students are given academic counseling by the Office of Continuing Studies; they are subject to most of the regulations set forth for degree candidates. Students who are “on leave” or who have been involuntarily withdrawn from the university are not eligible to enroll as nondegree students through the Office of Continuing Studies. Because these students oftentimes are prohibited from being on the Duke campus, they should also understand that they may not enroll in any noncredit classes that meet on Duke’s campus.

Application Procedures

Degree Status

Information regarding applying for admission may be obtained online at the Duke Admissions website at admissions.duke.edu. A nonrefundable processing fee that is determined annually must accompany the first part of the application. Students may apply using either the Common Application or Universal College Application plus the Duke Student Supplement Form. The Common Application (www.commonapp.org) and the Universal College Application (www.universalcollegeapp.com) are available in secondary school guidance offices as well as online. The required Duke Student Supplement Form is available online at both websites or at the Duke Admissions website at admissions.duke.edu.

A personal interview is not required for admission, but it provides an opportunity to learn more about an applicant’s strengths and goals. All interviews are conducted by alumni volunteers, students who submit their Common Application by the Early Decision deadline (November 1) or the Regular Decision priority interview deadline (December 20) will be contacted by alumni on a first-come, first-served basis. While Duke makes every effort to interview all applicants who submit applications by these deadlines, interviews are not guaranteed.

Regular Decision

Candidates who wish to enter Duke as first-year students must submit a completed application no later than January 2 of their senior year in secondary school. Decisions are mailed from the university in early April, and accepted candidates are expected to reserve a place in the class by May 1.

Early Decision

Students for whom Duke is a clear first choice may apply for Early Decision. Candidates who apply for Early Decision are required to sign a statement confirming their commitment to enroll at Duke if they are admitted in the Early Decision process. Under this agreement, applicants are required to withdraw all applications to other colleges and universities as soon as they learn of their admission to Duke. Students may apply to only one school under a binding Early Decision plan. Duke reserves the right to withdraw the applications of students accepted to other schools under binding Early Decision plans. Secondary school counselors and parents are also asked to sign the Early Decision agreement. Students who are denied admission under the Early Decision program may not reapply for admission under the Regular Decision program.

Students applying for Early Decision must submit a completed application by November 1. The SAT Reasoning Subject Tests or the ACT examinations should be taken no later than October of the senior year. Early Decision applicants who have not completed their standardized tests may be deferred to Regular Decision. Applicants are notified of their status—admit, defer, or deny—by mid-December. Admitted students are expected to respond by January 5. The credentials of candidates who are deferred are considered along with candidates for Regular Decision. Deferred students are no longer bound by the Early Decision agreement and are free to accept offers of admission from other colleges and universities.
The Early Decision plan is designed to provide well-qualified students who know Duke is their first choice a means of indicating that commitment to the university and notification of a decision early enough to eliminate the necessity of applying to several colleges.

**Midyear Admission**

A midyear (January) admission program has not been offered to first-year students for a number of years and there are no current plans to reinstate one.

**Transfer Admission**

A limited number of transfer seats may be available and will vary from year to year. Prospective transfer students should refer to the Duke Admissions website at [admissions.duke.edu](http://admissions.duke.edu) for the most up-to-date information on the transfer process. Duke considers transfer applicants intending to enter Duke as sophomores or juniors. All Duke students, except those majoring in engineering, must meet the requirements for the Trinity College of Arts & Sciences curriculum in addition to the requirements of their selected major. For most transfer students, this will require up to six semesters at Duke to complete. Candidates must submit completed application forms, official transcripts of all work completed at other accredited colleges, high school records, scores on the SAT or ACT, and employment records if there has been an extended period of employment since graduation from secondary school. See the section on transfer credit on page 38.

Transfer applicants submit a completed application by March 15, learn of their decisions in mid-May, and must respond to the university by June 1.

**Nondegree Status**

**Summer Session**

Registration forms and schedules of courses may be obtained by writing the Office of the Summer Session, Box 90059, Duke University, Durham, NC 27708-0059 or by calling (919) 684-2621. An application fee is required.

**Continuing Education**

Applications may be obtained from the Office of Continuing Studies and must be returned to that office, accompanied by the application fee, by August 1 for the fall semester, by December 1 for the spring semester, by April 15 for Summer Session, and by June 1 for Summer Session Term II.

A certain grade point average over four courses must be attained before a nondegree student may apply for degree candidacy. More detailed information on nondegree coursework through continuing education is available from the Office of Continuing Studies, Box 90700, Duke University, Durham, NC 27708-0700.

**Readmission of Former Students**

All undergraduate students (including those of The Pratt School of Engineering) applying to return to Duke from a leave of absence, withdrawal, dismissal, or suspension must apply directly to the Office of Student Returns located in Trinity College Office of the Academic Deans. For additional information, visit the Office of Student Returns website at [http://trinity.duke.edu/osr](http://trinity.duke.edu/osr). Also see the section, “Changes in Status” on page 50.
Financial Information

Tuition and Fees

No college or university can honestly state that an education at the college level is inexpensive. Fees paid by students cover less than half the cost of their instruction and the operation of the university. Income from endowment and contributions from alumni and other concerned individuals meet the balance and assure each student the opportunity to pursue an education of unusually high quality.

Students are urged to give their attention first to the selection of institutions that meet their intellectual and personal needs, and then to the devising of a sound plan for meeting the cost of their education. This process will require an in-depth knowledge of both the university’s financial aid program and the resources of the student’s family. Information describing in detail the various forms of financial aid may be obtained from the Office of Undergraduate Financial Aid website at financialaid.duke.edu.

Estimated Expenses

The figures in this section are projections and are subject to change. Certain basic expenditures, such as tuition, room, and board, are considered in preparing a student’s budget. These necessary expenditures, with a reasonable amount allotted for miscellaneous items, are shown below:

<table>
<thead>
<tr>
<th></th>
<th>Academic Year, 2014-2015</th>
<th>Two Summer Terms, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(two semesters)</td>
<td>(one semester equivalent)</td>
</tr>
<tr>
<td>Tuition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trinity College</td>
<td>$45,800</td>
<td>$12,042-14,050</td>
</tr>
<tr>
<td>Engineering</td>
<td>$45,800</td>
<td>$12,042-14,050</td>
</tr>
<tr>
<td>Residential Fee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Room</td>
<td>$8,610-10,368</td>
<td>$4,312</td>
</tr>
<tr>
<td>Double Room</td>
<td>$6,526-7,848</td>
<td>$3,234</td>
</tr>
<tr>
<td>Triple Room</td>
<td>$5,810-6,998</td>
<td>$2,842</td>
</tr>
<tr>
<td>Food (projections include a meal plan service fee and NC tax surcharge)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% board plan</td>
<td>$6,839</td>
<td>$2,259</td>
</tr>
<tr>
<td>75% board plan</td>
<td>$5,865</td>
<td>$1,425</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>$1,300</td>
<td>$650</td>
</tr>
<tr>
<td>Student Health Fee</td>
<td>$684</td>
<td>$218.50</td>
</tr>
</tbody>
</table>

1. The figures in this section are projections and are subject to change.
It should be realized that additional expenses will be incurred that will depend to a large extent upon the tastes and habits of the individual. The average undergraduate student, however, can plan on a budget of approximately $64,077. The budget estimate for the summer (two terms, one semester equivalent) is $18,404. These budgets represent most student living expenses except for cable, telephone, parking, travel costs, loan fees, and major clothing purchases.

Fees and Deposits for Fall and Spring

On the first bill from Duke, students (including transfer students) are required to pay a nonrefundable registration fee of $100 which includes a one-time transcript processing fee.

Late Registration

Continuing students who fail to register during the registration period must pay a fee of $50 to the bursar.

Part-Time Students

In the regular academic year, students who, with permission, register for no more than two courses in a semester will be classified as part-time students. Part-time students will be charged at the following rates: one course, $5,723; half course, $2,862; quarter course, $1,431. Registration for more than two courses requires payment of full tuition. Graduate students registered for undergraduate courses will be assessed three units for nonlaboratory courses and four units for laboratory courses. Men and women in nondegree programs who are being considered for admission to degree programs, as designated by the Office of Continuing Education, pay fees by the course whether the course load is one, two, or three courses.

Auditing one or more courses without charge is allowed for students paying full fees, provided that the consent of the instructor is obtained. Students who are enrolled for one or two courses may audit other courses by payment of $535 for each course audited. With the consent of the appropriate instructor and the director of continuing education, graduates of Duke may audit undergraduate courses for the above payment per course.

Fall and Spring Student Bills

The bursar’s office prepares students’ bills for tuition and fees. Tuition and fees are due before the start of each term. Fall 2014 charges are due on August 1, 2014; Spring 2015 charges will be due January 2, 2015. Students applying for financial aid should complete that process by the assigned due date.

Bills are available electronically on ACES. Students will receive an e-mail notice each time a new bill is ready for review. Students may view bills and up-to-date student account history on ACES. To grant permission to a parent or third party to access bills and student account history, please click on the “Guest Access” link on ACES.

Payment

Students are encouraged to pay by e-check, a fast and convenient method for paying their bill. To pay by e-check, visit ACES or www.bursar.duke.edu and click the DukePay icon. Payment also may be mailed to the address listed on the bill.

Payment Plan

Duke partners with Tuition Management Systems (TMS) to provide a payment plan for current term charges. Students will receive payment plan details and enrollment information from TMS in late May.

Additional reference information regarding student accounts is available at www.bursar.duke.edu. Students may also contact the bursar’s office for questions regarding their student account. E-mail bursar@duke.edu, call (919) 684-3531, or fax (919) 684-3091.

Restrictions on Past Due Accounts

As noted above, tuition and fees are due before the start of each term. If a student's account becomes past due, a late payment penalty charge (not to exceed 1.25 percent of the past due balance from the prior bill) will be assessed.
on subsequent bills. If the account remains unpaid, a student will not be allowed to register for future semesters and may be administratively withdrawn from Duke. As long as the account is past due, a student will not have access to academic transcripts, be able to have academic credits certified, or receive a diploma at graduation. If the account remains outstanding after a student’s departure from Duke, it may be referred to a collection agency and reported to a credit bureau.

**Fees for Study Abroad**

Students who register to study abroad on programs administered by institutions other than Duke University will pay the tuition and fees of the administering institution. There will be a fee of $4,580 per semester, payable to Duke University, to maintain a student's enrollment at Duke. Students receiving financial aid will receive aid based on revised costs from administering institution.

**Fees for Courses**

Additional fees are charged for certain physical education activity and applied music courses. For specific charges, consult the Office of the Bursar. For students receiving financial aid, all fees are included in aid evaluation.

**Tuition and Fees for Summer Session**

Tuition for undergraduates is $2,008 for each half-credit course, $1,004 for each quarter-credit course, and $6,024 for each 1.5-credit course program offered at the Marine Laboratory. A one-credit course is charged at the rate of $3,012 if there is no associated lab. One-credit courses with a weekly lab of eight or more hours is charged at the rate of $4,016.

Tuition for graduate masters students taking an undergraduate course will be charged at the graduate masters summer tuition rate. A graduate PhD student taking an undergraduate course that will apply toward their graduate degree will be charged at the graduate PhD summer rate. If the course will not be considered a part of the student's graduate degree program, undergraduate rates apply as described above.

**Health Fee**

All Duke students and all full-time non-Duke students are required to pay $109.25 per term. All students at the Marine Laboratory are required to pay $91 per five-week registration period.

**Music Fee**

A fee of $162 will be charged for Music 101. A fee of $324 will be charged for Music 103 to 108. A fee of $648 will be charged for Music 203 to 208.

**Auditing Fees**

Students carrying less than a full course program may be granted permission by the instructor and the director of summer session to audit one nonlaboratory course except a physical education and dance activity course, a studio art course, an applied music course, an independent study course, tutorials, and foreign programs. Regular deadlines apply. Courses may not be changed from credit to audit (or vice versa) after the Drop/Add period. For arts and sciences offerings, the auditing fee is $302 per course. Professional school course audit policies may differ.

**Payment of Tuition and Fees**

The Office of the Bursar will prepare bills in April, May, and June for current Duke students enrolled for Summer Session. April and May bills are due on the fifteenth of the following month. June bills are due on the first business day of August. Please consult the Office of the Bursar’s website for a complete billing schedule ([www.bursar.duke.edu](http://www.bursar.duke.edu)). Students will also be able to view their bills on the web. Problems meeting these deadlines should be discussed with the Office of the Bursar prior to the start of the term. Failure to meet deadlines may have implications for fall enrollment.

The Summer Session Office will enclose a statement of charges with the confirmation of registration letter sent to all visiting students, Duke graduates, and incoming Duke first-year students. Payment for term charges will be due on the designated due dates.

Summer Session retains the right to withdraw students from classes if they never attend, have not paid tuition and fees, or if they have failed to clear with the bursar, by the end of the Drop/Add period. Those withdrawn for these reasons will be billed the health fee and an administrative withdrawal fee of $150 per course. Attendance in classes after the first three days of the term obligates the student for the full tuition and fees for the course.
Students who, subsequent to withdrawal, clear with the Office of the Bursar may, with written permission of their academic dean, be reinstated in their classes as originally registered and receive regular grades. The administrative withdrawal fee will stand and the student will be liable for full tuition and fees.

Transcripts

Requests for transcripts of academic records can be made via ACES, Duke’s online student records system. Transcripts requested via ACES will normally be processed the next business day. (See the Office of the University Registrar’s website at http://registrar.duke.edu, for access to ACES.) Former students who do not have access to ACES may request transcripts by submitting a signed request form directly to the Office of the University Registrar in person, by mail, or by scanned e-mail attachment. All requests must be signed by the student. Transcripts will be withheld for outstanding financial obligations.

Duke Employees

With the permission of their supervisors, employees may, through the Office of Continuing Studies and Summer Session, take up to two courses for credit or audit during any one semester or one course during a summer term. A formal application for credit coursework must be submitted by August 1 for the fall semester, December 1 for the spring semester, April 15 for Term I of the summer session, or June 1 for Term II of the summer session. Only employees desiring to continue in the fall semester should apply for admission during the summer. Employees desiring to take a course for credit only during the summer should complete the summer session application/registration form.

Many employees may be eligible to receive an Employee Tuition Benefit to enroll in regular university classes. Employees with at least two years of continuous service may be eligible to receive an Employee Tuition Benefit to enroll in regular university classes for academic credit. The Employee Tuition Assistance Program provides reimbursement of tuition for a maximum of two classes per semester (limit six semester classes per calendar year) up to $5,250 per calendar year for full-time employees. The employee’s work supervisor must confirm the coursework is directly related to the individual’s work assignment or future career development at Duke. For additional information and an application to participate in the Tuition Assistance Program, visit http://www.hr.duke.edu/benefits/education/tuition_assistance/index.php. Staff members of continuing studies and summer session are available to advise Duke employees on educational matters by calling (919) 684-2621.

Living Expenses

Housing for Fall and Spring

In residence halls for undergraduate students the housing fee for a single room ranges from $8,610 to $10,368 for the academic year; for a double room, the fee ranges from $6,526 to $7,848; for a triple room, the fee ranges from $5,810 to $6,998 per occupant. Apartment rates for upper class students range from $6,096 to $7,862 per occupant.

Detailed information concerning the student’s obligations under the housing license and the consequences of failure to comply are published in The Duke Community Standard in Practice: A Guide for Undergraduates.

Housing for Summer

For detailed information on types and costs of accommodations available at Duke University for the summer session, e-mail housing@studentaffairs.duke.edu, call (919) 684-4304, or visit http://www.studentaffairs.duke.edu/hdrl.

Food and Other Expenses

Duke Dining Services and Duke University Stores operations are located on campus to serve the needs of the Duke community. The university identification card, known as the DukeCard, can be used to gain access to prepaid accounts and make purchases in many Duke University facilities.

The first-year student dining program is composed of two parts:

1. The figures contained in this section are projections and are subject to change prior to the beginning of the fall term.
• Board meals: Twelve prepaid all-you-can-eat-meals per week. (Five breakfasts, five out of seven dinners and two brunches) at The Marketplace at East Union.

• Dining plan declining balance “points” to be used at any dining location on campus, convenience stores, concessions at athletic events, sodas and snacks from vending machines, and late night meal delivery from approved local off-campus vendors.

The cost of the First Year Plan is $2,531 per semester, plus a $75 dining fee per semester and 7.5 percent NC tax surcharge, for the twelve-meal plan, and one of three “points” plans (Plan H or I) which range from $419 to $484. Participation in the First Year Plan is required of all first-year students who reside on East Campus.

Upper class students who live in the residence halls are required to participate in one of five dining plan debit accounts that allows access to all dining locations. The five plan levels (Plan A-Plan E) range from $2,002 to $3,111 per semester, plus a $75 dining fee and 7.5 percent NC tax surcharge per semester. Upper class students who live in Central Campus apartments are also required to participate in the dining plan, but may choose to do so at the lower minimum requirement of Plan J ($1,416 plus a $75 dining fee and 7.5 percent NC tax surcharge, per semester).

Nonresident students are not required to participate in the dining plan; however, Plan F, at a cost of $656 and a $75 dining fee and 7.5 percent NC tax surcharge per semester is offered as an option.

An optional summer dining plan is provided in three plan levels ranging from $344 to $1,110 per summer term.

Students may also purchase a Flexible Spending Account (FLEX) that can be used to purchase any goods or services from Duke Dining, Duke Stores, and other campus operations. FLEX is optional and may be opened with as little as $25. Additional funds may be deposited to either the FLEX or dining plan debit account at anytime.

Information regarding these accounts is sent to matriculating students. For more information about campus retail and food facilities, see the chapter “Campus Life and Activities” on page 77 in this bulletin.

**Fall and Spring Refunds**

In the case of withdrawal from the university, students or their parents may elect to have tuition refunded or carried forward as a credit for later study according to the following schedule:

<table>
<thead>
<tr>
<th>Withdrawal</th>
<th>Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before classes begin</td>
<td>Full amount</td>
</tr>
<tr>
<td>During first or second week</td>
<td>80%</td>
</tr>
<tr>
<td>During third, fourth, or fifth week</td>
<td>60%</td>
</tr>
<tr>
<td>During sixth week</td>
<td>20%</td>
</tr>
<tr>
<td>After sixth week</td>
<td>None</td>
</tr>
</tbody>
</table>

Tuition charges paid from grants or loans will be restored to those funds on the same pro rata basis and will not be refunded or carried forward. In the event of death, a full tuition, fees, and residence hall refund will be granted. In case of a call to military service, a full semester’s tuition, full purchase price of textbooks from the university’s book store, and the pro rata amount of the room charge will be refunded. The outstanding balance of the food service plan will be refunded in case of military service or death.

In the case of dropping special fee courses (e.g., music, art, golf), or of part-time students dropping audit courses, a full refund will be granted students during the Drop/Add period. Students changing status to part time are required to request permission at the time of preregistration; therefore, no refunds are granted during the Drop/Add period or subsequently for changes which involve carrying less than a full-time load.

Because Duke University participates in the Title IV federal aid programs, it follows federal guidelines with respect to the refund and repayment of these funds. All first-time students who withdraw within 60 percent of the enrollment period will have their charges and financial aid adjusted according to the federal regulations. Additional information regarding this procedure may be obtained from the Office of Financial Aid.
Summer Administrative Withdrawal Charges and Refunds

Drop or Administrative Withdrawal Charges

Students who will not be attending a summer term or course for which they have registered must officially drop the course(s) prior to the beginning of the term whether or not they have paid tuition and fees. (See the section on course changes for the summer term in the chapter “Academic Procedures and Information” on page 35.) Students who fail to drop the course(s) prior to the beginning of the term will be charged $150 per course.

Refunds (Except Study Abroad Programs)

Students who will not be attending a summer term or course for which tuition and fees have been paid are eligible for refunds following these policies:

- There is a financial obligation of full tuition and fees if the student withdraws from a course(s) or withdraws from the term after the third day.
- There is a financial obligation of $150 per course if the student officially drops a course(s) or withdraws from the term during the first three days. The health fee is not refunded. (There is no charge for Drop/Adds that result in no change in course load in the same term.)
- Full tuition and fees are refunded if the student officially drops a course(s) or withdraws from the term before the first day.

Student Aid

Duke University is strongly committed to its financial aid program and, for the four years of undergraduate enrollment, will meet 100 percent of the demonstrated need of each eligible admitted US citizen or eligible noncitizen. The university’s aid program includes both merit and need-based scholarships, work-study, and all federal grant and loan programs. Admissions decisions for domestic students are made without reference to a student’s application for aid, and students needing assistance are strongly encouraged to apply for financial aid at the same time as for admission. Students awarded financial aid will be notified at the same time they are offered admission.

For the student with demonstrated need, the net cost of an education at Duke University will generally be no greater than that for attendance at any private college or university. It is the intention of the Office of Undergraduate Financial Aid to set each award at a level consistent with a family’s ability to meet the costs of attending Duke University. This will be done by taking into consideration the contribution that can reasonably be expected from the student and the family.

Financial Aid for Entering Freshmen

Candidates should initiate their application for financial aid concurrently with their application for admission. Instructions outlining the specific requirements and deadline dates will accompany application materials. To receive institutional funds, two forms must be submitted, the Free Application for Federal Student Aid (FAFSA) to the federal processor and the PROFILE application to the College Scholarship Service (CSS). Students applying for federal loans and grants and not Duke University aid need to complete only the FAFSA. If a student’s parents are divorced or separated, the custodial parent must submit the PROFILE and FAFSA. The noncustodial parent must submit the CSS Noncustodial Profile Application. The College Scholarship Service will be collecting the noncustodial parent’s information through an online process; details will be e-mailed to applicants by CSS immediately following receipt of the PROFILE application. Students will be asked to submit copies of their and their parents’ Federal Income Tax Returns from the most recent year (all schedules and W2s must be included). Early Decision applicants must submit copies of their tax information directly to the Office of Undergraduate Financial Aid. Regular Decision applicants are required to submit their tax information directly to the College Board for processing by the Institutional Documentation Service (IDOC). Students will receive information from the College Board about the IDOC process. All tax information is then sent to Duke electronically by the College Board.

International students interested in obtaining need-based financial aid must apply for financial aid at the time of admission to be eligible to receive need-based aid in any year of undergraduate study. To apply, students must

1. This policy does not apply to study abroad program students.
complete the International CSS Profile online. A Statement of Foreign Earnings for both parents or a copy of the most recently completed tax return for both parents must be submitted directly to the Duke Office of Undergraduate Financial Aid. For further information about financial aid for international students, visit our website at financialaid.duke.edu/undergraduate-applicants/apply-aid.

Renewal of Financial Aid after the Freshman Year

Each year students must file an application for renewal of need-based financial aid. This application must include a new PROFILE form, a new Free Application for Federal Student Aid, a Noncustodial Parent’s Profile, if appropriate, and a copy of all pages, including schedules and attachments, of the parents’ and student’s current federal income tax return. The deadline for the receipt of all application materials by the Office of Undergraduate Financial Aid is May 1. All qualified students may receive need-based aid for up to nine semesters (eight semesters fall and spring plus two summer terms).

To have financial aid renewed, a student must meet the continuation requirements outlined in the chapter “Academic Procedures and Information” on page 35 as appropriate. Students not qualifying for financial aid due to their inability to meet these requirements may appeal directly to the Office of Undergraduate Financial Aid. Students holding merit scholarships are required to maintain an average considerably higher than the minimum required for need-based financial aid recipients. Specific details regarding retention standards will be provided to scholarship winners.

Summer School Financial Aid

Financial aid is available for each summer session. Students may choose to attend two summer sessions as part of a ninth semester of aid eligibility. Interested students can obtain more information about summer financial aid, budgets, and eligibility at financialaid.duke.edu/current-undergraduates/summer-school.

Types of Financial Aid

Gift scholarships or grants, long-term loans, and employment are integral parts of the financial aid program, and some portion of the aid offered an undergraduate is normally in each of these forms.

The work-study opportunity and loan(s) offered as financial aid are considered to be the self-help portion of the award. The standard aid package at Duke provides that the first $2,200 to $7,200 of each student’s need be awarded in the form of self-help funds. Funds awarded in excess of this amount will generally be grant funds. This combination of university grant funds and opportunities for self-help enables Duke to extend its resources to a larger number of deserving students.

Duke has a number of scholarships based on merit that are available from personal endowments and corporations. Most are intended for entering freshmen and require no separate application. These scholarships may be based on achievement in a particular field or on an outstanding overall record.

Merit Scholarships

The Office of Undergraduate Scholars and Fellows is the home for Duke’s merit scholarship programs. Scholarship holders may apply for need-based aid for any need not met by their scholarship. The scholars are chosen by faculty-driven committees on the basis of the Duke application. All the scholarships in these programs are renewable for eight semesters of undergraduate study for those students meeting the following academic standards: renewable merit scholarships will be continued for freshmen who complete the first year of studies with a 3.0 average or higher. Scholars are required to be enrolled in four full academic credits each semester. Upper class students must complete each academic year with a 3.2 average or higher. Students failing to meet the required average will be put “on review.” Thereafter, students on review must receive a 3.2 average each year to keep the scholarship or fellowship. If a scholar is ineligible to return to Duke for academic reasons, or is suspended or dismissed for disciplinary reasons, he or she will lose the scholarship. Please visit ousf.duke.edu.

Alumni Endowed Scholarship. An Alumni Endowed Undergraduate Scholarship is awarded annually to a Duke applicant who demonstrates superior academic ability, leadership potential and financial need. These awards are given to children or grandchildren of alumni and are renewable annually for those meeting the stated requirements. Each scholar receives tuition, room, board, and mandatory fees.

Angier B. Duke Memorial Scholarships, competitively awarded on the basis of academic merit, have been established to encourage the intellectual achievement of men and women by recognizing those who possess outstanding academic and leadership abilities. Candidates are selected on the basis of intellectual performance,
creative talent, and promise of being eventual leaders in whatever field of endeavor they choose. The scholarship is a four-year program (eight semesters), and a student’s continuation in the program is contingent upon good academic performance. All scholarship holders receive full tuition, room, board, and mandatory fees. All Angier B. Duke Scholars are eligible to participate in a six-week summer study program at Oxford University in England. Under the Oxford program the scholarship pays tuition, single room accommodation, full board, designated excursions for all scholars, and an allowance for transatlantic air fare. Those choosing not to participate in the Oxford program are eligible for a $2,500 grant for an approved independent project. At least one of the four years of the scholarship could be used abroad on an approved program. AB Duke scholars are eligible for research grants up to $5,000.

**The Benjamin N. Duke Scholarship Program.** As part of the Benjamin N. Duke Scholarship Fund, these awards recognize and encourage leadership potential and community involvement of students from North and South Carolina. Ten scholarships, valued at full tuition, room, board, and mandatory fees are awarded annually. Additionally the students participate in a domestic and international summer of service.

**Karsh International Scholarships** are awarded to outstanding students from around the world. They are strictly need-based scholarships and are equal to the demonstrated need of the student. Additionally they fund three summers of research or research-service opportunities in Durham, throughout the United States or abroad, including in the home country.

**The MasterCard Foundation Scholarships.** Five students from sub-Saharan Africa annually are awarded this prestigious scholarship. It covers full cost for eight semesters of undergraduate study at Duke University and includes opportunities for summer study and internships in Africa. Duke is one of a number of global partners with the MasterCard Foundation in educating young Africans who are committed to giving back to their communities and countries.

**Reginaldo Howard Scholarships** are awarded annually to freshmen of African heritage who demonstrate academic excellence and outstanding leadership potential. Five scholarships equal to full tuition, room, board, and mandatory fees are awarded each year. Scholarships are available for the eight semesters of undergraduate study as long as the student maintains the academic average specified for renewal.

**Robertson Scholars.** Half of the scholars matriculate at The University of North Carolina at Chapel Hill, and half at Duke University. All exhibit exceptional leadership potential, commitment to public service, and proven interest in the diversity of peoples and cultures both within the United States and beyond its borders. The program is designed so that every Robertson Scholar will have dynamic intellectual homes at two superb universities—Duke and UNC-Chapel Hill. Robertson scholars will receive full tuition, room, board, and mandatory fees at UNC-Chapel Hill or Duke, summer community-building and enrichment opportunities in the United States and abroad, support for research and related travel, and a top-of-the-line laptop computer.

**Trinity Scholarships.** Awarded to North Carolinians of exceptional ability, these scholarships are named to honor the fact that Duke University was originally named Trinity College. Trinity scholarships provide each winner an award equal to the value of tuition, fees, room, board, and the cost of a summer program.

**The University Scholars Program** is an interdisciplinary, intergenerational community of undergraduate, graduate, and professional school scholars. Undergraduate University Scholars are exceptional students who have also demonstrated, through official financial aid applications, that they need scholarship support to achieve their academic ambitions. Undergraduate University Scholars receive a full-tuition scholarship, room, board, mandatory fees, assistance for additional demonstrated need, and support for a summer abroad or research project. There is no separate application; interested Duke applicants are urged to file all financial aid forms as early as possible.

**Gift Scholarships**

The following are among the named gift scholarships offered through Duke University.

**W. N. Reynolds Memorial Scholarships.** Recipients of these awards are students with outstanding ability and/or need who show promise of constructive leadership. In considering candidates for the awards, consideration will be given in the following order: (1) children of employees of R. J. Reynolds Tobacco Company or any of its affiliates or subsidiaries; (2) children of families residing in Forsyth County, North Carolina; and (3) other candidates who are
residents or natives of North Carolina. There are a number of awards available for each freshman class with a minimum value of $500.

**United Methodist Scholarships.** A number of United Methodist Scholarships are available on a basis of demonstrated need to Methodist students who have given evidence of leadership in their local Methodist Youth Fellowship groups.

**Alice M. Baldwin Scholarships.** One or more of these scholarships, varying in amount, are awarded to women who are rising seniors in Trinity College of Arts & Sciences on the basis of scholarship, character, leadership, and need.

**Panhellenic Scholarship.** A scholarship is awarded to an upper class woman in Trinity College of Arts & Sciences on the basis of scholarship, character, leadership, service, and need.

**J. A. Jones Memorial Scholarships,** sponsored through the Jones Fund for Engineering, are awarded to engineering students whose outstanding academic and personal qualifications suggest that they will become leaders in a technological society. The awards may be up to $8,000 based on merit criteria set by the Pratt School of Engineering and financial need.

**Robert H. Pinnix Scholarships** are awarded annually to two upperclassmen enrolled in Pratt School of Engineering. The award is based upon demonstrated ability, excellence in engineering, and financial need.

**Richard Miles Thompson Scholarships** are awarded annually to two upper class students enrolled in Pratt School of Engineering. The awards are based upon academic merit and demonstrated financial need.

**The William O’Connor Memorial Scholarship.** This music scholarship of up to $2,500, established by the Mary Duke Biddle Foundation in honor of William O’Connor and in appreciation for his many years of service to the foundation, is awarded to student of a string instrument or organ.

**Air Force ROTC College Scholarship Program.** Students can apply for three-year scholarships during their freshman year and two-year scholarships during their sophomore year. Scholarships are available to qualified students who major in most fields, primarily scientific or engineering. The scholarships range from $15,000 up to full tuition, fees, and textbook reimbursement, and a monthly tax-free allotment.

**Army ROTC Scholarship Program.** All Duke students are eligible to apply for Army ROTC scholarships equal to full tuition. Awarded without regard to academic major, these grants pay a portion of tuition, fees, and textbook/equipment allowance of $900 in addition to providing a tax-free monthly stipend of $300-500 per month for ten months. Nonscholarship Advanced Course cadets also receive the $250-400 monthly stipend. Commissioned service, following graduation, can be either on active duty or with the reserve forces as determined by the Secretary of the Army. High school seniors must apply not later than November 1 of their senior year. Current Duke students can apply at any time. Additional information concerning Army ROTC scholarships is available from the professor of military science.

**Navy ROTC College Scholarship Program.** This program provides for up to four years’ tuition and textbooks, laboratory fees, and a monthly stipend. These scholarships, based upon academic achievement, leadership potential, and overall performance, can be awarded at any stage of the student’s college career through either a nationwide selection process or by the professor of naval science at the university. In addition, two other two-year scholarships are available to rising juniors: one leads to a career in nuclear power, and the other follows a summer attendance at the Naval Science Institute at Newport, Rhode Island. For further information on any of the above scholarship programs, contact the professor of naval science at (919) 660-3700.

**Kravis Scholarships.** The endowment, established in 1997, provides need-based support for disadvantaged students. Assistance is given to students enrolled in Trinity College of Arts & Sciences, with preference to African Americans. Kravis Scholars will receive financial aid for four years, which includes replacement of about one-half of the loan debt each year, and an award for one Duke-sponsored summer study abroad program.

**Gross Scholarship,** established in 2005, provides whole or partial scholarships to undergraduate students who are, or shall be at the time of receipt of the scholarship, enrolled in Trinity College of Arts & Sciences or Pratt School of Engineering at Duke University. Gross scholarship recipients will come from families with income below the
median of students receiving financial aid at Duke the previous year, using the same measurement standards applied by the Office of Financial Aid.

The Janet B. Chiang Memorial Scholarship Fund was created by the family and friends of Janet B. Chiang. An award is made annually to a student who has demonstrated strong leadership qualities and a strong interest in his or her Asian cultural heritage.

Emma A. Sheafer Drama Scholarships. These scholarships are awarded to talented prospective drama students who would not be able to attend Duke University without financial assistance. Awards shall be made to a single individual or to several qualified students in need, with first preference to students from the New York metropolitan area. Interested incoming students should apply to the director of the program.

The Steven and Toby Korman Drama Scholarships. The scholarship shall be awarded annually to a student(s) with demonstrated need who has demonstrated exceptional talent and ability in the field. Interested students should apply to the director of the program.

Kohler Scholarships in Drama. Several awards each year are given to needy students active in the drama program. Interested students should apply to the director of the program.

The Beth Gotham Semans Drama Scholarships. These awards are made annually to currently enrolled undergraduate students who have been and continue to be active in drama, with preference given to African American and other minority students. Applicants need not be drama majors but must have demonstrated need and demonstrate significant involvement in dramatic activities. Decisions are made by a special committee appointed by the drama program.

Alumni Endowed Scholarships. Three full-tuition per year Alumni Endowed Undergraduate Scholarships are awarded to needy students who demonstrate superior academic ability and leadership potential. These awards are renewable annually for those meeting the stated requirements. Although not restrictive, preference is given to children of alumni.

Scholarships for Residents of the Carolinas

Carolina Honors Scholarships, worth $5,000 each, are awarded each year to fifteen outstanding students from North or South Carolina who demonstrate financial need. The scholarships are applied toward the loan and work-study portion of the financial aid package and are renewable for four years.

North Carolina Math Contest. Upon enrolling at Duke, the top student finishing in the top ten in the North Carolina Math Contest taken as a high school senior is eligible to receive a scholarship equal to the amount of tuition. This scholarship is available for each of the four years of undergraduate enrollment as long as the student maintains the specified average. Winners must have applied to and been accepted by Duke University.

The Perry Family Scholarship. Awarded to students from Winston-Salem and the Forsyth County area, this scholarship is awarded every other year. Recipients of the scholarship will be required to demonstrate high academic achievement as well as leadership and/or involvement in extracurricular activities. The scholarship is available for four years if the student meets the specified academic requirements.

J. Welch Harriss Scholarships. Recipients of these scholarships will receive up to demonstrated need levels based on merit criteria. These awards are made to entering freshmen who have achieved outstanding academic records. They are renewable each year as long as the student maintains the required average. Consideration will be given in the following order: (1) students from High Point, North Carolina; (2) students from Guilford County, North Carolina; and (3) students from North Carolina. (Recipients are chosen by the Office of Undergraduate Admissions at the time of application.)

Alice Mack Scholarship. The endowment, established in 1996, provides scholarship support for undergraduate students in Trinity College of Arts & Sciences and Pratt School of Engineering and for graduate students enrolled in any of Duke University's professional schools or programs. First preference shall be given to needy students from Mooresville, North Carolina, and then to needy students from Iredell County, North Carolina. Awards shall be determined in accordance with university guidelines then in use and may include grants and grants-in-lieu of loans. Should there be no needy graduate or professional student from the designated area, that portion of the income (25 percent) shall be directed to the A.F. Calabrese Endowment in The Fuqua School of Business.
Alyse Smith Cooper Scholarships. Each year scholarships of various amounts are awarded to students demonstrating both merit and need. Preference is given to students from Alamance County, North Carolina.

Braxton Craven Endowed Scholarships. Recipients of these scholarships will receive an amount equal to the current tuition at Duke. Braxton Craven scholars will be chosen on the basis of outstanding academic and extracurricular achievement and need. First preference is given to students from North Carolina. The scholarships are renewable, provided that the recipient complies with the specified academic requirements.

The John M. and Sally V. Blalock Beard Scholarship. These scholarships are awarded annually to outstanding students from the Wake County area of North Carolina who major in English or the history of the United States. These awards are based on financial need, scholarship, character, and academic achievement.

Loans
The loan programs that are available to students through Duke University are listed below.

The Federal Perkins Loan is funded by the federal government and administered by Duke University. The interest rate for this loan is fixed at 5 percent. This is a need-based loan and only awarded to those students with demonstrated need. If a student is eligible for a Perkins Loan based on their Free Application for Federal Student Aid (FAFSA) and other aid application documents, the Perkins Loan will be included in the student’s award letter from the Office of Financial Aid.

The Federal Direct Stafford Loan is available to students who may borrow up to $5,500 as freshmen, $6,500 as sophomores, and $7,500 as juniors and seniors. Students who demonstrate need by filing the Free Application for Federal Student Aid (FAFSA) may qualify for a Subsidized Stafford Loan. The interest rate for the Subsidized Stafford is 4.66 percent, and interest does not accrue while the student is enrolled at least half-time in an accredited degree program. Students not demonstrating need, or those having borrowed the full subsidized amount already, may borrow through the Unsubsidized Stafford Loan program. The interest rate for the loan is 4.66 percent and interest accrues while the student is in school. The student may choose to capitalize the interest or pay it as it accrues. Repayment for both loans begins six months after the student is no longer enrolled at least half-time as a degree candidate at an accredited institution. If a student is eligible for a Federal Direct Stafford Loan, it will be included in the student’s award letter from the Office of Financial Aid.

The Federal Direct Parent Loan for Undergraduate Students (PLUS) allows qualified parents to borrow up to the cost of education minus other financial aid. The proceeds from this loan may only be used to pay the current year's costs of attendance. The interest rate is 7.21 percent and repayment of this loan begins within sixty days after the first disbursement for the academic year. Borrowers who have a student enrolled at least half-time may be eligible for deferment of payment. Federally mandated credit checks are required for all PLUS applicants.

Tuition Plans
Many families finance a college education with the assistance of an insured tuition payment plan regardless of whether they receive financial assistance from Duke. The university is pleased to offer a ten- or twelve-month payment plan through Tuition Management Systems. More information can be obtained from the bursar’s office or by visiting [https://duke.afford.com](https://duke.afford.com).

Employment
Most financial aid recipients are offered work study as part of their aid package. All students interested in working during the school year should review the jobs posted at [http://dukelist.duke.edu](http://dukelist.duke.edu). All earnings are paid directly to the student for hours worked.

Duke University also expects that students receiving financial aid will work during the summer. In the year before entering college, a freshman should save a minimum of $2,600 for use during the first year of college. In subsequent years, minimum student earnings will be $2,900 for sophomores, $3,000 for juniors.

Duke University also offers subsidized employment opportunities to many students not qualifying for need-based financial aid. Interested students should submit the appropriate aid applications. Additional information about how work study works, types of work study, and how to apply can be found at [financialaid.duke.edu/work-study](http://financialaid.duke.edu/work-study).
Courses and Academic Programs

Definition of Terms

The following portion of this bulletin, arranged alphabetically, includes courses of academic departments, programs, sections, and institutes, as well as categories of courses. Details are provided in the individual entries, which indicate whether a major, a minor, and/or a certificate is available in that particular field. (A certificate, offered in some programs, is not a substitute for a major but is a supplement, confirming that a student has satisfied the requirements of that program.)

Courses taught in recent years or scheduled for 2014-2015 are included in this chapter with full descriptions. For courses that will be offered in 2014-2015, also consult the online Course Catalog.

Introductory-level courses are numbered below 200; mid- to advanced-level courses are numbered 200 and above; courses numbered from 400 to 499 are primarily for seniors; courses numbered from 500 to 699 are graduate-level courses open to advanced undergraduate students. (See the section on course load and eligibility in the chapter “Academic Procedures and Information” on page 35) Special Topics courses may be repeated (if the subtitles of the courses are different), subject to any limitation set forth in the course description in this bulletin.

The following symbols, suffixed to course numbers, identify small classes: S, seminar; P, preceptorial; T, tutorial; D, discussion section (for a larger class). The L suffix indicates that the course includes laboratory experience. The FS suffix indicates Focus program courses, and the A suffix identifies courses that are taught away from Duke's Durham campus, e.g. study abroad or domestic away programs. C-L: denotes a course that is cross-listed or a program under which a course is also listed.

Curriculum codes appear at the end of course titles. An explanation of the curriculum codes follows:

Areas of Knowledge
- Arts, Literatures, and Performance (ALP)
- Civilizations (CZ)
- Natural Sciences (NS)
- Quantitative Studies (QS)
- Social Sciences (SS)

Modes of Inquiry
- Cross-Cultural Inquiry (CCI)
- Ethical Inquiry (EI)
- Science, Technology, and Society (STS)
- Foreign Language (FL)
- Research (R)
- Writing (W)
Trinity College of Arts & Sciences

Professor Patton, *Dean of Trinity College and of Arts & Sciences*; Professor Baker, *Dean of Academic Affairs of Trinity College*; Senior Associate Dean for Administration Wilson; Associate Dean of Curriculum and Course Development Walther; Associate Deans Blackmon, Forbes, Fox, Gilbert, Grunwald, Keul, Kostyu, Rabiner, Scheirer, and Thomas; Assistant Deans Perz-Edwards and Taylor

Aerospace Studies—Air Force ROTC

Professor Lieutenant Colonel Martinez, *Department Chair*; Assistant Professor Manibusan, Major, USAF, *Commandant of Cadets and Director of Undergraduate Studies*; Assistant Professor Fesel, Major, USAF, *Unit Admissions Officer*

Eligibility Requirements

All first-year students and sophomores are eligible to enroll in the General Military Course in the Air Force Reserve Officer Training Corps. For enrollment in the Professional Officer Course, the student must have successfully completed the General Military Course and a field training encampment; must execute a written agreement with the government to complete the Professional Officer Course; must be sworn into the enlisted reserve; and must agree to accept a commission in the US Air Force upon graduation. Students in the General Military Course and Professional Officer Course are required to attend two hours of leadership laboratory each week. All courses, except 99L, are open to all other students with consent of instructor.

Courses in Aerospace Studies—Air Force ROTC (AEROSCI)

General Military Courses

99L. Leadership Laboratory. Instruction in drill and ceremonies, wearing the uniform, giving commands, and other leadership activities. Mandatory for all Air Force ROTC cadets. Must be repeated each semester. Satisfactory/Unsatisfactory grading only. Instructor: Staff.


Second Year

201. The Evolution of US Air and Space Power. STS A survey course designed to examine the general elements and employment of air and space power, from an institutional doctrinal and historical perspective. From the first balloons and dirigibles to the space-age global positioning systems of the Persian Gulf War. Historical examples to demonstrate the evolution of what has become today's USAF air and space power. Air Force Core Values and communications skills. Leadership Laboratory mandatory for AFROTC cadets. Instructor: Staff. Half course.


Professional Officer Courses

All students selected to continue in aerospace studies must pursue the following courses.

Third Year

301S. Air Force Leadership and Management. EI Leadership and management fundamentals, professional knowledge, Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. Training philosophy, counseling/feedback, leadership vs. management, leadership principles and perspectives, effective delegation, and written and verbal communication skills. Leadership Laboratory required for AFROTC cadets. Instructor: Staff. One course.

302S. Air Force Leadership and Management. EI Continuation of Aerospace Studies 301S. Principle centered/situational leadership, case studies of different leadership styles, ethical behavior, effective management tools to
evaluate and improve processes, building and refining written and verbal communication skills from 301S. Leadership Laboratory required for AFROTC cadets. Instructor: Staff. One course.

Fourth Year

401S. Defense Studies. EI The national security process, regional studies, advanced leadership ethics, and Air Force doctrine. The military as a profession and current issues affecting military professionalism. American tradition in foreign policy, cold war challenges, the relationship with the president and Congress, the chain of command, national security issues, and advanced level briefings and papers. Leadership Laboratory mandatory for AFROTC cadets. Instructor: Staff. One course.

402S. Defense Studies. EI Continuation of Aerospace Studies 401S. Officership, ethics, military law, Air Force issues, roles and missions, Air Force and joint doctrines, preparation for active duty, and refining communications skills from 401S. Leadership Laboratory mandatory for AFROTC cadets. Instructor: Staff. One course.

African and African American Studies

Professor DeFrantz, Chair; Professor of the Practice Smith, Director of Undergraduate Studies; Professors Baker, Bonilla-Silva, Burton, Crichlow, Darity, DeFrantz, Dubois, French, Harris, Holloway, James, Matory, Neal, Piot, Powell, and Whitfield; Associate Professors Glymph, Hall, Haynie, Holsey, Lubiano, Milian, Royal and Wallace; Assistant Professors Aidoo and Makhulu; Professor of the Practice Smith; Associate Professor of the Practice Shapiro

A major or a minor is available in this program.

The program in African and African American studies provides students with an interdisciplinary approach to the field, within which they may focus on Africa or the Americas. The program encourages study abroad in Africa, available through the global education office.

The African and African American Studies courses are listed below. (Full descriptions of cross-listed courses may be found in the bulletin course listings of the particular department or program cited in the cross-listing, for example, Music 74). In addition, Arabic language courses are taught in the Asian and Middle Eastern Studies Program, and other relevant language courses in the Department of Romance Studies.

Courses in African and African American Studies (AAAS)

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

102. Introduction to African and African American Studies. CCI, CZ, SS A range of disciplinary perspectives on key topics in African American Studies: slavery and abolitionism, theories of race and racism, gender and race, the era of Jim Crow, cultural expressions, political and intellectual thought, African American freedom struggles from the seventeenth through the twentieth centuries, and race and public policy. Instructor: Staff. One course.


104. Introduction to Latino/a Studies in the Global South. ALP, CCI, SS One course. C-L: see Latino/a Studies in the Global South 101; also C-L: International Comparative Studies 106, Literature 143, Spanish 160

104S. Introduction to Latino/a Studies in the Global South. ALP, CCI, SS One course. C-L: see Latino/a Studies in the Global South 101S; also C-L: Literature 143S, Spanish 160S, International Comparative Studies 106S

109S. African Mbira Music: An Experiential Learning Class. ALP, CCI, CZ One course. C-L: see Music 133S; also C-L: Cultural Anthropology 133S

131. The Third World and the West I. CCI, CZ One course. C-L: see History 131; also C-L: International Comparative Studies, Latin American Studies

133S. Gateway Seminar: Civil Rights and Asian Americans. CCI, CZ, EI, R, SS One course. C-L: see History 183S; also C-L: Asian & Middle Eastern Studies 187S, International Comparative Studies 183S

134. Old Worlds/New Histories, 500-1500 CE. CCI, CZ, SS One course. C-L: see History 105; also C-L: Medieval and Renaissance Studies 105, Marxism and Society

140. Introduction to Jazz. ALP, CCI One course. C-L: see Music 140
140D. Introduction to Jazz. ALP, CCI One course. C-L: see Music 140D

190. Special Topics. Topics vary from semester to semester. Instructor: Staff. One course.


190FS. Focus Program Seminars: Special Topics. Topics vary semester to semester. Open only to students in the Focus Program. Instructor: Staff. One course.

190S. Special Topics. Seminar version of African and African American Studies 190. Instructor: Staff. One course.

206. Africans in America to the Civil War. CCI, CZ, EI One course. C-L: see History 346; also C-L: International Comparative Studies 349, Documentary Studies

207. African Americans Since the Civil War. CCI, CZ, EI One course. C-L: see History 347; also C-L: Documentary Studies

209. Afro-Brazilian Culture and History. CCI, CZ, R One course. C-L: see History 327; also C-L: Portuguese 260, Latin American Studies

210. Modern Africa. CCI, CZ, SS One course. C-L: see History 204; also C-L: International Comparative Studies

212. Europe’s Colonial Encounter, 1492-1992. CCI, CZ, EI One course. C-L: see History 312; also C-L: Canadian Studies 312, International Comparative Studies 312, Study of Ethics

213. Global Brazil. CCI, CZ, SS One course. C-L: see History 328; also C-L: Latin American Studies 328

214. South African History, 1870 to the Present. CCI, CZ, EI, SS One course. C-L: see History 208; also C-L: Political Science 221

215S. Slave Society in Colonial Anglo-America: The West Indies, South Carolina, and Virginia. CCI, CZ, R One course. C-L: see History 320S; also C-L: International Comparative Studies

217S. The Atlantic Slave Trade. CCI, CZ, R One course. C-L: see History 316S; also C-L: International Comparative Studies 209S, Latin American Studies

218. The Caribbean, 1492-1700. CCI, CZ One course. C-L: see History 318; also C-L: Medieval and Renaissance Studies 255, International Comparative Studies, Latin American Studies

219. The Caribbean in the Eighteenth Century. CCI, CZ One course. C-L: see History 319; also C-L: International Comparative Studies 263, Latin American Studies

220. West African Rootholds in Dance. ALP, CCI, CZ One course. C-L: see Dance 335L; also C-L: Religion 240

221SL. Capoeira: Practice and Culture. ALP, CCI, SS, W One course. C-L: see Dance 235SL; also C-L: Cultural Anthropology 221SL, Romance Studies 235SL

222. Dance and Religion in Asia and Africa. ALP, CCI, CZ One course. C-L: see Dance 367; also C-L: Religion 244, International Comparative Studies 214

223. African American Literature. ALP, CCI, R One course. C-L: see English 266

224. African American Literature. ALP One course. C-L: see English 276


226. Crime and the City from Dickens to The Wire. ALP, CCI, EI, SS One course. C-L: see History 313

226D. Crime and the City from Dickens to The Wire. ALP, CCI, EI, SS One course. C-L: see History 313D; also C-L: International Comparative Studies 313D

227. African American Art. ALP, CCI, CZ, R One course. C-L: see Art History 283

229. Contemporary Performance. ALP, R One course. C-L: see Dance 208; also C-L: Theater Studies 208, Art History 229

230. The South in Black and White. ALP, CCI, CZ One course. C-L: see Documentary Studies 326; also C-L: History 358
231S. Freedom Stories: Documenting Southern Lives and Writing. ALP, CCI, CZ One course. C-L: see Documentary Studies 320S; also C-L: History 356S

236S. Civil/Human Rights Activism: In the Spirit of Pauli Murray. ALP, CCI, CZ, R One course. C-L: see Documentary Studies 347S; also C-L: Cultural Anthropology 246S

240. The Modern Caribbean after Emancipation. CCI, CZ One course. C-L: see History 321; also C-L: Romance Studies 321, Cultural Anthropology 322, International Comparative Studies 319

241. Gender, Race, and Ethnicity in Politics and Public Policy. SS One course. C-L: see Political Science 303; also C-L: Public Policy Studies 235, Women's Studies 303


242S. Race, Gender, and Sexuality. CCI, SS One course. C-L: see Women's Studies 364S; also C-L: Study of Sexualities 264S

243. The Civil Rights Movement. CCI, CZ, EI, SS One course. C-L: see History 348; also C-L: Study of Ethics

244. Racial and Ethnic Economic Inequality: A Cross National Perspective. CCI, EI, SS One course. C-L: see Public Policy Studies 294; also C-L: Economics 248

246. Comparative Race and Ethnic Studies. CCI, EI, R, SS One course. C-L: see Sociology 316; also C-L: Latino/a Studies in the Global South, Marxism and Society

247S. Social Movements and Social Media. ALP, CCI, CZ, EI, STS One course. C-L: see Literature 320S; also C-L: Arts of the Moving Image 246S, International Comparative Studies 320S, Latin American Studies 320S

248. Psychology of Ethnicity and Context (A, D, S). CCI, SS One course. C-L: see Psychology 238; also C-L: Global Health

251. The Anthropology of Race. CCI, EI, SS One course. C-L: see Cultural Anthropology 208; also C-L: International Comparative Studies 239

257. Introduction to Racial and Ethnic Minorities in American Politics. CCI, SS One course. C-L: see Political Science 205

257D. Introduction to Racial and Ethnic Minorities in American Politics. CCI, SS One course. C-L: see Political Science 205D


263. Black Europe: Race, Ethnicity and Diaspora in Contemporary Europe. CCI, CZ, EI, SS One course. C-L: see Cultural Anthropology 263


270. Religion in Black America. CCI, CZ One course. C-L: see Religion 236

270S. Religion in Black America. CCI, CZ One course. C-L: see Religion 236S

271. Humanitarianism in Africa. CCI, CZ, EI One course. C-L: see History 207; also C-L: Islamic Studies

274S. Islam in the Americas. CCI, CZ, SS, W One course. C-L: see Religion 384S; also C-L: History 351, Asian & Middle Eastern Studies 230S, Islamic Studies

276. Religion and Race. CCI, CZ, SS One course. C-L: see Religion 276; also C-L: International Comparative Studies 294

280. Race, Ethnicity and Citizenship. CCI, SS One course. C-L: see Political Science 204; also C-L: Sociology 204

290. Special Topics. Topics vary from semester to semester. Instructor: Staff. One course.

290-1. Special Topics in Performance. Topics vary from semester to semester. Instructor: Staff. One course.

290-4. Special Topics in African American Literary Genres. ALP, CCI, R One course. C-L: see English 390-4

307. Development and Africa. CCI, CZ, SS Addresses the vexed issue of economic development in Africa - its many failures, its occasional successes - from the early colonial period to the present. Focuses especially on the transition from the 1960s "modernizing" moment to the millennium projects and humanitarian aid of the present. Will read the works of development experts, World Bank executives, anthropologists and historians, asking why this massively financed project has experienced such failure and exploring what can be done. Instructor: Piot. One course. C-L: Cultural Anthropology 307, Public Policy Studies 207, International Comparative Studies 308, Marxism and Society

310. African American Women and History. CCI, CZ The history of African American women in the United States. The production of discourses of gender, race, and class discrimination that evolved specifically to confront the presence of African American women first as slaves and later as free women. The ways in which prevalent ideas about race, race relations, and gender coalesced around images of the African American women and African American women's struggles to assert independent identities. Multidisciplinary readings. Instructor: Glymph. One course. C-L: History 349, Women's Studies 237


320. Black Dance. ALP, CCI, R, W Exploration of composition and performance structures commonly described as black dance. Working with cultural criticism contemporary with emergent modes of black dance, assesses political motivations and aesthetic strategies of artists and writers working explicitly in this idiom. Considers possibility of black dance performed by people of First World, European, and Asian descent. Examines concert dance, social dance, religious dance. Instructor: DeFrantz. One course. C-L: Dance 336

321. Visualizing the Caribbean. ALP, CCI, R, SS Art (paintings, installations, performance art) and film on the Caribbean offer vantage points for analyzing alternative ways through which the region has been thought, imagined and produced. They are periodized semiotic productions that feed into and are marked by perspectives that are at once global, national, and even personal. Considering the constitutive contexts of these productions and performances, we will attempt to glean the diverse perspectives, and the way these have influenced sociocultural policy and offer alternative interpretations of diasporic lifeways of Caribbean people. Instructor: Crichlow. One course. C-L: Cultural Anthropology 368, International Comparative Studies 318, Latin American Studies 321

324S. Social Facts and Narrative Representations. ALP One course. C-L: see Literature 330S

329. The Black Atlantic. ALP, CCI, CZ One course. C-L: see Art History 383; also C-L: International Comparative Studies 226S

330. Film and the African Diaspora. ALP, CCI, SS Theories and issues of representation and practice, with specific attention to culture, nation, and gender in contemporary and historic black films and filmmakers of Africa and the Diaspora. Instructor: Lubiano. One course. C-L: Visual and Media Studies 228, Women's Studies 250, Arts of the Moving Image

331. Black Popular Culture. CCI, CZ The production and circulation of African American popular cultural forms including, but not limited to, popular literature, music, film, television, and art in the twentieth century. The ways
in which African American popular culture may reflect the particular values and ethos of African Americans and the larger American society. Topics may include black cinema, blues and jazz music, black nationalism, hip hop, black social movements, blacks and sports culture, popular dance, and the cultural history of black style. Instructor: Lubiano, Wallace, and staff. One course. C-L: Visual and Media Studies 230

332S. Black Theater Workshop. ALP, CCI One course. C-L: see Theater Studies 243S

333S. The Wire. CCI, EI, SS Examines all 60 episodes of the HBO series "The Wire." Described as "socially robust" by one television scholar, the series dramatizes the real world experiences of poor, mostly African American, residents of Baltimore struggling to survive by way of the underground drug economy, while city officials and the police department strive to bring the illegal trade in check. The course brings all 60 episodes into conversation with relevant texts in anthropology, sociology, cultural geography, queer and literary theory. Requirements include weekly blog entries and a final keyword project. Students should have background in interpretive social science and social theory. Instructor consent required. Instructor: Makhulu. One course. C-L: Cultural Anthropology 333S

334. Sampling Soul. ALP, CCI, EI, SS Examines how the concept of "Soul" has functioned as raw data for contemporary forms of cultural expression. Considers the broader cultural implications of sampling, in the practices of parody and collage, and the legal ramifications of sampling within the context of intellectual property law. Course also offers the opportunity to rethink the concept of archival material in the digital age. Instructor: Neal. One course.

335. The History of Hip-Hop. ALP, CCI What began as a localized activity designed to provide a safe haven for Black and Latino youth in New York City, has become a global brand that has had a documented impact on the cultural, political and economic realities of youth throughout the globe. This course will examine the organic social and cultural foundations of Hip-Hop, as well as the key aesthetic innovators/innovations, and the debates that have arisen over Hip-hop's increased influence. Instructor: Neal. One course. C-L: Cultural Anthropology 335, Music 335, Visual and Media Studies 337

336. Michael Jackson and Performance of Blackness. ALP, CCI Examines the Black Performance context that produced Jackson's singular creative genius within the realms of music, movement and politics, including the influence of Black vernacular practices like signifying and sampling, the network of Black social spaces known as the Chitlin’ Circuit, the impact of Black migration patterns to urban spaces in the Midwest, and Black performance traditions including Blackface minstrelsy. Instructor: Neal. One course. C-L: Music 336, Visual and Media Studies 353

340. Culture and Politics in Africa. CCI, CZ, SS Explores the politics, history and culture of societies and nations across the continent while also critiquing Euroamerican discourses, images, and theories about Africa and Africans. Readings consist of not only anthropological texts—some classic, and some experimental and off-beat—but also media accounts, novels and historical texts. Instructor: Piot. One course. C-L: Cultural Anthropology 242, Visual and Media Studies 229, International Comparative Studies, Marxism and Society

341S. Race in Durham. CCI, R, SS Individual student research, archival and interview-based, on the history and current status of ideas about race, racial discrimination, and race relations in the city of Durham, as a window into one regional and local pattern that illuminates larger patterns of race in the U.S. Open to undergraduates at both NCCU and Duke. Instructor: Hall. One course.

343. Displacements: Migration and Human Trafficking. ALP, CCI, EI, R, SS Examination of the meaning of migration in the global world through cross-disciplinary texts and visual media. Situates the phenomenon of human trafficking within the context of these general movements focusing on the risks involved when people endanger their lives to find a better and more strategic position in the world. Explores how these experiences should be interpreted, and how processes and the politics of race, space and place are a condition and/or outcome of these movements. Investigates and considers ways to resolve some of the problems associated with such movements. Instructor: Crichlow. One course. C-L: Latin American Studies 343, Cultural Anthropology 342, Sociology 343

344. Troubling Pasts: Slavery, Genocide, and Terror. ALP, CCI, EI, SS Examination of commemorative practices surrounding difficult pasts. Analyzes slavery, the Holocaust, Hiroshima, and 9/11; considers the role of collective memories of trauma and injustice in the formation of racial, religious, and national identities. Readings address historic sites, monuments and other forms of commemorative art, museums, fiction, and film. Examines social, political, ethical, and economic considerations behind various forms of commemoration. Explores several debates over appropriate forms of commemorations and the consideration of politics of memory in the creation of ethical subjects. Instructor: Holsey. One course. C-L: Cultural Anthropology 344, International Comparative Studies 343
345S. African Americans, Mass Incarceration and Citizenship. ALP, CCI, CZ, EI, R Explores in depth the presence of African Americans within the phenomenon of U.S. mass incarceration and its implications for notions of citizenship. Surveys the history of prison build-up resulting from legislation and policy over the past forty years including the governmental discussions of drug policy and welfare reform that disproportionately affected African Americans. Course will explore definitions of citizenship and the means by which African-American citizens were and are both included in and excluded from participation in the movement toward mass incarceration as part of their changing position in the U.S. polity. Instructor: Lubiano. One course. C-L: Literature 343S

350S. U.S. Critical Studies of Race, Law and the Literary Imagination. CZ, SS This course explores the intersectionalities of race and law. We'll focus on issues like sexuality, adoption, and marriage, the era and residue of Jim Crow, as well as the meaning and intent of affirmative action in educational contexts. We'll use case law and some literary fiction to expose and explore these issues with a particular interest in understanding how race matters in the construction of US citizenship. Instructor: Holloway. One course.

352. Pigging Out: The Cultural Politics of Food. CCI, EI, SS Examine cultural influences of food, linking class, geography, ethnicity to food practices. Investigates link between overeating and cheap food, under-eating and expensive food; discrepancy between cost and quality; changing diets in US and elsewhere; current debates regarding food production, specifically in the U.S., Americas, Africa and Asia. Discussion of Cargill companies' restrictions on spread of their hybrid grains; questionable agricultural practices, e.g. animal cruelty, overuse of pesticides, condition of migrants. Environmental policies examined in relation to pursuit of such industrial agricultural practices. Will include hands-on experiments with food preparation and tasting. Instructor: Crichlow. One course. C-L: Sociology 374, International Comparative Studies 206


356. Magical Modernities. CCI, SS Examination of competing tendencies in modern society across cultural contexts and historical time periods concluding with close attention to the present: the secularism linked to increased rationalization (and the rise of the modern state), and persistence of beliefs in the supernatural. Readings on beliefs in magic and the occult drawing attention to overlap between magical phenomena and the workings of capitalism in our contemporary world. Several short response papers and a final project (written, performed, filmed). Instructor: Makhulu. One course. C-L: Cultural Anthropology 225

372S. The Frontiers and Minorities of the Tsarist and Soviet Empires. CCI, CZ, EI, SS Introduces multiconfessional, multilingual, multicultural composition of Russian & Soviet empires with questions concerning minorities in an imperial context. Learn about construction, interaction, and manipulation of cultures and identities. Balance Tsarist & Soviet efforts to modernize and Russify minorities, such as Ashkenazi Jews, Poles, & Turkic Muslims, against negotiated transformation and cultural resilience of minorities. Recognizes cultural diversity in an imperial setting and provides better appreciation of Russian and Eurasian realities and other multicultural contexts such as America. No Russian required. Instructor: Tuna. One course. C-L: History 280S

385S. Cultures of the African Diaspora. CCI, CZ, SS Course reveals the diversity of black life in the Americas, Europe, and the Middle East through film and classical and contemporary ethnographies by the likes of W.E.B. DuBois, Zora Neale Hurston, Fernando Ortiz, and others. Examines diverse analytical tropes that illuminate how cultures and communities reproduce themselves amid exploitation and stigma. Instructor: Matory. One course. C-L: Cultural Anthropology 385S

390. Special Topics. Topics vary from semester to semester. Instructor: Staff. One course.

390L. Special Topics. Laboratory version of African and African American Studies 390. Topics vary semester to semester. One course. Topics course. Instructor: Staff. One course.


391. Independent Study. Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation
of a previously approved topic. Open to juniors and seniors. Consent of both instructor and director of undergraduate studies required. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to juniors and seniors. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


407S. Capstone Seminar: Globalization and Development: China and India. CCI, CZ, R, SS, STS One course. C-L: see History 454S; also C-L: International Comparative Studies 412S, Women's Studies 412S

408S. Capstone Seminar: Post-Civil Rights America: The Search for Social Justice, 1968-Present. CZ, EI, R One course. C-L: see History 482S


410S. Francophone Literature. ALP, CCI, FL One course. C-L: see French 417S; also C-L: Asian & Middle Eastern Studies 202S, History 387S, Canadian Studies, Latin American Studies

420S. The Role of Race and Culture on Development (C, D, S). CCI, EI, SS One course. C-L: see Psychology 435S

421. Imagining Justice: The U.S. and the Carceral Imagination. ALP, CCI, CZ, EI One course. C-L: see Literature 431; also C-L: Women's Studies 431

425S. Cidanania, Cultura, e Participacao/Citizenship, Culture, and Participation. ALP, CCI, CZ, EI, R One course. C-L: see Portuguese 410S

465S. Global Cities. CCI, EI, SS Examination of new ways of living and surviving in cities across the world - new urbanization as distinct from the "new urbanism" - in context of the decline of the industrial economy, the offshoring of work, the creation of network cities and so-called "global cities." Explores impact of increased urbanization, linked to "post-wage" work, informalization, and inequality. Addresses dilemmas of alternative forms of life through "cases," including cities in the global North and South, varied "urban" schools, their theories and methodologies. Instructor: Makhulu. One course. C-L: Cultural Anthropology 465S, International Comparative Studies 465S, International Comparative Studies

475S. Variation in the African Diaspora. CCI, NS, SS, STS Exposes and explores biological and non-biological diversity within and between regions, countries, and peoples of the African Diaspora. Draws on multiple disciplines and modes of inquiry in the comparative analysis of genetic, phenotypic, historical, political, and sociocultural dimensions of the African Diaspora. The content of the course is not limited to the transatlantic African Diaspora, but is open to the broader African Diaspora (including the Middle East) as well. Instructor: Royal. One course. C-L: Genome Sciences and Policy 475S, Cultural Anthropology 475S

490. Special Topics. Topics vary from semester to semester. Instructor: Staff. One course.

490S. Special Topics. Topics vary from semester to semester. One course.


495. Distinction Program Sequence. Research for the development of thesis. Open only to senior majors. Consent of both instructor and director of undergraduate studies required. Instructor: Staff. One course.

496. Distinction Program Sequence. Continuation of African and African American Studies 495 Open only to senior majors. Consent of both instructor and director of undergraduate studies. Instructor: Staff. One course.

499S. Senior Seminar. Open to seniors majoring in African and African American Studies and to others with consent of instructor. Instructors: Staff. One course.
510S. Africa in a Global Age. CCI, EI, SS One course. C-L: see Cultural Anthropology 561S; also C-L: History 561S, Political Science 527S, International Comparative Studies 510S

515S. Race, Class, and Gender: A Social History of Modern (1750-present) Britain. CCI, CZ, EI, SS One course. C-L: see History 505S; also C-L: Women's Studies 509S

520S. Harlem Renaissance. ALP, CCI, CZ, R One course. C-L: see Art History 554S

530S. Third Cinema. ALP, CCI, EI, SS, STS One course. C-L: see Literature 613S; also C-L: International Comparative Studies 613S, Latin American Studies 613S, Arts of the Moving Image 644S

540S. Seminar in Asian and Middle Eastern Cultural Studies. CZ One course. C-L: see Asian & Middle Eastern Studies 505S; also C-L: Literature 530S

541S. Monuments and Memory: Public Policy and Remembrance of Racial Histories. ALP, CCI, EI, SS One course. C-L: see Public Policy Studies 562S

544S. Race and American Politics. CCI, SS One course. C-L: see Political Science 525S; also C-L: Public Policy Studies 526S

545S. Race, Racism, and Democracy. CCI, SS, W One course. C-L: see Cultural Anthropology 535S

548S. Poverty, Inequality, and Health. EI, R, SS One course. C-L: see Public Policy Studies 644S

549S. Schooling and Social Stratification. CCI, SS One course. C-L: see Public Policy Studies 542S; also C-L: Education 542S, Child Policy Research

551S. Race and Ethnicity. CCI, EI, SS One course. C-L: see Public Policy Studies 529S; also C-L: International Comparative Studies 529S

575. Justice, Law, and Commerce in Islam. CZ, EI One course. C-L: see Religion 660; also C-L: Medieval and Renaissance Studies 659, International Comparative Studies, Islamic Studies

580S. Race Theory: Biological Classification and Moral Implications. CZ, EI One course. C-L: see Philosophy 539S

589S. Black Visual Theory. ALP, CCI, CZ, EI, R One course. C-L: see Visual and Media Studies 555S

590S-5. Topics in African Art. ALP, CZ One course. C-L: see Art History 590S-5; also C-L: International Comparative Studies

594S. Cultural (Con)Fusions of Asians and Africans. CCI, CZ, SS This course examines how people lay claims to belonging as citizens of nation-states. Focusing primarily on African and Indian descended populations in the Caribbean and the Pacific, we investigate how these populations invoke colonial constructions to reinvent themselves and work to negotiate their racialized identities in these shared communities. We will consider the construction of histories and explore the general cultural politics that sustain and bolster claims of authenticity and belonging and unbelonging within these national spaces. What sorts of sociocultural and political strategies are deployed by such people to exclude others even as they connect across these troubling divides. Instructor: Crichlow. One course. C-L: Cultural Anthropology 594S, Latin American Studies 594S, Sociology 594S

620S. AfroFuturism. ALP Explores Afrofuturism, a literary and cultural aesthetic imagining how people of color project themselves into narratives of the future. Investigation of Science fiction, fantasy literature, music, artworks, music videos, and dance to trace the concept of an Afrofuturist point of view. Creation of Afrofuturist media and performances. Artists considered include writers Samuel R. Delany and Andrea Hairston; musicians Parliament-Funkadelic and Sun Ra; filmmaker Hype Williams; performers Janelle Monae and Flying Lotus. Instructor: DeFrantz. One course. C-L: Dance 535S, Theater Studies 535S, Visual and Media Studies 524S

621S. Black Performance Theory. ALP, CCI, R Exploration of methods and research approaches relevant to the construction of black performance theory. Performance Studies methodologies undergird ways of seeing and modes of analysis relevant to considerations of black art, including dance, sound and music, drama, visual art, and aesthetics of popular culture. Instructor consent required. Instructor: DeFrantz. One course. C-L: Dance 645S, Visual and Media Studies 621S

641S. Citizen and Subject in a Neoliberal Age. CCI, EI, SS Explores studies of citizenship, quests to belong to a place, and institutional mechanisms people deem sacred, and others, profane and dispensable. Focuses on the ways
African, Caribbean and Pacific peoples have adapted identitarian constructions to develop narratives of home. Case studies using ethnographic, historical, sociological and visual methods are used to investigate how particular claims are pursued in clamoring for citizenship in various communities. Instructor: Crichlow. One course. C-L: Sociology 645S, Cultural Anthropology 641S

642S. Global Inequality Research Seminar. ALP, CCI, R, SS Engagement of vertically integrated research teams in projects exploring racial and ethnic disparities exhibited and expressed in six arenas: employment, wealth, health, political participation, education, and arts and culture. Each team will produce a major paper that will qualify for submission to a refereed journal in the area relevant to the focus of the study. Instructor: Staff. One course. C-L: Economics 541S, Sociology 642S, Political Science 642S, Public Policy Studies 645S

645S. African Modernities. CCI, SS Encounters between African societies and global forces, including colonialism, capitalism, development initiatives. Instructor: Holsey. One course. C-L: Cultural Anthropology 560S, International Comparative Studies

690. Special Topics. Topics vary from semester to semester. Instructor: Staff. One course.


699S. Gateway/Proseminar. The proseminar is the required gateway course in the AAAS Certificate Program. It is designed to introduce students to the broad interdisciplinary scope of advanced scholarship in black diasporic studies globally. Students will learn interdisciplinary and cross disciplinary research methods, including awareness of archival, bibliographic, and qualitative/quantitative methods. The history of the field and its unique influence on the production of humanistic and social scientific knowledge are also significant concerns in the course. Instructor: Staff. One course.

The Major
The major requires ten courses, eight of which must be at the 200 level or above. Students may choose one of the two following options.

A. The Americas Focus
Major Requirements:
• African and African American Studies 102 and 103
• Three courses focusing on the Americas, one course in each of the following areas:
  • arts or literature
  • history
  • social, religious, economic, or political institutions/processes.
• African and African American Studies 499S (Senior Seminar)
• Four additional African and African American studies courses

B. Africa Focus
Major Requirements:
• African and African American Studies 102 and 103
• Three courses focusing upon Africa, one course in each of the following areas:
  • arts or literature
  • history
  • social, religious, economic, or political institutions/processes.
• African and African American Studies 499S (Senior Seminar)
• Four additional African and African American studies courses

The Minor
The minor requires five courses, two of which must be African and African American Studies 102 and 103, and three of which must be at the 200 level or above. Courses must be selected in each of the following areas:
• arts or literature
• history
• social, religious, economic, or political institutions/processes
N.B. Both program foci (Africa and the Americas) must be represented in the three-course selection.
Departmental Graduation with Distinction

The program offers work leading to Graduation with Distinction. See the section on honors in this bulletin and contact the director of undergraduate studies.

Foreign Languages

The program recommends that majors complete at least two years of college-level study, or equivalent, of a foreign language. Students interested in additional study of African or Diaspora cultures are strongly encouraged to study an African or Caribbean language.

Animal Behavior

For courses in animal behavior, see biology on page 180.

Anthropology

See the departments of evolutionary anthropology (on page 323) and cultural anthropology (on page 225).

Arabic

For courses in Arabic, see Asian and Middle Eastern studies on page 156.

Art, Art History, and Visual and Media Studies

Professor Dillon, Chair; Professor McWilliam, Director of Undergraduate Studies; Professors Antliff, Bruzelius, Dillon, Forte, Hansen, Leighten, Lenoir, McWilliam, Morgan, Powell, Seaman, Stiles, Van Miegroet, Weisenfeld, and Wharton; Associate Professors Abe, and Gabara; Assistant Professors Galletti and Olson; Assistant Research Professors Lasch and Szabo; Professor of the Practice Noland, Rankin, and Shatzman; Assistant Professor of the Practice Salvatella de Prada; Adjunct Professor Schroth

A major and/or a minor is available in art history, visual arts, art history/visual arts, visual and media studies, and photography through this department.

Art History

Art history is the study of works of art in the context of the broader social, political, and intellectual cultures of which they are a part. Studying art history develops the ability to evaluate and organize information, visual as well as verbal; it also enhances the faculties of creative imagination, precise observation, clear expression, and critical judgment. Students of art history acquire a sophisticated understanding of the theory and practice of artistic production and reception.

A major or second major in art history provides basic training for those interested in teaching, museum and gallery work, art publishing, and advertising; the major also furnishes an appropriate background for graduate training in architecture. Art history's emphasis on careful observation, the ordering of diverse sorts of information, expository writing, and scholarly research makes it a good general preparation for any profession.

Courses in Art History (ARTHIST)

20. Basic Art History. Credit for Advanced Placement on the basis of the College Board examination in art history. Does not count toward the major in art history or design. One course.

89S. First-Year Seminar. ALP, CZ, R Topics vary each semester offered. Instructor: Staff. One course.

101D. Introduction to the History of Art. ALP, CCI, CZ Same as Art History 101, except instruction provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course.

102D. Introduction to the History of Art. ALP, CCI, CZ Same as Art History 102 except instruction provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course.

121. Medieval Cultures. ALP, CCI, CZ One course. C-L: see Medieval and Renaissance Studies 151; also C-L: Classical Studies 121, History 241
152. Renaissance Cultures. ALP, CCI, CZ One course. C-L: see Medieval and Renaissance Studies 152; also C-L: History 116, Italian 381

185FS. The Languages of Art. ALP, CCI, CZ How meaning is communicated by a work of art. Interpretive strategies. Visual languages developed and used by different societies. Relationship between visual and verbal languages, texts and images. Study of Semiotics and Iconology. Open only to students in the Focus Program. Instructor: Kachurin. One course.

190A. Duke-Administered Study Abroad: Special Topics in Art History. Topics differ by section. Instructor: Staff. One course.

190FS. Topics in Art History. ALP, CZ Subjects, areas, or themes that embrace a range of disciplines, art historical areas, and visual culture. Open only to students in the Focus Program. Instructor: Staff. One course.

190S. Special Topics in Art History. ALP Subjects, areas, or themes that embrace a range of disciplines or art historical areas. Instructor: Staff. One course.

197A. Visual Culture Outside the United States, I. ALP, CZ Course in the visual arts and/or architecture taught in Duke programs abroad. Instructor: Staff. One course.

198A. Visual Culture Outside the United States, II. ALP, CZ See Art History 197A. Instructor: Staff. One course.

203. Visualizing Cultural Dissent in Modernism, 1880-1945. ALP, CCI, CZ Interrelations of modernism and politics in a period of rapid social and technological change, rise of mass social movements, and political reaction on left and right. Development of new media in the form of prints and photography reflecting these changes and a variety of social movements and political positions by artists exploring a range of subjects, media, and exhibition venues from large-scale paintings in the annual state-sponsored salons to political satire in the press. Instructor: Leighton. One course. C-L: Visual and Media Studies 203, Policy Journalism and Media

205. The Aegean Bronze Age. ALP, CCI, CZ One course. C-L: see Classical Studies 352

206. Early Greek Archaeology: From the Fall of Mycenae to the Persian Wars. ALP, CCI, CZ One course. C-L: see Classical Studies 344

207. Classical Greek Archaeology, Archaic to Classical. ALP, CCI, CZ One course. C-L: see Classical Studies 348

208. Art and Archaeology of Ancient Athens. ALP, CCI, CZ Monuments, archaeology, art, and topography of ancient Athens from the Archaic to the Roman period. Examination of the physical remains of the city and countryside to trace the development of one of the most important city-states in the Greek world and to understand its impact on western civilization. Case study in understanding the role of archaeology in reconstructing the life and culture of the Athenians. Instructor: Dillon. One course. C-L: Classical Studies 248

209A. Rome: History of the City. ALP, CCI, CZ One course. C-L: see Classical Studies 340A; also C-L: History 238A

210. The Art of Greece and Rome. ALP, CCI, CZ Explores profound influence of Greek and Roman artistic legacy on Western art. Innovations include portrait, Baroque style, large-scale painting, public baths, theater. Explore art and architecture of Greece and Rome in social and cultural context, including major technical and aesthetic innovations. Role of artistic agency and patronage. Starts with the Classical age and ends with Christian emperor Constantine. Instructor: Dillon. One course. C-L: Classical Studies 250

215S. Representing Women in the Classical World. ALP, CCI, CZ, W The lives of women in the Classical world viewed through the visual culture of Classical art. Through images of women in statues, reliefs, coins, and painting, the course explores the role of visual representation in communicating complex social and political messages. Issues such as the construction of gender, the expression of power and status, the preservation of social hierarchies, the protection of normative values, and the manipulation and control of sexuality are considered. Instructor: Dillon. One course. C-L: Classical Studies 243, Visual and Media Studies 209

225. Gothic Cathedrals. ALP, CCI, CZ, R Great cathedrals of Europe in England, Germany, and Italy, with a special focus on France, from roughly 1140 to 1270, and their construction, financing, and role in the fabric of medieval city life. The urban context of each city, the history of the site and its relics, and the artistic and technological developments that made the construction of these complex and large-scale structures possible. A consider-
226. Medieval Architecture. ALP, CCI, CZ, R A survey of the origins and development of medieval church architecture from Late Antiquity to the High Middle Ages in the Mediterranean and Europe north of the Alps concentrating on the effects of the cult of relics, the inclusion of burials, the segmentation of the lay public, and different types of liturgical requirements on the shapes and spaces of religious buildings; the origins and development of fortifications and castles. Emphasis on monastic architecture and especially the buildings of the mendicant orders. Instructor: Bruzelius. One course. C-L: Medieval and Renaissance Studies 215

229. Contemporary Performance. ALP, R One course. C-L: see Dance 208; also C-L: African and African American Studies 229, Theater Studies 208

231. History of Art Markets. R, SS, STS Analytical survey of emergence of art markets, interactions between market behavior(s), visual/media culture(s). Addresses questions regarding the nature of art markets, the specificity of art markets and the application of economic and historical methodologies, how and where players in local markets throughout the world shape visual culture(s), effective causes for art consumption, taste, fashion throughout ages, and methodological implications of art market research at interface of Economics, Art History, Law and Visual Studies. Instructor: Van Miegroet. One course. C-L: Economics 344, Visual and Media Studies 242

232. Japanese Art, 1600 to the Present. ALP, CCI, CZ, EI Japanese visual culture from the end of the sixteenth century to the contemporary period encompassing the country's unification under Tokugawa rule and later emergence on the world stage through painting, sculpture, architecture, ceramics, decorative arts, photography, and print media. The relationship between artistic production and Japanese sociopolitical development seen through the critical issues of religion, region, gender, class, and nationalism. Ethical questions surrounding the establishment of the Japanese colonial empire in Asia, the Pacific War, the atomic bombings of Hiroshima and Nagasaki, the internment of Japanese-Americans in the United States, and the American Occupation of Japan. Instructor: Weisenfeld. One course. C-L: International Comparative Studies 309

234. Japanese Architecture. ALP, CCI, CZ A survey of major architectural traditions of Japan. Sites ranging from prehistoric tombs and dwellings to contemporary design work of architects such as Isozaki Arata and Ando Tadao. Focus on the development of various architectural typologies: Buddhist temples, Shinto shrines, tea ceremony structures, garden design, imperial and shogunal palaces, fortified castles, modern institutional structures, and private residences. Japanese architectural practices compared with other Asian and Euro-American building traditions. Aesthetic, structural, historical, social, and religious issues considered. Instructor: Weisenfeld. One course. C-L: International Comparative Studies

238. Science Fiction Film. ALP, CCI, EI, STS One course. C-L: see English 386

250D. Introduction to Modern Latin American Art and Visual Culture. ALP, CCI, CZ Latin American and Caribbean art and visual culture from independence to present. Examines cultural diversity of these regions through their rich artistic production, from fine arts such as painting, sculpture, and drawing to popular forms such as prints and posters, ceramics, textiles, design, and even sports. Topics include: art and politics; race, gender, and representation; colonialism, nationalism, and globalization; modernity and modernism; Latino/a art in the United States. Lectures and readings in English. Discussion sections available in English and Spanish. Instructor: Gabara. One course. C-L: Spanish 350D

255. Art in Renaissance Italy. ALP, CCI, CZ Introduction to the development of painting, sculpture, and architecture in Rome from the fifteenth to the early seventeenth centuries, focusing on the patronage of the Popes and Papal court. Instructor: Galletti. One course. C-L: Medieval and Renaissance Studies 225, Italian 386

255A. Renaissance and Baroque Art History. ALP, CCI, CZ Introduction to the development of painting, sculpture, and architecture in Rome from the fifteenth to the early seventeenth centuries, focusing on the patronage of the Popes and the Papal court. Consent required. (Taught at the Intercollegiate Center for Classical Studies in Rome.) Instructor: Galletti. One course. C-L: Medieval and Renaissance Studies 229A

256. Art in Spain During the Golden Age. ALP Survey of the visual arts in Spain from 1550-1770, with an emphasis on artistic centers of Toledo, Madrid, and Seville. Concentration on the effects of royal patronage, the role of the Church, and the artist's status in society. Field trips to Ackland Art Museum, UNC, Chapel Hill, and the NC Museum of Art, Raleigh. Instructor: Schroth. One course. C-L: Spanish 360


259. Michelangelo in Context. ALP, CCI, CZ Historical and cultural contextualization of the work of Michelangelo Buonarroti (1475-1564), painting, sculpture and architecture. History, historiography, contemporary debate and scholarship concerning his work of artistic training and workshop practice, techniques, centers of production, art markets and consumption, antiquarianism and art collections, patronage, identity, gender, artistic rivalry, spread of knowledge and models, relationship with the spectator, social life, sacred and secular spaces and objects. Field trip to the Metropolitan Museum of Art collection of Renaissance architectural drawings and prints in New York. Instructor: Galletti. One course. C-L: Medieval and Renaissance Studies 227FS


261. The Contemporary Art Market. ALP, R, SS One course. C-L: see Economics 343; also C-L: Markets and Management Studies


280. European Art 1900-1945. ALP, CCI, CZ Major artistic movements and theoretical aims of early modernism: fauvism, cubism, expressionism, futurism, constructivism, suprematism, dada, surrealism, de Stijl, Bauhaus, and
Neue Sachlichkeit in France, Italy, Germany, America. Instructor: Antliff, Leighten, or Stiles. One course. C-L: Italian 384, Women's Studies, International Comparative Studies

282S. Painting Russia Red: Early Soviet Culture, 1917-1934. ALP, CCI, CZ One course. C-L: see Russian 375S


285D. Modern Architecture. ALP, CCI, CZ The history of European and American architecture from the eighteenth-century Neo-Classicism through Gothic Revival, Art Nouveau, and Arts and Crafts to the early twentieth century Bauhaus. Labrouste, Richardson, early Wright, and LeCorbusier among the architects considered. Instructor: Wharton. One course. C-L: International Comparative Studies 231D

286D. Contemporary Architecture. ALP, CCI, CZ Background examination of the Bauhaus through Corporate International Style as a background to the Postmodern core of the course. Later Wright and LeCorbusier, Gehry, Graves, Eisenman, Disney Imaginers among the architects and designers considered. Political, ideological, aesthetic, and technical aspects of building investigated through primary texts. Instructor: Wharton. One course.

287. Russian Art and Politics: 1800-Present. ALP, CCI, CZ One course. C-L: see Russian 217

287FS. Russian Art and Politics. ALP, CCI, CZ One course. C-L: see Russian 217FS

288. Dada and Surrealism. ALP, CCI, CZ The origins, aims, literature, and politics of the international movements of dada and surrealism, which flourished between the world wars, examined in the light of dada and surrealist theory, literature, and art. Instructor: Leighten. One course. C-L: Women's Studies


290. Special Topics in Art History. ALP Topics vary by semester. Instructor: Staff. One course.

290-1. Topics in Medieval Art and Architecture. ALP, CCI, CZ Specific problems dealing with contextual and cultural issues in medieval art and architecture from c. 300 to 1400. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 290-1

290A-1. Topics in Italian Art and Architecture. Topics vary from year to year. Consent of instructor required. (Taught in Italy.) Instructor: Staff. One course.

291. Independent Study. Directed reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or report. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

292. Independent Study. See Art History 291. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

293. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

294. Research Independent Study. R See Art History 293. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

295. Chinese Art 1900 to Present. ALP, CCI, CZ, R Study of selected works of Chinese art and visual culture (painting, sculpture, architecture, video, performance, and installation art; fashion design and cinema) from 1900 to the present. Emphasis on the visual analysis of objects as well as their social and historical context. Instructor: Abe. One course. C-L: International Comparative Studies
296A. Berlin: Architecture, Art and the City, 1871-Present. ALP, CCI, CZ One course. C-L: see German 322A; also C-L: International Comparative Studies

297A. Art and Architecture of Berlin, Fifteenth to the Twentieth Century. ALP, CCI, CZ Introduction to the visual arts of Germany from the fifteenth to the twentieth century through lectures conducted in Berlin's museums and cultural institutions. German Old Masters, German Romantic and Realist artists, Modernist art movements, such as Expressionism and New Objectivity, considered in relation to upheavals in modern German history. Taught in English in the Duke-in-Berlin summer program. Instructor: Staff. One course. C-L: German 365A


303. History of Photography, 1839 to the Present. ALP, CCI, CZ Major artists and movements in the history of the photographic medium, including visual and critical traditions inherited and manipulated by photographers, the ways photography participated in nineteenth- and twentieth-century art movements as well as documentation and social change, and critical photographic discourse throughout this period. Topics include the invention of photography, 'Art' photography and documentary photography in the nineteenth century, pictorialism, 'straight' and purist photography, photography and modernist art movements (dada, surrealism, Bauhaus, Russian avant-garde), twentieth-century documentary, and photography of the 1950s, 1960s, 1970s, 1980s, and 1990s. Instructor: Leighten. One course. C-L: Visual and Media Studies 303, Documentary Studies, Arts of the Moving Image

304. Cubism and Culture. ALP, CCI, CZ, W Development of Cubism from its origins in Paris in 1907 to the movement's decline in the 1920's. Cubist aesthetics is contextualized in light of the cultural politics of the period. Topics may include tradition, primitivism, and anti-colonialism, anarchism and politics, approaches to collage, contemporary philosophy and science, and the role of gender in Cubist aesthetics. Instructor: Antliff or Leighten. One course.


310. Museum Internship. ALP, R Museum work in the context of art historical, ethical, philosophical, and economic issues related to the presentation of art in museums. Under direction of museum director, curators, or other staff, independent research project and practicum and production of a document or publication as a culmination of the course. Instructor: Wardle. One course.

311. Museum Internship, Part 2. ALP, R Museum work in the context of art historical, ethical, philosophical, and economic issues related to the presentation of art in museums. Under direction of museum director, curators, or other staff, independent research project and practicum and production of a document or publication as a culmination of the course. Prerequisite: ARTHIST 310. Instructor: Wardle. One course.

312A. Internship in New York. One course. C-L: see English 313A; also C-L: Theater Studies 214A, Visual and Media Studies 296A

313A. The Business of Art and Media. One course. C-L: see English 310A; also C-L: Visual and Media Studies 301A

334. Roman Spectacle. ALP, CCI, CZ, EI Gladiatorial games, wild beast hunts, elaborately-staged executions of condemned criminals, and chariot racing as some of the most popular forms of public entertainment in the Roman world. The ritual of these entertainments and spectacles, the circumstances of and occasions for their performance, and the form and elaboration of the venues - the amphitheater, the circus, the theater, and the stadium - in which they took place. Visual and literary representations of these spectacles. Instructor: Dillon. One course. C-L: Visual and Media Studies 334, Classical Studies 354
336. Pilgrimage and Tourism. ALP, CCI, CZ, EI, W Investigation of pilgrimage and tourist destinations (Jerusalem, Rome, Santiago, Orlando, New York) from the Middle Ages to the present through a study of their material remains, primary sources and theoretical texts. Discussion of the moral and ethical issues involved in marketing authenticity from a cross-cultural and comparative perspective. Evaluation based on weekly student written assessments of the texts and the presentation of a pilgrimage site of their choice. Instructor: Wharton. One course. C-L: Religion 260, Visual and Media Studies 336

337. Netherlandish Art and Visual Culture in the Seventeenth and Eighteenth Centuries. ALP, CCI, CZ, R A contextual study of northern Netherlands art, seen through the major Dutch cities and towns where painters, such as Frans Hals and Johannes Vermeer, were at work. Rembrandt and his school; Dutch art in its historical, societal, moral, and psychological context. Instructor: Van Miegroet. One course. C-L: Medieval and Renaissance Studies 249, International Comparative Studies

340S. Classical Sculpture. ALP, CZ, W Statues were "other population" of Greece and Rome. Portraits of athletes, generals, kings, emperors lined streets and filled markets. Why? What do statues do for people setting them up, for people viewing them? Seminar explores place of statues in Greek and Roman society, and relationship between context, style, and meaning. Course approaches materially thematically and contextually. Particular attention paid to changing physical, cultural, historical, political contexts in which statues were set up and in which they continued to operate for centuries. Instructor consent required. Instructor: Dillon. One course. C-L: Classical Studies 346S

350. Representing the Artist in Film and Popular Culture. ALP Cultural constructions of the artist and the art world, using fictional and documentary film as starting point; the artist in literature; popular conceptions of artistic biography, mentality, and lifestyle -- genius, gender, sexuality, madness, boheminism; relationship between images of the artist in popular culture and methods within academic art history; the artist in cinema from Michelangelo to Warhol. No prerequisites. Instructor: McWilliam. One course. C-L: Visual and Media Studies 343, Arts of the Moving Image 351


381D. Global Art Since 1945. ALP, CCI, CZ, EI Major avant-garde movements of the post-World War II era covered globally, from abstract expressionist painting to multimedia interactive art, all of which concentrate on the social, political, and cultural impact of experimental art after the atomic age and in the aftermath of the Holocaust, continuing into the post-biological age of genetic engineering. Focus on the vast changes that have occurred in art and its media since 1945 and the moral and ethical roles that art plays in shaping culture and in reflecting its social exigencies. Instructor: Stiles. One course. C-L: Women's Studies 277D, International Comparative Studies 219D, Study of Ethics

383. The Black Atlantic. ALP, CCI, CZ. The African diapora--a direct result of the transatlantic slave trade and Western colonialism--has generated a wide array of artistic achievements, from the "shotgun" houses of New Orleans to the urban graffiti of NYC. The course surveys several major cultural groups in West and Central Africa and their aesthetic impact on the arts, religions, and philosophies of peoples of African descent in South America, the Caribbean, and the United States. Instructor: Powell. One course. C-L: African and African American Studies 329, International Comparative Studies 226S

384. Art of the United States. ALP, CZ, EI Course introduces the major art forms and aesthetic theories developed in the US from colonial period to present. Emphasis on architecture, painting, sculpture, graphic, and decorative arts. Structured chronologically, this course defines the characteristics of the different historical periods and the ways American artists both adopted and diverged from other models to create their own, distinctive national identity. Instructor: Powell. One course.

390. Special Topics in Art History. ALP Topics vary by semester. Instructor: Staff. One course.

390-1. Topics in Renaissance Art. ALP, CCI, CZ Specific problems dealing with the iconography, style, or an individual master from c. 1300 to 1600. Subject varies from year to year. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 390-1

390S. Special Topics in Art History. Subjects, areas, or themes that embrace a range of disciplines or art historical areas. Consent of instructor required. Instructor: Staff. One course.

390SL. Special Topics in Art History and Digital Visualization. ALP Subjects, areas, or themes that embrace a range of disciplines of art historical areas and the visualization of this information or material culture through digital technologies. Instructor consent required. Instructor: Staff. One course.


490-1. Topics in Nineteenth Century European Art. ALP, CCI, CZ Focus on a major aspect of nineteenth century European art. Subject varies from year to year. Instructor: Staff. One course.

490-2. Topics in Twentieth Century Art (TOP). ALP, CCI, CZ Focus on a major aspect of Twentieth century European art. Subject varies from year to year. Instructor: Staff. One course.

490-3. Topics in Contemporary Art. ALP, CCI, CZ Focus on a major aspect of contemporary European art. Subject varies from year to year. Instructor: Staff. One course.

490-4. Topics in History of Photography. ALP, CZ Focus on periods, cultures and major ethical, social and political issues in the history of the photographic medium. Subject varies from year to year. Instructor: Leighten. One course.

490S. Special Topics. Focus on particular aspects of Art and Art History. Topics vary. Instructor consent required. Topics course. Instructor: Staff. One course.

491. Independent Study. Directed reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or report. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

492. Independent Study. See Art History 491. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

493. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

494. Research Independent Study. R See Art History 493. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

501S. Greek Art and Society: Archaic To Classical. ALP, CCI, CZ, R Main categories of buildings, monuments, and images most characteristic of ancient city life in fifth and fourth centuries BCE. Range of material studied: city plans, temples, statues, reliefs, painted pottery. Emphasis on archaeological and historical contexts; questions and themes concern relation of new forms of public building and representation to changing historical circumstances. Fifth century made decisive break with archaic visual modes; area of special investigation is swift emergence and consolidation of revolutionary way of seeing and representing known as 'classical art'. Instructor: Dillon. One course. C-L: Classical Studies 541S

502S. Greek Art: Hellenistic to Roman. ALP, CCI, CZ Seminar explores art of Greek East from 300 B.C.E to 300 C.E.; emphasis on understanding and analyzing production, style, materials, functions. Sculpture made for Hellenistic kings and cities, and changes in sculptural production with Roman conquest and imperial rule. Main categories of evidence: funerary monuments, portrait statues, heroic groups in baroque style, Dionysiac-themed decorative sculpture. Issues of stylistic categories, periodization, meaning and interpretation, theoretical perspectives expressed in ancient literary texts, and current scholarly debates and trends in study of Hellenistic and Roman art in a Greek context form an integral part of the seminar. Instructor: Dillon. One course. C-L: Classical Studies 542S

506A. History of Netherlandish Art and Visual Culture in a European Context. ALP, CCI, CZ, R A contextual study of visual culture in the Greater Netherlands and its underlying historical and socioeconomic assumptions from the late medieval to early modern period, through immediate contact with urban cultures, such as Amsterdam,
Leiden, Utrecht, Brussels, Ghent, Bruges, and Antwerp. Includes daily visits to major museums, buildings, and sites; hands-on research in various collections; discussion sessions with leading scholars in the field; and a critical introduction to various research strategies. (Taught in the Netherlands.) Not open to students who have taken Art History 262A-263A. Course credit contingent upon completion of Art History 507A. Instructor: Van Miegroet. One course. C-L: Medieval and Renaissance Studies 504A, Visual and Media Studies 506A, International Comparative Studies


536S. Technology and New Media: Academic Practice. SS, STS One course. C-L: Visual and Media Studies 562S


538S. Museum Theory and Practice. ALP, R Museum theory and the operation of museums, especially art museums, and how the gap between theory and practice is negotiated in the real world setting. Issues involving collecting practices, exhibition practices, and didactic techniques, as well as legal and ethical issues. Taught in the Nasher Museum. Instructor: Staff. One course. C-L: Markets and Management Studies

540S. Topics in Nineteenth-Century Art. ALP, CCI, CZ, R Focus on a major artist, movement, or trend in nineteenth-century art. Subject varies from year to year. Consent of instructor required. Instructors: Antliff, Leighten, or McWilliam. One course.

541S. The Symbolist Movement in the Arts & European Thought. ALP, CZ Investigates the relationship linking Symbolist aesthetics and practice with currents in European philosophy in the late nineteenth and early twentieth centuries. The reaction against Positivism; aesthetic idealism and the Platonic tradition; the influence of Schopenhauer and Nietzsche on artists and writers; Symbolism and mysticism (Theosophy, Rosicrucianism, the occult); Symbolism and the Catholic revival; Art nouveau and theories of psychology; the anarchist impulse. Emphasis on visual arts in France, England and Germany; focus on the relationship between word and image in Symbolist poetics. McWilliam. One course. C-L: Literature 541S


543S. Methodology of Art History. ALP, CZ, R, W Various theoretical perspectives that have shaped different disciplinary perspectives and practices in art history. Introduction to particular types of methodologies (i.e. Marxism, feminism, race and gender, psychoanalysis, post-colonial theory, and deconstruction) as fields of inquiry through which the study of the visual arts and culture have been practiced. Historiography of the last two decades in art history; selected contemporary debates. Instructor: Staff. One course.


546S. The American Artist. ALP, CZ, R, W This course utilizes art historical methodologies as tools for critical inquiry and scholarly research on one American artist (selected as per this seminar's scheduling every four years). Apart from a firm biographical and art historical grasp of the specific American artist under investigation, the goal of this course is to develop visual literacy of American art through seeing and writing. An emphasis will be placed on improving various forms of written art discourse (i.e., descriptive, expository, interpretative, etc. Instructor: staff. One course.

551LS. Wired! New Representational Technologies. ALP, CZ, STS Research and study in material culture and the visual arts expressed by using new visual technologies to record and communicate complex sets of visual and
physical data from urban and/or archaeological sites. Introduces techniques for the presentation and interpretation of visual material through a series of interpretative and reconstructive technologies, including the development of webpages (HTML/Dreamweaver), Photoshop, Illustrator, Google Sketch-up, Google Maps, and Flash. To develop techniques of interpretation and representation. Consent of instructor required. Instructors: Bruzelius, Dillon, or Olson. One course. C-L: Visual and Media Studies 551LS, Information Science and Information Studies 551LS

554S. Harlem Renaissance. ALP, CCI, CZ, R The art and culture that was produced by and about African Americans (largely in the western metropoles) during the period roughly between the two world wars. Chronological overview, a focus on individual figures, and study of the criticism and creative writings of this period. Other topics include black migrations to urban centers, performance-as-a-visual-paradigm, racial and cultural primitivism, and an alternative, African American stream of early twentieth century visual modernism. Instructor: Powell. One course. C-L: African and African American Studies 520S

557S. Trauma in Art, Literature, Film, and Visual Culture. ALP, CZ, EI Theories of trauma applied to visual representations of violence, destruction, and pain in contemporary art, film, and literature, examining the topic through multiple subjects from the Holocaust, cults, gangs, racism, and sexual abuse to cultures of trauma. Theories of trauma examined from a variety of sources including clinical psychology, cultural and trauma studies, art, film, and literature, aiming to enable students to gain the visual acuity to identify, understand, and respond to traumatic images with empathy. Not open to students who have previously taken this course as Art History 295S. Instructor: Stiles. One course. C-L: Visual and Media Studies 557S

558S. Spatial Practices. ALP, CCI, CZ, R How space works from medieval refectories to Starbucks, from Jerusalem to Las Vegas, from mikvaot to hot spring spas. Consideration of space through theoretical texts, including Lefebvre, Habermas, Eliade, Zizek, and mapped on specific historical landscapes. Consent of instructor required: preference given to students earning concentration in architecture. Instructor: Wharton. One course.

560SL. Roman Topography: Urban Life and Cityscapes in Ancient Rome. CCI, CZ, R, SS C-L: see Classical Studies 556SL; also C-L: Visual and Media Studies 570SL

561. Etruscan Cities. CCI, CZ One course. C-L: see Classical Studies 560

589S. Critical Animal Studies in Art and Visual Culture. ALP, CCI, CZ, EI, R The visual culture constructed around animals, including images of animals from prehistoric to contemporary representations, the role of visualization in animal rights and survival, animals as human totems and stuffed toys, portrayals of animal consciousness and debates about speciesism, in the analysis of the cultural objectification and societal subjectification of animals. Instructor: Stiles. One course.

590S. Special Topics. ALP Subjects, areas, or themes that embrace a range of disciplines or art historical areas. Instructor: Staff. One course.

590S-01. Special Topics in Greek Art. ALP Problems and issues in a specific period or genre of Greek material culture. Instructor consent required. Instructor: Dillon. One course. C-L: Classical Studies 590

590S-10. Special Topics in Roman Archaeology. ALP, CZ One course. C-L: see Classical Studies 590LS

590S-11. Special Topics in Greek Archaeology. ALP, CZ One course. C-L: see Classical Studies 590SL-1

590S-2. Topics in Renaissance Studies. ALP, CCI, CZ One course. C-L: see Italian 590S-1; also C-L: Medieval and Renaissance Studies 690S-2

590S-3. Topics in Romanesque and Gothic Art and Architecture. ALP, CCI, CZ, R Analysis of an individual topic. Subject varies from year to year. Consent of instructor required. Instructor: Bruzelius. One course. C-L: Medieval and Renaissance Studies 590S-1

590S-4. Topics in Italian Renaissance Art. ALP, CCI, CZ, R Topics in art and/or architecture from c. 1300 to c. 1600. Subject varies from year to year. Consent of instructor required. Instructor: Galletti. One course. C-L: Medieval and Renaissance Studies 590S-2

590S-6. Topics in Chinese Art. ALP, CCI, CZ, R Problems and issues in a specific period or genre of Chinese art. Specific focus varies from year to year. Instructor: Abe. One course. C-L: International Comparative Studies


590S-8. Topics in Modern Art. ALP, CZ, R Selected themes in modern art before 1945, with emphasis on major movements or masters. Subject varies from year to year. Consent of instructor required. Instructor: Antliff, Leighten, or Stiles. One course. C-L: International Comparative Studies

590S-9. Topics in Art since 1945. ALP, CZ, R Historical and critical principles applied to present-day artists and/or movements in all media since World War II. Consent of instructor required. Instructor: Stiles. One course. C-L: International Comparative Studies

630S. Phenomenology and Media. ALP, CCI, CZ, R, STS One course. C-L: see Literature 630S; also C-L: Information Science and Information Studies 630S, Visual and Media Studies 630S, Arts of the Moving Image 631S

632S. Whitehead, Bergson, James. ALP, CCI, CZ, EI One course. C-L: see Literature 632S; also C-L: Information Science and Information Studies 632S, Visual and Media Studies 632S, Arts of the Moving Image 632S

### Historical and Cultural Visualization

#### Courses in Historical and Cultural Visualization (HCVIS)

515S. Representing Architecture: Means and Methods. ALP, R Projects and skills based studio course. Exploration of the historic and contemporary techniques and technologies used to visualize, communicate and document, built/historic, proposed or hypothesized architecture and its construction. Focus on its application for art, architectural history and the humanities, as well as architectural design training. Topics covered include hand sketching, ortho/perspective representation, 2d CAD, 3d modeling and potential explorations of 3d immersion/VR or 3d printing/model-making. Presented in a series of short, topic-based studio exercises culminating in a final project, which may relate to the student's research interests. Instructor consent required. Instructor: Berreth. One course. C-L: Visual Arts 515S, Art History 515S


581S. Historical and Cultural Visualization Proseminar 2. ALP, STS Interactivity and online content management through databases, collaborative blogs, and other systems. Data visualization based on textual, image, and quantitative sources. Basic techniques for virtual reality, simulations, augmented reality, and game-based historical and cultural visualization project development. Mini-projects based on existing and new research data from the Wired! Lab and elsewhere. Best practices for digital research project planning and collaboration. Theoretical topics include: critical digital heritage, virtuality and culture, information aesthetics, hypermedia information design. Instructor consent required. Historical and Cultural Visualization 580S required. Instructor: Szabo or Olson. One course. C-L: Visual and Media Studies 581S, Information Science and Information Studies 581S

### Visual Arts

Studio art courses offer directed experiences in the practice of the visual arts, enhancing the understanding of art both within the history of culture and as an individual human achievement. Department offerings emphasize the analysis and articulation of visual concepts and processes as they relate to a broader education in the humanities and sciences.

122 Art, Art History, and Visual and Media Studies
Courses in Visual Arts (ARTSVIS)


89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

102. Introduction to the Arts of the Moving Image. ALP One course. C-L: see Arts of the Moving Image 101; also C-L: Visual and Media Studies 102, Information Science and Information Studies 111, Literature 111

115S. Introduction to Photography. ALP One course. C-L: see Documentary Studies 115S; also C-L: Visual and Media Studies 115S

120. Beginning Painting. ALP Studio practice in painting with individual and group criticism and discussion of important historic or contemporary ideas. Prerequisites: Visual Arts 199 and consent of instructor. Instructor: Lasch. One course.

130. Experimental Drawing: Image and Bit Play. ALP Approaches the creation of digital image-making in collective play. Includes individual and group brainstorming using different digital and traditional analogue (drawing, painting, and collage) processes to study how the ludic(play) enables creative thinking and experimentation in digital image manipulation. Database of images presented from multiple genres. Students work on outside assignment critiqued at end of class. Instructor: Seaman. One course. C-L: Visual and Media Studies 131


190FS. Topics in Visual Arts. ALP Subjects, areas, or themes that embrace art and visual culture. Open only to students in the Focus program. Instructor: Staff. One course.

196FS. The Photobook: History & Practice. ALP, CZ Cultural, intellectual and artistic history and uses of the book in photographic practice. Traces technical, conceptual, formal innovations that mark international history of photography books through lectures/hands-on examination of key books, including lesser known innovations and uses of photobook in Eastern Europe, the Soviet Union and Japan. Marries historical awareness with studio practice. Simultaneous immersion in production of images as well as collecting of archives from various cultures. Crafting of photobooks in several genres as students edit, print, scan, assemble materials. Seminar includes readings, discussions, short writings, field trips. Focus Program only. Instructor consent required. Instructor: Noland. One course. C-L: Visual and Media Studies 196FS

198. Experimental Interface Design. ALP, STS Class explores issues surrounding embodied approaches to interface design. Articulates methodology for generating new forms of human/computer interface; includes workshops, discussions, student presentations, critiques and group brainstorming sessions. Content related to biometrics; haptic body knowledge; multi-modal sensing; physical computing; physical | digital relationships; networked relations; the potentials of virtual space and different qualities of space, both visual and sonic. Database potentials discussed and explored in service of developing new approaches to interface. Instructor: Seaman/Staff. One course. C-L: Visual and Media Studies 198, Arts of the Moving Image 198, Information Science and Information Studies 198

199. Drawing. ALP Drawing as integrative tool where ideas and processes explored and expanded through a variety of media. Still life, figure, landscape, architecture. Representation, abstraction, and working from imagination. Through problem solving within a range of projects, development of a visual language, and drawing skills to be applied to conceptual, visual, and technical disciplines. Instructor: Staff. One course.

201. Book Art: Form and Function. ALP Studio course examining all aspects of bookmaking, including theories of bookmaking, designing and planning, typography, computer design, illustration, and binding. Prerequisites: Visual Arts 199 and consent of instructor. Instructor: Shatzman. One course. C-L: Visual and Media Studies 201

202. Figure Drawing. ALP The human figure through different artistic media and from different visual perspectives. Emphasis on drawing and design skills and an anatomical knowledge of the human form. A significant body of drawings is developed in this class. Prerequisites: Visual Arts 199 and consent of instructor based on portfolio. Instructor: Staff. One course.
203. Introduction to Architectural Design. ALP
Introduction to architectural design: space making with emphasis on process, abstraction, and modes of representation. Drawing conventions, orthographic projection, model building, rendering, digital technologies as forms of visual inquiry. Tectonics, space, scale, and material as ensemble parts of project presentations to represent ideas as well as artifacts. Final projects on building program and architectural issues: threshold, view, entry. Instructor consent required. Instructor: Jones. One course.

205. Intermediate Drawing. ALP, R
Allows students to explore their artistic interests and biases through a series of self-directed projects. Both the directness and the flexibility of the medium of drawing are investigated. Prerequisites: Visual Arts 199 and consent of instructor. Instructor: Staff. One course.

206. Digital Imaging. ALP
Photoshop and Illustrator used to introduce single and serial images for print and web output. Consent of instructor required. Instructor: Salvatella de Prada. One course. C-L: Visual and Media Studies 206, Documentary Studies, Information Science and Information Studies

208LS. Virtual Form and Space.
Studio course that explores various applications of virtual environments and specific 3D modeling techniques. Introduction to animation principles. Screenings, discussions, and lab. Prerequisites: Visual Arts 199 and consent of instructor required. Instructor: Staff. One course. C-L: Visual and Media Studies 395LS, Information Science and Information Studies 208LS, Arts of the Moving Image 321LS

209. 3D Modeling and Animation. ALP
Basic concepts of 3D modeling and animation; fundamentals of computer geometry; knowledge of basic tools of 3D software (Maya); introduction to modeling, animation, texturing, lighting, and rendering; combination of these techniques in a final project. Prerequisite: Visual and Media Studies 206 or 396 and consent of instructor. Instructor: Salvatella de Prada. One course. C-L: Visual and Media Studies 351

210. Sculpture. ALP
Sculptural principles, processes, and issues introduced through lectures, readings, studio assignments, individual projects, and field trips. Consent of instructor required. Instructor: Noland. One course.

211. Site, Situation, and Object: Sculpture and Architecture. ALP
Studio practice in sculpture at the intermediate level. Group and individual discussion and critique. Prerequisite: Visual Arts 210 and consent of instructor. Instructor: Noland. One course.

212S. A Digital Approach to Documentary Photography: Capturing Transience. ALP
One course. C-L: see Documentary Studies 209S; also C-L: Visual and Media Studies 212S, Education 209S, Information Science and Information Studies

216. Documentary Photography and the Southern Culture Landscape. ALP, CCI
One course. C-L: see Documentary Studies 215; also C-L: Visual and Media Studies 215

218S. Photo Workshop. ALP
One course. C-L: see Documentary Studies 217S

219S. Photography. ALP, CZ
An emphasis on how to see with the camera and ways of thinking about photographs. Class assignments accompanied by historical and theoretical readings, lectures, class discussions, and field trips. Final projects are a self-portrait series and an individual documentary essay. Prerequisites: camera and consent of instructor. Instructor: Staff. One course. C-L: Documentary Studies, Arts of the Moving Image

220. Intermediate Painting. ALP
Studio practice in painting with individual and group criticism and discussion of important historic or contemporary ideas. Prerequisites: Visual Arts 199 and consent of instructor. Instructor: Staff. One course.

221S. Alternative Photographic Processes. ALP
One course. C-L: see Documentary Studies 218S; also C-L: Visual and Media Studies 216S

222S. The Photographic Portfolio. ALP
Students actively seek specific photographic territory to explore and build a body of work. The resulting images are extensively work-shopped for sequencing. Particular emphasis on the making of high quality prints. Semester culminates in the production of finished portfolios in three formats: a printed form, a digital form, and an exhibition or installation form. Each student's evolving body of work to be informed by relevant precedents from the history of photography. These are brought into discussions of the work as the semester progresses, with an emphasis on examining bodies of photographic work that communicate something larger than a single idea. Instructor consent required. Instructor: Noland. One course. C-L: Arts of the Moving Image

223. Graphic Design in Multimedia: Theory and Practice. ALP
Design history and theory. Lectures and projects focused on direct interaction with digitized elements of historically significant designs. Design elements and

224. Printmaking: Silkscreen. ALP, R The silkscreen medium and its stencil-making processes including paper stencils, blockouts crayon, and photographic methods. Students develop a significant body of prints using these techniques. Consent of instructor required. Instructor: Shatzman. One course. C-L: Visual and Media Studies 221

226. Printmaking: Relief and Monotype. ALP, R Relief methods of woodcut and linoleum block printing and monotype techniques. Concentration on both the technical and historical aspects of the media and its expressive potentials. Students develop a significant body of prints using these techniques. Instructor consent required. Instructor: Shatzman. One course.

227. Printmaking: Intaglio. ALP, R Directed problems in the intaglio medium including etching, aquatint, drypoint, black and white, and color printing methods. Assigned projects emphasize conceptual issues supported by the medium. Students develop a significant body of prints through use of this medium. Prerequisites: Visual Arts 199 and consent of instructor. Instructor: Shatzman. One course.

229S. Experimental Filmmaking. ALP One course. C-L: see Arts of the Moving Image 340S

230S. Collaborative Art: Practice and Theory of Working Within a Community. ALP One course. C-L: see Documentary Studies 329S; also C-L: Visual and Media Studies 219S

232S. Small Town USA: Local Collaborations. ALP, CCI, R One course. C-L: see Documentary Studies 230S; also C-L: Public Policy Studies 389S, Visual and Media Studies 224S, Policy Journalism and Media Studies

233S. Costume Design. ALP, R One course. C-L: see Theater Studies 261S

234S. Scene Design. ALP, R One course. C-L: see Theater Studies 262S

235S. Lighting Design. ALP, R One course. C-L: see Theater Studies 263S; also C-L: Dance 276S

236S. Motion Graphics in Film and Video. ALP, STS One course. C-L: see Arts of the Moving Image 322S; also C-L: Visual and Media Studies 272S

237. Book Art: Typography as Image. ALP Investigates use of text as vehicle for communication and visual form within book format. Typography, interaction of writing and page design, history of typography, writing and printed page, use of written form as work of art, book design, binding and how text as visual element interacts with and becomes the image. Prerequisite: Visual Arts 201 preferred. Instructor consent required. Instructor: Shatzman. One course. C-L: Visual and Media Studies 243


239S. Gaming the System: Pervasive Gaming as Art. ALP, STS Explores the genre of pervasive or alternate reality gaming, in which the computer gameplay extends beyond typical screen spaces to any area of the player's life, often employing dispersed unconventional "real world" media, such as websites, emails, instant messaging, text messages, online videos, and even direct human interaction. Examines how blurring common distinctions between game and life opens new critical possibilities for artists. Engages students by designing and staging their own alternate reality game as a transformative social action. Open to undergraduates and graduate students. No prerequisites, though prior programming experience is helpful. Instructor: Staff. One course. C-L: Information Science and Information Studies 273S, Visual and Media Studies 239S

240S. Color Photography: Fieldwork and Digital Color. ALP One course. C-L: see Documentary Studies 236S; also C-L: Visual and Media Studies 227S

241S. The Photographic Essay: Narratives Through Pictures. ALP One course. C-L: see Documentary Studies 239S; also C-L: Public Policy Studies 399S
242L. **Interactive Graphics: Critical Code.** ALP, QS
Introduction to interactive graphics programming for artists. Explores object-oriented programming via the Processing programming environment as well as historical and theoretical appreciation of interactivity and computer graphics as artistic mediums. Combines discussions of key concepts from the readings with hands-on Processing projects and critiques. No previous programming experience or prerequisites required. Enrollment limited to 15 students. Instructor: Staff. One course. C-L: Visual and Media Studies 397L, Information Science and Information Studies 294L, Arts of the Moving Image 323, Policy Journalism and Media Studies

244. **Photography.** ALP Practice in photography. Consent of instructor required. Instructor: Staff. Half course.


248S. **Cinematography.** ALP One course. C-L: see Arts of the Moving Image 355S; also C-L: Visual and Media Studies 260S, Documentary Studies 281S

249S. **The Photobook: History and Practice.** ALP, CCI, CZ Cultural, intellectual and artistic history and uses of the book in photographic practice. Traces technical, conceptual, formal innovations that mark international history of photography books through lectures/hands-on examination of key books, including lesser known innovations and uses of photobook in Eastern Europe, the Soviet Union and Japan. Marries historical awareness with studio practice. Simultaneous immersion in production of images as well as collecting of archives from various cultures. Crafting of photobooks in several genres as students edit, print, scan, assemble materials. Seminar includes readings, discussions, short writings, field trips. Consent of instructor required. Instructor: Noland. One course. C-L: Visual and Media Studies 350S

254S. **Photography in Context.** ALP, R One course. C-L: see Documentary Studies 245S; also C-L: Visual and Media Studies 252S, International Comparative Studies 245S

258S. **Electronic Music and Video Workshop.** ALP, STS One course. C-L: see Music 275S; also C-L: Arts of the Moving Image 358S

269. **Personal Geographics: Mapping Self-Identity.** ALP, R Using mapping as structure of applying informational graphics, students explore aspects of visually charting self-identity. Through graphic design principles students investigate how to visually use mapping, signage and data to portray culture, history, ethnicity, memory relating to their individual backgrounds. Using traditionally based, digital media and typography students create digital images and artist book based on mapping addressing specific assignments using Adobe Photoshop, Illustrator and Indesign. Some knowledge of Adobe Photoshop and Illustrator preferred. Instructor: Merrill Shatzman. One course. C-L: Visual and Media Studies 270

281S. **Graphic Design in Motion.** Motion Design is the creation of animated graphics using graphic design, typography, advertising, photography, animation sound and filmmaking. Emphasis will be on design, conceptualization and ability to communicate ideas and work collaboratively. Learn language and principles of graphic design by developing a method for solving design problems, communicating ideas effectively, and creating professional motion design such as title credits, logo animation, and news reel that can be integrated into film, life performance or web. Photoshop, Illustrator, After Effects, video editing and 3D software will be used. Instructor consent required. Instructor: Salvatella de Prada. One course. C-L: Visual and Media Studies 281S, Arts of the Moving Image 358S

290. **Topics in Visual Arts.** ALP Subject varies from year to year. Consent of instructor required. Instructor: Staff. One course.

290S. **Special Topics in Visual Arts.** ALP Subject varies from year to year. Instructor: Staff. One course.

291. **Individual Project in the Visual Arts.** Individual directed study in a field of visual practice on a previously approved topic, under the supervision of a regular-rank faculty member, resulting in a academic and/or artistic product. Instructor consent required. Instructor; Staff. One course.

305L. **Virtual Museums: Theories and Methods of 21st Century Museums.** ALP, R, STS Analysis of interaction between virtual museum theories/practices and society. Focuses on digital technologies and interactive media. Students develop critical understanding of new practices of cultural data management; learn interactive pre-visit/post-visit tools employed by museums worldwide. Lab section focuses on digital acquisition of artifacts, web visualization and interaction design techniques. Guest lectures held by Nasher staff. Case study is digital acquisition of Nasher Classical Antiquities collection. Final project is design of interactive exhibit of works of art from the ancient

325S. Visiting Filmmaker Master Courses: Special Topics. ALP One course. C-L: see Arts of the Moving Image 385S; also C-L: Documentary Studies 285S

326S. Film Animation Production. ALP One course. C-L: see Arts of the Moving Image 320S; also C-L: Visual and Media Studies 271S, Information Science and Information Studies

328. Animated Film: A History and Aesthetic. ALP, STS One course. C-L: see Arts of the Moving Image 215; also C-L: Information Science and Information Studies 211

352S. Documentary Publishing from Gutenberg to the Web: History and Practice. ALP, CCI, R, SS, STS One course. C-L: see Documentary Studies 352S; also C-L: Policy Journalism and Media Studies 352S, Visual and Media Studies 352S

359S. A First Look at the History, Theory and Practice of Storytelling Using Steroscopic Motion Pictures. ALP One course. C-L: see Arts of the Moving Image 359S; also C-L: Information Science and Information Studies 359S, Visual and Media Studies 360S


390S. Special Topics in Visual Arts. ALP Special Topics in Visual Arts. Subject varies from year to year. One course. Instructor: Staff. One course.

391. Independent Project in the Visual Arts. Individual directed study in a field of visual practice on a previously approved topic, under the supervision of a regular-rank faculty member, resulting in an academic and/or artistic product. Instructor consent required. Instructor: Staff. One course.


425. Advanced Printmaking: Multi-Media Printmaking Studio. ALP, R Advanced level printmaking with focus on creating multi-media prints by combining different print techniques. Conduct research to expand artistic, conceptual, and intellectual approaches and technical practice of making prints. Experimentation in image making and printing encouraged. Create blog entries and formal presentations on intellectual/visual connection. Must have prior knowledge of at least two different printmaking methods and facility in using Adobe Photoshop and Illustrator. Instructor consent required. Instructor: Shatzman. One course.

426. Advanced Printmaking: The Printed Installation. ALP Students will explore how print media engages with physical space. Using multiples made from different print processes, students will create objects and installations made from their prints. Projects will evolve from constructing dimensional prints to collaborating to build a room installation with prints. Experimentation by printing on different surfaces is highly encouraged. Prior printmaking coursework and instructor consent required. Instructor: Shatzman. One course.

450S. Advanced Narrative Production. ALP One course. C-L: see Arts of the Moving Image 450S

455. Site, Situation, and Object: Sculpture and Architecture. ALP, R Students produce a small series of closely related sculptural projects with an eye towards architectural concerns. Investigations into the making of objects and structures in human scale, set within a general context of engineering and the capturing or inhabiting of space. Programmatic considerations of site, shape, light, proportion, strength, tactility, spatial sequence and the surround. Instructor consent required. Instructor: Noland. One course.

460S. Multimedia Documentary: Editing, Production, and Publication. ALP One course. C-L: see Documentary Studies 460S; also C-L: Visual and Media Studies 460S

490S. Special Topics in the Visual Arts. ALP Subject varies from year to year. Instructor: Staff. One course.

491. Independent Study. Individual directed study in a field of visual practice on a previously approved topic, under the supervision of a regular-rank faculty member, resulting in an academic and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor Staff. One course.
492. **Independent Study.** Individual directed study in a field of visual practice on a previously approved topic, under the supervision of a regular-rank faculty member, resulting in an academic and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

497S. **Advanced Visual Practice.** ALP Majors in the fall of their senior year work on independent projects in a group situation. Students meet weekly with professor teaching course to discuss progress and monthly with full Visual Arts and Visual and Media Studies faculty for critiques. This course serves as anchor course for students participating in Graduation with Distinction in Visual Arts and those Graduation with Distinction students in Visual and Media Studies with a practice-based component to their project. Initial development of projects during the fall semester, brought to completion in the Capstone course in spring. Instructor consent required. Instructor: Staff. One course. C-L: Visual and Media Studies 497S

498S. **Senior Capstone in Visual Practice.** ALP Capstone seminar focusing on advanced visual practice and theory, including the completion of a body of work and participation in a culminating exhibition. Consent of instructor required. Instructor: Staff. One course.

499. **Bookmaking: The Hand Printed Book.** ALP, R Using printmaking as a vehicle for the development of imagery, students will focus on the creation of a hand printed artist book throughout the semester. Information driving the imagery and/or text will be researched and displayed in bound, editioned copies of their book at the end of the semester. Prior bookmaking and printmaking coursework is required, in addition to knowledge of Adobe Photoshop and Illustrator. Instructor consent required. Instructor: Shatzman. One course. C-L: Visual and Media Studies 498

510S. **(Neosentience) Body as Electrochemical Computer.** ALP, NS, R, STS Weekly discussions/lectures related to different disciplinary understandings of the body, exploring new computational and aesthetic paradigms for brain/mind/body/environment relations, and working towards articulating bridging languages enabling researchers to talk across disciplines. Students required to participate in ongoing discussion, develop particular aspects of research and write a major research paper. Instructor: Seaman. One course. C-L: Visual and Media Studies 510S, Information Science and Information Studies 666S, Arts of the Moving Image 622S

515S. **Representing Architecture: Means and Methods.** ALP, R Projects and skills based studio course. Exploration of the historic and contemporary techniques and technologies used to visualize, communicate and document, built/historic, proposed or hypothesized architecture and its construction. Focus on its application for art, architectural history and the humanities, as well as architectural design training. Topics covered include hand sketching, ortho/perspective representation, 2d CAD, 3d modeling and potential explorations of 3d immersion/VR or 3d printing/model-making. Presented in a series of short, topic-based studio exercises culminating in a final project, which may relate to the student's research interests. Instructor consent required. Instructor: Berreth. One course. C-L: Art History 515S, Historical and Cultural Visualization 515S

554S. **Experimental Communities.** ALP, CCI, CZ, EI Interdisciplinary seminar examining visual culture and experimental social structures. Readings across academic spectrum focusing on alternative corporate models and workers' unions, early soviet social networks, neighborhood associations, anarchist communes, art collectives, minority alliances, reality TV, fan clubs and fundamentalist organizations, encouraging students to fuse theories of social change with practice to produce new social structures. Class productions may include research papers, performances, experimental theater, social actions, new media works, as well as conventional art forms. Work will be judged by its formal sophistication or aesthetic merits, its social or political relevance, and its engagement with methods of ethical inquiry studied throughout the semester. Consent of instructor required. One course. C-L: Visual and Media Studies 554S, Sociology 636S

556S. **Poverty and the Visual.** ALP, CCI, CZ Relationship between art, visual culture, and poverty from 1950s to present across cultures. Readings across broad range of texts in humanities and social sciences. Research, visual analyses, and student productions based on a broader understanding of poverty as a philosophical, economic, social, and cultural concept. Three-part definition of poverty includes: special focus on cultural contributions of grassroots social movements and impoverished sectors of global society, poverty as an intentional set of aesthetic or cultural constraints, and poverty as a critical term to understand historical and contemporary limitations of visuality. Instructor consent required. Instructor: Lasch. One course. C-L: Visual and Media Studies 570S, Sociology 556S
599. Bookmaking: The Hand Printed Book. ALP, R Using printmaking and photography as a vehicle for the development of imagery, students will focus on the creation of a hand printed artist book throughout the semester. Information driving the imagery and/or text will be researched and displayed in bound, editioned copies of their book at the end of the semester. Prior bookmaking and printmaking coursework/experience is required, in addition to knowledge of Adobe Photoshop and Illustrator. Instructor consent required. Instructor: Shatzman. One course.

630. The Ongoing Moment: Presentations of Time in Still and Moving Images. ALP, R Project-driven studio course exploring time through video and still photography. Management, presentation and trace of time discussed in relation to various forms of art, augmented by examination of concepts of duration, aura, silence and thought as they pertain to still and moving images. Individual and group projects investigate various manifestations of stillness and movement in video and photography, with and without sound. Slices of time in both media examined for their properties of continuity, discontinuity and fissure, with emphasis on rendering meaning in and through time and space. Instructor consent required. Prerequisites: two 200-level or above photography or film production classes. Instructor consent required. Instructor: Noland. One course. C-L: Arts of the Moving Image 630

655S. The Photographic Portfolio. ALP Students identify photographic territory to explore and build a body of work. Images are extensively work-shopped for sequencing. Particular emphasis on the making of high quality prints. Semester culminates in the production of finished portfolios in three formats: print, digital, and exhibition or installation. Student's body of work to be informed by relevant precedents from history of photography, with an emphasis on identifying bodies of photographic work that communicate something larger than a single idea. Instructor consent required; this is the same course as Visual Arts 455, with additional graduate level work required. Instructor: Noland. One course.

690S. Special Topics in the Visual Arts. ALP Subject varies from year to year. Instructor: Staff. One course.


Visual and Media Studies

Visual studies concerns all aspects of the production, circulation, and reception of visual images in culture, science, and society. Media studies considers similar questions from the perspective of mass media as a social and cultural force through history. Taken together, these approaches engage students in the analysis of the rhetoric and expanded semiotics of images and their relationships to other media forms, both analog and digital, providing access to how meaning is socially, politically, and culturally constructed and received. Visual and media studies enables students to interpret the representations that shape the visual and conceptual constructs of a particular society, to consider how systems of media codes differ from culture to culture, and to think through how the symbolic constructions of life organize how one sees, understands, and participates in natural and social environments. Most importantly, establishing a clear connection between the theory and the practice of visuality and other media of expression are the foundations of visual and media studies. In that light, students will both study and create visual and digital media as part of their coursework, and participate in individual or group capstone projects that include a media production dimension.

Courses in Visual and Media Studies (VMS)

89S. First-Year Seminar. Topics vary. Open only to first-year students. Instructor: Staff. One course.

102. Introduction to the Arts of the Moving Image. ALP One course. C-L: see Arts of the Moving Image 101; also C-L: Visual Arts 102, Information Science and Information Studies 111, Literature 111

103. Traditions in Documentary Studies. ALP, CCI One course. C-L: see Documentary Studies 101; also C-L: International Comparative Studies 111

115S. Introduction to Photography. ALP One course. C-L: see Documentary Studies 115S; also C-L: Visual Arts 115S

130. Anthropology and Film. SS One course. C-L: see Cultural Anthropology 130; also C-L: International Comparative Studies 104, Documentary Studies, Arts of the Moving Image

131. Experimental Drawing: Image and Bit Play. ALP Approaches the creation of digital image-making in collective play. Includes individual and group brainstorming using different digital and traditional analogue (drawing, painting, and collage) processes to study how the ludic(play) enables creative thinking and experimentation in digital image manipulation. Database of images presented from multiple genres. Students work on outside assignment critiqued at end of class. Instructor: Seaman. One course. C-L: Visual Arts 130

150. Introduction to Astronomy. NS, QS One course. C-L: see Physics 134


170D. Advertising and Society: Global Perspective (DS4). CCI, SS One course. C-L: see Cultural Anthropology 170D; also C-L: Sociology 160D, Linguistics 170D

172. Complex Systems & Evolving Multiagent Simulations. QS, SS, STS One course. C-L: see Information Science and Information Studies 170; also C-L: Computer Science 107

172FS. Artificial Life, Culture, and Evolution. QS, SS, STS One course. C-L: see Information Science and Information Studies 170FS; also C-L: Computer Science 107FS

180. Introduction to Cultural Studies. ALP One course. C-L: see Literature 150; also C-L: English 180, Arts of the Moving Image, Marxism and Society


190S. Special Topics in Visual and Media Studies. ALP Subjects, areas, or themes that embrace a range of disciplines that relate to visual and media studies. Instructor: Staff. One course.

196FS. The Photobook: History & Practice. ALP, CZ Cultural, intellectual and artistic history and uses of the book in photographic practice. Traces technical, conceptual, formal innovations that mark international history of photography books through lectures/hands-on examination of key books, including lesser known innovations and uses of photobook in Eastern Europe, the Soviet Union and Japan. Marries historical awareness with studio practice. Simultaneous immersion in production of images as well as collecting of archives from various cultures. Crafting of photobooks in several genres as students edit, print, scan, assemble materials. Seminar includes readings, discussions, short writings, field trips. Focus Program only. Instructor consent required. Instructor: Noland. One course. C-L: Visual Arts 196FS

198. Experimental Interface Design. ALP, STS Class explores issues surrounding embodied approaches to interface design. Articulates methodology for generating new forms of human/computer interface; includes workshops, discussions, student presentations, critiques and group brainstorming sessions. Content related to biometrics; haptic body knowledge; multi-modal sensing; physical computing; physical | digital relationships; networked relations; the potentials of virtual space and different qualities of space, both visual and sonic. Database potentials discussed and explored in service of developing new approaches to interface. Instructor: Seaman/Staff. One course. C-L: Visual Arts 198, Arts of the Moving Image 198, Information Science and Information Studies 198

201. Book Art: Form and Function. ALP Studio course examining all aspects of bookmaking, including theories of bookmaking, designing and planning, typography, computer design, illustration, and binding. Prerequisites: Visual Arts 199 and consent of instructor. Instructor: Shatzman. One course. C-L: Visual Arts 201

202D. Introduction To Visual Culture. ALP, CCI, CZ Survey of visual culture, from issues of production, circulation and reception to how visual media have historically exerted power, elicited desire, and constructed social experience. Topics include: how photography, television, film, video, Internet, advertising, comics, and other imagery code vision and inscribe race, gender, sexuality and class differences, and dominate nature and animals; how the gaze links cultural performativity, from the coliseum to shopping malls and museums to sports events; and how
the rhetoric and semiotics of representation provide access to ways in which visual meaning is socially, politically, and culturally produced and obtained. (Team-taught.) Instructor: Olson, Stiles. One course.

203. Visualizing Cultural Dissent in Modernism, 1880-1945. ALP, CCI, CZ Interrelations of modernism and politics in a period of rapid social and technological change, rise of mass social movements, and political reaction on left and right. Development of new media in the form of prints and photography reflecting these changes and a variety of social movements and political positions by artists exploring a range of subjects, media, and exhibition venues from large-scale paintings in the annual state-sponsored salons to political satire in the press. Instructor: Leighten. One course. C-L: Art History 203, Policy Journalism and Media Studies

204S. Medicine and the Vision of Documentary Photography. ALP One course. C-L: see Documentary Studies 206S; also C-L: Public Policy Studies 377S


207S. Children's Self Expression: Literacy Through Photography. EI, SS One course. C-L: see Documentary Studies 224S; also C-L: Education 244S

209. Representing Women in the Classical World. ALP, CCI, CZ, W The lives of women in the Classical world viewed through the visual culture of Classical art. Through images of women in statues, reliefs, coins, and painting, the course explores the role of visual representation in communicating complex social and political messages. Issues such as the construction of gender, the expression of power and status, the preservation of social hierarchies, the protection of normative values, and the manipulation and control of sexuality are considered. Instructor: Dillon. One course. C-L: Art History 215S, Classical Studies 243


212S. A Digital Approach to Documentary Photography: Capturing Transience. ALP One course. C-L: see Documentary Studies 209S; also C-L: Visual Arts 212S, Education 209S, Information Science and Information Studies

214S. The Silent Film: An Introduction. ALP, CCI One course. C-L: see Arts of the Moving Image 208S; also C-L: German 268S, Literature 208S

215. Documentary Photography and the Southern Culture Landscape. ALP, CCI One course. C-L: see Documentary Studies 215; also C-L: Visual Arts 216

216S. Alternative Photographic Processes. ALP One course. C-L: see Documentary Studies 218S; also C-L: Visual Arts 221S

217S. Visual Research and the American Dream. ALP, R, SS One course. C-L: see Documentary Studies 221S; also C-L: Sociology 228S

218S. Sociology through Photography. ALP, SS One course. C-L: see Documentary Studies 227S; also C-L: Sociology 352S

219S. Collaborative Art: Practice and Theory of Working Within a Community. ALP One course. C-L: see Documentary Studies 329S; also C-L: Visual Arts 230S

220S. Planning the Documentary Film: From Concept to Treatment. ALP, R One course. C-L: see Documentary Studies 273S; also C-L: Arts of the Moving Image 332S, Information Science and Information Studies

221SA. The Economics of Art (The Chicago Scene). ALP, CCI One course. C-L: see Theater Studies 217SA; also C-L: Arts of the Moving Image 217SA, Dance 279SA, Music 217SA, Markets and Management Studies

223. Melodrama East and West. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 211; also C-L: Women's Studies 279

224S. Small Town USA: Local Collaborations. ALP, CCI, R One course. C-L: see Documentary Studies 230S; also C-L: Visual Arts 232S, Public Policy Studies 389S, Policy Journalism and Media Studies
227S. Color Photography: Fieldwork and Digital Color. ALP One course. C-L: see Documentary Studies 236S; also C-L: Visual Arts 240S
228. Film and the African Diaspora. ALP, CCI, SS One course. C-L: see African and African American Studies 330; also C-L: Women's Studies 250, Arts of the Moving Image
229. Culture and Politics in Africa. CCI, CZ, SS One course. C-L: see African and African American Studies 340; also C-L: Cultural Anthropology 242, International Comparative Studies, Marxism and Society
230. Black Popular Culture. CCI, CZ One course. C-L: see African and African American Studies 331
231. Indian Cinema. ALP, CCI, CZ, R One course. C-L: see Asian & Middle Eastern Studies 251; also C-L: Literature 211, Arts of the Moving Image 253
232. Japanese Cinema. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 261; also C-L: Literature 213, Arts of the Moving Image 255
233. Religion in American Life. CZ, EI One course. C-L: see Religion 237
234. World of Korean Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 471; also C-L: Literature 212, Arts of the Moving Image 256, Cultural Anthropology 255
235. Modern Chinese Cinema. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 431; also C-L: Literature 214, Arts of the Moving Image 250
236. Contemporary Japanese Visual Culture. ALP, CCI, CZ, W Introduction to the art and visual culture of contemporary Japan concentrating on the postwar period, particularly 1980s to present. Performance art, installations, graphic and industrial design, photography, fashion, animation, and comics (manga). The transnational spread of popular culture within the Asia-Pacific region and the cross-cultural exchanges between East and West; the relationship between high art and popular culture; the impact of economic globalization and consumerism on visual culture. Instructor: Weisenfeld. One course.
237. Global Chinese Cities through Literature and Film. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 233; also C-L: International Comparative Studies 302, Arts of the Moving Image 269
238S. Discourse of Disease and Infection. ALP, CCI, CZ, STS One course. C-L: see Asian & Middle Eastern Studies 409S; also C-L: International Comparative Studies 404S, Arts of the Moving Image 215S
239S. Gaming the System: Pervasive Gaming as Art. ALP, STS Explores the genre of pervasive or alternate reality gaming, in which the computer gameplay extends beyond typical screen spaces to any area of the player's life, often employing dispersed unconventional "real world" media, such as websites, emails, instant messaging, text messages, online videos, and even direct human interaction. Examines how blurring common distinctions between game and life opens new critical possibilities for artists. Engages students by designing and staging their own alternate reality game as a transformative social action. Open to undergraduates and graduate students. No prerequisites, though prior programming experience is helpful. Instructor: Staff. One course. C-L: Visual Arts 239S, Information Science and Information Studies 273S
240. Drama of Greece and Rome. ALP, CCI, CZ One course. C-L: see Classical Studies 304; also C-L: Theater Studies 227
242. History of Art Markets. R, SS, STS Analytical survey of emergence of art markets, interactions between market behavior(s), visual/media culture(s). Addresses questions regarding the nature of art markets, the specificity of art markets and the application of economic and historical methodologies, how and where players in local markets throughout the world shape visual culture(s), effective causes for art consumption, taste, fashion throughout ages, and methodological implications of art market research at interface of Economics, Art History, Law and Visual Studies. Instructor: Van Miegroet. One course. C-L: Art History 231, Economics 344
245. Espionage, Cryptology & Psychological Operations. SS, STS One course. C-L: see Information Science and Information Studies 235; also C-L: Cultural Anthropology 226, International Comparative Studies 235
247. Global Culture. CCI, SS One course. C-L: see Cultural Anthropology 210; also C-L: Markets and Management Studies

251. Representing Haiti. CCI, CZ, R, STS One course. C-L: see Romance Studies 345; also C-L: Information Science and Information Studies 215

252S. Photography in Context. ALP, R One course. C-L: see Documentary Studies 245S; also C-L: Visual Arts 254S, International Comparative Studies 245S

253S. The Surface of the Earth. NS One course. C-L: see Earth and Ocean Sciences 203S

255K. American Dreams, American Movies. ALP C-L: see English 288K; also C-L: Arts of the Moving Image 288K

259A. The Arts in New York: A Thematic Approach. ALP, R, W One course. C-L: see English 312A; also C-L: Theater Studies 213A, Public Policy Studies 312A

260S. Cinematography. ALP One course. C-L: see Arts of the Moving Image 355S; also C-L: Documentary Studies 281S, Visual Arts 248S

261S. Moving Image Practice. ALP, STS One course. C-L: see Arts of the Moving Image 301S; also C-L: Theater Studies 370S, Information Science and Information Studies


264. Contemporary Documentary Film: Filmmakers and the Full Frame Documentary Film Festival. ALP, CCI, STS One course. C-L: see Arts of the Moving Image 205; also C-L: Documentary Studies 270, Political Science 276, Public Policy Studies 374

265. History of Documentary Film. ALP, CCI One course. C-L: see Arts of the Moving Image 202; also C-L: Documentary Studies 107

266. Media History: Old and New. ALP, SS, STS Development of various media forms in historical and social contexts. Impact of old "new" media on established art, commerce, education, politics, entertainment from 19th c. on. Changing ideas about authenticity, authority, agency, reception, identity, and power relating to emerging media forms, production, circulation. Overlaps, disjunctions, convergences, persistences and antiquations via case studies and examples. Technologies include print publishing, photography, audio recording, film, telegraph, maps, exhibitions, architecture and installations alongside contemporary web, multimedia, database, game, virtual reality, and telepresence systems. Final rich media research project required. Instructor: Lenoir, Szabo. One course. C-L: Information Science and Information Studies 268

267. Film Genres. ALP One course. C-L: see Arts of the Moving Image 210; also C-L: Literature 220

268. American Film Comedy. ALP One course. C-L: see Arts of the Moving Image 211; also C-L: English 382, Literature 221

269. Documentary Photography and Film of the Nuclear Age. ALP, CZ, EI The role of photojournalism and documentary photographers in recording and communicating vital issues of the nuclear age including nuclear weapons testing and its effects, the environmental issues surrounding fallout and nuclear power-plant accidents, low-level waste disposal, and other human and environmental issues related to war, the technology of nuclear weapon and energy production and their cultural manifestations. Instructor: Stiles. One course. C-L: International Comparative Studies, Documentary Studies, Arts of the Moving Image

270. Personal Geographics: Mapping Self-Identity. ALP, R Using mapping as structure of applying informational graphics, students explore aspects of visually charting self-identity. Through graphic design principles
students investigate how to visually use mapping, signage and data to portray culture, history, ethnicity, memory relating to their individual backgrounds. Using traditionally based, digital media and typography students create digital images and artist book based on mapping addressing specific assignments using Adobe Photoshop, Illustrator and Indesign. Some knowledge of Adobe Photoshop and Illustrator preferred. Instructor: Merrill Shatzman. One course. C-L: Visual Arts 269

271S. Film Animation Production. ALP One course. C-L: see Arts of the Moving Image 320S; also C-L: Visual Arts 326S, Information Science and Information Studies

272S. Motion Graphics in Film and Video. ALP, STS One course. C-L: see Arts of the Moving Image 322S; also C-L: Visual Arts 236S

274S. Editing the TV Documentary: From Creativity to Collaboration to Negotiation. ALP One course. C-L: see Arts of the Moving Image 333S; also C-L: Documentary Studies 279S, Policy Journalism and Media Studies

275LS. Reconstructing Ancient Worlds. CCI, CZ, R, STS Extraordinary growth of information and digital technologies in archaeology raises urgent new questions about research methodology, knowledge and dissemination of culture. Technologies of 3D acquisition and representation - computer vision, photogrammetry, laser scanning - create information with a complexity unimaginable a few years ago. Course explores multidisciplinary issues, methods and technologies in virtual and cyber archaeology and reconstruction of the past. Examines methodology of archaeological research, digital integrated technologies, virtual archaeology, archaeological excavation, virtual reality, archaeological and anthropological landscapes. Instructor: Forte. One course. C-L: Art History 275LS, Classical Studies 252LS

276S. German Film. ALP, FL One course. C-L: see German 441S; also C-L: Arts of the Moving Image 252S

279S. Freud's Vienna: Experiments in Modernity Around 1900. ALP, CCI, CZ, FL One course. C-L: see German 442S

280. German Film. ALP, CZ One course. C-L: see German 264; also C-L: Arts of the Moving Image

280D. German Film. ALP, CZ One course. C-L: see German 264D; also C-L: Arts of the Moving Image 252D

281S. Graphic Design in Motion. Motion Design is the creation of animated graphics using graphic design, typography, advertising, photography, animation sound and filmmaking. Emphasis will be on design, conceptualization and ability to communicate ideas and work collaboratively. Learn language and principles of graphic design by developing a method for solving design problems, communicating ideas effectively, and creating professional motion design such as title credits, logo animation, and news reel that can be integrated into film, life performance or web. Photoshop, Illustrator, After Effects, video editing and 3D software will be used. Instructor consent required. Instructor: Salvatella de Prada. One course. C-L: Visual Arts 281S, Arts of the Moving Image 281S

282S. Film Noir. ALP, CCI, EI One course. C-L: see Arts of the Moving Image 209S; also C-L: German 270S, Literature 233S

283. Existentialist Cinema. ALP, CCI, CZ, EI, STS One course. C-L: see German 386; also C-L: Theater Studies 372, Literature 218, Arts of the Moving Image 267, Arts of the Moving Image

284. Weimar and Nazi Germany. CZ, R One course. C-L: see History 289; also C-L: International Comparative Studies

286S. Gender and Digital Culture. ALP, STS, W One course. C-L: see Information Science and Information Studies 340S; also C-L: Women's Studies 210S

287S. Constructing Immersive Virtual Worlds. QS One course. C-L: see Information Science and Information Studies 270S; also C-L: Computer Science 102S

288. Fundamentals of Web-Based Multimedia Communications. ALP, QS, R One course. C-L: see Information Science and Information Studies 240; also C-L: Arts of the Moving Image 325, Policy Journalism and Media Studies

288A. Fundamentals of Web-Based Multimedia Communications. ALP, QS, R One course. C-L: see Information Science and Information Studies 240A; also C-L: Arts of the Moving Image 325A

288L. Fundamentals of Web-Based Multimedia Communications. ALP, QS, R One course. C-L: see Information Science and Information Studies 240L; also C-L: Arts of the Moving Image 325L
289. Introduction to Film Studies. ALP One course. C-L: see Arts of the Moving Image 201; also C-L: Theater Studies 278, English 181, Literature 110, Documentary Studies 264, Policy Journalism and Media Studies

290. Special Topics in Visual Studies. ALP Subjects, areas, or themes that embrace a range of disciplines that relate to visual studies. Instructor: Staff. One course.

290S. Special Topics in Visual Studies. ALP Subjects, areas, or themes that embrace a range of disciplines that relate to visual studies. Instructor: Staff. One course.


295S. Sexualities in Film and Video (DS4). ALP One course. C-L: see Literature 315S; also C-L: Arts of the Moving Image 220S, Study of Sexualities

296. Internship in New York. C-L: see English 313A; also C-L: Theater Studies 214A, Art History 312A

296A-1. Internship in New York. C-L: see English 313A-1; also C-L: Theater Studies 214A-1

298. Film Theory. ALP, STS One course. C-L: see Literature 316; also C-L: Arts of the Moving Image 203, Women's Studies

299. Aesthetics: The Philosophy of Art. ALP, CZ One course. C-L: see Philosophy 202

301A. The Business of Art and Media. One course. C-L: see English 310A; also C-L: Art History 313A

302. Philosophy of Mind. CZ, R One course. C-L: see Philosophy 212; also C-L: Linguistics 208, Information Science and Information Studies

303. History of Photography, 1839 to the Present. ALP, CCI, CZ Major artists and movements in the history of the photographic medium, including visual and critical traditions inherited and manipulated by photographers, the ways photography participated in nineteenth- and twentieth-century art movements as well as documentation and social change, and critical photographic discourse throughout this period. Topics include the invention of photography, 'Art' photography and documentary photography in the nineteenth century, pictorialism, 'straight' and purist photography, photography and modernist art movements (dada, surrealism, Bauhaus, Russian avant-garde), twentieth-century documentary, and photography of the 1950s, 1960s, 1970s, 1980s, and 1990s. Instructor: Leighten. One course. C-L: Art History 303, Documentary Studies, Arts of the Moving Image

303S. This Is Your Brain on the Internet. ALP, EI, STS One course. C-L: see Information Science and Information Studies 225S

305S. Television Journalism. SS One course. C-L: see Policy Journalism and Media Studies 365S; also C-L: Public Policy Studies 365S, Information Science and Information Studies, Policy Journalism and Media Studies

306S. Magazine Journalism. SS, W One course. C-L: see Policy Journalism and Media Studies 366S; also C-L: Public Policy Studies 366S, Documentary Studies 356S, Policy Journalism and Media Studies


308. Italian Cinema. ALP, CCI One course. C-L: see Italian 380; also C-L: Literature 215, Arts of the Moving Image 254, Theater Studies 276

310. World War II and French Film. CCI, CZ, EI, FL One course. C-L: see French 413; also C-L: Arts of the Moving Image 261, History 295

311. Comics and Culture: Images of Modern France in the Making. ALP, CCI, FL One course. C-L: see French 414

312. Yesterday's Classics/Today's Movies. ALP, CCI, FL One course. C-L: see French 415; also C-L: Arts of the Moving Image 262

313. Contemporary Culture Wars. CCI, CZ, EI, FL One course. C-L: see French 416
315SA. stARTup Project. ALP, R One course. C-L: see Theater Studies 316SA; also C-L: Arts of the Moving Image 316SA, Dance 307SA, Music 316SA, Markets and Management Studies

316S. Mexicana Through from North and South: Writing, Art, Film. ALP, CCI, FL One course. C-L: see Spanish 435S

317S. Russian Language and Culture through Film. CCI, FL, SS, STS One course. C-L: see Russian 373S

318. Eastern Europe in Transition: Markets, Media, and the Mafia. CCI, CZ, SS One course. C-L: see Russian 350; also C-L: Sociology 221, Policy Journalism and Media Studies

319S. Russian Language and Culture through Film II. ALP, CCI, FL, SS, STS One course. C-L: see Russian 374S

320A. Contemporary Russian Media. CCI, EI, FL, SS One course. C-L: see Russian 223A; also C-L: International Comparative Studies, Arts of the Moving Image

321. Contemporary Russian Culture: Detective Novels and Film. ALP, CCI, CZ, FL One course. C-L: see Russian 377


325L. Optics and Photonics. NS One course. C-L: see Electrical and Computer Engineering 340L

326. Representing Slavery. ALP, CCI, EI, SS One course. C-L: see African and African American Studies 314; also C-L: Cultural Anthropology 314

327S. Theories of Visual and Media Studies. ALP Survey of visual and media studies theories. Development of analytical methods to critically engage with analog and digital visual media production, circulation and consumption in a global context. Overview of the historical development of visual studies and media studies as distinct critical fields with intellectual ties to cultural studies, art history, philosophy, sociology, literature, communications, and information science. Exploration of contemporary convergences between visual and media studies, in dialog with scientific visualization, cognitive neuroscience, and quantitative approaches to image processing. Course required for VMS majors. Instructor consent required. Instructor: Olson, Stiles, Weisenfeld. One course.

328S. Media Theory. STS One course. C-L: see Literature 317; also C-L: Arts of the Moving Image 204S, Information Science and Information Studies 214S

329S. Non-Profit Cultural Institutions. EI, SS One course. C-L: see Theater Studies 310S; also C-L: Economics 247S

330. Gender and Popular Culture. CCI, SS, W One course. C-L: see Women's Studies 362

331S. Gender and Popular Culture. CCI, SS, W One course. C-L: see Women's Studies 362S


332S. American Independent Cinema. ALP, CCI One course. C-L: see Literature 318S; also C-L: Arts of the Moving Image 318S, English 389S, Theater Studies 373S

333S. Approaches to French Literature and Theory. ALP, CCI, FL, W One course. C-L: see French 306S

334. Roman Spectacle. ALP, CCI, CZ, EI Gladiator games, wild beast hunts, elaborately-staged executions of condemned criminals, and chariot racing as some of the most popular forms of public entertainment in the Roman world. The ritual of these entertainments and spectacles, the circumstances of and occasions for their performance, and the form and elaboration of the venues - the amphitheater, the circus, the theater, and the stadium - in which
they took place. Visual and literary representations of these spectacles. Instructor: Dillon. One course. C-L: Classical Studies 354, Art History 334

335. The Art of Medieval Southern Italy. ALP, CCI, CZ, R The art and architecture of southern Italy from the ninth through the fourteenth centuries. The wide range of cultural influences and mixtures of populations that characterized the Kingdom of Sicily and the impact of these rich and diverse importations on the art and architecture of the southern part of the peninsula. Special importance placed on the Islamic contribution to Italian art and its development under the Norman kings of Sicily. Instructor: Bruzelius. One course. C-L: Medieval and Renaissance Studies 220

336. Pilgrimage and Tourism. ALP, CCI, CZ, EI, W Investigation of pilgrimage and tourist destinations (Jerusalem, Rome, Santiago, Orlando, New York) from the Middle Ages to the present through a study of their material remains, primary sources and theoretical texts. Discussion of the moral and ethical issues involved in marketing authenticity from a cross-cultural and comparative perspective. Evaluation based on weekly student written assessments of the texts and the presentation of a pilgrimage site of their choice. Instructor: Wharton. One course. C-L: Art History 336, Religion 260

337. The History of Hip-Hop. ALP, CCI One course. C-L: see African and African American Studies 335; also C-L: Cultural Anthropology 335, Music 335

338. Paris: A City and its Culture 1850 - 1930. ALP, CCI, CZ The development of Paris, from the major remodeling initiated under the Second Empire to the advent of modern style in the interwar years, focusing on the changes in architecture and planning which transformed the French capital into a model of urban modernity. The city as a physical environment that has to be understood in terms of varied populations, transport systems, economic activities, and cultural representations. The role played by visual arts in shaping the city, recording its appearance and interpreting its meanings, together with Paris's role as a environment favoring cultural production and exchange. Instructor: McWilliam. One course.

342S. Islamic Media. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 329S; also C-L: Religion 379S, International Comparative Studies 331S, Arts of the Moving Image 342S

343. Representing the Artist in Film and Popular Culture. ALP Cultural constructions of the artist and the art world, using fictional and documentary film as starting point; the artist in literature; popular conceptions of artistic biography, mentality, and lifestyle -- genius, gender, sexuality, madness, bohemianism; relationship between images of the artist in popular culture and methods within academic art history; the artist in cinema from Michelangelo to Warhol. No prerequisites. Instructor: McWilliam. One course. C-L: Art History 350, Arts of the Moving Image 351

344. Global Performance Art: History/Theory from 1950's to Present. ALP, CCI, CZ, EI Performance Art History/Theory explores cultural experimentation, theoretical strategies, and ideological aims of performance art internationally; examines interchanges between artists' theories of performance, stylistic development, and impact in the context of cultural criticism and art history; traces interdisciplinary genealogies of performance globally; thinks about the body as a vehicle for aesthetic expression, communication, and information in its critique of social and political conditions; studies performance and gender, sexuality, race, and class; asks how performance alters the semiotics of visual culture and contributes to a paradigm shift from modernism to postmodernism. Instructor: Stiles. One course. C-L: Information Science and Information Studies 275, Literature 222, Theater Studies 235, Women's Studies 276

345. Cultural History of the Televisual. ALP, CZ, STS Critical history of the "televisual" in the American visual culture mediascape, broadcast television, cable television, and contemporary convergences with new media technologies, emphasizing social conceptions of television, and their influence on how the medium has emerged as a cultural, technological, and visual apparatus; consideration of the economic and social forces unfolding in the context of the televisual, examining the social forces shaping the development of television from its inception in the 1940s to the present-day. Instructor: Olson. One course. C-L: Information Science and Information Studies 283, Arts of the Moving Image 207, Policy Journalism and Media

346S. Visual Cultures of Medicine. ALP, STS Exploration of the visual culture(s) of medicine. The changing role of diagnostic visuality and medical imaging from various philosophical and historical perspectives. The connections between medical ways of seeing and other modes of visuality, photography, cinema, television, computer graphics.
The circulation of medical images and images of medicine in popular culture as well as in professional medical cultures. Instructor: Olson. One course. C-L: Information Science and Information Studies 279S


350S. The Photobook: History and Practice. ALP, CCI, CZ Cultural, intellectual and artistic history and uses of the book in photographic practice. Traces technical, conceptual, formal innovations that mark international history of photography books through lectures/hands-on examination of key books, including lesser known innovations and uses of photobook in Eastern Europe, the Soviet Union and Japan. Marries historical awareness with studio practice. Simultaneous immersion in production of images as well as collecting of archives from various cultures. Crafting of photobooks in several genres as students edit, print, scan, assemble materials. Seminar includes readings, discussions, short writings, field trips. Consent of instructor required. Instructor: Noland. One course. C-L: Visual Arts 249S

351. 3D Modeling and Animation. ALP Basic concepts of 3D modeling and animation; fundamentals of computer geometry; knowledge of basic tools of 3D software (Maya); introduction to modeling, animation, texturing, lighting, and rendering; combination of these techniques in a final project. Prerequisite: Visual and Media Studies 206 or 396 and consent of instructor. Instructor: Salvatella de Prada. One course. C-L: Visual Arts 209

352S. Documentary Publishing from Gutenberg to the Web: History and Practice. ALP, CCI, R, SS, STS One course. C-L: see Documentary Studies 352S; also C-L: Policy Journalism and Media Studies 352S, Visual Arts 352S

353. Michael Jackson and Performance of Blackness. ALP, CCI One course. C-L: see African and African American Studies 336; also C-L: Music 336

354S. Poetic Cinema. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 311S; also C-L: Arts of the Moving Image 266S, International Comparative Studies 311S

355. America Dreams, American Movies. ALP One course. C-L: see Theater Studies 272; also C-L: Arts of the Moving Image 212, English 288

355S. Foundations of Interactive Game Design. ALP, STS One course. C-L: see Information Science and Information Studies 355S

357S. Digital Storytelling. ALP, STS, W One course. C-L: see Information Science and Information Studies 351S; also C-L: Literature 224S

358S. Digital Durham. ALP, STS One course. C-L: see Information Science and Information Studies 356S; also C-L: Education 356S

359. Introduction to Global Los Angeles: An Interdisciplinary Survey. ALP For students enrolled in the Duke in Los Angeles program. To explore Los Angeles as the model for a new global (visual) culture. Approaches include visual studies, art (installation, video, sculpture, murals, performance, theater, and music), ethnic studies, urbanism, environmental studies, public policy, history of social movements, border studies, immigration, and language acquisition. Class discussions, field trips, and independent research involved. Final project in lieu of final exam. Instructor: Gabara. One course. C-L: Arts of the Moving Image 283, Literature 230A

360S. A First Look at the History, Theory and Practice of Storytelling Using Steroscopic Motion Pictures. ALP One course. C-L: see Arts of the Moving Image 359S; also C-L: Information Science and Information Studies 359S, Visual Arts 359S

362S. 16mm Film Production. ALP One course. C-L: see Arts of the Moving Image 356S; also C-L: Documentary Studies 357S, Visual Arts 356S

366. Media Remix: Sampling Theory. ALP, EI, STS One course. C-L: see Information Science and Information Studies 365

371S. Gender, Sexuality, and the Image. ALP, CCI, R, SS, W One course. C-L: see Women's Studies 371S; also C-L: Study of Sexualities 371S
380S. Digital Cities: Representing the Past and Building the Future. CZ, R, STS One course. C-L: see Information Science and Information Studies 380S

380SA. Digital Cities and the Cartographic Imagination. CZ, R, STS One course. C-L: see Information Science and Information Studies 380SA


391. Independent Study. Directed reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or report. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

392. Independent Study. See Visual and Media Studies 391. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

394. Research Independent Study. R See Visual and Media Studies 393. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

395LS. Virtual Form and Space. Studio course that explores various applications of virtual environments and specific 3D modeling techniques. Introduction to animation principles. Screenings, discussions, and lab. Prerequisites: Visual Arts 199 and consent of instructor required. Instructor: Staff. One course. C-L: Information Science and Information Studies 208LS, Arts of the Moving Image 321LS, Visual Arts 208LS


397L. Interactive Graphics: Critical Code. ALP, QS Introduction to interactive graphics programming for artists. Explores object-oriented programming via the Processing programming environment as well as historical and theoretical appreciation of interactivity and computer graphics as artistic mediums. Combines discussions of key concepts from the readings with hands-on Processing projects and critiques. No previous programming experience or prerequisites required. Enrollment limited to 15 students. Instructor: Staff. One course. C-L: Information Science and Information Studies 294L, Arts of the Moving Image 323, Visual Arts 242L, Policy Journalism and Media

412S. Cultures of New Media. ALP, SS, STS One course. C-L: see Cultural Anthropology 434S; also C-L: Literature 412S, International Comparative Studies 432S, Asian & Middle Eastern Studies 425S


433S. 20th Century Latin American Photography. CCI, CZ, FL One course. C-L: see Spanish 433S; also C-L: Art History 433S, International Comparative Studies 459S, Latin American Studies

435S. Soviet Life through the Camera's Lens. ALP, CCI, CZ, FL One course. C-L: see Slavic and Eurasian Studies 433S

439. Queer China. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 439; also C-L: Cultural Anthropology 439, Literature 439, Arts of the Moving Image 439, Women's Studies 439

460S. Multimedia Documentary: Editing, Production, and Publication. ALP One course. C-L: see Documentary Studies 460S; also C-L: Visual Arts 460S
470S. Advanced Documentary Filmmaking. One course. C-L: see Arts of the Moving Image 470S; also C-L: Documentary Studies 470S, Public Policy Studies 383S, Information Science and Information Studies

490S. Special Topics in Visual and Media Studies. ALP An advanced investigation of major concepts and principles in visual and media studies and/or theories of visual and media studies. Contents and methods vary with instructors. Instructor: Staff. One course.

491. Independent Study. Directed reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or report. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

492. Independent Study. See Visual and Media Studies 491. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

493. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

494. Research Independent Study. R See Visual and Media Studies 493. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

497S. Advanced Visual Practice. ALP Majors in the fall of their senior year work on independent projects in a group situation. Students meet weekly with professor teaching course to discuss progress and monthly with full Visual Arts and Visual and Media Studies faculty for critiques. This course serves as anchor course for students participating in Graduation with Distinction in Visual Arts and those Graduation with Distinction students in Visual and Media Studies with a practice-based component to their project. Initial development of projects during the fall semester, brought to completion in the Capstone course in spring. Instructor consent required. Instructor: Staff. One course. C-L: Visual Arts 497S

498. Bookmaking: The Hand Printed Book. ALP, R Using printmaking as a vehicle for the development of imagery, students will focus on the creation of a hand printed artist book throughout the semester. Information driving the imagery and/or text will be researched and displayed in bound, editioned copies of their book at the end of the semester. Prior bookmaking and printmaking coursework is required, in addition to knowledge of Adobe Photoshop and Illustrator. Instructor consent required. Instructor: Shatzman. One course. C-L: Visual Arts 499

499S. Senior Capstone in Visual & Media Studies. ALP, CCI, CZ, R Capstone seminar focusing on advanced visual studies theories, as well as individual senior projects undertaken as a written research paper or visual production. Consent of instructor required. Prerequisite: Visual and Media Studies 103S. Instructor: Abe, Olson, Stiles, Weisenfeld. One course.

506A. History of Netherlandish Art and Visual Culture in a European Context. ALP, CCI, CZ, R A contextual study of visual culture in the Greater Netherlands and its underlying historical and socioeconomic assumptions from the late medieval to early modern period, through immediate contact with urban cultures, such as Amsterdam, Leiden, Utrecht, Brussels, Ghent, Bruges, and Antwerp. Includes daily visits to major museums, buildings, and sites; hands-on research in various collections; discussion sessions with leading scholars in the field; and a critical introduction to various research strategies. (Taught in the Netherlands.) Not open to students who have taken Art History 262A-263A. Course credit contingent upon completion of Art History 507A. Instructor: Van Miegroet. One course. C-L: Art History 506A, Medieval and Renaissance Studies 504A, International Comparative Studies


510S. (Neosentience) Body as Electrochemical Computer. ALP, NS, R, STS Weekly discussions/lectures related to different disciplinary understandings of the body, exploring new computational and aesthetic paradigms for brain/mind/body/environment relations, and working towards articulating bridging languages enabling researchers to talk across disciplines. Students required to participate in ongoing discussion, develop particular aspects of research and write a major research paper. Instructor: Seaman. One course. C-L: Information Science and Information Studies 666S, Visual Arts 510S, Arts of the Moving Image 622S
512S. Performing Gender/Exhibiting Race. ALP, R Studying intersections of race/gender in art since 1945 with host of visual subjects and methodological strategies. Examines works by e.g. Barkley L. Hendricks, David Hammons, Adrian Piper, Jean-Michel Basquiat, Faith Ringgold, Kara Walker. Traces theorizing gender/race through historical documents and contemporary writings. Focus on images in documentary and fine art photography; silent and sound film; broadcast television and video art past/present. Assorted critical writings on mass media imagery. Opportunities for introduction of artists, art works, issues external to syllabus. Instructor: Powell. One course.

515S. Interethnic Intimacies: Production and Consumption. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 515S; also C-L: Literature 515S, Arts of the Moving Image 515S, International Comparative Studies 515S, Women's Studies 505S


524S. AfroFuturism. ALP One course. C-L: see African and African American Studies 620S; also C-L: Dance 535S, Theater Studies 535S


535S. Camera Asia. ALP, CCI, CZ, EI, R Examines how art and technology of photography have changed the way we study and understand historical past, with focus on three important Asian contexts: China, India, and Japan. Analyzes arrival of photography in these places as a historical event, and the photographers and how their work was viewed. Evaluates ways in which technology was embraced, to what purposes was the art form put in terms of cultural representation, commercial development, industrialization, and nation building. Instructor: Weisenfeld and Ramaswamy. One course. C-L: History 530S, International Comparative Studies 531S

539S. Queer China. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 539S; also C-L: Cultural Anthropology 539S, Women's Studies 502S, Literature 539S, Arts of the Moving Image 539S

550S. Digital Humanities: Theory and Practice. ALP, STS One course. C-L: see Information Science and Information Studies 560S

551LS. Wired! New Representational Technologies. ALP, CZ, STS Research and study in material culture and the visual arts expressed by using new visual technologies to record and communicate complex sets of visual and physical data from urban and/or archaeological sites. Introduces techniques for the presentation and interpretation of visual material through a series of interpretative and reconstructive technologies, including the development of web-pages (HTML/Dreamweaver), Photoshop, Illustrator, Google Sketch-up, Google Maps, and Flash. To develop techniques of interpretation and representation. Consent of instructor required. Instructors: Bruzelius, Dillon, or Olson. One course. C-L: Art History 551LS, Information Science and Information Studies 551LS

552. Citizen Godard. ALP, CCI, W One course. C-L: see French 510; also C-L: Arts of the Moving Image 642, Literature 510

553S. From Caricature to Comic Strip. ALP, CCI, CZ, R History of caricature as a medium for political critique and social comment from the eighteenth century to the present, focusing on England, France, Germany, and the United States. Languages of graphic satire in the context of specific historical moments, from the War of Independence to the war in Iraq; history of popular journalism and the comic press; censorship and agitation for press freedom; growth of specialized juvenile graphic magazines and the development of the strip cartoon. Instructor: McWilliam. One course.

554S. Experimental Communities. ALP, CCI, CZ, EI Interdisciplinary seminar examining visual culture and experimental social structures. Readings across academic spectrum focusing on alternative corporate models and
workers' unions, early soviet social networks, neighborhood associations, anarchist communes, art collectives, minority alliances, reality TV, fan clubs and fundamentalist organizations, encouraging students to fuse theories of social change with practice to produce new social structures. Class productions may include research papers, performances, experimental theater, social actions, new media works, as well as conventional art forms. Work will be judged by its formal sophistication or aesthetic merits, its social or political relevance, and its engagement with methods of ethical inquiry studied throughout the semester. Consent of instructor required. One course. C-L: Sociology 636S, Visual Arts 554S

555S. Black Visual Theory. ALP, CCI, CZ, EI, R Approaches to studying and theorizing of African diasporal arts and black subjectivity, with a special emphasis on art historiography, iconology, and criticism, and a particular focus on slavery, emancipation, freedom, and cultural nationalism, as pertaining to peoples of African descent and as manifested in such visual forms as paintings, sculptures, graphics, and media arts from the early modern period to the present, as well as the political edicts, philosophical tracts, autobiographies, and theoretical writings of individuals similarly preoccupied with these ideas. Consent of instructor required. Instructor: Powell. One course. C-L: African and African American Studies 589S

556S. Latin American Modernism and Visual Culture. ALP, CCI, CZ, R Early twentieth-century modernist movements in Spanish America, Brazil, and the Caribbean. Topics include: race, primitivism, and indigenism; gender; theory of the avant-garde; peripheral modernity; and nationalism, regionalism, and cosmopolitanism. Instructor: Gabara. One course. C-L: Latin American Studies

557S. Trauma in Art, Literature, Film, and Visual Culture. ALP, CZ, EI Theories of trauma applied to visual representations of violence, destruction, and pain in contemporary art, film, and literature, examining the topic through multiple subjects from the Holocaust, cults, gangs, racism, and sexual abuse to cultures of trauma. Theories of trauma examined from a variety of sources including clinical psychology, cultural and trauma studies, art, film, and literature, aiming to enable students to gain the visual acuity to identify, understand, and respond to traumatic images with empathy. Not open to students who have previously taken this course as Art History 295S. Instructor: Stiles. One course. C-L: Art History 557S

559S. Urbanism. ALP, CCI, CZ Introduction to urbanism through considerations of the political, social and economic forces that model urban space. Assessment of the expression in urban topography of state power, disempowered communities, competing ethnicities, religious groups. Readings include canonical works of urban history (Vitruvius, Jacobs), theory (Benjamin, Lefebvre), novels and media (Visconti, Zola).] Instructor: Wharton. One course.

560S. Poverty of the Visual. ALP, CCI, CZ, EI Interdisciplinary seminar on the relationship between visuality and poverty from 1945 to the present. Theorizes visual culture through an examination of the forms of knowledge produced by impoverished populations. Uses philosophical and perceptual methods to explore the limits and limitations of visuality as it applies to science, ethics, the humanities, and the arts. Readings in the humanities and social sciences focus on issues related to lack, scarcity, absence, minimalism, and invisibility. Students encouraged to fuse theory and practice in research presentations and visual productions. Consent of instructor required. Instructor: Lasch. One course.

561S. Critical Studies in New Media. ALP, R, SS, STS One course. C-L: see Information Science and Information Studies 650S; also C-L: Literature 621S, Art History 537S, Arts of the Moving Image, Policy Journalism and Media Studies

562S. Technology and New Media: Academic Practice. SS, STS One course. C-L: see Information Science and Information Studies 540S; also C-L: Art History 536S

563. Media and Democracy. CCI, SS One course. C-L: see Public Policy Studies 674; also C-L: Information Science and Information Studies, Policy Journalism and Media Studies

565S. New Media, Memory, and the Visual Archive. ALP, STS Explores impact of new media on the nature of archives as technologies of cultural memory and knowledge production. Sustained engagement with major theorists of the archive through the optics of "media specificity" and the analytical resources of visual studies. Themes include: storage capacity of media; database as cultural form; body as archive; new media and the documentation of "everyday life;" memory, counter-memory, and the politics of the archive; archival materiality and digital ephemerality. Primary focus on visual artifacts (image, moving image) with consideration of the role of other sensory modalities in the
Art, Art History, and Visual and Media Studies


566S. How They Got Game: History and Culture of Interactive Simulations and Video Games. ALP, STS One course. C-L: see Information Science and Information Studies 510S


570S. Poverty and the Visual. ALP, CCI, CZ Relationship between art, visual culture, and poverty from 1950s to present across cultures. Readings across broad range of texts in humanities and social sciences. Research, visual analyses, and student productions based on a broader understanding of poverty as a philosophical, economic, social, and cultural concept. Three-part definition of poverty includes: special focus on cultural contributions of grassroots social movements and impoverished sectors of global society, poverty as an intentional set of aesthetic or cultural constraints, and poverty as a critical term to understand historical and contemporary limitations of visibility. Instructor consent required. Instructor: Lasch. One course. C-L: Visual Arts 556S, Sociology 556S

570SL. Roman Topography: Urban Life and Cityscapes in Ancient Rome. CCI, CZ, R, SS C-L: see Classical Studies 556SL; also C-L: Art History 560SL

575S. Generative Media Authorship - Music, Text & Image. Covers Generative Media in all its forms. Lectures, workshops, discussions, one semester-length project, shorter individual exercises and readings. Interdisciplinary Graduate Seminar with advanced undergraduates and MFA students with permission of instructor. Instructor: Seaman and Supko. One course. C-L: Arts of the Moving Image 575S, Information Science and Information Studies 575S, Music 575S


581S. Historical and Cultural Visualization Proseminar 2. ALP, STS Interactivity and online content management through databases, collaborative blogs, and other systems. Data visualization based on textual, image, and quantitative sources. Basic techniques for virtual reality, simulations, augmented reality, and game-based historical and cultural visualization project development. Mini-projects based on existing and new research data from the Wired! Lab and elsewhere. Best practices for digital research project planning and collaboration. Theoretical topics include: critical digital heritage, virtuality and culture, information aesthetics, hypermedia information design. Instructor consent required. Historical and Cultural Visualization 580S required. Instructor: Szabo or Olson. One course. C-L: Historical and Cultural Visualization 581S, Information Science and Information Studies 581S

590. Special Topics in Visual and Media Studies. ALP Subjects, areas, or themes that embrace a range of disciplines related to visual and media studies. Instructor: Staff. One course.

590S. Special Topics in Visual Studies. ALP Subjects, areas, or themes that embrace a range of disciplines related to visual studies. Instructor: Staff. One course.

614S. Thinking Digital Cinema. ALP, STS One course. C-L: see Literature 614S; also C-L: Theater Studies 671S, Arts of the Moving Image 614S
The #Selfie. CZ, EI, R, STS One course. C-L: see Literature 615S; also C-L: Arts of the Moving Image 615S, Women's Studies 615S, International Comparative Studies 615S

621S. Black Performance Theory. ALP, CCI, R One course. C-L: see African and African American Studies 621S; also C-L: Dance 645S

625S. Comparative Media Studies. ALP, STS One course. C-L: see Literature 625S; also C-L: Information Science and Information Studies 615S

630S. Phenomenology and Media. ALP, CCI, CZ, R, STS One course. C-L: see Literature 630S; also C-L: Art History 630S, Information Science and Information Studies 630S, Arts of the Moving Image 631S

631S. Seminar on Modern Chinese Cinema. CZ, R One course. C-L: see Asian & Middle Eastern Studies 631S; also C-L: Arts of the Moving Image 633S, Literature 631S

632. Modern Chinese Cinema. CZ, R One course. C-L: see Asian & Middle Eastern Studies 631; also C-L: Arts of the Moving Image 632, Literature 632

660S. Digital Places and Spaces: Mirror, Hybrid, and Virtual Worlds. ALP, SS, STS One course. C-L: see Information Science and Information Studies 660S

662S. Mapping Culture: Geographies of Space, Mind, and Power. ALP, CZ, STS One course. C-L: see Information Science and Information Studies 662S

691. Independent Study. Directed reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or report. Consent of instructor and director of graduate studies required. Instructor: Staff. One course.

692. Independent Study. Directed reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or report. Consent of instructor and director of graduate studies required. Instructor: Staff. One course.

The Major

The student will elect a sequence of courses emphasizing the history of art, visual arts, visual and media studies, or the combined major in art history/visual arts.

Art History

Major Requirements. The major in art history requires at least eleven courses, eight of which are at the 200 level or above. Both introductory art history courses, Art History 101D and 102D (Survey of Art), are required, as well as Visual Arts 101 (Introduction to Visual Practice). The other eight courses must include at least one course in each of the following five areas: ancient, medieval, Renaissance/Baroque, modern, and non-Western, and may include two courses in Visual and Media Studies. One of the eleven courses must be a 500- to 699-level seminar.

The requirements and prerequisites for the major can be satisfied by courses taken at other institutions or abroad, but no more than two courses taken away from Duke may count toward the major. Further courses are available for credit at North Carolina State University and The University of North Carolina at Chapel Hill.

Students planning to attend graduate school should consider taking two 500- to 699-level seminars: Art History 543S (Methodology of Art History), and a second seminar in the same field as a 200-level course already taken by the student. For example, Art History 255 (Art in Renaissance Italy), is a logical preparation for Art History 590S-4 (Topics in Italian Renaissance Art). Two years of a foreign language at the college level are strongly recommended. Students interested in preparing for graduate work in architecture should supplement their major requirements with the following courses: Visual Arts 101 and 199; Mathematics 111L, 112L, and 212; and/or Physics 141L or 142L; and/or Civil and Environmental Engineering 311 or 411. No more than two approved courses taken away from Duke (at other institutions or abroad) may count toward the requirements of the major.

Concentration in Architecture

The department offers a BA degree in art history with a concentration in architecture. Certification of this concentration is designated on the official transcript. Thirteen courses are required in four broad areas: (1) Either Art History 491/493 or 492/494 on a subject approved by the concentration in architecture advisor, or a relevant 500-699-level seminar; (2) seven additional courses in art history, including at least three of the following: Art History 225, 226, 258, 382, 285 or 286D, or topics courses that focus on space or architecture in visual and media studies or
art history; (3) two courses in the visual arts, including Visual Arts 100; (4) three courses in mathematics, physics, and/or engineering courses that offer or require advanced math or physics skills (recommended courses include Mathematics 111L, 112L, and 212; Physics 141L or 142L; Civil and Environmental Engineering 311 or 411). Distribution requirements for the major must be fulfilled.

Visual Arts

Major Requirements. The visual arts major requires twelve courses. Courses for the major include: three courses at the 100 level in a variety of disciplines, four courses at the intermediate/advanced level (between 200-599), Visual Arts 497S (Advanced Visual Practice), Visual Arts 498S (Senior Capstone in the Visual Arts), one course at any level in art history, one course at any level in visual and media studies, and one additional course in either art history or visual and media studies at the 200 level or above.

The requirements for the major can be satisfied by courses taken at other institutions or abroad, but no more than two courses taken away from Duke may count toward the major. Further courses are available for credit at North Carolina State University and The University of North Carolina at Chapel Hill.

Visual and Media Studies

Major Requirements. The visual and media studies major requires thirteen courses, at least eight of which must be at the 200 level or above. Courses required for the major include Visual and Media Studies 202D (Introduction to Visual Culture), Visual and Media Studies 327S (Theories of Visual and Media Studies) and the capstone course Visual and Media Studies 499S (Visual and Media Studies Capstone), as well as ten additional courses to be divided as follows: two courses in visual and media history or art history; two courses in visual and media practice; three visual and media studies electives; and three previously approved cross-listed courses in another department.

The requirements and prerequisites for the major can be satisfied by courses taken at other institutions or abroad, but no more than two courses taken away from Duke may count toward the major. Further courses are available for credit at North Carolina State University and The University of North Carolina at Chapel Hill.

Combined Major in Art History/Visual Arts

Major Requirements. A combined major in art history and visual arts requires at least fourteen courses. These include: Visual Arts 199 (Drawing) and Art History 101D or 102D (Survey of Art); and twelve upper-level courses. The twelve upper-level courses are to be divided as follows:

- **Art History:** Six upper-level courses distributed across the fields of ancient, medieval, Renaissance/Baroque, modern, and non-Western (pre-Columbian, African, Asian). Students must take at least one course in four of these five areas. At least one of these courses must be a 500- to 699-level seminar.
- **Visual Arts:** Six 200-level courses including a minimum of one course in at least three of the following primary areas of instruction: arts of the moving image, graphic design, painting, photography, print making, and sculpture. Students are encouraged to enroll as seniors in an independent study and, during the spring of that year, in Visual Arts 390S (Special Topics in Visual Arts).

Departmental Graduation with Distinction

The department offers work leading to Graduation with Distinction. See the section on honors in this bulletin.

The Minor

Two transfer courses may count toward the requirements for the minor; courses taken Satisfactory/Unsatisfactory or Advanced Placement credits do not count toward the minor.

Art History

Requirements: Five courses in art history at the 200 level or above.

Photography

Requirements: Five courses related to photography, with the following courses required: Visual Arts 115 (Introduction to Photography) or Visual Arts 219S (Photography); Art History 303 (History of Photography); and Visual Arts 492 (Individual Project).

Visual Arts

Requirements: Five courses in visual arts at the 200 level or above.
Visual and Media Studies

Requirements: Five courses to be distributed as follows: any three courses at the 200 level or above in visual and media studies and any two courses in any cross-listed discipline previously approved for the visual and media studies major.

Arts & Sciences

Courses in Arts & Sciences (ARTS&SCI)

390. University Course (Special Topics). Interdisciplinary course on topics of social relevance, sponsored by the Dean of Arts & Sciences. Topics vary each year. Instructor: Patton. One course.

395. Bass Connections: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing social issues. Teams may also include postdoctoral fellows, visiting fellows, and other experts from business, government, and the non-profit sector. A team’s work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires substantive final paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. One course.

395-1. Bass Connections: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing social issues. Teams may also include postdoctoral fellows, visiting fellows, and other experts from business, government, and the non-profit sector. A team’s work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires final paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. Half course.

396. Bass Connections: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing social issues. Teams may also include postdoctoral fellows, visiting fellows, and other experts from business, government, and the non-profit sector. A team’s work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires substantive final paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. One course.

396-1. Bass Connections: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing social issues. Teams may also include postdoctoral fellows, visiting fellows, and other experts from business, government, and the non-profit sector. A team’s work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires final paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. Half course.

398-1. Foundations of Education and Human Development. SS, STS, W This course is for selected members of Bass Connections Education and Human Development (EHD) project teams. Provides students from diverse disciplines with the conceptual foundations—drawn from economics, psychology, neuroscience, statistics, among others—to analyze coherently issues in education and human development, broadly defined. Includes examination of how the bases for the study of human development by social scientists have developed over the last 50 years, as well as how advances in the understanding of development and its disorders have impacted the design of policies and interventions aimed at developmental issues. Instructor: Zelder. Half course.

398-2. Foundations of Education and Human Development. SS, STS, W This course is for selected members of Bass Connections Education and Human Development (EHD) project teams. Provides students from diverse disciplines with the conceptual foundations—drawn from economics, psychology, neuroscience, statistics, among others—to analyze coherently issues in education and human development, broadly defined. Includes examination of how the bases for the study of human development by social scientists have developed over the last 50 years, as well as how advances in the understanding of development and its disorders have impacted the design of policies and interventions aimed at developmental issues. Instructor: Zelder. Half course.
Research Independent Study: Duke Connections. Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor required. Instructor: Staff. One course.

Arts of the Moving Image

Associate Professor Guo-Juin Hong, Director

A certificate, but not a major, is available in this program.

The Program in the Arts of the Moving Image provides students with the opportunity to study, analyze, and create film, video, television, digital media, and emergent computational art forms. Courses are taught in both the studies and the practices of arts of the moving image. Students may concentrate in one of these areas, or take courses in both.

Arts of the Moving Image Studies

Students develop critical understanding of the history, theory, and art form of cinema and computational media technologies. Courses offered in arts of the moving image studies include introduction to film, documentary film, film history, film genres, national cinemas, and new media. Course credit is also available for internships.

Arts of the Moving Image Practice

Students gain expertise in a wide range of technologies, from analog film creation and cell animation to digital video creation, motion graphics and computational programming. Courses offered in arts of the moving image practice include narrative, animation, sound, editing, documentary and experimental filmmaking, and interactive media. Independent Study credit is also available for individual projects for advanced students, but no more than two may count toward the certificate.

Certificate Requirements

Students must take a minimum of six courses, which must include at least one gateway course, either Arts of the Moving Image 101 (Introduction to Arts of the Moving Image), Arts of the Moving Image 201 (Introduction to Film Studies), or Arts of the Moving Image 301S (Moving Image Practice, and Arts of the Moving Image 499S (Arts of the Moving Image Capstone Course). Additionally students must take at least one arts of the moving image practice course, which may include Arts of the Moving Image 301S, and one arts of the moving image studies course, which may include Arts of the Moving Image101 or Arts of the Moving Image 201, plus three other arts of the moving image courses. For the certificate, students may take no more than three courses originating in a single department or program, other than those originating in the Program in the Arts of the Moving Image.

Screen/Society

Arts of the moving image organizes and coordinates Screen/Society, an academically integrated program of public film and video screenings, sometimes accompanied by lectures, discussions, or filmmaker visits. Screen/Society's mission is to advance the academic study of moving image culture at Duke by collaborating with schools, departments, and programs throughout the university to relate film, video, and digital art to other disciplines, and to provide a venue for works from around the world.

Courses in Arts of the Moving Image Studies (AMI)

89S. First-Year Seminar. ALP Topics vary each semester offered. Instructor: Staff. One course.


190. Special Topics in Film Studies. Special topics in film studies. Instructor: Staff. One course.
190A. Duke-Administered Study Abroad: Special Topics in Film and Video. Topics differ by section. Instructor: Staff. One course.

190S. Special Topics in Film Studies. Special topics in film studies. Seminar version. Instructor: Staff. One course.

198. Experimental Interface Design. ALP, STS One course. C-L: see Visual Arts 198; also C-L: Information Science and Information Studies 198

201. Introduction to Film Studies. ALP Basic film theory and history of motion picture technology. Introduction to experimental, documentary, and narrative forms of Third World, European, and United States cinemas. Basic film theory and history of motion picture technology. Introduction to experimental, documentary, and narrative forms of Third World, European, and United States cinemas. Economics and aesthetics. Not open to students who have taken Theater Studies 236 or who have taken this course as FVD 130. Instructor: Hadjioannou. One course. C-L: Theater Studies 278, English 181, Literature 110, Visual and Media Studies 289, Documentary Studies 264, Policy Journalism and Media Studies


203. Film Theory. ALP, STS One course. C-L: see Literature 316; also C-L: Visual and Media Studies 298, Women's Studies

204S. Media Theory. STS One course. C-L: see Literature 317; also C-L: Information Science and Information Studies 214S, Visual and Media Studies 328S

205. Contemporary Documentary Film: Filmmakers and the Full Frame Documentary Film Festival. ALP, CCI, STS Integrated with the films and filmmakers of the Full Frame Documentary Film Festival. The art form, style, and technology of contemporary documentary films. Issues of autonomy and power, politics, and public policies. Analysis of outstanding films from around the world. Presentations and discussions by filmmakers. Not open to students who have taken this course as Film/Video/Digital 129. Instructor: Staff. One course. C-L: Documentary Studies 270, Political Science 276, Public Policy Studies 374, Visual and Media Studies 264

206S. The Israeli-Palestinian Conflict in Films. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 201S; also C-L: Jewish Studies 206S, International Comparative Studies 202S

207. Cultural History of the Televisual. ALP, CZ, STS One course. C-L: see Visual and Media Studies 345; also C-L: Information Science and Information Studies 283, Policy Journalism and Media Studies


210. Film Genres. ALP A historical survey of motion picture genre as a stylistic and narrative device, including comedy, horror, the musical, the western, and science fiction. Instructor: Staff. One course. C-L: Literature 220, Visual and Media Studies 267

211. American Film Comedy. ALP A historical survey of American film comedy from silent cinema to contemporary television and film. Instructor: Staff. One course. C-L: English 382, Literature 221, Visual and Media Studies 268
212. **America Dreams, American Movies.** ALP One course. C-L: see Theater Studies 272; also C-L: Visual and Media Studies 355, English 288


215. **Animated Film: A History and Aesthetic.** ALP, STS Evolution of animation from the philosophical "toys" of the late eighteenth century to the major international entertainment form of today. Special focus on American animation as it evolved from inspired individuals like Emile Cohl and Winsor McCay to a full-blown industrial model allowing for the creation of the animated feature and contemporary special effects. Instructor: Staff. One course. C-L: Visual Arts 328, Information Science and Information Studies 211

215S. **Discourse of Disease and Infection.** ALP, CCI, CZ, STS One course. C-L: see Asian & Middle Eastern Studies 409S; also C-L: International Comparative Studies 404S, Visual and Media Studies 238S

216. **Women in Film.** ALP, CCI One course. C-L: Women's Studies 227, Literature 219, Study of Sexualities 225

217SA. **The Economics of Art (The Chicago Scene).** ALP, CCI One course. C-L: see Theater Studies 217SA; also C-L: Visual and Media Studies 221SA, Dance 279SA, Music 217SA, Markets and Management Studies

220S. **Sexualities in Film and Video (DS4).** ALP One course. C-L: see Literature 315S; also C-L: Visual and Media Studies 295S, Study of Sexualities

230S. **Sound, Music, and the Moving Image.** ALP, CCI, CZ, W One course. C-L: see Music 129S; also C-L: International Comparative Studies

240S. **Around the Bloc: Cold War Culture in the USSR and Eastern Europe.** CCI, CZ, EI, SS One course. C-L: see Slavic and Eurasian Studies 240S; also C-L: Literature 241S, Cultural Anthropology 259S

246S. **Social Movements and Social Media.** ALP, CCI, CZ, EI, STS One course. C-L: see Literature 320S; also C-L: African and African American Studies 247S, International Comparative Studies 320S, Latin American Studies 320S


248. **Movies of the World/The World of Movies.** ALP, CCI, STS One course. C-L: see Literature 313; also C-L: German 363, Russian 384, Islamic Studies

249S. **States of Exile and Accented Cinemas.** ALP, CCI, EI, SS One course. C-L: see Literature 314S; also C-L: Islamic Studies, Latin American Studies

250. **Modern Chinese Cinema.** ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 431; also C-L: Literature 214, Visual and Media Studies 235

252D. **German Film.** ALP, CZ One course. C-L: see German 264D; also C-L: Visual and Media Studies 280D

252S. **German Film.** ALP, FL One course. C-L: see German 441S; also C-L: Visual and Media Studies 276S

253. **Indian Cinema.** ALP, CCI, CZ, R One course. C-L: see Asian & Middle Eastern Studies 251; also C-L: Literature 211, Visual and Media Studies 231

254. **Italian Cinema.** ALP, CCI One course. C-L: see Italian 380; also C-L: Literature 215, Visual and Media Studies 308, Theater Studies 276

255. **Japanese Cinema.** ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 261; also C-L: Literature 213, Visual and Media Studies 232

256. **World of Korean Cinema.** ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 471; also C-L: Literature 212, Visual and Media Studies 234, Cultural Anthropology 255

257. **Contemporary Israeli Cinema.** ALP, CCI, EI, W One course. C-L: see Asian & Middle Eastern Studies 241; also C-L: Literature 217, Jewish Studies 241, Women's Studies 214, Islamic Studies

260. **Anime: Origins, Forms, Mutations.** ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 361
261. World War II and French Film. CCI, CZ, EI, FL One course. C-L: see French 413; also C-L: History 295, Visual and Media Studies 310

262. Yesterday's Classics/Today's Movies. ALP, CCI, FL One course. C-L: see French 415; also C-L: Visual and Media Studies 312

263. Screening the Holocaust: Jews, WWII, and World Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 341; also C-L: Jewish Studies 266, International Comparative Studies 341

263S. Screening the Holocaust: Jews, WWII, and World Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 341S; also C-L: Jewish Studies 266S, Literature 263S, Documentary Studies

264. Russian Revolutionary Cinema. CCI, CZ One course. C-L: see History 281; also C-L: Russian 381, Marxism and Society


266S. Poetic Cinema. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 311S; also C-L: Visual and Media Studies 354S, International Comparative Studies 311S

267. Existentialist Cinema. ALP, CCI, CZ, EI, STS One course. C-L: see German 386; also C-L: Theater Studies 372, Literature 218, Visual and Media Studies 283

268. Chinese Im/migration: Chinese Migrant Labor and Immigration to the US. ALP, CCI, EI, SS One course. C-L: see Asian & Middle Eastern Studies 409

268S. Trauma and Nostalgia: East European Film in the 21st Century. ALP, CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 288S; also C-L: Literature 216S, International Comparative Studies 288S

270. Traffic in Women: Cultural Perspectives on Prostitution in Modern China. ALP, CCI, SS One course. C-L: see Asian & Middle Eastern Studies 333; also C-L: Cultural Anthropology 334, Women's Studies 233, Study of Sexualities 233

271. Classics of Page and Screen: Exploring the Iconic in Literature and Film. ALP, CCI, CZ One course. C-L: see Classical Studies 206


281S. Graphic Design in Motion. One course. C-L: see Visual and Media Studies 281S

283. Introduction to Global Los Angeles: An Interdisciplinary Survey. ALP One course. C-L: see Visual and Media Studies 359; also C-L: Literature 230A

286. German History Through Film. ALP, CZ, EI One course. C-L: see German 286; also C-L: History 255, Literature 286

288K. American Dreams, American Movies. ALP C-L: see English 288K; also C-L: Visual and Media Studies 255K

290. Special Topics in Film Studies. Special Topics in Film Studies. Instructor: Staff. One course.

290S. Special Topics in Film Studies. Seminar version of Arts of the Moving Image 290. Instructor: Staff. One course.

295A. Media Internship in Los Angeles. Immersion in the for-profit and not-for-profit art and entertainment worlds through apprenticeship to a sponsoring artist, scholar, or institution selected to match each student's area of interest. Each student required to submit a substantive paper containing significant analysis and interpretation that considers the relationship between the student's sponsoring institution and the larger industrial/cultural complex within the local (Los Angeles) and national economies of art, culture, and commerce. Simultaneous enrollment in
Literature 290AS-1 required. Open only to students admitted to the Duke in Los Angeles Program. Instructor: Staff. One course.

297SA. Writing the Hollywood Cyber Journal. ALP Seven week research and development of the web publication of a class journal on modern Hollywood practices/industries, public policy issues, and controversies confronting these industries including the culture wars, media violence, intellectual properties, and new technologies. Culminates with presentations in a class-planned conference interacting with industry professional respondents. Must be enrolled in the Duke in Los Angeles Program. Instructor: Thompson. Half course. C-L: Information Science and Information Studies 224AS

301S. Moving Image Practice. ALP, STS Film and digital video production in conjunction with the history and theory of these technologies. Students may produce work in 8mm, 16mm film and digital video and learn the basics of non-linear digital editing on Final Cut Pro. Not open to students who have taken this course as Film/Video/Digital 100S. Instructor: Staff. One course. C-L: Theater Studies 370S, Visual and Media Studies 261S, Information Science and Information Studies

302S. Transforming Fiction for Stage and Screen. ALP, W One course. C-L: see Theater Studies 282S; also C-L: English 227S

302SA. Transforming Fiction for Stage and Screen. ALP, W One course. C-L: see Theater Studies 282SA; also C-L: English 272SA

303S. From Stories to Movies. ALP, W One course. C-L: see Theater Studies 274S

305S. Screenwriting. ALP, W One course. C-L: see Theater Studies 273S; also C-L: English 317S

306S. Writing the Movie. Introduction to the Theory and Practice of Writing for the Screen. ALP, W One course. C-L: English 225S

310S. Acting For the Camera. ALP One course. C-L: see Theater Studies 275S

316SA. stARTup Project. ALP, R One course. C-L: see Theater Studies 316SA; also C-L: Visual and Media Studies 315SA, Dance 307SA, Music 316SA, Markets and Management Studies

318S. American Independent Cinema. ALP, CCI One course. C-L: see Literature 318S; also C-L: English 389S, Theater Studies 373S, Visual and Media Studies 332S

320S. Film Animation Production. ALP Experimentation with various media; mastering animation techniques such as metamorphosis, timing, articulation, storytelling, sound design, special effects, and camera. Each student to produce a one-minute animated film on the Oxberry 16mm film animation stand. Not open to students who have taken this course as Film/Video/Digital 102S. Instructor: Staff. One course. C-L: Visual Arts 326S, Visual and Media Studies 271S, Information Science and Information Studies

321LS. Virtual Form and Space. One course. C-L: see Visual Arts 208LS; also C-L: Information Science and Information Studies 208LS

322S. Motion Graphics in Film and Video. ALP, STS An advanced post-production course designed to explore the history, theory, and practice of motion graphics techniques in film and video. Students produce digital motion sequences out of still images and create multiple motion paths through exposure to applications such as Adobe After Effects, Final Cut Pro, iMovie. Not open to students who have taken this course as Film/Video/Digital 109S. Consent of instructor required. Instructor: Staff. One course. C-L: Visual and Media Studies 272S, Visual Arts 236S


325. Fundamentals of Web-Based Multimedia Communications. ALP, QS, R One course. C-L: see Information Science and Information Studies 240; also C-L: Visual and Media Studies 288, Policy Journalism and Media Studies

325A. Fundamentals of Web-Based Multimedia Communications. ALP, QS, R One course. C-L: see Information Science and Information Studies 240A; also C-L: Visual and Media Studies 288A

325L. Fundamentals of Web-Based Multimedia Communications. ALP, QS, R One course. C-L: see Information Science and Information Studies 240L; also C-L: Visual and Media Studies 288L

331S. Serial Fictions: The Art of 'To Be Continued'. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 331S

332S. Planning the Documentary Film: From Concept to Treatment. ALP, R One course. C-L: see Documentary Studies 273S; also C-L: Visual and Media Studies 220S, Information Science and Information Studies

333S. Editing the TV Documentary: From Creativity to Collaboration to Negotiation. ALP "Behind the scenes" look at editing a long form documentary for broadcast television. Discussions, readings and hands-on editing exercises introducing students to the language of editing and the tricky negotiations often needed to bring a film to dissemination. Instructor: Cutler. One course. C-L: Documentary Studies 279S, Visual and Media Studies 274S, Policy Journalism and Media

334S. Producing Docu-Fiction. ALP Investigation of hybrid, genre-defying films that question traditional definitions of documentary and fiction. Emphasis on experimental forms, documentary reenactment, mockumentary and dramatized "true stories." Exploration of both documentary and fiction production techniques, culminating in the production of a final video project. Instructor: Gibson. One course. C-L: Documentary Studies 278S

335S. Video for Social Change. ALP, CCI, SS One course. C-L: see Documentary Studies 271S; also C-L: Public Policy Studies 375S

336S. Documentary and Policy: How Documentary Influences Policy. ALP One course. C-L: see Documentary Studies 272S; also C-L: Public Policy Studies 228S

337. Chinatowns: A Cultural History. ALP, CCI, CZ, R One course. C-L: see Asian & Middle Eastern Studies 335; also C-L: History 228, International Comparative Studies 336

340S. Experimental Filmmaking. ALP The history of avant-garde in film and video combined with production exercises. Instructor: Staff. One course. C-L: Visual Arts 229S

342S. Islamic Media. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 329S; also C-L: Religion 379S, International Comparative Studies 331S, Visual and Media Studies 342S

343S. Dance for the Camera. ALP, R, STS One course. C-L: see Dance 306S; also C-L: Documentary Studies 242S

344S. Death and the Emergence of the Modern Self. ALP, CCI, EI, SS One course. C-L: see Asian & Middle Eastern Studies 340S; also C-L: Jewish Studies 340S

350S. Sound for Film and Video. ALP, STS One course. C-L: Documentary Studies 277S, Music 121S, Information Science and Information Studies 243S

351. Representing the Artist in Film and Popular Culture. ALP One course. C-L: see Visual and Media Studies 343


356S. 16mm Film Production. ALP Hands-on experience with 16mm motion picture film and photography. In-depth exploration of the techniques and aesthetics of film production, including basic screen writing, lighting, story telling, and editing. Each student will produce an individual 16mm film. Instructor: Staff. One course. C-L: Documentary Studies 357S, Visual and Media Studies 362S, Visual Arts 356S

357S. Editing for Film and Video. ALP Theory and practice of film and video editing techniques. Exploration of traditional film cutting as well as digital non-linear editing. Exercises in narrative, documentary and experimental approaches to structuring moving image materials. Instructor: Staff. One course. C-L: Information Science and Information Studies 248S, Documentary Studies 288S

358S. Electronic Music and Video Workshop. ALP, STS One course. C-L: see Music 275S, also C-L: Visual Arts 258S
359S. A First Look at the History, Theory and Practice of Storytelling Using Steroscopic Motion Pictures. ALP Provides combined opportunity to establish foundation for telling stories with stereoscopic tools and receive basic technical experience using 3D equipment. Beyond an informative introduction to concepts and principles of stereography, students will learn terminology, explore the notion of what makes "good" vs. "bad" 3D, compare and contrast 2D vs. 3D media and production techniques, appreciate how a more natural extension of our own physical world can be created within 3D display, enjoy hands-on experience shooting and editing 3D video at a campus location. Instructor: Bogosian. One course. C-L: Information Science and Information Studies 359S, Visual and Media Studies 360S, Visual Arts 359S

370S. Matters of Life and Death. ALP, CCI Examination of works of cinema that seek to address fundamental questions of existence. Emphasis on relationship between radical subject matter and innovative formal strategies. Particular and significant emphasis on varying cultural attitudes toward the end of life in a range of international cinemas. Projects include use of a range of still image, celluloid and digital filmmaking practices. Course culminates in a final film project. Instructor: Gatten. One course. C-L: Visual Arts 370S, Documentary Studies 280S


390A. Duke-Administered Study Abroad: Advanced Topics in Film and Video. Topics differ by section. Instructor: Staff. One course.

390S. Special Topics in Film and Digital Video Production. ALP, STS An in-depth investigation of a particular production technology combined with an emphasis on an aesthetic or theoretical strategy. Exploration of lighting, cinematography, directing for camera, and/or nonlinear post-production techniques. Instructor: Staff. One course. C-L: Information Science and Information Studies

395. Internship. Students may arrange academic work in conjunction with approved internship in the moving image industry. Academic work must be with AMI faculty and include the university minimum (one research paper) as well as reading from bibliography and/or viewing list approved by instructor in advance. Prerequisite: (one of the following) AMI 101, AMI 201, 202, or 301. Instructor: Staff. One course.

410S. Trauma and Space in Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 410S; also C-L: Cultural Anthropology 366S, International Comparative Studies 410S


439. Queer China. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 439; also C-L: Cultural Anthropology 439, Literature 439, Visual and Media Studies 439, Women's Studies 439


470S. Advanced Documentary Filmmaking. Intermediate to advanced filmmaking techniques. Presumes a working knowledge of Final Cut Pro, mini-DV camera, and some fieldwork experience with a camcorder. Topics include fieldwork in a variety of communities and work on pertinent social and cultural issues. Not open to students who have taken this course as Film/Video/Digital 116S. Prerequisite: Documentary Studies 105S or equivalent experience and knowledge. Consent of instructor required. Instructor: Staff. One course. C-L: Documentary Studies 470S, Public Policy Studies 383S, Visual and Media Studies 470S, Information Science and Information Studies

480S. Advanced Production Projects. ALP Project-based course for advanced students to undertake preconceived film or digital productions. Consent of instructor required. Instructor: Gibson. One course.

490S. Special Topics In Arts of the Moving Image. Advanced special topics investigation of major concepts and principles in arts of the moving image. Content varies with instructors. Instructor: Staff. One course.
491. **Individual Project.** Independent work open to highly qualified juniors and seniors on recommendation of instructor and/or invitation of department. Instructor: Staff. One course.

491-1. **Individual Project.** Independent work open to highly qualified juniors and seniors on recommendation of instructor and/or invitation of department. Instructor: Staff. Half course.

499S. **Capstone Course in Arts of the Moving Image.** ALP, STS Culminating seminar for Arts of the Moving Image Program certificate students. Designed to allow students to complete their certificate with a finished project or advanced research in the field. Instructor: Staff. One course.

515S. **Interethnic Intimacies: Production and Consumption.** ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 515S; also C-L: Literature 515S, Visual and Media Studies 515S, International Comparative Studies 515S, Women's Studies 505S

539S. **Queer China.** ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 539S; also C-L: Cultural Anthropology 539S, Women's Studies 502S, Literature 539S, Visual and Media Studies 539S

561. **Anime: Origins, Forms, Mutations.** ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 561

575S. **Generative Media Authorship - Music, Text & Image.** Covers Generative Media in all its forms. Lectures, workshops, discussions, one semester-length project, shorter individual exercises and readings. Interdisciplinary Graduate Seminar with advanced undergraduates and MFA students with permission of instructor. Instructor: Seaman and Supko. One course. C-L: Visual and Media Studies 575S, Information Science and Information Studies 575S, Music 575S

610S. **Basic Concepts in Cinema Studies.** ALP One course. C-L: see Literature 610S

614S. **Thinking Digital Cinema.** ALP, STS One course. C-L: see Literature 614S; also C-L: Theater Studies 671S, Visual and Media Studies 614S

615S. **The #Selfie.** CZ, EI, R, STS One course. C-L: see Literature 615S; also C-L: Visual and Media Studies 615S, Women's Studies 615S, International Comparative Studies 615S

622S. **(Neosentience) Body as Electrochemical Computer.** ALP, NS, R, STS One course. C-L: see Visual Arts 510S; also C-L: Information Science and Information Studies 666S

630. **The Ongoing Moment: Presentations of Time in Still and Moving Images.** ALP, R One course. C-L: see Visual Arts 630

631S. **Phenomenology and Media.** ALP, CCI, CZ, R, STS One course. C-L: see Literature 630S; also C-L: Art History 630S, Information Science and Information Studies 630S, Visual and Media Studies 630S

632. **Modern Chinese Cinema.** CZ, R One course. C-L: see Asian & Middle Eastern Studies 631; also C-L: Literature 632, Visual and Media Studies 632

633S. **Seminar on Modern Chinese Cinema.** CZ, R One course. C-L: see Asian & Middle Eastern Studies 631S; also C-L: Literature 631S, Visual and Media Studies 631S

640S. **Literary Guide to Italy.** ALP, CCI, CZ One course. C-L: see Italian 586S; also C-L: Literature 542S, German 586S

641. **Documentary and East Asian Cultures.** ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 511; also C-L: Documentary Studies 511, International Comparative Studies 513

642. **Citizen Godard.** ALP, CCI, W One course. C-L: see French 510; also C-L: Visual and Media Studies 552, Literature 510

643S. **Environmental Issues & the Documentary Arts.** ALP One course. C-L: see Documentary Studies 615S; also C-L: Environment 615S

644S. **Third Cinema.** ALP, CCI, EI, SS, STS One course. C-L: see Literature 613S; also C-L: African and African American Studies 530S, International Comparative Studies 613S, Latin American Studies 613S

690. **Special Topics in Arts of the Moving Image.** Focus on aspects of Arts of the Moving Image. Topics vary. Instructor: Staff. One course.
690S. Special Topics in **Arts of the Moving Image. ALP** Focus on aspects of Arts of the Moving Image. Topics vary. One course.


**Related Courses Offered Regularly**

**African and African American Studies**
- 330. Film and the African Diaspora

**Art History**
- 303. History of Photography, 1839 to the Present
- 537S. Critical Studies in New Media
- 782. Art and Dissidence: Films of Tarkovsky, Kubrick, Kurosawa, and Lynch

**Arts of the Moving Image**
- 265. Art and Dissidence: The Films of Tarkovsky, Kubrick, Kurosawa, and Lynch

**Asian & Middle Eastern Studies**
- 311S. Poetic Cinema

**Cultural Anthropology**
- 130. Anthropology and Film
- 130D. Anthropology and Film
- 170. Advertising and Society: Global Perspective (DS4)

**Documentary Studies**
- 233S. American Communities: A Photographic Approach
- 415S. Advanced Documentary Photography

**English**
- 180. Introduction to Cultural Studies (DS4)
- 226S. Dramatic Writing
- 320S. Advanced Dramatic Writing
- 390-6. Special Topics in Film
- 390S-6. Special Topics in Film

**German**
- 264. German Film
- 386. Existentialist Cinema

**Information Science and Information Studies**
- 510S. How They Got Game: History and Culture of Interactive Simulations and Video Games
- 650S. Critical Studies in New Media

**International Comparative Studies**
- 104. Anthropology and Film

**Italian**
- 587S. Cinema and Literature in Italy

**Literature**
- 150. Introduction to Cultural Studies (DS4)
- 218. Existentialist Cinema
- 290S-2. Special Topics in National Cinema
- 370. International Popular Culture
- 371. Problems in Global Culture
- 371S. Problems in Global Culture
- 390S-4. Special Topics in Film
- 610S. Basic Concepts in Cinema Studies
- 611S. Film Feminisms
- 621S. Critical Studies in New Media

**Music**
- 249. Hollywood Film Music

**Political Science**
- 501S. Politics and Media in the United States

**Public Policy Studies**
- 367S. News Writing and Reporting
- 376S. Telecommunications Policy and Regulation
- 397S. American Communities: A Photographic Approach
- 398S. Advanced Documentary Photography

**Religious Studies**
- 268. Religion and Film

**Russian**
- 223A. Contemporary Russian Media
- 382. Art and Dissidence: The Films of Tarkovsky, Kubrick, Kurosawa, and Lynch
- 782. Art and Dissidence: Films of Tarkovsky, Kubrick, Kurosawa, and Lynch

**Sociology**
- 160. Advertising and Society: Global Perspective (DS4)
Asian and Middle Eastern Studies

Associate Professor Hae-Young Kim, Chair; Assistant Professor Ginsburg, Director of Undergraduate Studies; Professors Cooke and Liu; Associate Professors Ching, Hong, and Rojas; Assistant Professors Ginsburg, Hwansoo Kim, Kwon, McFarney; Professor of the Practice Hae-Young Kim; Associate Professors of the Practice Endo, Khanna, and Lee; Assistant Professor of the Practice Lo; Lecturers Cai, He, Kurokawa, Liu, Plessner and Vaishnava; Instructors Habib, Houssami, Hsieh, E. Kim, Naeymi-Rad, Saito, and Wang; Secondary Appointments: Professors Conzeison (theater studies) and Goldman (religious studies); Assistant Professor Gökner (Slavic and Eurasian studies) and Associate Professor Prasad (religious studies); Visiting Professors Jawad, Kramer, and Tucker; Visiting Associate Professor Chow

A major and minor is available in this program.

Asian and Middle Eastern Studies provides instruction in several languages and literatures of Asia and the Middle East. Languages offered are Arabic, Chinese, Hebrew, Hindi, Japanese, Korean, Sanskrit, and Persian. The program offers Arabic, Chinese, Hebrew, Hindi, Japanese, and Korean literature courses, many in translation.

Courses in Asian and Middle Eastern Studies (AMES)

80S. Studies in Special Topics. Opportunities for first-year students to engage with a specific issue in Asian & Middle Eastern Studies, with emphasis on student writing. Topics vary each semester offered. Instructor: Staff. One course.

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. Elementary Tibetan I. FL Introductory Tibetan language course for students who have little to no knowledge of Tibetan. Development of speaking, listening, reading, writing skills through Tibetan concepts, grammar and syntax of spoken and written Tibetan. Topics include situations of everyday life (e.g. greetings, introductions, family, habits/hobbies, making appointments, food, visiting friends, weather, shopping, etc.) as well as aspects of Tibetan people and culture (e.g. songs, short stories, etc.). Course taught at University of Virginia; Duke students participate through video conference and/or telepresence classroom. One course.

107S. Gateway Seminar: Cultural Exchange in Continental Asia. CCI, CZ, R One course. C-L: see History 153S; also C-L: Slavic and Eurasian Studies 106S, International Comparative Studies 154S
143FS. Modern Jewish Identity between Death and Mourning. ALP, CCI, CZ, EI
Representations of Death and Dying in modern Jewish literature, cinema, philosophy, anthropology and sociology. Traces the place of religious rites of mourning in secular Jewish culture. Explores the role played by religion in shaping the modern, so-called "secular" Jewish experience. Instructor: Ginsburg. One course.

154. History and Practice of the Dance and Dance-theatre of India. ALP, CCI, CZ
One course. C-L: see Dance 355; also C-L: Religion 243, Theater Studies 234

176S. Religion and Culture in Korea. CCI, CZ, EI
Introduction to Shamanism, Buddhism, Confucianism, Daoism, Christianity, and new religions in Korea from ancient times to the present. Examination of religious traditions in close relationships with social, economic, political, and cultural environments in Korean society. Examination of religious tensions, philosophical arguments, and ethical issues that indigenous and foreign religions in Korea have engaged throughout history to maximize their influence in Korean society. Instructor: Hwansoo Kim. One course. C-L: Religion 211S

183FS. The Palestinian-Israeli Conflict in Literature and Film. ALP, CCI, CZ, EI
A cultural study of the collapse of the Israeli-Palestinian peace process and failure of Israeli and Palestinian doves to transform their respective communities and to change conditions on the ground. Focus on self-criticism as manifested in Israeli and Palestinian literature and cinema and on its limits. Open only to students in the Focus Program. Instructor: Ginsburg. One course. C-L: Jewish Studies 183FS, Islamic Studies

187S. Gateway Seminar: Civil Rights and Asian Americans. CCI, CZ, EI, R, SS
One course. C-L: see History 183S; also C-L: African and African American Studies 133S, International Comparative Studies 183S

190A. Duke-Administered Study Abroad: Special Topics in Asian and Middle Eastern Studies. Topics vary each semester. Instructor: Staff. One course.

190FS. AMES Special Topics-Focus Program. Topics vary each semester. Open only to students in the Focus Program. Instructor consent required. Instructor: Staff. One course.

190SA. Duke-Administered Study Abroad: Special Topics in Asian and Middle Eastern Studies. Topics vary each semester. Instructor: Staff. One course.

201S. The Israeli-Palestinian Conflict in Films. ALP, CCI, CZ, EI

202S. Francophone Literature. ALP, CCI, FL
One course. C-L: see French 417S; also C-L: African and African American Studies 410S, History 387S, Canadian Studies, Latin American Studies

205. Understanding the Middle East. CCI, SS
Introduction to central political, geopolitical, cultural, and socioeconomic issues in the Middle East, offering a better understanding of new ideological, political, and cultural phenomena. Includes movies and guest speakers. Students will conduct interviews to broaden their worldview. Introduction to different variables that affect our understanding of the socio-political life of this volatile region. Instructor: Jawad Al Mamouri. One course. C-L: International Comparative Studies 205

206S. Muslim Ethics and Islamic Law: Issues and Debates. CCI, CZ, EI
One course. C-L: see Religion 388S; also C-L: Study of Ethics 345S

207. Modern East Asia, 1600-2000. CCI, CZ, SS
One course. C-L: see History 229; also C-L: International Comparative Studies 230

209. Critical Inter-Asia: Rethinking Local and Global Connections. ALP, CCI, CZ
Reconsidering the nexus of cultures and societies in Asia. Critical, transnational and interdisciplinary perspectives on two or more Asian cultures and their interactions in the world. Variable concerns and texts from history, literature, current affairs, cinematic, visual, and pop-cultures. Topics framed in local, regional, and global contexts. Instructor: Kwon. One course. C-L: International Comparative Studies

211. Melodrama East and West. ALP, CCI
Melodrama as a genre in literature and as a mode of representation in film and other media. Issues include: gender construction, class formation, racial recognition, and national identity-

214. Music in East Asia. ALP, CCI, CZ East Asian musicians and their instruments, genres, performance traditions, and contexts. Study of the relationship of music to social, religious, historical, and philosophical trends informed by listening to the musical forms themselves in recorded and live performances. Instructor: Kramer. One course. C-L: Music 234, Religion 245

215S. The Middle East in Popular Culture. CCI, CZ, SS One course. C-L: see Cultural Anthropology 417S; also C-L: Islamic Studies

220S. Al-Qaeda's Terrorism: Roots, Responses, and Ramifications. CCI, CZ, EI, SS, W Focus on Al-Qaeda, its roots, ideology, and its terrorism. Examination of Al-Qaeda's ideology, political culture, and development by exploring the origins and the narrative discourse of modern Islamic organizations dating back to the Salfi Movement of the nineteenth century. Presentation of the patterns and ramifications of Al-Qaeda's terrorist activities. Use critical thinking in order to differentiate Muslim proper narrative discourse from that of Al-Qaeda and its affiliated groups. Instructor: Lo. One course. C-L: Islamic Studies

221. Arab Society and Culture in Film. ALP, CCI, CZ, EI Examination of Arab worldviews (including cultural variations, artistic expressions, view about gender, and religion, and perspectives toward the U.S.). Explores the development of images of the Arab and seeks to understand them in the context of the Arab world as well as in its relationship to the West. Analyzes the dynamics between norms of modern civil society and those dictated by religious traditions. Critically examines current Western assumptions, representations and understanding of Arab societies, and the moral frameworks in which different choices are debated in the Arab context. Instructor: Lo. One course. C-L: Islamic Studies

222S. Syrian and Iraqi Cultures and Revolutions. ALP, CCI, CZ A cultural examination of Syrian and Iraqi revolutions in the post-independence period. Through fiction and films and an international conference, students will be exposed to the dynamics of the 2011 Arab Spring. One course. C-L: Islamic Studies

223. History and Culture of Iran. ALP, CCI, CZ A multi-disciplinary approach to Iran and Persian culture. Covers history, religion, politics, literature, music, and cinema. Focuses on the developments in Iran leading up to and after the 1979 revolution. Does not require any knowledge of Persian or previous background. Instructor: Safi. One course. C-L: History 248, Religion 283

225. Egypt: Mother of the World. ALP, CCI, CZ A cultural history of modern Egypt: the Arab spring; arts of the revolution; Egyptian cinema, popular culture, and literature; Islamic politics, Islamic thought, and Islamic mobilization; Arab nationalism and Gamal Abd al-Nasser; the economics of Egyptian politics; the Awakening (Nahda) of the 19th century; Muhammad Ali and the Ottoman empire; British and French conquests of Egypt; and orientalist knowledge about Egypt. Includes a trip to Egypt over break. Instructor: McLarney. One course. C-L: International Comparative Studies, Islamic Studies

225FS. Islamic Awakening: Revival and Reform. CCI, CZ Explores religious revival in the Islamic world: revival as reinterpretation of sacred texts, revival as revolution, revival as social movement, revival as spiritual awakening, revival as political mobilization. Focuses on Wahabism, Salafism, the renaissance/enlightenment of the late 19th century, ijtihad and jihad, grassroots movements, the Muslim Brotherhood, Hassan al-Banna, Sayyid Qutb, the awakening (sahwa/yaqza) of the 1970s and 1980s, the Iranian revolution, Khomeini, Ali Shariati, feminist theologies in Islam, and the role of the media in circultating religion. Instructor: McLarney. One course. C-L: Religion 372FS

227. The Modern Middle East. CCI, CZ One course. C-L: see History 214; also C-L: Jewish Studies 258, International Comparative Studies, Islamic Studies

229. The Arab Spring Revolutions. CCI, EI, SS One course. C-L: see Political Science 222; also C-L: Islamic Studies

230S. Islam in the Americas. CCI, CZ, SS, W One course. C-L: see Religion 384S; also C-L: History 351, African and African American Studies 274S, Islamic Studies

231. Culture and Politics in China. CCI, CZ, SS One course. C-L: see Cultural Anthropology 241

232S. Chinese Literature and Culture in Translation. ALP, CCI, CZ The transmutation of Chinese culture and literature from the perspective of translation conceived as a broad range of literary and cultural activities, including
transactions between cultures, appropriation of a foreign work into a Chinese version, and adaptation of one literary-cultural form into another (such as literature into drama or film). Instructor: Hong. One course. C-L: Literature 248S

233. Global Chinese Cities through Literature and Film. ALP, CCI, CZ. Modern Chinese cities in and beyond China, particularly as represented in literature and film. Considers city as object of cultural representation, as well as an engine of cultural production. Examines themes of modernization, alienation, nostalgia, migration, labor, and commoditization, and rethinks the very notion of "Chineseness" within an increasingly globalized world. Featured cities include Beijing, Shanghai, Hong Kong, Taipei, and New York. Instructor: Rojas. One course. C-L: Visual and Media Studies 237, International Comparative Studies 302, Arts of the Moving Image 269, International Comparative Studies

237. China and the United States. CCI, CZ, EI One course. C-L: see History 221; also C-L: International Comparative Studies 221

238. Survey of Modern China 1800-Present. CCI, CZ One course. C-L: see History 223


257S. Indian Civilization. CCI, CZ, EI, SS, W One course. C-L: see History 219S; also C-L: Cultural Anthropology 215S

259. Culture and Politics of South Asia. CCI, CZ, SS One course. C-L: see Cultural Anthropology 245


267. Ancient and Early Modern Japan. CCI, CZ One course. C-L: see History 226; also C-L: International Comparative Studies

269. The Emergence of Modern Japan. CCI, CZ One course. C-L: see History 227

270T-4. Voices in Global Health: Hindi Tutorial. Half course. C-L: see Global Health 270T-4; also C-L: Hindi 270T-4


282. Asian American Theatre. ALP, CCI One course. C-L: see Theater Studies 232; also C-L: English 387

283S. The City of Two Continents: Istanbul in Literature and Film. ALP, CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 307S; also C-L: Islamic Studies
286S. Buddhism and Sexuality. CCI, CZ, EI One course. C-L: see Religion 328S; also C-L: International Comparative Studies 389S

287. The Turks: From Ottoman Empire to European Union. ALP, CCI, CZ, EI, R One course. C-L: see Turkish 308; also C-L: Religion 228, History 212

288S. Religion and Politics in Post-Revolutionary Iran. CCI, CZ, EI One course. C-L: see Religion 377S

289S. Tracing Muslim Identities in Eurasia. ALP, CCI, CZ One course. C-L: see Turkish 371S; also C-L: Islamic Studies

291. Independent Study. Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. Half course.

303SA. Culture and Politics in Turkey and the Middle East. CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 343SA; also C-L: Political Science 213SA

306. Mahayana Buddhism. CCI, CZ One course. C-L: see Religion 322

308S. Bilingualism. CCI, SS Examination of bilingualism at the individual, interpersonal, and social levels from psycholinguistic, socio-linguistic, anthropological, and educational perspectives. Issues to include the relation between language and cognition, language development, language identity, socio-linguistic practices in multicultural settings, language maintenance, and language policy and planning. Instructor: Hae-Young Kim. One course. C-L: Linguistics 308S

311S. Poetic Cinema. ALP, CCI, CZ Inquiry into sources of "resonance" in international cinema with emphasis on films from Asia and the Middle East. The object of the course is to attempt a description of aspects of film construction which conduce to intense experience for viewers. Readings in indigenous aesthetics. Instructor: Khanna. One course. C-L: Visual and Media Studies 354S, Arts of the Moving Image 266S, International Comparative Studies 311S, Arts of the Moving Image

322. Mystical Literature. ALP, CCI Explore & examine the tradition of mysticism in literature of the Arab/Muslim world and among British and American writers. Introduce students to numerous genres and literary works that manifest a deep religious attitude or experience as a way of life and cross-cultural phenomenon. Focus on selected works from Muslim writers, American & British writers as example of mystics- or Sufis outside the traditional Church. Reveal the recurrent theme of direct, intuitional experience of God through unifying love. Instructor: Jawad. One course. C-L: Religion 263, International Comparative Studies 323, Islamic Studies

323S. Gender Jihad: Muslim Women Writers. ALP, CCI Roles and representations of women in Muslim societies of Asia (including Indonesia, South Asia, and the Middle East) and Africa, as well as in Muslim minority societies(including Europe and the United States). Examination of ways writers and filmmakers project images of women in today's Muslim societies. Focus on women as producers of culture and as social critics. Instructor: cooke. One course. C-L: Islamic Studies

325. Islamic Awakening: Revival and Reform. CCI, CZ Explores religious revival in the Islamic world: revival as reinterpretation of sacred texts, revival as revolution, revival as social movement, revival as spiritual awakening, revival as political mobilization. Focuses on Wahabism, Salafism, the renaissance/enlightenment of the late 19th century, jihadi and jihad, grassroots movements, the Muslim Brotherhood, Hassan al-Banna, Sayyid Qutb, the awakening (sa'ida/yaqza) of the 1970s and 1980s, the Iranian revolution, Khomeini, Ali Shariati, feminist theologies in Islam, and the role of the media in circulating religion. Instructor: McLarney. One course. C-L: Religion 372, Islamic Studies, Policy Journalism and Media

326A. Religion and Civil Society in the Arab World. CCI, CZ, EI Examine how the Arab world is embodied in the global or world system of the 21st century. Learn the specific accents that inform its citizens and shape its prospects locally, regionally and internationally. Examine how the major Abrahamic traditions - Judaism, Christianity and Islam - had their historical origins in the eastern Mediterranean world, and how they continue to have adherents that populate the region and challenge the modern notion of citizenship. Explore how the current uprising reflects the challenges of reconciling local aspirations with global forces. STUDY ABROAD: Duke in the Arab World Summer 2012. One course. C-L: Religion 371A
327. Islamic Civilization I. CCI, CZ, EI One course. C-L: see Religion 375; also C-L: Cultural Anthropology 256, History 210, Medieval and Renaissance Studies 268, Information Science and Information Studies, Ethics Courses Offered Through Other Departments, Islamic Studies

328S. Literary Islam. ALP, CCI, CZ The Quran as scripture; mystical poetry; stories of the early community; literary cultures in the early community; modern reinterpetations of Islamic sources; Islamist literature; modern Islamic poetry, novels, plays, and stories. Instructor: McLarney. One course. C-L: Literature 328S

329S. Islamic Media. ALP, CCI, CZ How contemporary technologies reawaken the sense of the sacred in daily life, rather than destroy it. How technologies new and old circulate the Word in its multiple incarnations, but also cultivate modes of communal identification. How Islamic media transform the social and political landscape, as well as the way we see/feel and perceive the world. How religion has been intensified, diversified, and inflected by the information age. How this media constitutes the very experience of religion. Film, video, digital media, satellite television, social media, print media, audiocassettes, radio, music. Instructor: McLarney. One course. C-L: Religion 379S, International Comparative Studies 331S, Arts of the Moving Image 342S, Visual and Media Studies 342S

331S. Serial Fictions: The Art of 'To Be Continued'. ALP, CCI A survey of the forms that seriality has taken: from Arabian Nights and Journey to the West, to Victorian serialists like Dickens and Conan Doyle, to daily 'funnies' and comics, anime and manga, contemporary genre fiction and endless movie sequels. Course will focus on diverse media (oral traditions, modern novels, cinema, soap operas, graphic novels, fanfiction, transmedial narratives, social media) that use the serial form as audience lure and aesthetic device. Instructor: Chow. One course. C-L: Arts of the Moving Image 331S

333. Traffic in Women: Cultural Perspectives on Prostitution in Modern China. ALP, CCI, SS Dialectic of prostitution as lived experience, and as socio-cultural metaphor. Focus on literary and cinematic texts, together with relevant theoretical works. The figure of the prostitute will be used to interrogate assumptions about gender identity, commodity value, and national discourse. Transnational traffic in women will provide context for examination of discourses of national identity in China and beyond, together with the fissures at the heart of those same discourses. Instructor: Rojas. One course. C-L: Cultural Anthropology 334, Women's Studies 233, Study of Sexualities 233, Arts of the Moving Image 337, International Comparative Studies 336

335. Chinatowns: A Cultural History. ALP, CCI, CZ, R Explores the intersection of space and ethnicity through the myriad ways Chinatown has circulated as memory, fantasy, myth, in the dominant cultural imagination, and how lived realities of overseas Chinese communities, Asian American history, and changing conceptions of "Chineseness" have productively engaged with real and phantom Chinatowns. Research will emphasize multi-disciplinary approaches, such as urban history, architecture, ethnography, economics; or engagement in a creative project. Instructor: Chow. One course. C-L: History 228, Arts of the Moving Image 337, International Comparative Studies 336

337. China from Antiquity to 1400. CCI, CZ One course. C-L: see History 220

340S. Death and the Emergence of the Modern Self. ALP, CCI, EI, SS Comparative examination of how "death" informs the modern self. Looks at the tension between the religious death and secular death. Probes the role played by the Jewish experience of the 20th century in shaping post WWII self. Comparison with notions of death and the self in the Middle East and East Asia. Focuses on cultural representations of death (particularly literary, cinematic and artistic), but sociological, anthropological and political perspectives will also be considered. Instructor: Ginsburg. One course. C-L: Arts of the Moving Image 344S, Jewish Studies 340S

341. Screening the Holocaust: Jews, WWII, and World Cinema. ALP, CCI, CZ, EI Surveys representations of the Jewish Holocaust in World Cinema Explores different filmic strategies employed to represent what is commonly deemed as "beyond representation" Examines the heated debate spurred by a number of Holocaust films. Asks whether anything is permissible in representing such an event: Is there an appropriate way, in contradistinction to inappropriate way, to represent the Jewish Holocaust? Instructor: Ginsburg. One course. C-L: Arts of the Moving Image 263, Jewish Studies 266, International Comparative Studies 341

341S. Screening the Holocaust: Jews, WWII, and World Cinema. ALP, CCI, CZ, EI Probes representations of the Jewish Holocaust in World Cinema. Explores divergent filmic strategies employed to represent what is commonly deemed as "beyond representation". Focuses on theoretical and philosophical questions that pertain to the representation of horror in general and of the genocide of Jews in particular. Asks whether anything is permissible in
representing such an event: Is there an appropriate way, in contradistinction to inappropriate way, to represent the Jewish Holocaust? Instructor: Ginsburg. One course. C-L: Arts of the Moving Image 263S, Jewish Studies 266S, Literature 263S, Documentary Studies

343. Representing the Holocaust. ALP, CCI, CZ Issues of representing the Holocaust in Israel through various cultural media, such as literature, film, criticism, historiography, legal documents, and music. The limits of representation: the historical and ideological deployment of Holocaust representation in different cultural contexts. Instructor: Ginsburg. One course. C-L: Religion 267, Jewish Studies 267

350S. Zionism: Jewish and Christian Aspects. CCI, CZ, EI, SS One course. C-L: see Religion 349S; also C-L: Jewish Studies 350S

355. Contemporary Culture in South Asia. ALP, CCI, CZ Integrates literature, film, anthropology, and history to explore themes and questions about modern South Asia and the realities of its peoples. Focus on contemporary academic and socio-cultural debates. Instructor: Staff. One course. C-L: International Comparative Studies, Documentary Studies

357. Modern & Global India. CCI, CZ, EI, SS, W One course. C-L: see History 218; also C-L: International Comparative Studies 218


365S. The World of Japanese Pop Culture. ALP, CCI, CZ An examination of modern Japanese culture through a variety of media including literary texts, cultural representations, and films. Different material each year. Instructor: Ching. One course. C-L: Cultural Anthropology 365S

376S. Modern Korean Buddhism in the Global Context. ALP, CCI, CZ, EI History, thought and practice of Buddhism in Korea from nineteenth century to present. Topics include colonial Buddhism; relationship with Christianity and Japanese Buddhism; reform movements; post-colonial factionalism; North Korea; critical role of nuns; response to Westernization of society; temples in America. Attention to influence of religious persecution, colonialism, modernity, nationalism, democracy, and globalization on Buddhist reformers, institutions, practices, and rituals. Readings drawn largely from primary sources (in translation), supplemented by secondary works. No prior knowledge of Korean language/culture/Buddhism required. Instructor: Hwansoo Kim. One course. C-L: Religion 325S

378S. Korean Sociolinguistics. CCI, CZ, SS Examination of Korean language in social and cultural contexts from sociolinguistic and linguistic anthropological points of view. Focus on construction of cultural identities, social order and interpersonal relationships through everyday language use. Honorifics and language ideology, language and gender, regional and social variations, language contact and language policy in contemporary Korea. Sociolinguistics literature introducing conceptual frameworks and empirical research on specifics of language in use and synchronic and diachronic variations. Readings and class conducted in English. Prerequisite: Familiarity with Korean or basics of Linguistics. Instructor: Hae-Young Kim. One course. C-L: Linguistics 306S

382S. Orhan Pamuk and World Literature. ALP, CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 345S; also C-L: Literature 276S, International Comparative Studies 345S, Islamic Studies

386S. Tibetan Buddhism: Culture, Ethics, Philosophy and Practice. CCI, CZ, EI, W One course. C-L: see Religion 327S

387S. The Middle East through Historical Literature. ALP, CCI, CZ One course. C-L: see Turkish 305S; also C-L: Islamic Studies

389A. Between Europe and Asia: The Geopolitics of Istanbul From Occupation To Globalization. CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 342A

390. Special Topics. Topics vary each semester. Instructor: Staff. One course.

390S. Special Topics. Seminar version of Asian and Middle Eastern Studies 390. Topics vary each semester. Instructor: Staff. One course.


391. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

403. The Palestinian-Israeli Conflict in Literature and Film. ALP, CCI, CZ, EI A cultural study of the collapse of the Israeli-Palestinian peace process and failure of Israeli and Palestinian doves to transform their respective communities and to change conditions on the ground. Focus on self-criticism as manifested in Israeli and Palestinian literature and cinema and on its limits. Instructor: Cooke and Ginsburg. One course. C-L: Jewish Studies 483, International Comparative Studies

405. Orientalism. ALP, CCI, CZ Introduction to the political culture of Orientalism since the 17th century. Explores the intellectual roots of Orientalism since the 17th century, the intellectual roots of European orientalism before World War 1, and the rise of American Orientalism after the Second World War. Analyzes the role of Edward Said's work in highlighting the legacy of Orientalism. The course will also examine the means and goals of neo-Orientalism in the Arab world and in the aftermath of the Arab spring. Instructor: Jawad. One course. C-L: International Comparative Studies 405

409. Chinese Im/migration: Chinese Migrant Labor and Immigration to the US. ALP, CCI, EI, SS Comparative examination of contemporary China's "floating population" of migrant labor, and of Chinese immigration abroad (particularly to the US). Focus on cultural representation of these phenomena (particularly literary, cinematic, and artistic works), but sociological, anthropological, economic, and political perspectives will also be considered. Topics include cultural alienation, marginalization, and assimilation; education and health care; labor and commodification; gender and ethnicity; narratives of modernization and development; together with the ethical, social, and political implications of migration. Instructor: Rojas. One course. C-L: Arts of the Moving Image 268


410S. Trauma and Space in Asia. ALP, CCI, CZ Space and Trauma across Asia. Introduces theoretical framework of "trauma discourse," examines how the experience of space in Asia broadly defined has shaped historical traumas, which have marked the transition from colonialism to postcolonialism. Focus on Israel/Palestine, India/Pakistan, China/Taiwan, Japan/Korea; examine how critical terms originating in one historico-geographical context are translated across geographical boundaries. Instructor: Kwon, Ginsburg. One course. C-L: Cultural Anthropology 366S, Arts of the Moving Image 410S, International Comparative Studies 410S


419. The New Middle East. CCI, EI, SS One course. C-L: see Cultural Anthropology 433; also C-L: Turkish 433
422S. Arab Women Writers. ALP, CCI, CZ The emergence of women writers in the Arab world from nineteenth century poets to 21st century bloggers. Novels, short stories, autobiographies and poetry dealing with Arab women's rights in the home and in politics, war, colonialism, religion and sexuality. Writers include Syrian Idilbi and Samman, Egyptian El Saadawi and Bakr, Lebanese al-Shaykh, Palestinian Khalifa, Iraqi Riverbend, Algerian Djebbar. Instructor: Cooke. One course. C-L: Islamic Studies

423S. Introduction to Modern Arabic Literature. ALP, CCI, CZ An introduction to trends and movements in modern Arabic literature. Poetry, novel, and short story, among other genres examined and analyzed. Nobel prize winner Naguib Mahfouz, Al-Tayyib Salih, M. Darweesh, Nizar Qabbani, as well as prominent women writers will be considered critically. Mahfouz's novel Palace Walk will be given its due critical notice in the light of 'Post-Colonial' studies. A 'reading pack' will be prepared by the instructor, comprising selected writings from different genres and countries, as well as textbooks. Instructor: Jawad. One course. C-L: International Comparative Studies, Islamic Studies

425S. Cultures of New Media. ALP, SS, STS One course. C-L: see Cultural Anthropology 434S; also C-L: Literature 412S, Visual and Media Studies 412S, International Comparative Studies 432S

427S. Capstone Seminar: Palestine and Arab-Israeli Conflict. CCI, CZ, EI, R One course. C-L: see History 455S

429. Revolution: The Arab World. ALP, CCI, CZ Revolution in the Middle East and the Arab world, with a focus on Tunis, Syria, and Egypt: revolution in theory and practice; studying events as they unfold in real time; histories of revolution in the region; democratic mobilization against authoritarian regimes; religion and revolution; media, social media, and social change; the poetics of politics; graffiti art; and women's political action. Instructor: McLarney/Cooke. One course.

431. Modern Chinese Cinema. ALP, CCI, CZ Films, documentaries, television series, and soap operas produced in Mainland China in the post-Mao era, modern and contemporary Taiwan, and Hong Kong. Topics include the history and aesthetics of the new wave cinema, soap operas as the new forum for public debate o popular culture, and debate over the relationship between Euro-American modernist and the national cinema. C-L Film Video. Instructor: Hong. One course. C-L: Literature 214, Arts of the Moving Image 250, Visual and Media Studies 235

439. Queer China. ALP, CCI, CZ, EI Examines queer discourses, cultures, and social formations in China, Greater China, and the global Chinese diaspora from the late imperial period to the present. Course will focus on cultural representations, particularly literary and cinematic, but will also consider a wide array of historical, anthropological, sociological, and theoretical materials. Instructor: Rojas. One course. C-L: Cultural Anthropology 439, Literature 439, Arts of the Moving Image 439, Visual and Media Studies 439, Women's Studies 439

450S. Human Rights in Islam. CCI, CZ, EI Islamic conceptions of human rights, beginning with early formulations of key concepts like freedom and equality during the Arab 'awakening' or Nahda and continuing to Islamic conceptions of rights after WWII and the Universal Declaration of Human Rights. Special attention to how women's rights and women's emancipation became key points of dispute between the West and the Islamic world. How ideas of the human and humanity (and its “rights”) are constructed, especially within the humanities. Instructor: McLarney. One course. C-L: Religion 450S, International Comparative Studies 450S

463S. Nightmare Japan. ALP, CCI, CZ, EI Inquiry into social anxieties erupted through encounters with natural or man-made ‘disasters.’ Examine defining disasters of modern Japan - the encounter with the West, the imperialist war and subsequent defeat, nuclear bomb and the recent Fukushima meltdowns, earthquakes and tsunami, recession and its associated social malady. Reading through literature, films and popular culture as sites where fantasy and desire are materialized and projected in coping with these ineluctable catastrophes. Instructor: Ching. One course.

469S. Minor Japan. ALP, CCI, CZ, EI Examine the history and experiences of marginalized peoples in Japan from the Ainu to ethnic Koreans, from queer to the Okinawans, to challenge the myth of racial and ethnic homogeneity and sexual heteronormativity. Enhance understanding about cultural and artistic productions by reading a variety of texts, including fiction, oral histories, philosophical treatises, and films. Instructor: Ching. One course. C-L: Cultural Anthropology 364S

471. World of Korean Cinema. ALP, CCI, CZ, EI The world of Korean cinema, broadly defined in terms of national, generic, theoretical boundaries, beyond conventional auteur, genre, one-way influence, and national cinema theories. Cinematic texts examined in local, regional, and global contexts and intersections, in conversation with
global theories and histories of cinema, visual cultures, and other representational forms. Variable topics informed theoretically and politically by discourses on gender/sexuality, race/ethnicity, global flows of people and cultures, popular and "high" culture crossovers, transnational co-productions, remakes, translations and retellings. No knowledge of Korean language/ culture presumed. Instructor: Kwon. One course. C-L: Literature 212, Arts of the Moving Image 256, Visual and Media Studies 234, Cultural Anthropology 255

473. Trauma and Passion in Korean Culture. ALP, CCI Representations of passion and trauma in Korean society and history through various cultural media including literature, historical texts, autobiographies, film, and other visual media. In dealing with historical traumas such as the Korean War, Japanese colonization, Western imperialism and political upheavals, sub-topics to include war, love, melodrama, nationalism, ideological strife and longing and loss. Instructor: Kwon. One course.

475S. North Korea: Politics, Economics and Culture. CCI, CZ, EI, SS Critical examination of the political and economic with social, cultural, and religious dimensions of North Korea. Topics includes North Korea's leadership, religious (especially cultic) aspects of the North Korean Juche ideology, the daily lives of its citizens, the Korean War, nuclear development and missiles, North Korean defectors and refugees in other Asian countries, human rights, international relationships, and unification. Instructor: Hwansoo Kim. One course.

482. Arabian Nights in the West. ALP, CCI Examines one of the most popular works of world literature, The Thousand and One Nights. Considers elements of fairy tales, romances, fables, legends, parables, and adventures. Comparison of narrative techniques used in Boccaccio's The Decameron and Chaucer's Canterbury Tales. Comparative analysis of the structure of the story. Instructor: Jawad Al Mamouri. One course.

485S. Global Tibet. CCI, CZ, EI, SS One course. C-L: see Cultural Anthropology 431S; also C-L: International Comparative Studies 431S

490S. Special Topics. Topics in Asian and Middle Eastern Studies vary each semester. Instructor: Staff. One course.

493. Research Independent Study. R Individual Research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

494A. Research Independent Study on Contemporary China. FL, R Research and field studies culminating in a paper approved and supervised by the resident director. Includes field trips on cultural and societal changes in contemporary China. Offered at the Duke in China Program. Instructor: Staff. One course.

495. Collaborative Research Projects. R Small collaborative research projects of faculty with graduate and undergraduate students. Close mentoring of students. Training in methods of cultural analysis and interpretation. Projects developed in conjunction with ongoing faculty initiatives. Students will present their research in the form of a term paper or some equivalent medium. Funding available to support students' research. Consent of Director of Undergraduate Studies required. Instructor: Staff. One course.

499S. Senior Honors Thesis Seminar. R, W Required for AMES seniors completing an honors thesis. Course will guide students through the writing of the thesis, the preliminary research for which will have been completed in the Fall. Students will share and critically evaluate portions of each other's projects. Consent of instructor required. Instructor: Staff. One course.

502S. Translation Studies and Workshop. ALP, CCI, CZ, W One course. C-L: see Theater Studies 530S; also C-L: Romance Studies 520S

503. Asian & Middle Eastern Studies. Graduate credit for undergraduate course in AMES. Consent of the instructor and the director of undergraduate studies required. Instructor: Staff. One course.

503S. Asian & Middle Eastern Studies. Graduate credit for undergraduate course in AMES. Consent of the instructor and the AMES DGS required. Instructor: Staff.

504S. East Asia's Twentieth Century. CCI, CZ, R One course. C-L: see History 504S

505S. Seminar in Asian and Middle Eastern Cultural Studies. CZ Concentration on a theoretical problem or set of issues germane to the study of Asian and Middle Eastern cultures. One course. C-L: African and African American Studies 540S, Literature 530S
166 Asian and Middle Eastern Studies

511. Documentary and East Asian Cultures. ALP, CCI, CZ, EI Focus on documentary films from various regions in East Asia, including China, Taiwan, Korea and Japan, studying the specific historical and social context of each while attending to their interconnected histories and cultures. Emphasis on the ethical implications of documentary in terms of its deployment of visual-audio apparatus to represent different groups of people and beliefs, values and conflicts, both intra- and inter-regionally in East Asia. Special attention paid to the aesthetics and politics of the documentary form in terms of both its production of meanings and contexts of reception. Instructor: Hong. One course. C-L: Arts of the Moving Image 641, Documentary Studies 511, International Comparative Studies 513

515S. Interethnic Intimacies: Production and Consumption. ALP, CCI, CZ, EI Critical examination of cultural dynamics, political economies, and ethical implications of interethnic intimacies or “intercourse” as represented from and about Asia. Examines shifts within and beyond “Asia”, asking why cultural representations matter in ways societies construct, produce, and consume objects of desire and repulsion. Texts from literature and visual culture read along with theories of critical race studies, gender and sexuality, postcolonialism, globalization, visual culture, and other representative technologies of the Self/Other. May be taught simultaneously with AMES 415S with additional requirements. Students who have taken the freshman seminar are not eligible. Instructor: Kwon. One course. C-L: Literature 515S, Arts of the Moving Image 515S, Visual and Media Studies 515S, International Comparative Studies 515S, Women’s Studies 505S

526A. Religion and Civil Society in the Arab World. CCI, CZ, EI Examine how the Arab world is embodied in world system of the 21st century. Learn the specific accents that inform its citizens and shape its prospects locally, regionally and internationally. Examine how the major Abrahamic traditions — Judaism, Christianity and Islam — had their historical origins in the eastern Mediterranean world, and how they continue to have adherents that populate the region and challenge the modern notion of citizenship. Explore how the current uprising reflects the challenges of reconciling local aspirations with global forces. Class content is similar to AMES 326A with added reading materials, meeting hours and assignments. STUDY ABROAD: Duke in the Arab World. Instructor: Lo & McLarney. One course. C-L: Religion 526A

529S. Gender Jihad: Muslim Women Writers. ALP, CCI Roles and representations of women in Muslim societies of Asia (including Indonesia, South Asia, and the Middle East) and Africa, as well as in Muslim minority societies (including Europe and the United States). Examination of ways writers and filmmakers project images of women in today's Muslim societies. Focus on women as producers of culture and as social critics. Same as AMES 173S but requires extra assignments. Staff: Cooke. One course.

533. Traffic in Women: Cultural Perspectives on Prostitution in Modern China. ALP, CCI, SS Dialectic of prostitution as lived experience, and as socio-cultural metaphor. Focus on literary and cinematic texts, together with relevant theoretical works. The figure of the prostitute will be used to interrogate assumptions about gender identity, commodity value, and national discourse. Transnational traffic in women will provide context for examination of discourses of national identity in China and beyond, together with the fissures at the heart of those same discourses. Same as Asian and Middle Eastern Studies 333 but with additional graduate level work. Instructor: Rojas. One course.

535. Chinese Media and Pop Culture. ALP, CCI, R Current issues of contemporary Chinese media and popular culture within the context of globalization. Cultural politics, ideological discourse, and intellectual debates since gaige kaifang (reform and opening up); aspects of Chinese media and popular culture: cinema, television, newspapers and magazines, the Internet, popular music, comics, cell phone text messages, and fashion. Instructor: Liu. One course. C-L: Information Science and Information Studies 535, Policy Journalism and Media

539S. Queer China. ALP, CCI, CZ, EI Examines queer discourses, cultures, and social formations in China, Greater China, and the global Chinese diaspora from the late imperial period to the present. Course will focus on cultural representations, particularly literary and cinematic, but will also consider a wide array of historical, anthropological, sociological, and theoretical materials. Not open to students who have taken Asian and Middle Eastern Studies 439. Instructor: Rojas. One course. C-L: Cultural Anthropology 539S, Women's Studies 502S, Literature 539S, Arts of the Moving Image 539S, Visual and Media Studies 539S

540S. Reading Heidegger. ALP, CCI, CZ, EI Closely reading major works by Heidegger Tracing the Turn in Heidegger's thought from the early metaphysical writing to the lecture courses of the 1930s. Underscores the role played by language in Heidegger's thought Probes what aesthetics means within the context of Heidegger's work. Instructor: Ginsburg. One course. C-L: Literature 543S, Religion 560S
541S. Jews and the End of Theory. CCI, CZ, EI, R, SS Examines role played by the figure of "the Jew" (or "Jews") in critical theory. Assesses role played by Jewish "giants" in shaping critical theory. Explores role played by images of Jews and Jewishness in linguistic turn of 20th century theory. Asks how should one understand contemporary theory in relation to "Jews"--literal Jews and figurative Jews, whether demise of these intellectual giants and diminishing interest in "Jews" and "Jewishness" means "the end of theory", and how to conceive the relations between theory and "Jewish Studies" in light of these questions. Instructor: Ginsburg. One course. C-L: Jewish Studies 541S, Literature 580S, International Comparative Studies 541S

552S. Epics of India: Ethics, Politics, and Performance Traditions. ALP, CCI, CZ One course. C-L: see Religion 562S


563S. Nightmare Japan. ALP, CCI, CZ, EI, R Inquiry into social anxieties erupted through encounters with natural or man-made `disasters.' Examine defining disasters of modern Japan—the encounter with the West, the imperialist war and subsequent defeat, nuclear bomb and the recent Fukushima meltdowns, earthquakes and tsunami, recession and its associated social malady. Reading through literature, films and popular culture as sites where fantasy and desire are materialized and projected in coping with these ineluctable catastrophes. Same as Asian and Middle Eastern Studies 463S but with additional readings, assignments and meeting times. Instructor: Ching. One course. C-L: Cultural Anthropology 563S

565. The World of Japanese Pop Culture. ALP, CCI, CZ, R An examination of modern Japanese culture through a variety of media including literary texts, cultural representations, and films. Different material each year; may be repeated for credit. (Same as Asian and Middle Eastern Studies 365 but requires extra assignments.) Instructor: Ching. One course. C-L: Cultural Anthropology 565, International Comparative Studies

590. Special Topics in Asian and Middle Eastern Studies. ALP, R Topics vary each semester. Instructor: Staff. One course.

593. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor required. Instructor: Staff. One course.

603. The Palestinian-Israeli Conflict in Literature and Film. A cultural study of the collapse of the Israeli-Palestinian peace process and failure of Israeli and Palestinian doves to transform their respective communities and to change conditions on the ground. Focus on self-criticism as manifested in Israeli and Palestinian literature and cinema and on its limits. Instructor: Staff. One course. C-L: Jewish Studies 683

605. East Asian Cultural Studies. ALP, CCI, CZ, R East Asia as a historical and geographical category of knowledge emerging within the various processes of global movements (imperialism, colonialism, economic regionalism). Instructor consent required. Instructor: Ching. One course. C-L: Cultural Anthropology 605, Literature 571, International Comparative Studies 605

610S. Trauma and Space in Asia. ALP, CCI, CZ Space and Trauma across Asia. Introduces theoretical framework of "trauma discourse," examines how the experience of space in Asia broadly defined has shaped historical traumas, which have marked the transition from colonialism to postcolonialism. Focus on Israel/Palestine, India/Pakistan, China/Taiwan, Japan/Korea; examines how critical terms originating in one historico-geographical context are translated across geographical boundaries. Taught simultaneously with AMES 410, but includes additional readings, assignments, and meeting times. Instructor: Kwon, Ginsburg. One course.

611. Melodrama East and West. Melodrama as a genre in literature and as a mode of representation in film and other media. Issues include: gender construction, class formation, racial recognition, and national identity-building. Emphasis on comparative method attending American and Chinese cultures and the politics of cross-cultural repre-
sentation. (Same as Asian and Middle Eastern Studies 411 but requires extra assignments.) Instructor: Hong. One course.

620S. Critical Genealogies of the Middle East: An examination of the canon of Middle East scholarship. CCI, CZ, SS This course provides an in-depth investigation into the various theoretical and textual traditions that inform interdisciplinary Middle East studies with a focus on History, Cultural Studies, Religion and Social Sciences. Interdisciplinary in scope, the course will maintain a disciplinary rigor so that students learn how knowledge is produced within the framework of specific disciplines. Foci include social history, literary theory, critical visual studies, and postcolonial theory. Staff: Cooke. One course.

622S. Arab Women Writers. ALP, CCI, CZ The emergence of women writers in the Arab world from nineteenth century poets to 21st century bloggers. Novels, short stories, autobiographies and poetry dealing with Arab women's rights in the home and in politics, war, colonialism, religion and sexuality. Writers include Syrian Idilbi and Samman, Egyptian El Saadawi and Bakr, Lebanese al-Shaykh, Palestinian Khalifa, Iraqi Riverbend, Algerian Djebar. Same as Asian and Middle Eastern Studies 422S but with additional graduate level work. Instructor: Cooke. One course. C-L: Islamic Studies

623. Arabic Culture and 9/11. Same as Asian and Middle Eastern Studies 423 except 623 has additional focus on theoretical studies of cultural production of the post-1990 period including such works as Shohat and Stam, Unthinking Eurocentrism, and Abdelwahhab Meddeb, The Malady of Islam. Instructor: Cooke. One course.

625. Islamic Awakening: Revival and Reform. Explores religious revival in the Islamic world: revival as reinterpretation of sacred texts, revival as revolution, revival as social movement, revival as spiritual awakening, revival as political mobilization, revival as cultural renaissance. Graduate students will pursue in depth research in their specific area of concentration, read selected sources in the original languages, and design a final project that furthers their course of study. Instructor: McLean. One course. C-L: Islamic Studies

629. Revolution: The Arab World. ALP, CCI, CZ Revolution in the Middle East and the Arab world, with focus on Tunis, Syria, and Egypt: revolution in theory and practice; studying events as they unfold in real time; histories of revolution in the region; democratic mobilization against authoritarian regimes; religion and revolution; media, social media, and social change; the poetics of politics; graffiti art; and women's political action. Graduate level includes readings and research in Arabic, or any other primary source readings in original language of graduate students' area of specialization, and intensive theoretical readings, a substantive research paper, and regular group meetings with instructors to discuss extra readings. Instructor: McLean, Cooke. One course.

629S. Muslim Networks Across Time and Space. CCI, CZ, EI Muslim networks are at once an historical and a contemporary phenomenon. Networks for the exchange of material goods, people and cultural practices define Islamic civilization, and now the Internet provides a new network of communication in cyberspace. This course will explore various hermeneutical strategies for understanding both Muslim cybernauts and their role in the future of Muslim communities from America to Asia. Instructor: Cooke, Lawrence. One course. C-L: Religion 662S, Islamic Studies

631. Modern Chinese Cinema. CZ, R Films, documentaries, television series, and soap operas produced in mainland China in the post-Mao era. Topics include the history and aesthetics of the cinema, soap operas as the new forum for public debates on popular culture, the emerging film criticism in China, the relationship of politics and form in postrevolutionary aesthetics. (Same as AMES 431 but requires extra assignments.) Research paper required. Prerequisite: Chinese 436S or advanced oral and written proficiency in Mandarin Chinese. Instructor: Hong. One course. C-L: Arts of the Moving Image 632, Literature 632, Visual and Media Studies 632, International Comparative Studies

631S. Seminar on Modern Chinese Cinema. CZ, R Films, documentaries, television series, and soap operas produced in mainland China in the post-Mao era. Topics include the history and aesthetics of the cinema, soap operas as the new forum for public debates on popular culture, the emerging film criticism in China, the relationship of politics and form in postrevolutionary aesthetics. (Same as AMES 431 but requires extra assignments.) Research paper required. Instructor consent required. Prerequisite: Chinese 436S or advanced oral and written proficiency in Mandarin Chinese. Instructor: Hong. One course. C-L: Arts of the Moving Image 633S, Literature 631S, Visual and Media Studies 631S, International Comparative Studies
632S. Literati/Literature Culture: Pre Modern Chinese Literature. ALP, CCI, R Survey of works in Chinese from Confucius to the Qing Dynasty including short stories, novels, autobiographical writings, and poetry. Topics include the role of the educated elite in relation to literature and culture and how the literati portray themselves in their works. Relations between orthodoxy and marginalization of the literati and its impact on their writing. (Same as Asian and Middle Eastern Studies 432S but requires extra assignments.) Instructor: Staff. One course.

650S. Human Rights in Islam. CCI, CZ, EI Islamic conceptions of human rights, beginning with early formulations of key concepts like freedom and equality during the Arab ‘awakening’ or Nahda and continuing to Islamic conceptions of rights after WWII and the Universal Declaration of Human Rights. Special attention to how women’s rights and women’s emancipation became key points of dispute between the West and the Islamic world. How ideas of the human and humanity (and its “rights”) are constructed, especially within the humanities. Same as 450S, but with graduate level assignments and discussions. Instructor: McLarney. One course. C-L: Religion 661S

661. Japanese Cinema. ALP, CCI, CZ An introduction to the history of Japanese cinema focusing on issues including the relation between the tradition-modernity or Japan-West in the development of Japanese cinema, the influence of Japanese films on the theory and practice of cinema abroad, and the ways in which cinema has served as a reflection of and an active agent in the transformation of Japanese society. (Same as Asian and Middle Eastern Studies 461, but requires extra assignments.) Instructor: Chow. One course.

665. Girl Culture, Media, and Japan. Examination, through visual and literary texts, of the way in which girlhood, girl culture, and girl bodies have figured in the construction of gender, nation, and consumer culture in modern to contemporary Japan. Same as Asian and Middle Eastern Studies 465, but requires extra assignments. Instructor: Staff. One course.

669S. Minor Japan. ALP, CCI, CZ, EI Examine the history and experiences of marginalized peoples in Japan from the Ainu to ethnic Koreans, from queer to the Okinawans, to challenge the myth of racial and ethnic homogeneity and sexual heteronormativity. Enhance understanding about cultural and artistic productions by reading a variety of texts, including fiction, oral histories, philosophical treatises, and films. Same as Asian and Middle Eastern Studies 469S, with extra graduate level assignments, discussion groups, and papers. Instructor: Ching. One course.

671. World of Korean Cinema. Introduction to Korean Cinema from postwar to contemporary period. Examination of issues such as national division, gender, pop culture, family, transnational identity and its influence abroad. Same as Asian and Middle Eastern Studies 471, but requires extra assignments. Instructor: Staff. One course.

673. Trauma and Passion in Korean Culture. ALP, CCI Representations of passion and trauma in Korean society and history through various cultural media including literature, historical texts, autobiographies, film, and other visual media. In dealing with historical traumas such as the Korean War, Japanese colonization, Western imperialism and political upheavals, sub-topics to include war, love, melodrama, nationalism, ideological strife and longing and loss. (Same as Asian and Middle Eastern Studies 473 but requires extra assignments.) Instructor: Kwon. One course.

682. Arabian Nights in the West. ALP, CCI Graduate version of Asian and Middle Eastern Studies 482. Examines one of the most popular works of world literature, The Thousand and One Nights. Considers elements of fairy tales, romances, fables, legends, parables, and adventures. Comparison of narrative techniques used in Boccaccio’s The Decameron and Chaucer’s Canterbury Tales. Comparative analysis of the structure of the story. Students in this graduate section will have a supplementary reading list, additional assignments, and meet regularly with the professor outside regular class time. Instructor consent required. Instructor: Jawad Al Mamouri. One course.

690S. Special Topics in Asian and Middle Eastern Studies. ALP, CCI Seminar version of Asian and Middle Eastern Studies 590. Topics vary each semester. One course.

695. Collaborative Research Projects. R Small collaborative research projects of faculty with graduate and undergraduate students. Close mentoring of students. Training in methods of cultural analysis and interpretation. Projects developed in conjunction with ongoing faculty initiatives. Students will present their research in the form of a term paper or some equivalent medium. Funding available to support students' research. Director of Graduate Studies consent required. Instructor: Staff. One course.
Arabic

Courses in Arabic (ARABIC)


102. Elementary Arabic. FL Continuation of Arabic 101. Prerequisite: Arabic 101 or equivalent. Instructor: Lo. One course.

203. Intermediate Arabic. CZ, FL Reading, composition, and conversation in modern standard Arabic. Readings include selections from the Qur’an, contemporary literature, and the Arabic press. Prerequisite: Arabic 102 or equivalent. Instructor: Habib. One course.

204. Intermediate Arabic. CZ, FL Continuation of Arabic 203. Prerequisite: Arabic 203 or equivalent. Instructor: Habib. One course.

205A. Dardasha Masriyyah: Egyptian Dialect. CZ, FL Intermediate level foundation in the structure, pronunciation, vocabulary, culture of Egyptian Arabic. Focus on communicative skills of listening and speaking of Egyptian dialect of Arabic. Develop the automated production skills necessary to function in an Arabic speaking environment of Egyptian culture. Understand Egyptian culture as reflected in popular imagery & films. Visit cultural sites & icons for historical awareness. Offered only in the Duke in the Arab World Study Abroad Program. Pre-req: Arabic 2 or equivalent. Instructor: Habib. One course.

281. Media Arabic I: Arabic in Media and Documentary Film. CZ, FL Development of students proficiency in speaking, writing, reading, and listening comprehension through exposure to a wide variety of Arabic texts taken from newspapers, magazines and websites from around the Arab world, with focus on specialized vocabulary of media Arabic and documentary films. Explore media materials and programs from al-Jazeera news and documentary films. Students will also learn to hold informed discussions and write analyses and reports of current events and debates that are related to these materials. Instructor: Habib. One course.

283. Media Arabic II. CZ, FL Focus on further expansion of speaking, writing, reading, and listening skills through selected materials of media Arabic taken from written news sources, TV and Internet programs. Focus on changes in Arab popular culture, language of the Arab revolution and language of the new social media. Develop students’ abilities to conduct research using a variety of media sources. Prerequisite: Arabic 204 or 281. Instructor: Habib. One course.

287. Levantine Arabic: Dardasha Shamiyyah. CCI, CZ, FL Provides solid foundation in language structure, vocabulary, culture of Levantine (Lebanon, Palestine, Syria, and Jordan); focuses on communicative skills of listening and speaking and cultural awareness; recite dialogues, song and cultural expressions exemplifying basic speaking patterns of native speakers; use language in order to deal with different social and cultural situations; participate actively in conversations in most settings using language and cultural expressions to express, describe, and compare preferences; understand cultural variations of the people of the Levantine. Prerequisite: Four semesters of Arabic language (elementary and intermediate), or equivalent. Instructor: Houssami. One course.

290A. Duke Administered Study Abroad: Special Topics in Arabic. Topics vary each semester. Instructor: Staff. One course.

295. Arabic Dialect in Music. CZ, FL Exposure to wide variety of Arabic modes of expression through Arabic music. Learn usage of both standard and colloquial Arabic in producing Arabic music. Deal with linguistic differences in materials selected from popular media as well as classical sources. Develop skills in speaking, reading, and listening comprehension beyond intermediate high level. Exposure to Arabic musical traditions language. Introduces some Arabic scales (Maqamat), genres, rhythms and musical instruments, namely Oud, Qanoun and Nay and their usage in language production. Prerequisite: Arabic 203. Instructor: Staff. One course.

305. Advanced Arabic. ALP, CCI, FL Readings in classical and contemporary fiction and nonfiction. Works include al-Jahiz, Ibn Arabi, Taha Husain, Ibn Battuta, Ghada al-Samman and 1001 Nights. Prerequisite: Arabic 204 or equivalent. Instructor: Staff. One course. C-L: International Comparative Studies

306. Advanced Arabic. ALP, FL Continuation of Arabic 305. Prerequisite: Arabic 305 or equivalent. Instructor: Staff. One course.
328S. Literary Islam. ALP, CCI, CZ, FL The Qur'an as scripture; mystical poetry; stories of the early community; literary cultures in the early community; modern reinterpretations of Islamic sources; Islamist literature; modern Islamic poetry, novels, plays, and stories. Prerequisite: 2 years of Arabic. Instructor: McLarney. One course.

391. Independent Study. Individual study of language for conducting research involving sources written or spoken in the language. Students have to submit a proposal describing the purported research, types of sources to be analyzed, and kinds of language knowledge or skills they need to be equipped with. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

407. Issues in Arabic Language and Literature I. ALP, CCI, FL Readings and other material, including films, television, and radio broadcasts. Exercises in composition. Prerequisite: Arabic 306 or consent of instructor. Instructor: Cooke. One course. C-L: International Comparative Studies

408. Issues in Arabic Language and Literature II. ALP, FL Continuation of Arabic 407. Prerequisite: Arabic 306 or consent of instructor. Instructor: Cooke. One course. C-L: International Comparative Studies

489. Classical Arabic Language & Literature. CZ, FL Explore development of Arabic language and Literature from pre-Islamic era to current epoch. Review major Arabic works in each of the Islamic eras. Explore role of the Qur'an in construction of Arabic sciences. Review content and forms of essential texts of the science of Islamic Studies, including tafsir (Qur'anic exegesis), sirah (biography of the Prophet Muhammad), Hadith, travel literature, biographical literature. Graduate and undergraduate sections will be taught together with extra expectations for graduate students. Prerequisites: 400 level Arabic or advanced-high proficiency in MSA. Instructor: Lo. One course.

501S. Translation as a Research Tool in Arabic and Islamic Studies. ALP, CCI, CZ, FL Introduces advanced students of Arabic to the science of translation as a major tool to pursue research in Arabic and Islamic studies. Learn techniques of translating Arabic text, editing, accessing biographical translation. Teach students how to translate literary text, religious text etc. (Qur'an, Hadith, poetry, etc.) Instructor: Jaward. One course. C-L: Islamic Studies

690. SPECIAL READINGS. Variable credit.

Courses in Chinese (CHINESE)

101. First-year Chinese I. FL First semester of a two-semester sequence. Designed for students with little or no knowledge of the Chinese language. Aim at developing basic communicative proficiency in Mandarin Chinese with equal attention to aural comprehension, speaking, reading, and writing skills. Learn some Chinese cultural facts and social-cultural etiquette when developing basic communicative competence in Chinese. Recognize and write approximately 250-300 characters by the end of the semester. Instructor: Staff. One course.

101A. First-Year Chinese. First semester of a two-semester sequence. Designed for students with little or no knowledge of the Chinese language. Aim at developing basic communicative proficiency in Mandarin Chinese with equal attention to aural comprehension, speaking, reading, and writing skills. Learn some Chinese cultural facts and social-cultural etiquette when developing basic communicative competence in Chinese. Recognize and write approximately 250-300 characters by the end of the semester. Offered through the Duke Study in China program. Instructor: Staff. One course.

101DK. First Year Chinese I. FL First semester of two-semester sequence. Designed for students with little or no knowledge of Chinese language. Aimed at developing basic communicative proficiency in Mandarin Chinese with equal attention to aural comprehension, speaking, reading, and writing skills. Learn some Chinese cultural facts and social-cultural etiquette when developing basic communicative competence in Chinese. Recognize and write approximately 250-300 characters by end of semester. Taught at Duke Kunshan University. Instructor: Staff.

102. First-year Chinese II. FL Continuation of Chinese 101. Designed for students with little knowledge of the Chinese language. Focus on developing basic communicative proficiency in Mandarin Chinese with equal attention to aural comprehension, speaking, reading, and writing skills. Learn some Chinese cultural facts and social-cultural etiquette when developing basic communicative competence in Chinese. Recognize and write approximately 300 characters by the end of the semester. Instructor: Staff. One course.

102DK. First Year Chinese II. FL Continuation of Chinese 101. Designed for students with little knowledge of Chinese language. Focus on developing basic communicative proficiency in Mandarin Chinese with equal attention to aural comprehension, speaking, reading, and writing skills. Learn some Chinese cultural facts and social-cultural
etiquette when developing basic communicative competence in Chinese. Recognize and write approximately 300 characters by end of semester. Taught at Duke Kunshan University. Instructor: Staff.

131. Literacy in Chinese I. FL Designed for students who were raised in a Chinese-speaking environment and who can converse about personal information or daily topics but have little or no reading and writing skills in Mandarin Chinese. Gain knowledge of the etymologies of Chinese characters and writing system. Substantial work on the development of reading and writing competencies in Chinese while continuing to improve aural understanding and speaking competency. Topics focus on issues concerning the aspects of bilingual and bicultural experiences specifically addressed for Chinese heritage learners. Instructor: Yao. One course.


204. Intermediate Chinese. FL Continuation of Chinese 203. Prerequisite: Chinese 203. Not open to students who have completed Chinese 232 or 242. Instructor: Cai. One course.


232. Literacy in Chinese II. FL Continuation of Chinese 131. Further development of reading and writing fluency and competencies through studying a range of topics consisting of more complex vocabulary and grammatical structures. Content covering necessary understanding of language and cultural heritage concerning Chinese customs, civilization, and history. Prerequisite: Chinese 131 or equivalent. Instructor: Yao. One course.

242. Intensive Literacy in Chinese. FL Intensive Literacy in Chinese. Covers the curriculum of Chinese for advanced-beginners (Chinese 131 and 232) in one semester. Equal attention to listening, speaking, reading and writing skills. Introduction to various aspects of Chinese culture. Not open to students without previous exposure to Mandarin Chinese, or to students who can read and write more than 300 Chinese characters. Instructor: Staff. Two courses.

305. Advanced Intermediate Chinese. CCI, CZ, FL Designed for Chinese as a foreign/second language. Follows Chinese 204 or 224A as part of the language sequence. Increases students' knowledge of more complex forms of the Chinese vocabulary system and competencies in speaking, aural comprehension, reading, and writing. Exposure to a speech variety appropriate to formal and informal speech situations. Materials drawn from newspaper articles, essays, and other readings concerning social and cultural issues in contemporary Chinese society. Emphasis on the active use of the language for communication in written and spoken forms. Prerequisite: Chinese 204 or equivalent. Instructor: Staff. One course.

306. Advanced Chinese II. ALP, CCI, CZ, FL Continuation of Chinese 305. Designed for Chinese as a foreign/second language. Builds knowledge of more sophisticated linguistic forms and learning to differentiate between different types of written and spoken discourse. Development of writing skills in selected formats and genres while continuing to develop correct use of speech patterns and vocabulary and cross-cultural understanding. Content drawn from newspaper articles, essays, and other readings concerning social and cultural issues in contemporary Chinese society. Prerequisite: Chinese 305 or equivalent. Instructor: Yao. One course.


333. Advanced Literacy in Chinese. ALP, CCI, CZ, FL Continuation of Chinese 232, Literacy in Chinese. Designed for Chinese as a second language. Practice in formal and informal speech and discourse in speaking and writing. Content drawn from newspaper articles, essays, TV and radio broadcasts concerning social and cultural issues in contemporary China. Develops fluency and skills in writing expository essays and short stories (narrative) while continuing to advance understanding of heritage culture and aural/oral proficiency. Prerequisite: Chinese 232 or equivalent proficiency. Instructor: Staff. One course.
334. Issues in Modern Chinese. ALP, CCI, CZ, FL Further development of the elements practiced in Chinese 331-333. Designed for Chinese as a second language. Theme-based approach focusing on aspects of social/cultural phenomena and historical/political background of topics in contemporary China and Taiwan. Guided writing practice and development of skills in reading authentic texts in both colloquial and literary Chinese. Prerequisite: Chinese 333 or equivalent. Instructor: Staff. One course.


391. Independent Study. Individual study of language for conducting research involving sources written or spoken in the language. Students have to submit a proposal describing the purported research, types of sources to be analyzed, and kinds of language knowledge or skills they need to be equipped with. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

407S. Issues in Chinese Language and Society I. ALP, CCI, CZ, FL Materials from public media used to analyze diverse social phenomena and cultural issues in contemporary China. Major focus on developing literary reading and writing skills along with learning methods of writing academic Chinese essays on a wide range of complex topics. Topics include popular culture, food, marriage outlooks, Cultural Revolution, Confucianism, and social issues after the economic reform in China. Analysis of cultural and literary texts from variety of media and genres providing a basis for practice in discussion and writing. Instructors: Lee and staff. One course.


435S. Selected Readings in Contemporary Chinese Literature I. ALP, CCI, FL Designed for advanced learners of Chinese as a second language. Study short stories by prominent writers published in the late 1990s. Stories focus on the concerns of human beings, touching upon contemporary themes such as the recollections of the Cultural Revolution, the impact of commercialization of the traditional family, sex, drugs and crime, etc. Advance analytical competency in the language and cultural literacy. Instructor: Staff. One course.

436S. Selected Readings in Contemporary Chinese Literature II. ALP, CCI, FL Continuation of Selected Readings in Contemporary Chinese Literature I. Designed for advanced learners of Chinese as a second language. Further development of literary reading and writing skills on a range of formal topics. Advancing analytical competency in the language and cultural literacy. Content drawn from authentic materials and literary work by prominent writers in contemporary China. Instructor: Staff. One course.

455. Modern Chinese Culture: Narratives of Home and Abroad. ALP, CCI, FL Major works in Chinese literature, film, and other cultural media in their creation of the spectacle of "Modern China" at home and abroad. All reading materials and class discussion in Chinese. Prerequisite: Chinese language proficiency at the fourth year level or the equivalent. Instructor: Chow. One course.

456. Aspects of Chinese Culture and Society. ALP, CCI, CZ, FL Topics in Chinese culture and society including media, popular culture, literature, and the arts of China. Prerequisite: Chinese language proficiency at the fourth-year level or the equivalent. Instructor: Liu. One course.
473A. Current Issues in Modern Chinese I. CCI, CZ, FL. Equivalent to fifth year. Discussion based on oral and written reports and topical readings. Offered in the Duke Study in China Program at Capital Normal University. Instructor: Staff. One course.


Hebrew

Courses in Hebrew (HEBREW)


102. Elementary Modern Hebrew. FL. Continuation of Hebrew 101. Prerequisite: Hebrew 101 or equivalent. Instructor: Plesser. One course. C-L: Jewish Studies 102

171. Biblical Hebrew I. FL. One course. C-L: see Religion 105; also C-L: Jewish Studies 105

172. Biblical Hebrew II. FL. One course. C-L: see Religion 106; also C-L: Jewish Studies 106


204. Intermediate Modern Hebrew. ALP, CZ, FL. Continuation of Hebrew 203. Prerequisite: Hebrew 203 or equivalent. Instructor: Plesser. One course. C-L: Jewish Studies 204


306S. Advanced Modern Hebrew. ALP, CCI, FL. Continuation of Hebrew 306S. Consent of instructor required. Prerequisite: Hebrew 306S or equivalent. Instructor: Ginsburg. One course. C-L: Jewish Studies 306S

391. Independent Study. Individual study of language for conducting research involving sources written or spoken in the language. Students have to submit a proposal describing the purported research, types of sources to be analyzed, and kinds of language knowledge or skills they need to be equipped with. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


Hindi

Courses in Hindi (HINDI)


123A. Intensive Elementary Hindi. FL. Covers the basic elementary Hindi language curriculum (Hindi 1 and 2) in one semester. Conversation, basic grammar, and vocabulary; introduction to the Devanagari script, the reading of texts, and culture. Open only to students in the Duke INtense Global program in Hyderabad. Two courses. Instructor: Staff. Two courses.


225A. Intensive Intermediate Hindi. FL Covers the intermediate Hindi language curriculum (Hindi 63 and 64) in one semester. Includes reading, composition, and conversation, as well as cultural components. Open only to students in the Duke INTense Global program in Hyderabad. Two courses. Instructor: Staff. Two courses.

270T-4. Voices in Global Health: Hindi Tutorial. Half course. C-L: see Global Health 270T-4; also C-L: Asian & Middle Eastern Studies 270T-4

305. Advanced Hindi. ALP, CCI, FL Proficiency in reading, writing, and speaking. Prerequisite: Hindi 204 or equivalent. Instructor: Khanna. One course.

306. Advanced Hindi. ALP, CCI, FL Continuation of Hindi 305. Prerequisite: Hindi 305 or equivalent. Instructor: Khanna. One course.

391. Independent Study. Individual study of language for conducting research involving sources written or spoken in the language. Students have to submit a proposal describing the purported research, types of sources to be analyzed, and kinds of language knowledge or skills they need to be equipped with. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

407S. Issues in Hindi Language and Society II. ALP, CCI, FL Readings in prevailing literary and mass media forms. Prerequisite: Hindi 306 or consent of instructor. Instructor: Khanna. One course. C-L: International Comparative Studies

408S. Issues in Hindi Language and Society II. ALP, CCI, FL Continuation of Hindi 407S. Prerequisite: Hindi 306 or consent of instructor. Instructor: Khanna. One course. C-L: International Comparative Studies

Japanese

Courses in Japanese (JPN)


391. Independent Study. Individual study of language for conducting research involving sources written or spoken in the language. Students have to submit a proposal describing the purported research, types of sources to be analyzed, and kinds of language knowledge or skills they need to be equipped with. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


451S. Seminar in Japanese- Introduction to Japanese Literature. ALP, FL Focus on developing interpretive and expressive abilities in both speaking and writing through reading short stories and novels being made into films. Students are required to have high levels of proficiency in both speaking and writing. Prerequisites: Japanese 408S or equivalent. Instructor: Saito. One course.
471S. Classical Japanese (Bungo). ALP, CCI, FL Introduction to classical Japanese (Bungo). Readings in ancient, medieval, early modern, and modern texts, prose and poetry, such as Hōjōji, Shinkokinshu, Oku no hosomichi, Hyakunin isshu, Genjō kōan, and Gakumon no susume. Emphasis on understanding classical grammar and translation of texts. Prerequisite: Japanese 408S or permission of instructor. Instructor: Tucker. One course.


Korean

Courses in Korean (KOREAN)

101. Elementary Korean. FL Designed for true beginners with no prior knowledge of Korean, introduces the basics of Korean. The sounds of spoken Korean, the writing system Hangul, and greetings; basic communication, fundamentals of grammar, and elementary reading skills for simple sentences. Instructor: E. Kim. One course.

102. Elementary Korean. FL Continuation of Korean 101. Developing speaking and listening skills for everyday personal communication; reading simple narratives and descriptions; learning core grammatical patterns. Prerequisite: Korean 101 or equivalent (knowledge of Hangul and rudimentary speaking ability). Instructor: E. Kim. One course.

203. Intermediate Korean. FL Focus on developing reading skills for narrative and descriptive texts, and on writing. Practice in listening and speaking in social settings with peers and colleagues; development of complexity and sociolinguistic appropriateness in speech. Prerequisite: Korean 102 or equivalent (ability to communicate in service encounters and express oneself in basic personal situations). Instructor: E. Kim. One course.

204. Intermediate Korean. CZ, FL Continuation of Korean 203. Listening and speaking about cultural practices and historical events, reading and writing informative and expository texts, and honing grammatical usage and vocabulary choice. Prerequisite: Korean 203 or equivalent (ability to speak on daily topics fluently and to read simple stories). Instructor: E. Kim. One course.

305. Advanced Korean. ALP, CCI, FL Listening and speaking about cultural, social, and political issues; reading and responding to authentic texts; honing grammatical usage at the discourse level. Prerequisite: Korean 204 or equivalent (fluency in speaking, familiarity with culture, and experience in reading at grade 1 to 3 level). Instructor: Kim. One course.

306S. Advanced Korean. CCI, CZ, FL Continuation of Korean 305. Introduction to Chinese characters; focus on reading and discussing authentic texts on modern Korean history and its social and cultural legacies. Prerequisite: Korean 305 or equivalent (fluency in speaking, familiarity with culture, and experience in reading at grade 4 or 5 level). Instructor: Kim. One course.

391. Independent Study. Individual study of language for conducting research involving sources written or spoken in the language. Students have to submit a proposal describing the purported research, types of sources to be analyzed, and kinds of language knowledge or skills they need to be equipped with. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

407S. Issues in Korean Language and Society I. ALP, CCI, FL Focus on developing interpretive and expressive abilities through reading and discussions of essays, short stories, and newspaper articles. Prerequisite: Korean 306S or equivalent. Instructor: Kim. One course.

408S. Issues in Korean Language and Society II. ALP, CCI, FL Continue developing interpretive and expressive abilities through reading and discussions of essays, short stories, and newspaper articles. Prerequisite: Korean 407S or equivalent. Instructor: Kim. One course.

455S. Korean Politics and Society: Academic Reading and Writing. CCI, CZ, EI, FL, SS An advanced class for students having completed a fourth year course in Korean, or for international students schooled in Korea. Explores
controversial issues in contemporary South Korea such as economic aid to North Korea, restrictions on online anonymity, legal status of immigrants, the US-Korea Free Trade Agreement, revision of National Security Laws, with focus on their ethical dimensions, diverging perspectives, underlying ideologies, and historical contexts. Course materials drawn from media and academic publications in Korean. Instructor: Staff. One course.

**Persian**

**Courses in Persian (PERSIAN)**


204. *Intermediate Persian. FL* Continuation of Persian 203. Instructor: Staff. One course.

391. *Independent Study.* Individual study of language for conducting research involving sources written or spoken in the language. Students have to submit a proposal describing the purported research, types of sources to be analyzed, and kinds of language knowledge or skills they need to be equipped with. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

490AS. *Duke-Administered Study Abroad: Advanced Special Topics in Persian.* Topics differ by section. Instructor: Staff. One course.

**Sanskrit**

**Courses in Sanskrit (SANSKRIT)**

101. *Introductory Sanskrit Language and Literature. FL* Introduces classical, literary Sanskrit, the ancient and trans-continental language of India's intellectual heritage, history, and sacred scriptures. Teaches students Devanagari script, to learn and analyze grammatical forms and structures, vocabulary, and to interpret meaning. Provides an overview to the literature and civilizational importance of Sanskrit, from the ancient past to the present. Instructor: Freeman. One course. C-L: Religion 107

102. *Introductory Sanskrit Language and Literature. FL* Continuation of Sanskrit 101/Religion 107, as prerequisite. Further learning of grammatical forms and structures of the higher language. Introduction of elementary readings from literature and scriptures. Instructor: Freeman. One course. C-L: Religion 108


391. *Independent Study.* Individual study of language for conducting research involving sources written or spoken in the language. Students have to submit a proposal describing the purported research, types of sources to be analyzed, and kinds of language knowledge or skills they need to be equipped with. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

**Tibetan**

**Courses in Tibetan (TIBETAN)**

101. *Elementary Tibetan I. FL* Introductory Tibetan language course for students who have little to no knowledge of Tibetan. Development of speaking, listening, reading, writing skills through Tibetan concepts, grammar and syntax of spoken and written Tibetan. Topics include situations of everyday life (e.g. greetings, introductions, family, habits/hobbies, making appointments, food, visiting friends, weather, shopping, etc.) as well as aspects of Tibetan people and culture (e.g. songs, short stories, etc.). Course taught at University of Virginia; Duke students participate through video conference and/or telepresence classroom. One course.

102. *Elementary Tibetan II. FL* Continuation of Tibetan 101. Prerequisite: Tibetan 101 or equivalent. Development of speaking, listening, reading, writing skills through Tibetan concepts, grammar and syntax of spoken and
written Tibetan. Topics include situations of everyday life (e.g. greetings, introductions, family, habits/hobbies, making appointments, food, visiting friends, weather, shopping, etc.) as well as aspects of Tibetan people and culture (e.g. songs, short stories, etc.). Course taught at University of Virginia; Duke students participate through video conference and/or telepresence classroom. Instructor: Staff. One course.

203. Intermediate Tibetan I. FL Intermediate skill-building in the grammar and syntax of spoken and written Tibetan, along with development of skills in listening, speaking, reading and writing through the integrated use of spoken and literary forms. Students will also enhance their knowledge of Tibetan culture in order to improve their communication skills. Course taught at University of Virginia; Duke students participate through video conference and/or telepresence classroom. Pre-Requisite: TIBETAN 102 Elementary Tibetan II or equivalent. One course.

The Major

Asian and Middle Eastern studies offers a curriculum that reflects an increasing awareness of the interconnectedness of the globe. It provides students with an understanding of languages, literatures, and cultures beyond America and the West to prepare them for professional work or advanced graduate study in a number of international arenas. The curriculum is based on a theoretical framework that examines contemporary cultures of Asia and the Middle East within a global context. Its mission is to foster a view of literature and culture at once indigenous and global, informed by local histories of internal development as well as by theories of cross-cultural influence. The course requirements for the major provide an intellectual vision that includes both study of language and culture practice and a critical theoretical framework for analyzing cultural experience.

The major requires a minimum of ten courses (at least eight of which must be at the 200 level or above), with concentration in one of the six following areas: Arabic, Chinese, Hebrew, Hindi, Japanese, or Korean.

The department also offers an interregional track for students who are interested in graduation with distinction. Students desiring to pursue the interregional program of study may apply to the DUS by or before their penultimate semester at Duke. The application process will consist of a one-page statement explaining the rationale for their proposed program together with a “long-range plan” specifying which courses (or categories of courses) they propose to use to fulfill the 10-course requirement for the major. Proposals are subject to the following restrictions: 1) students may not count introductory language courses toward the major; 2) students must complete third-year level (or the equivalent) in at least one AMES language, or in a language corresponding to one of the geocultural regions covered by the department; 3) Students must take at least 3 literature/culture courses offered by or through AMES; 4) All students pursuing an “Interregional” track must maintain a 3.5 GPA within the major, and must complete a senior thesis. The DUS and the curriculum committee must approve all Interregional track applications, and the DUS will serve as the major advisor for all students whose applications are approved.

The major is organized in accordance with three overlapping structures, as reflected in the following requirements:

- For advanced linguistic skills, the student should take a minimum of three and up to a maximum of six language courses, two of which must be at the 300 level or above. Elementary level courses do not count toward the major.
- Students whose competence in a language exceeds the most advanced language course offered by the department may substitute these courses with literature/culture courses at the 100 level or above in their area of concentration.
- For comprehensive understanding and critical analysis of the literary and cultural traditions, along with theoretical examination of cultural identities such as gender, class, ethnicity, nation, and sexuality, the student is required to take a minimum of three and up to a maximum of five corresponding literature/culture courses at the 100 level or above, two of which must be taken in the department of Asian and Middle Eastern Studies. Majors should consult with their advisor for appropriate courses from other departments.
- For critical analysis of the issue of cultural identities and cross-cultural links with other cultures in Asian and Middle Eastern Studies, every student is required to complete a minimum of one and up to a maximum of two Asian and Middle Eastern Studies courses at the 100 level or above on other cultures.

Study Abroad. An integral part of the student’s experience will be study abroad; while not a requirement of the major, it is strongly encouraged. Students should discuss this option as early as possible with their major advisor.

Advising. Majors will be assigned a faculty advisor from the department.
Departmental Graduation with Distinction

Majors with grade point averages of 3.5 or higher in the major may apply in their junior year to the director of undergraduate studies for Graduation with Distinction (see the section on honors in this bulletin). Students working on their honors thesis will take an independent study with their thesis advisor in the fall of their senior year, and will take a departmental honors seminar (Asian and Middle Eastern Studies 495S) in the spring. Students will have an oral defense of their theses at the end of their final semester, at which point their thesis committee will determine what level of distinction the student will receive. In order to graduate with honors, the student must obtain at least an A- in the honors seminar.

The Minor

A minor is offered to students interested in the study of language, literature, and culture of a particular region of Asia and the Middle East. Areas of concentration include Arabic, Chinese, Hebrew, Hindi, Japanese, or Korean.

The minor offers two tracks: concentration in (1) an Asian and Middle Eastern studies with a language concentration and (2) in Asian and Middle Eastern studies with a literature concentration. Five courses are required in each track. Students must receive a C- or above in all courses taken for the minor.

Minor in Asian and Middle Eastern Studies with a Language Concentration: Includes Arabic, Chinese, modern Hebrew, Hindi, Japanese, or Korean. Five courses are required as follows: 1) a minimum of three and up to a maximum of four language courses, two of which must be at the 300 level (elementary level courses do not count toward the minor); 2) a minimum of one and up to a maximum of two corresponding literature/culture courses at the 100 level or above which must be taken from the Department of Asian and Middle Eastern Studies.

Minor in Asian and Middle Eastern Studies with a Literature Concentration: Five courses are required as follows: (1) two language courses at the intermediate (200) level or above; 2) a minimum of one and up to a maximum of two corresponding literature/culture courses at the 100 level or above from Asian and Middle Eastern studies; and 3) a minimum of one and up to a maximum of two courses on other cultures at the 100 level or above, which must be taken from the Department of Asian and Middle Eastern Studies.

Astronomy

For courses in astronomy, see physics on page 494.

Biochemistry

For courses in biochemistry, see Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates (on page 659); also see biology (below) and chemistry (on page 198).

Bioethics and Science Policy

Courses in Bioethics and Science Policy (BIOETHIC)

282. Science, Ethics, & Democracy. EI, SS, STS One course. C-L: see Philosophy 282

390S. Special Topics. Topics vary each semester. Instructor: Staff. One course.

601S. Foundations of Bioethics & Science Policy. CZ, EI, STS An introduction to the philosophical foundations of bioethics and bioethical policy, including (1) major ethical theories [consequentialism, deontology], (2) important philosophical analyses of key ethical concepts, [e.g. well-being, autonomy, rights, respect for persons, consent, coercion, exploitation, fairness], and (3) the practices of rigorous argumentation. The aim is to give students a more sophisticated understanding of the values at play in major ethical disputes, while enabling students to engage productively with these debates by improving their ability to argue, and their ability to express themselves with clarity and precision. Consent of instructor required for undergraduates. Instructor: Hawkins. One course.

602S. Law, Research and Bioethics. EI, SS, STS An examination of the relationship between the law and bioethical issues, particularly in research and medical contexts. The course will explore the ways scientific advances affect law and other social institutions, and, conversely, how law affects the development and use of scientific knowledge. Topics include the history of human subject protections, current regulatory and statutory issues in
research, and legal decisions governing informed consent, confidentiality, privacy, and other issues. Consent of instructor is required for undergraduates. Instructor: Dame. One course.

605S. Contemporary Issues in Bioethics and Science Policy. An introduction to cutting-edge developments in science, medicine, and technology as well as the difficult ethical questions they raise. This two-semester course will meet every other week and will feature guest speakers, including policy-makers, regulators, criminal investigators, legislators, activists, and prominent academics in the fields of policy, bioethics, law, and neuroscience. Students will have the opportunity to engage with speakers and to explore potential career paths. Consent of instructor is required for undergraduates. Instructor: Staff. One course.

606S. Activism and Advocacy Among Patients and Research Participants. CCI, EI, SS, STS In the 1960s, patients appropriated the language and tactics of the civil rights movement to advance clinical and research agendas. In today's post-genomic and digital information era, patient activism is evolving, leading to new solutions, dilemmas, and organizational structures. This course will examine patient and research participant activism and the ways it challenges conventional notions of expertise, amateurism, "human subjects protections," and minimization of risk. Students will bring the tools of investigative journalism, humanities scholarship, and community engagement/citizen science to bear on ethical and policy questions. Instructor consent required for undergraduates. Instructor: Angrist. One course.

607. Introduction to Genetics and Genomics. NS, STS An introduction to the fields of genetics and genomics for students without a formal science background. The course begins with an overview of the structure and function of DNA and the genome, and an introduction to the lab techniques and technologies used in these fields. Students will learn how scientists sequence a genome and how they map a disease gene. The course will conclude with an examination of the health and societal applications of genetics and genomics. Throughout the course, examples of ethical controversies will be provided to give perspective to the science. Consent of instructor is required for undergraduates. Instructor: Staff. One course.
89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

148FS. Genomics of Host-Microbe Interactions: The Symbiotic Web. NS, R, STS One course. C-L: see Genome Sciences and Policy 148FS; also C-L: Environment 148FS

150. Biology of Aging: The Quest for a Fountain of Youth. EI, NS, STS Current research in the cellular and molecular mechanisms of aging, specifically focusing on model organisms (e.g. yeast, worms, and flies) and how this is being applied to extending longevity in humans. Topics including the forces of natural selection and aging, stress and telomere length, free radicals and oxidative damage, calorie restriction, the obesity epidemic, degenerative diseases and stem cells. Social and political impact of increasing life expectancies and the consequences of shifting global demographics. Ethical questions such as the value of doubling human life span. Intended for nonmajors. Instructor: Hill. One course.

151. The Role of Trees in Urban Environments. NS, STS Discussion in first part of course of various environmental properties of city living; in second part, examination of how trees, as a proxy for vegetation, affect those properties. Also discussed are socioeconomic aspects of trees in the city. Instructor: Wilson. One course.


154. AIDS and Other Emerging Diseases. NS, STS Explores the interaction of biology and culture in creating and defining diseases through an investigation of acquired immunodeficiency syndrome (AIDS) and other emerging diseases: molecular biology; biology of transmission and infection; the role of people and culture in the evolution of infectious diseases; reasons for the geographic variations in disease. The inductive-deductive methodology of science is both used to develop and test hypotheses as well as examined itself as an analytical tool. Intended for nonmajors. Instructor: Broverman. One course. C-L: International Comparative Studies 103, Global Health

155. The Biology of Dinosaurs. NS, STS Introduction to the history of ideas about the anatomy, diversity, behavior, reproduction, and ecology of dinosaurs and their relatives. The historical and social contexts of important scientific discoveries and controversies. Controversies and current research used to illustrate the scientific method as a way of learning about the natural world. Topics such as plate tectonics, the age of the earth, natural selection, and parental care in dinosaurs illustrating how scientists draw upon observation and experiment to frame, test, and refine hypotheses. Intended for nonmajors. Instructor: Wray. One course.

156. Genetics, Genomics, and Society: Implications for the 21st Century. EI, NS, SS, STS Introduction to the foundation of genomic sciences with an emphasis on recent advances and their social, ethical and policy implications. Foundational topics including DNA, proteins, genome organization, gene expression, and genetic variation will be interwoven with contemporary issues emanating from the genome revolution such as pharmacogenetics, genetic discrimination, genomics of race, genetically modified crops, and genomic testing. Genomic sciences and policy science applied to present and future societal, and particularly ethical, concerns related to genomics. Intended for non-Biology majors. Not open to students who have taken Biology 210FS, 211L or 212L. Instructor: Hill. One course. C-L: Marine Science and Conservation

157. The Dynamic Oceans. NS, STS One course. C-L: see Earth and Ocean Sciences 102; also C-L: Marine Science and Conservation

158. Plants and Human Use. NS, STS Historical and present interactions between humans and plants like coffee, tea, sugar, opium, pepper, potato and hemp, illustrating major changes in human civilization and cultures as a result. Social economic, trade, exploration, spiritual, medicinal, and plant structural and chemical reasons underlying the pivotal roles certain plant species have played in the development of human culture and technology. Case studies of different plant commodities (products) revealing these biological and historical interactions. For nonmajors. Instructor: Pryer. One course.

159. The Past and Future of the Human Genome. EI, NS, SS, STS Exploration of current DNA technology and potential impacts which are in continual flux because of new scientific findings, medical advances, judicial rulings. Introduction to the structure of the genome, genetic variation, and the genetic basis of disease to study existing and
future medical, ethical, and policy issues. Intended for nonmajors. Instructor: Goldstein and Angrist. One course. C-L: Genome Sciences and Policy 159

161. Plants of Duke Campus. NS Ecology, morphology, and identification of trees and shrubs; topics include plant anatomy and wood structure, reproduction, classification, evolution; outdoor class meetings focus on identification of native and cultivated species; intended for nonmajors. Instructor: Shaw. One course.

162. Evolution of Life. NS, STS The history of life on earth and mechanisms underlying evolution. Topics include the history of thought about evolution, Darwin and "Darwinism", applications of evolutionary ideas in agriculture and medicine, mis-applications such as in eugenics and racism, and the relationship between evolutionary biology and religion. Intended for non-majors. Instructor: Shaw. One course.

175LA. Marine Biology. EI, NS, STS Physical and chemical aspects of estuarine and marine ecosystems and environments. Functional adaptations of marine organisms and the role of man and society on the ecosystems. Includes field trips to local environments with an emphasis on impacted environments and their relation to societal activity and policy. For students not majoring in natural sciences. (Given at Beaufort.) Instructor: Staff. One course. C-L: Marine Sciences, Marine Science and Conservation

179S. Biology and Human Disease. NS, STS Exploration of important concepts in molecular biology and genetics designed for members of the Cardea Fellows Program. The course will cultivate curiosity and promote deep understanding of important biological principles by examining them in the context of human health and disease. Students will utilize case studies and group problem solving to apply biological knowledge to biomedical and societal challenges. Consent of instructor required. Instructor: Perz-Edwards. One course.

180FS. Global Diseases. NS, STS Biological, social, and cultural factors impacting global disease spread and/or reduction; current challenges in vaccination and disease control programs. Open only to students in the Focus Program. One course. C-L: Global Health


190FS. Focus Program Topics in Biology. NS Open only to students in the Focus Program; for first-year students with consent of instructor. Instructor: Staff. One course.

190S. Topics in Modern Biology. NS Occasional seminars in various topics in biology. Intended for nonmajors. Instructor: Staff. One course.

201L. Gateway to Biology: Molecular Biology. NS, STS Introduces major concepts in biology through the lens of molecular biology. Molecular mechanisms that comprise the Central Dogma and variants. DNA structure and function, replication, transcription, and translation. Protein synthesis, folding, structure and function. Supporting topics related to the structure of cells, metabolism and energetics. Integration of physical and quantitative principles to molecular biology. Relevance to human diseases and the biotechnology industry. Laboratory includes an introduction to recombinant DNA technology. Prerequisite: Chemistry 101DL, or equivalent. Instructor: Buchler, Haase, Kiehart, Wray. One course.

190LA. Gateway to Biology: Molecular Biology. NS, STS Introduces major concepts in biology through the lens of molecular biology. Molecular mechanisms that comprise the Central Dogma and variants. DNA structure and function, replication, transcription, and translation. Protein synthesis, folding, structure and function. Supporting topics related to the structure of cells, metabolism and energetics. Integration of physical and quantitative principles to molecular biology. Relevance to human diseases and the biotechnology industry. Laboratory includes an introduction to recombinant DNA technology. Prerequisite: Chemistry 101DL. Taught only in the Beaufort Marine Lab program. Instructor: Schultz. One course. C-L: Marine Sciences


204. Biological Data Analysis. NS, QS Principles and applications of statistics in biology, with emphasis on genetics, molecular biology, ecology and environmental science. Topics include: the presentation of biological data,
summary statistics, probabilities and commonly-applied probability distributions, the central limit theorem, statistical hypothesis tests, errors and power, tests using the z- and t-distributions, correlation and regression, analyses of variance and covariance, non-parametric tests, and sampling design. Not open to students who have credit for another 100-level statistics course. Instructor: Rodrigo. One course.

205. Marine Megafauna. NS, STS Ecology, systematics, and behavior of large marine animals including giant squid, bony fishes, sharks, sea turtles, seabirds, and marine mammals. Relations between ocean dynamics, large marine animals, and their role in ocean food webs. Impact of human activities and technological advancement on populations. Economic, social, and policy considerations in the protection of threatened species. Prerequisite: AP Biology, Introductory Biology, or consent of the instructor. Instructor: Johnston. One course. C-L: Environment 205, Marine Sciences, Marine Science and Conservation

206L. Organismal Diversity. NS Broadly integrated survey of biological diversity, including the major lineages of prokaryotes, plants, protists, animals and fungi, with an emphasis on evolutionary relationships, ecological and functional anatomical features of major groups. Lectures closely coordinated with twice-weekly intensive laboratory exercises emphasizing live material to present. Required weekend field trips to distinctive habitats in North Carolina. Intended for Biology or prospective Biology majors. Prerequisite: Biology 20 or 202L, recommended. Not open to students who have taken Biology 207. Instructor: Motten. One course.

207. Organismal Evolution. NS Exploration of the diversity of life by emphasizing evolutionary, structural, and functional aspects of the major lineages of bacteria, plants, protists, animals and fungi. Not open to students who have taken Biology 206L. Instructor: Manos and Cunningham. One course.

209. Ecology for a Crowded Planet. NS, STS Human activities are fundamentally altering our landscapes and our atmosphere. The science of ecology is central to our ability to sustain populations of organisms, regional and global biodiversity, and the provision of critical ecosystem services. Course emphasizes critical analysis of ecological data and the design and interpretation of ecological experiments and models. Students will become well equipped to evaluate environmental science as it is reported in the popular press. Instructor: Bernhardt, Reid, or Wright. One course.

210FS. Genomes, Biology, and Medicine. NS, R, STS Implications of Human Genome Project for understanding biology of molecules, cells, organs, organisms and populations. Topics include: genome and evolution, infectious disease, sex, Implications of Human Genome Project for understanding biology of molecules, cells, organs, organisms and populations. Topics include: genome and evolution, infectious disease, sex, aging, behavior, impact on the practice of medicine and society's perception of health and disease. Examination of case studies based on primary scientific literature. Open only to students in the Focus Program. Prerequisite: Biology 20 or the equivalent. Instructor: Willard. One course. C-L: Genome Sciences and Policy

212L. General Microbiology. NS Classical and modern approaches to the study of microorganisms and their roles/applications in everyday life, medicine, research, and the environment. Microbial cell structure, function, growth, genetics, metabolism, evolution, and ecology. Study of disease, infection, and immunology. Introduction to virology. Recommended for many pre-health programs. Prerequisite: one course in a biological science or consent of instructor. Instructor: Dong, Lutzoni, Schmid, and/or Vilgalys. One course. C-L: Global Health

213. Cell Signaling and Diseases. NS During the past several decades, exploration in basic research has yielded extensive knowledge about the numerous and intricate signaling processes involved in the development and maintenance of a functional organism. In order to demonstrate the importance and processes of cellular communication, this course will focus on cell signaling mechanisms and diseases resulting from their malfunction, such as cancer, stroke, and neuron degeneration (including Parkinson's disease, Alzheimer's disease, Huntington's disease, and Amyotrophic lateral sclerosis). Students will be exposed to current literature and cutting edge knowledge. Prerequisite: Biology 201L. Instructor: Chen and Pei. One course.

214L. Experimental Cell and Molecular Biology. NS, R, W Application of contemporary molecular techniques to biological problems. Questions addressed on protein-DNA binding, protein domain structure and function, differential gene expression, protein localization. Techniques include genetic transformation, gel mobility shift assay, Western blot, Northern blot, PCR, RT-PCR, microarrays, immunolocalization, DNA sequencing. Students learn to write three scientific-style papers on their experiments. Prerequisite: Biology 201L or 202L. Instructor: Armaleo. One course.


219. Molecular Genetics and Genomics. NS Explores the flow of information from gene to phenotype, and the social implications of modern genetic analysis and the genomic revolution. Topics include: organization and stability of genomes from bacteria to humans, conversion of the genetic code into a functioning organism, classical transmission (Mendelian) genetics and its relevance to human hereditary disorders, content of the genome and societal issues that include genetic privacy, eugenics, genetically modified organisms, and cloning. Prerequisite: Biology 201L. Instructor: Bejsovec. One course. C-L: Genome Sciences and Policy

220. Cellular and Developmental Biology. NS The role of genes and proteins in mediating basic cellular and development processes. Topics include: structure and function of cellular membranes and organelles; protein targeting and transport; signal transduction; role of the cytoskeleton in cell shape and motility; function of the immune system; genetic regulation of cell growth/division and the relationship to cancer; genetic control of development processes. Prerequisite: Biology 201L. Instructor: Baugh, Chen, McClay, D. Sherwood, or staff. One course.

221. Food and Fuel for a Growing Population: Nuts and Bolts of Plant Growth and Production. NS, STS Covers primary physiological processes from subcellular to whole plant that affect plant growth in a changing environment. Processes include photosynthesis, respiration, water relations, nutrient and carbohydrate allocation, signaling, and stress responses to various biotic and abiotic factors for a range of plant species adapted to different environments. Applications include plant improvement for food and biofuel production, management of plant growth in response to global change. Local field trip planned. Prerequisites: Biology 201L or 202L. Instructors: Reid and Siedow. One course. C-L: Environment 228

222S. Comparative Biomechanics. NS How living organisms interact with the physical world, their design, and operation. Covers solid and fluid mechanics using examples from plants, invertebrates, and vertebrates. Emphasizes biological principles. Prerequisite: Physics 141L or equivalent. Instructor: Staff. One course.

224. Fundamentals of Neuroscience (B). NS, STS One course. C-L: see Psychology 275; also C-L: Neuroscience 201

227. Evolution of Animal Form. NS, R, W A survey of the history of animal life focusing on major revolutions in design such as the Cambrian explosion, the Mesozoic radiation of dinosaurs, and the Cenozoic radiation of mammals. Exploration of three views of form: the Darwinian view which stresses function; the historicist view which emphasizes historical accident; and the structuralist view that form is mainly the result of fixed mathematical relationships. The different ways in which each view applies the comparative method. Prerequisite: Biology 20 or 201L or equivalent, and Psychology 106. Instructor: Sherwood and Volkan. One course. C-L: Genetics 227

228. Population Genetics. NS Use of genetic sequence analysis to examine aspects of natural populations of humans and other organisms in the past and present. Topics include molecular phylogenetics; the origin, maintenance, and loss of major features of evolution; the evolutionary process at the molecular level; reconstruction of human origins and paleohistory; and genetic information in forensic studies. Instructor: Uyenoyama. One course.
251L. Molecular Evolution. NS, QS, R Evolution of genes, gene families, and genomes and relation to their structure, function and history. Contemporary computer-based analysis of nucleic acid and protein evolution including: BLAST searches; sequence alignment; estimation of rates, patterns, types of substitution; interpreting evolutionary changes in structure-function relations; protein homology modeling; visualizing and annotating protein structure. Prerequisite: Biology 201L or consent of the instructor. Instructor: Mercer. One course. C-L: Genome Sciences and Policy

255. Philosophy of Biology. CZ, NS, R, STS One course. C-L: see Philosophy 314; also C-L: Genome Sciences and Policy, Marine Science and Conservation

261S. Ecosystem Ecology for a Crowded Planet. EI, NS, STS Concepts of ecosystem ecology within the ethical, social and political context context of current environmental policy issues. Lectures, discussions and class activities examine environmental policy issues, linkage between ecosystem science and political issues. Prerequisites: Biology 209 or Environment 89S or consent Instructor: Bernhardt. One course. C-L: Environment 261S

262. People, Plants and Pollution: Introduction to Urban Environments. NS, STS Cities turn natural lands into impervious surfaces, like roofs and parking lots, while trees, forests, and grass decrease. Course covers urban environmental issues, including energy and carbon, air, heat, and water pollution, the health and welfare of people, and changes in other species and regional/global climatic patterns. Examines costs/benefits of urban nature on solving urban environmental problems, including enhancing the social welfare of people's lives. Instructor: Wilson. One course. C-L: Environment 274

263. Biological Responses to Climate Change. NS, W Lecture/discussion course on how organisms, populations, and biological communities are expected to respond to climate change. Topics include evidence for effects of climate change on organisms, how to experimentally test for potential effects of climate change, ecological and evolutionary mechanisms that organisms have--or do not have--that enable them to respond to climate change, community responses to climate change. Prerequisite: Biology 202L. Instructor: Donohue. One course.


270A. Conservation Biology and Policy. EI, NS, STS Introduction to the key concepts of ecology and policy relevant to conservation issues at the population to ecosystems level. Focus on the origin and maintenance of biodiversity and conservation applications from both the biology and policy perspectives (for example, endangered species, captive breeding, reserve design, habitat fragmentation, ecosystem restoration/rehabilitation). (Given at Beaufort.) Prerequisites: introductory biology; suggested: a policy and/or introductory ecology course. Instructors: Staff. One course. C-L: Environment 270A, Marine Sciences, Marine Science and Conservation

272A. Analysis of Ocean Ecosystems. NS The history, utility, and heuristic value of the ecosystem; ocean systems in the context of Odum's ecosystem concept; structure and function of the earth's major ecosystems. (Given at Beaufort.) Prerequisite: one year of biology, one year of chemistry, or consent of instructor. Instructor: Johnson. One course. C-L: Environment 272A, Earth and Ocean Sciences 272A, Marine Sciences, Marine Science and Conservation

273LA. Marine Ecology. NS, R, W Factors that influence the distribution, abundance, and diversity of marine organisms. Course structure integrates lectures and field excursions. Topics include characteristics of marine habitats, adaptation to environment, species interactions, biogeography, larval recruitment, and communities found in rocky shores, tidal flats, beaches, mangrove, coral reefs, and subtidal areas. Not open to students who have taken Biology 773LA. (Given at Beaufort fall and summer.) Prerequisite: introductory biology. Instructors: Silliman or staff. One course. C-L: Environment 273LA, Earth and Ocean Sciences 374LA, Marine Sciences, Marine Science and Conservation

275A. Biology for Engineers: Informing Engineering Decisions. NS, STS Biology from an engineering perspective. Emphasis on biological processes that inform engineering decisions. Topics include: environmental chemicals, biological command and control, nanostructures, e-waste, biology and engineered materials, organotoxins, metaltoxins, nanotoxins, biofouling, biomemetics, biological glues, biocorrosion, biodegradation, bioremedi-
ation, biological resistance, and biological virulence. Environmental and human health policy. (Given at Beaufort.)
Prerequisite: introductory chemistry. Instructor: Rittschof. One course. C-L: Environment 271A, Marine Science, Marine and Conservation

278LA. Physiology of Marine Animals. NS, R, W Comparative physiology of estuarine and marine animals. Physics and chemistry of estuarine and marine environments and physiological adaptations of animal residents. Focus on theory, behavioral, and physiological responses of animals to the major environmental drivers of temperature, salinity, oxygen, and light. Lectures and laboratories illustrating the approaches and methodology, analysis techniques, and written reporting of classical environmental physiology research. One course (fall); one and one-half courses (summer). (Given at Beaufort.) Prerequisites: AP biology, introductory biology, or consent of the instructor, and Chemistry 101DL. Instructor: Forward. Variable credit. C-L: Environment 278LA, Marine Sciences, Marine Science and Conservation

279LA. Sound in the Sea: Introduction to Marine Bioacoustics. NS, R, STS One course. C-L: see Environment 280LA; also C-L: Electrical and Computer Engineering 384LA, Earth and Ocean Sciences 280LA, University Program in Marine Science, Marine Science-Natural Science

280A. Fundamentals of Tropical Biology. NS Conceptual themes in ecology, emphasizing tropical organisms and ecosystems. Topics range from behavioral and physiological adaptation of individuals to processes and patterns in diverse assemblages, including: mutualism and parasitism in the tropics, competition and the structure of tropical guilds, pollination ecology, forest dynamics and gap-phase regeneration, island biogeography and the design of biological reserves, and evolutionary processes responsible for promoting high tropical biodiversity. (Taught in Costa Rica.) Instructor: Staff. One course.

280LA. Fundamentals of Tropical Biology. NS, R Laboratory version of Biology 280A. Field activities and independent field research projects. (Taught in Costa Rica, summer). Instructor: Staff. One course. C-L: Latin American Studies

281LA. Research Methods in Tropical Biology. NS, R, W Field-based course. Student design and implementation of ecological projects in different tropical ecological zones. Introduces basic concepts in statistical populations, sampling techniques, and experimental design and hypothesis testing. Topics include: measuring abiotic micro- and macroclimatic variables; estimating population abundance and distribution; performing demographic and life history analyses; investigating mutualistic, competitive, and predator-prey coevolutionary processes; and measuring patterns of species diversity. (Taught in Costa Rica.) Instructor: Staff. One course. C-L: Latin American Studies

282LA. Introduction to Field Ethnobiology. NS, STS Four-week summer course in Costa Rica on the scientific study of subsistence, medicinal, ceremonial, and esthetic use of plants and animals by human societies. Lectures and demonstrations in San José. Travel to southern Costa Rica to learn the use of resources in contrasting communities including Zancudo coastal community, Abrojos Guaymi Indian Reservation, and Guatil, a Chorotega Indian village. Offered by the Organization for Tropical Studies in Costa Rica from mid-July to mid-August. Prerequisites: one semester of biology and Spanish. Taught at Gómez, Las Cruces Biological Station/Wilson Botanical Garden. Instructor: Staff. One course.

284A. South African Ecosystems and Diversity. NS, STS Conceptual themes in ecology emphasizing savannas; also consideration of fynbos, highveld, podocarp forests, coastal and intertidal zones. Topics include climate and geology of South Africa; roles of fire, drought, human presence, invasive species, and herbivores in shaping ecosystems; top-down and bottom-up control of mammalian herbivores; plant pollination and seed dispersal; role of rivers in defining savanna characteristics; origin and maintenance of biodiversity; vertebrate social systems; major research programs in Kruger National Park (taught in Kruger National Park, South Africa). Prerequisite: Biology 20 or introductory ecology. Instructor: McClearn. One course. C-L: Environment 284A

285LA. Field Research in Savanna Ecology. NS, R, W Field-based course stressing student design and implementation of research projects in savanna ecosystems. Introduces basic concepts in experimental design and hypothesis testing, long-term monitoring, sampling techniques, parametric and nonparametric analysis. Each student will participate in several faculty-led research projects. In addition, students in small groups will design independent projects, consult with faculty, collect and analyze data, and make oral and written presentations of their results. Each student will work on two of these independent projects. (Taught in Kruger National Park, South Africa) Prerequisite: Biology 20 or introductory ecology or equivalent. Instructor: Staff. One course. C-L: Environment 285LA
288A. Biogeography in an Australian Context. NS, STS Distribution of plants and animals in space and time as determined by the interaction of geophysics, geology, climate, and evolutionary history. Special emphasis on the unique terrestrial and marine faunas and floras of the Australian continent and on the impact of humans on the distribution of these plants and animals. Taught in Australia. Instructor: Manos, Shaw, or Vilgalys. One course. C-L: Environment 288A, Earth and Ocean Sciences 288A

290. Topics in Biology. NS Occasional topics in the biological sciences. Instructor: Staff. One course.

290S. Seminar in Biology. NS Instructor: Staff. One course.

293. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to all qualified students with consent of supervising instructor and director of undergraduate studies. May be repeated. Continued in Biology 493. Instructor: Staff. One course. C-L: Marine Sciences, Marine Science and Conservation

293A. Research Independent Study. R Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Taught only in the Beaufort Marine Lab program. Instructor: Staff. One course. C-L: Marine Sciences, Marine Science and Conservation

293A-1. Research Independent Study. R Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Taught only in the Beaufort Marine Lab program. Half course. Instructor: Staff. Half course. C-L: Marine Sciences, Marine Science and Conservation

309S. Current Research in Biology. EI, NS, STS, W Biology Research Forum Fellows write and review research proposals, discuss ethical issues in the conduct of biological and biomedical research, and present and discuss their research projects. Consent of instructor required. Instructor: Sun. One course.

311. Systems Biology: An Introduction for the Quantitative Sciences. NS Introduction to concepts and applications of Systems Biology. Identification of molecular interactions that underlie cellular function using high dimension data acquired through high-throughput approaches. Intended for students with prior training in quantitative fields (computer science, math, physics, statistics, engineering). Instructor: Magwene or Schmid. One course. C-L: Genome Sciences and Policy

321. Primate Sexuality. NS, STS One course. C-L: see Evolutionary Anthropology 341

321D. Primate Sexuality. NS, STS One course. C-L: see Evolutionary Anthropology 341D

322. From Neurons to Brain. NS Physiology of single neurons, and how they come together to form a circuit. Ideas about how circuits encode information. Operation of neural circuits, and experimental and theoretical approaches to unravel them. Principles underlying sensory, motor and decision-making circuits. A range of model systems from small (leech, stomatogastric ganglia) to medium (fruitflies and bees) and large (songbirds, mice, primates) will be introduced. Design principles and constraints that have shaped the nervous system during evolution will be discussed. Prerequisites: Biology 201L and Chemistry 101DL or equivalent. Instructor: Bhandawat. One course. C-L: Neuroscience 322

329D. Principles of Animal Physiology. NS Non-laboratory version of Biology 329L. Does not carry the R or W curricular designations. Not open to students who have taken Biology 329L or Biomedical Engineering 244L. Prerequisites: Biology 20 or 201L and Physics 141L and Chemistry 101DL. Instructor: Grunwald. One course.

329L. Principles of Animal Physiology. NS Animals as physical and chemical machines; respiration, circulation, neural and hormonal coordination, movement, water balance/excretion, metabolism, thermoregulation, digestion, and responses to special environments. Comparative study of all animals, with an emphasis on vertebrates. Labora-
330L. Comparative and Functional Anatomy of the Vertebrates. NS The structure, function, and evolution of the vertebrate body. Emphasis on understanding the functional, evolutionary, and developmental basis for the similarities and differences observed among living vertebrates. Laboratories examining specific problems in the evolution of major organ systems through dissection, comparison, and analysis of functional data. Instructor: Smith. One course.

340L. Plant Diversity. NS Major groups of living plants, their evolutionary origins and phylogenetic relationships. Instructor: Shaw. One course.

341L. Plant Communities of North Carolina. NS Overview of plant communities in the mountains, piedmont, and coastal plain of North Carolina, primarily through field trips. The dominant native plants of each community; the biology and identification of important invasive species. Required weekend field trip to the mountains, and several weekend day trips. Instructor: Manos. One course.

342L. Plant Systematics and Evolution. NS, STS Plants as providers of food, shelter, and medicine and as one of evolution's great success stories. Phylogenetic principles and methods of analysis used to recognize major families of vascular plants. Flowering plants and the evolution of floral form and function, pollination, and breeding systems. Sources of taxonomic evidence including morphology, anatomy, and DNA. Both traditional and modern identification tools. The interdisciplinary nature of plant systematics and its importance in modern society. Prerequisite: Biology 20 or 202L. Field trips. Instructor: Pryer and Windham. One course.


345. Dinosaurs with Feathers and Whales with Legs: Major Evolutionary Transitions in the Fossil Record. NS, STS One course. C-L: see Earth and Ocean Sciences 341

350. Complex Traits and Evolutionary Genetics. NS Introduction to the principles of evolutionary genetics and variation of complex phenotypic traits. Genetic variation, neutral theory, natural selection, quantitative genetics, human population genetics, phylogenetic reconstruction, evolutionary genomics, and evolutionary bioinformatics. Prerequisites: Biology 20 or 202L. Instructor: Mitchell-Olds. One course. C-L: Genome Sciences and Policy

361LS. Terrestrial Field Ecology. NS, R, W Ecosystem, community, and physiological ecology of temperate plants and animals through hands-on experimentation. How biological processes are affected by biotic interactions. Theory and methods reviewed through discussions; hypothesis formulation, experimental design, data acquisition and processing, and data analysis learned through field investigation. Includes several field trips, including two weekends. Prerequisites: Biology 20 or one course in ecology or consent of instructor; Mathematics 111L. Instructor: Wright. One course. C-L: Environment 361LS

362LS. Aquatic Field Ecology. NS, R, W Explore the stream, wetland and reservoir ecosystems of NC. Through hands on inquiry and field experimentation students will gain experience in formulating hypotheses, designing field observations and experiments, analyzing field data and interpreting field results. In addition to weekly field labs, the course will include two weekend field trips, one to the Duke Marine Lab and the second to the NC mountains. Prerequisites: Biology 20 or one course in ecology or consent of instructor; Mathematics 111L. Instructor: Bernhardt. One course. C-L: Environment 213LS

365. From Influenza A to Varicella Zoster: The Physiology, Ecology, and Evolution of Infectious Disease. NS Covers the physiology and the ecological and evolutionary dynamics of a suite of infectious diseases. Case studies include influenza, cholera, HIV, and myxomatosis, among others, with an emphasis on pathogens infecting humans. Topics include: basic immunology, the physiology of different disease processes and transmission, the role of population size on disease transmission, the effects of climate and behavioral changes on disease dynamics, networks of disease spread, spatial spread of disease, evolution of virulence, antigenic evolution, emerging infectious diseases. Pre-reqs: Biology 201L and 202L. Instructor: Johnsen and Koelle. One course.

and research methodology used to study the evolution of molecular signaling and control systems. Research projects using local invertebrates to study behavioral and physiological responses to environmental signals. Field trips include night walks in local environments and marine fossil expeditions to local strip mines involved with production of fertilizer, food additives, cement, and gravel. One course (fall); one and one-half courses (summer). (Given at Beaufort.) Prerequisites: AP Biology, introductory biology, or consent of instructor; and Chemistry 101DL. Instructor: Rittschof. Variable credit. C-L: Environment 372LA, Marine Sciences, Marine Science and Conservation

373LA. Sensory Physiology and Behavior of Marine Animals. NS, R, W Sensory physiological principles with emphasis on visual and chemical cues. Laboratories will use behavior to measure physiological processes. (Given at Beaufort.) Prerequisites: AP Biology or introductory biology or consent of instructor and Chemistry 101DL. Instructor: Rittschof. One course. C-L: Neuroscience 381LA, Marine Sciences, Marine Science and Conservation

374LA. Marine Molecular Ecology. NS, R, STS One course. C-L: see Environment 382LA; also C-L: Marine Sciences, Marine Science and Conservation

375A. Biology and Conservation of Sea Turtles. NS, STS Essential biology of sea turtles (evolution, anatomy, physiology, behavior, life history, population dynamics) and their conservation needs; emphasis on their role in marine ecosystem structure and function. Basic ecological concepts integrated with related topics including the conservation and management of endangered species, the contributions of technology to the management of migratory marine species, the role of research in national and international law and policy, and the veterinary aspects of conservation. (Given at Beaufort.) Field trip to Puerto Rico required. Prerequisite: Introductory Biology. Consent of instructor required. Instructor: Godfrey or staff. One course. C-L: Environment 375A, Marine Sciences, Marine Science and Conservation

375LA. Biology and Conservation of Sea Turtles. NS, STS Laboratory version of Biology 375A. Includes laboratory and field experience with animals and with their habitat requirements. (Given at Beaufort.) Prerequisite: Introductory Biology. Instructor: Godfrey or staff. One course. C-L: Environment 375LA, Marine Sciences, Marine Science and Conservation

376A. Marine Mammals. NS, STS The biology of cetaceans, pinnipeds, sirenians, and sea otters. Topics covered include the diversity, evolution, ecology, and behavior of marine mammals and their interactions with humans. Detailed consideration given to the adaptations that allow these mammals to live in the sea. Evaluation of the scientific, ethical, and aesthetic factors influencing societal attitudes toward these animals and of their conservation management in light of domestic legislation and international treaties. (Given at Beaufort.) Prerequisite: introductory biology. Instructor: Read or staff. One course. C-L: Environment 376A, Marine Sciences, Marine Science and Conservation

376LA. Marine Mammals. NS, R, STS Laboratory version of Biology 376A. Laboratory and field exercises consider social organization, behavior, ecology, communication, and anatomy of local bottlenose dolphins. (Given at Beaufort.) Prerequisite: introductory biology. Instructor: Read or staff. One course. C-L: Environment 376LA, Marine Sciences, Marine Science and Conservation

377LA. Marine Invertebrate Zoology. NS, R Structure, function, and development of invertebrates collected from estuarine and marine habitats. Not open to students who have taken Biology 777LA. One course (fall, spring, and Summer Term II); one and one-half courses (Summer Term I). (Given at Beaufort fall, spring, and summer.) Prerequisite: AP Biology or introductory biology or consent of instructor. Instructor: Van Dover or staff. Variable credit. C-L: Environment 377LA, Earth and Ocean Sciences 377LA, Marine Sciences, Marine Science and Conservation

378LA. Marine Ichthyology. NS, STS Overview of the bony and cartilaginous fishes, including their taxonomy, anatomy, functional morphology, and physiology. Aspects of their relationship with humans, specifically how fish biology and life history affect this relationship. Lectures and discussion of current scientific literature, and field/lab experiences to explore and collect data on local fish populations. Quantitative genetic techniques to explore fish population and community structure. (Given at Beaufort.) Prerequisite: AP Biology or introductory biology or consent of instructor. Instructor: Nowacek. One course. C-L: Environment 378LA, Marine Sciences, Marine Science and Conservation

379LA. Research Methods in Marine Science. NS, R, W Introduction to research methods in the marine sciences through lectures and customized individual independent research. Lectures on all aspects of research including ethics, intellectual property, budgeting, laboratory and reporting practices, data analysis techniques, reporting and
presenting. Draft manuscript and proposal for future research and travel to meeting required. (Given at Beaufort, summer) Prerequisite: AP Biology or Introductory biology and permission of instructor. Instructor: Rittschof or staff. One course. C-L: Environment 379LA, Marine Sciences, Marine Science and Conservation

380LA. Marine Molecular Microbiology. NS One course. C-L: see Environment 383LA; also C-L: Marine Sciences, Marine Science and Conservation

384A. Marine Conservation Biology - a Practicum. NS, STS One course. C-L: see Environment 384A; also C-L: Marine Sciences, Marine Science and Conservation


410S. Advanced Approaches to Genome Science Research. NS, R, STS Exploration of current experimental and computational approaches in genomics and genetics and their applications to contemporary research questions. Formulation and design of interdisciplinary research plans with discussion of implications for biology, medicine and society. Utilizing primary scientific literature, students write critical reviews and research proposals. Prerequisite: Biology 201L or 210FS, 220 or 413L, or consent of instructor. Recommended co- or prerequisite: independent study in genomics or computational biology. Instructor: Willard. One course. C-L: Genome Sciences and Policy

411S. Molecular Genetic Analysis. NS Seminar course designed to help students understand research talks by working scientists, such as those presented in the Developmental Biology Colloquium and the UPGG and CMB seminar series at Duke. Read and discuss research papers that use the yeast, C. elegans, and Drosophila genetic model systems to study cellular processes at the molecular level. Topics will include forward and reverse genetic screen strategies, gene manipulation and expression analysis, somatic mosaics and transgenics. Prerequisites: Biology 201L and 202L, or equivalent molecular genetics course. Instructor: Bejsovec. One course.

412S. Sensory Signal Transduction. NS, R Recent progress in sensory signal transduction mediated by calcium channels and receptors. Topics include history and techniques in the study of ion channels, such as electrophysiology, calcium imaging, and cell and molecular biology; cell surface perception for external signals, including light receptors, olfactory receptors, taste receptors, hot and cold receptors, and mechanical receptors; heart and brain pacemakers; sensory channel receptor-related human diseases; and plan sensory signaling network. Instructor: Pei. One course.

413L. Genomics Laboratory. NS, R, STS Introduction to the field of genomics. Genomic techniques including genome sequencing, microarray analysis, proteomics, and bioinformatics; applications of genomics to understanding biological problems including biological networks, human origins, evolution; applications to medicine and agriculture. Computer-based research lab with participation in collaborative bioinformatics projects. Prerequisites: Biology 201L or consent of instructor. Instructor: Spana. One course. C-L: Genome Sciences and Policy

414LS. Experiments in Developmental and Molecular Genetics. NS, R Experimental approaches in development and genetics using animal and plant models. Laboratory training in molecular genetics, immunochemistry, microscopy, protein chemistry, and genetic screening. Experiments include immunohistochemical localization, in situ hybridization, polymerase chain reaction, genetic screening, embryo micromanipulation, microscopic imaging, and mutant analysis. Prerequisite: Biology 201L or 202L; recommended, prior or concurrent registration in Biology 220. Instructor: Spana. One course.

415S. Developmental and Stem Cell Biology Colloquium. NS Lectures, seminars, and discussion of current topics in developmental biology. Prerequisites: Biology 201L or 202L and/or 220 or equivalent. Instructor: Sherwood. One course.

416S. Systems Biology Colloquium. NS Lectures, seminars, and discussion of current topics in systems biology. Introduction to both experimental and quantitative approaches to understanding the function of biological networks. Weekly lectures by experts in the field. Instructor: Haase. One course.

417S. Genetic Engineering and Biotechnology. NS, STS Applications of recombinant DNA in medicine and in agriculture. Topics include diagnosis of genetic diseases, gene therapy, drugs for AIDS and cancer, DNA fingerprinting, cloning of mammals, phytoremediation, crop improvement, and pharmaceutical protein production in transgenic plants and animals. Social and environmental impacts of biotechnology. Prerequisites: Biology 201L.
Recommended: Biology 220 or lab experience or consent of instructor. Instructor: Sun. One course. C-L: Genome Sciences and Policy

419S. The Cell Cycle: Principles of Control. NS An introduction to the mechanisms and principles of the eukaryotic cell cycle and the model organisms of cell-cycle analysis, including Xenopus, Drosophila, and yeasts. Cell-cycle control in development and the failure of controls in cancer will be discussed. Prerequisite: Biology 201L. Instructor: Buchler. One course.

420. Cancer Genetics. NS, R Overview of the genetic changes associated with cancer and the molecular events that transform normal cellular processes into tumor-promoting conditions. Topics include: tumor viruses, oncogenes, growth factors, signal transduction pathways, tumor suppressors, cell cycle control, apoptosis, genome instability, stem cells, metastasis, and current therapeutic approaches. Prerequisites: Biology 201L. Instructor: Buchler. One course.

421S. Biology of Nervous System Diseases (B). NS Primary literature investigating the underlying molecular and cellular mechanisms of nervous system disorders such as neurodegenerative diseases (Alzheimer's, Parkinson's, Huntington's), mental illness, and epilepsy. Prerequisite: Neuroscience 201 or 223 or Biology 220 or consent of instructor. Instructor: Sherwood, Nina. One course. C-L: Neuroscience 421S, Psychology 477S

423S. Development of Neural Circuits. NS Lectures on molecular pathways regulating development and assembly of neural networks in the brain throughout the lifespan of the organism. Comparative exploration of sensory neural circuits in different model systems (fly, worms, and rodents). Includes discussion of the classic and recent literature. Prerequisites: Biology 201L and Biology 223. Instructor: Volkan. One course. C-L: Neuroscience 423S

426S. Visual Processing. NS Focus on understanding how visual systems adapt to an animal's requirement. About a third of the course will focus on understanding the evolutionary processes that shape the visual system. The remaining 2/3 will focus on understanding the neural processes underlying vision. A comparative approach--comparing invertebrate vs. vertebrate vision will be used to highlight different ways in which visual information is processed. Introduction of methods used to study vision (and brain function) from "single molecules to whole organism." Prereq: Biology 201L or 202L and one course in Neurosciences. Not open to students who have taken Biology/Neuroscience 521S. Instructor: Bhandawat. One course. C-L: Neuroscience 426S

427S. Current Topics in Sensory Biology. NS Exploration of recent and classic studies in sensory biology. Actual topics are chosen by students at the start of the semester. Usually includes vision, hearing, smell, taste, pheromones, electrorereception, magnetoreception, bioluminescence, touch, time, and music. Prerequisites: Biology 201L, or Biology 201L and 202L, or the equivalent, and one course in Neuroscience, or consent of instructor. Instructor: Johnsen. One course. C-L: Neuroscience 427S

430S. Advanced Anatomy. NS For students with prior course work in vertebrate (incl. human or primate) anatomy who wish to pursue study of selected topics in greater detail. Focus on integrating anatomy with physiology, biomechanics, development, evolution and/or clinical aspects. Potential topics include cardiac structure, function, and disease; developmental basis of craniofacial form; muscle function at cell, tissue and whole animal levels; use of animal models in the design of robotics; reproductive anatomy and physiology; functional morphology of feeding or locomotion; integrated studies of bone and skeletal tissue function. Pre-reqs: previous course work in anatomy or related field, instructor consent required. Instructor: Smith. One course.

431S. Human Embryology. NS, STS The development of the mammalian embryo. Emphasis on human embryology, the origin of major human teratologies, birth defects, ethical and social issues of reproductive biology, aspects of comparative vertebrate development. The evolution of developmental patterns, and the molecular mechanisms of development. Prerequisites: Biology 330L or 414LS or Evolutionary Anthropology 333L or equivalent. Permission of instructor required. Instructor: Smith and Wall. One course. C-L: Evolutionary Anthropology 431S

445A. Climate Change in the Marine Environment. EI, NS, STS One course. C-L: see Environment 445A; also C-L: Public Policy Studies 445A, Marine Sciences, Marine Science and Conservation

452S. Genes & Development. NS Literature-based seminar covering transcriptional regulation of development. Regulatory mechanisms and genome-wide approaches will be covered. Topics: embryogenesis, stem cells, transcription factors, regulatory networks, chromatin, nuclear organization, small RNAs, imprinting and Pol II pausing. Prerequisites: Biology 201L. Instructor: Baugh. One course.
453S. Gene-Environment Interaction: Genes in an Ecological Context. NS Seminar on genotype-environment interaction. Topics include the evolution and adaptive value of environment-dependent phenotypes (phenotypic plasticity), ecological consequences of genotype-environment interaction, molecular mechanisms of phenotypic plasticity, and how genotype-environment interaction pertains to outstanding debates in evolutionary biology and genetics. Pre-requisites: Biology 202L. Instructor: Donohue. One course.

462S. Ecology and Evolutionary Biology Colloquium. NS Lectures, seminars, and discussion of current research in ecology and evolution. Guest lectures will focus on research at Duke. Intended for advanced undergraduates. Prerequisites: Biology 202L and one course in ecology. Instructor: J. Noor. One course.

490. Topics in Biology. NS Lecture course on a selected topic. Offerings vary each semester. Instructor: Staff. One course.

490S. Special Topics Seminar. NS Seminar on a selected topic. Offerings vary each semester. Instructor: Staff. One course.

490T. Tutorial. For junior and senior majors with consent of director of undergraduate studies and supervising instructor. Instructor: Staff. One course. C-L: Marine Sciences

490T-1. Tutorial. For junior and senior majors with consent of director of undergraduate studies and supervising instructor. Instructor: Staff. Half course. C-L: Marine Sciences

490TA. Tutorial (Topics). For junior and senior majors with consent of Director of Undergraduate Studies and supervising instructor. Taught only in the Beaufort Marine Lab program. Instructor: Staff. One course. C-L: Marine Sciences

490TA-1. Tutorial (Topics). For junior and seniors with consent of director of undergraduate studies and supervising instructor. Taught only in the Beaufort Marine Lab program. Half course. Instructor: Staff. Half course. C-L: Marine Sciences

493. Research Independent Study. R Continuation of Biology 293. Individual research and reading of the primary literature in a field of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to juniors and seniors only with consent of supervising instructor. Pre-requisites: Biology 293 or Biology 379LA. May be repeated. Instructor: Staff. One course. C-L: Marine Sciences, Marine Science and Conservation

493A. Research Independent Study. Continuation of Biology 293A. Individual research and reading of the primary literature in a field of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to juniors and seniors only with consent of supervising instructor. Taught only in the Beaufort Marine Lab program. Pre-requisites: Biology 293A or Biology 379LA. May be repeated. Instructor: Staff. One course. C-L: Marine Sciences, Marine Science and Conservation

495. Writing in Biology. W Conventions of scientific writing, focusing on the process of writing a thesis or other major research paper in the biological sciences. Course intended for all candidates for Graduation with Distinction in Biology. Instructor: Reynolds, JA and Motten. One course.

515. Principles of Immunology. NS, R One course. C-L: see Immunology 544


517S. From Neurons to Development: The Role of Epigenetics in Plasticity. NS Readings and discussion of current literature on epigenetics and plasticity. A comparative look at epigenetic factors in mediating plasticity in biological systems from neuronal learning to development and aging. Prerequisites: Biology 201L and Psychology 106. Instructor: Volkan. One course. C-L: Neuroscience 517S

540L. Mycology. NS Survey of the major groups of fungi with emphasis on life history and systematics. Field and laboratory exercises. Instructor: Vilgalys. One course.
546S. Biology of Mammals. NS The biology of mammals: diversity, evolutionary history, morphology, and aspects of physiology and ecology. Local field trips. Prerequisite: Biology 20 or 202L or equivalent. Instructor: Roth. One course.

547L. Entomology. NS The biology of insects: diversity, development, physiology, and ecology. Field trips. Prerequisite: Biology 20 or 202L or equivalent. Instructor: H. Nijhout. One course.

548L. Herpetology. NS, R Biology of recent amphibians and non-avian reptiles, evolutionary history, morphology, life history, physiology, behavior, and ecology. Local field trips. Prerequisites: Biology 20 or equivalent. Instructor: Staff. One course.

554. Genomic Perspectives on Human Evolution. NS, R, STS, W Human evolutionary history as studied from the perspective of the genome. Nature of contemporary genomic data and how they are interpreted in the context of the fossil record, comparative anatomy, psychology, and cultural studies. Examination of both the origin of modern humans as a distinct species and subsequent migration across the world. Emphasis on language, behavior, and disease susceptibility as traits of particular evolutionary interest. Prerequisite: Biology 201L and 202L or equivalent course. Instructor: Wray. One course. C-L: Evolutionary Anthropology 514, Genome Sciences and Policy

555S. Problems in the Philosophy of Biology. NS, STS One course. C-L: see Philosophy 634S


556L. Systematic Biology. NS Laboratory version of Biology 556. Theory and practice of identification, species discovery, phylogeny reconstruction, classification, and nomenclature. Prerequisite: Biology 202L or equivalent. Instructors: Lutzoni and Swofford. One course.

557L. Microbial Ecology and Evolution. NS, R Survey of new advances in the field of environmental and evolutionary microbiology, based on current literature, discussion, and laboratory exercises. Topics to include bacterial phylogeny, molecular ecology, emerging infectious diseases, bacterial symbiosis, experimental evolution, evolution of drug resistance, and microbial genomics. Prerequisite: Biology 20 or 212L or 201L or 202L. Instructor: Vilgalys. One course.

559S. Foundations of Behavioral Ecology. NS Readings on behavioral ecology, both historical papers and papers from the current literature that represent the most vital areas of research in the discipline. Instructors: Alberts. One course.

560. Ecology and Global Change. NS, R, STS Feedbacks between ecological processes and global environmental change; physiological and ecosystem ecology using a variety of sources, including the primary scientific literature. Topics include global warming, biodiversity, land-use change, ozone depletion, and the application of ecological research to policy. Prerequisite: Recommended: One course in ecology. Instructor: Jackson. One course.

561. Tropical Ecology. NS, STS One course. C-L: see Environment 517; also C-L: Latin American Studies

563S. Stormwater Science: Pollution, Pavement, and Precipitation. NS Examines pollution emissions/deposition, impervious surfaces, evapotranspiration, groundwater, stormwater runoff, nutrients, thermal pollution, and freshwater effects. Uses primary literature, as well as a couple of books. Also examines "stormwater control measures" that mitigate problems. Student-driven course: Reading, presenting, and discussing primary literature, asking/answering questions in class, and seeking answers. Course designed for graduate and advanced undergraduate students. Prerequisites: one course in Ecology or Environmental Science or instructor consent. Instructor: Wilson. One course. C-L: Environment 565S

564. Biogeochemistry. NS, STS Processes controlling the circulation of carbon and biochemical elements in natural ecosystems and at the global level, with emphasis on soil and surficial processes. Topics include human impact on and social consequences of greenhouse gases, ozone, and heavy metals in the environment. Prerequisite: Chemistry 101DL or equivalent; Recommended: Chemistry 210DL. Instructor: Bernhardt. One course. C-L: Environment 564

565L. Biodiversity Science and Application. NS, R Processes responsible for natural biodiversity from populations to the globe. Topics include species interactions (e.g., competition, predation, parasitism), natural and human disturbance, climate change, and implications for management and conservation. Lab section involving observation and data from large-scale manipulations, such as experimental hurricanes, fire, and herbivore exclosures. Instructors: Clark and Wright. One course. C-L: Environment 575L
567S. Genetic Basis of Behavior. NS The relationship between genotype and behavioral phenotype. Readings from the primary literature, including papers on humans, lab mice, and wild animal populations. Exploration of two philosophical topics: the question of causality in the natural world and the question of determinism in biology. Short research paper required. Instructor: Alberts. One course. C-L: Genome Sciences and Policy

570LA-1. Experimental Tropical Marine Ecology. NS, R Distribution and density of marine and semi-terrestrial tropical invertebrate populations; behavioral and mechanical adaptations to physical stress, competition, and predation using rapid empirical approaches and hypothesis testing. Offered only at Beaufort, with preparation for fieldwork before and analysis and presentation of projects after required one week intensive field experience on the coast of Panama. Consent of instructor required. Instructor: Diaz. Half course. C-L: Marine Sciences

570LA-2. Marine Ecology of the Pacific Coast of California. NS, STS Ecology of the rocky intertidal, kelp forest, and mud flat habitats. Introduction to marine mammals, fish and other large West Coast vertebrates. Offered only at Beaufort, with preparation for fieldwork before and analysis and presentation of projects after required one week intensive field experience on the coast of Northern California. Prerequisite: Concurrent registration in Biology 273LA and consent of instructor. Instructor: Staff. Half course. C-L: Marine Sciences

570LA-3. Harmony in Brittany: French Use of Marine Environments. NS, STS Intensive field experience on the coast of Brittany, including French maritime cultural heritage, regional and national coastal reserves (Le Parc naturel régional d’Armorique; Presqu’île de Crozon), shellfish aquaculture (La Tremblade), seaweed harvest (Lanildut), and tidal energy (La Rance). Offered only in Beaufort, with preparation for fieldwork before and analysis and presentation of projects after required one week intensive field experience on the coast of France over Fall Break. Prerequisites: AP Biology or introductory biology and consent of instructor. Instructor: Van Dover. Half course. C-L: Marine Sciences

571A. Sojourn in Singapore: Urban Tropical Ecology. CCI, NS, SS, STS One course. C-L: see Environment 571A; also C-L: Marine Sciences, Marine Science and Conservation

579LA. Biological Oceanography. NS, R Variable credit. C-L: see Environment 579LA; also C-L: Earth and Ocean Sciences 579LA, Marine Sciences

588S. Macroevolution. NS Evolutionary patterns and processes at and above the species level; species concepts, speciation, diversification, extinction, ontogeny and phylogeny, rates of evolution, and alternative explanations for adaptation and evolutionary trends. Prerequisite: Biology 202L or equivalent. Recommended: one course in plant or animal diversity and one course in evolution beyond 202L. Instructor: Roth. One course. C-L: Evolutionary Anthropology 588S

590. Topics in Biology. NS Lecture course on selected topic. Offerings vary each semester. Instructor: Staff. One course.

590S. Seminar (Topics). NS Seminar on a selected Topic. Offerings vary each semester. Instructor: Staff. One course.

605S. Modeling biological systems using Matlab. NS, QS Introduction to Matlab programming and numerical methods for biological systems. Implementation of models for ecological and evolutionary dynamics and cellular and molecular dynamics. Topics covered include basic programming fundamentals (for/while/if statements), data input/output, data structures, numerical simulations of deterministic and stochastic systems. Includes a final project, decided upon by the student. Prerequisites: Biology 201L and 202L, or the equivalent, or consent of the instructor. Instructor: Koelle. One course.

627. Molecular Ecology. NS, STS One course. C-L: see Environment 627; also C-L: Genome Sciences and Policy 627

650. Molecular Population Genetics. NS Genetic mechanisms of evolutionary change at the DNA sequence level. Models of nucleotide and amino acid substitution; linkage disequilibrium and joint evolution of multiple loci; analysis of evolutionary processes, including neutrality, adaptive selection, and hitchhiking; hypothesis testing in molecular evolution; estimation of evolutionary parameters; case histories of molecular evolution. For graduate students and undergraduates with interests in genetics, evolution, or mathematics. Instructor: Uyenoyama. One course.

651S. Speciation. NS Experimental and phylogenetic approaches to the origin of plant and animal species. Emphasis on current literature and modern approaches to evolutionary patterns and processes. Prerequisites: basic courses in systematics and genetics. Instructors: Noor and Willis. One course.
652S. The Life and Work of Darwin. NS Readings by and about Darwin and his contemporaries, especially Wallace. Darwin's "Autobiography" and Janet Browne's biography as context for readings of some of his major works and works of his contemporaries. Consent of instructor required. Instructors: Alberts and McShea. One course.


668. Population Ecology. NS Key questions in population ecology from a theoretical perspective. Topics include demography and dynamics of structured populations, population regulation, stochastic and spatial population dynamics, life history characteristics, species interactions, and conservation of threatened populations. Computer labs will emphasize fitting models to data. Prerequisites: One course in Ecology. Instructor: Morris. One course.


The Major

The bachelor of arts and the bachelor of science degrees are offered with a major in biology or in an individually designed interdepartmental concentration approved by the director of undergraduate studies in biology. Information may be obtained in the office of the director of undergraduate studies.

For the AB Degree

This degree program is the general liberal arts major program. Students contemplating a career in biological or biomedical sciences should elect the program leading to the BS degree. A minimum of thirteen courses is required for this major.

Prerequisites. Chemistry 101DL or equivalent
Corequisites. Mathematics 105L and 106L, or equivalent
Major Requirements. Two gateway courses: one in molecular biology (Biology 201L) and one in genetics and evolution (Biology 202L). These courses, which may be taken in any order, are prerequisites to many of the advanced courses in these subject areas. In addition to the gateway courses, a minimum of eight full courses in at least eight course registrations in the biological sciences, not including the above corequisites or courses specified not for science majors; two of these courses must include related laboratory experience at the 200 level or above; one laboratory independent study course may be counted toward the laboratory requirement. The eight courses must include one course in structure and function (chosen from a list of approved courses), one course in organismal diversity (chosen from a list of approved courses), and one course in ecology (chosen from a list of approved courses). The remaining courses may be elected as long as the science departments of the School of Medicine; or from approved courses of a basic biological character in related departments. Six of these eight courses must be in biology. A maximum of two independent study or tutorial courses may be counted toward the eight-course minimum. At least one of these eight courses must be an advanced course at the 400 level or above in biology. This requirement may not be satisfied by a first semester of an independent study but may be satisfied by a second semester continuation of an independent study. The elective courses acceptable for a biology major with an area of concentration (see below) are defined by the requirements for that concentration.

For the BS Degree

This is the program in biology for students contemplating a career in biological or biomedical sciences. A minimum of fifteen courses is required for this major.

Prerequisites: Chemistry 101DL or equivalent.
Corequisites: Chemistry 201DL; Mathematics 21 or 111L, either Calculus II (122, 112L, or 122L) or Statistical Science 102 or above or Biology 204. Physics 141L or 151L. Additional corequisites may be required for professional schools or particular areas of concentration (see below).
Major Requirements. Two gateway courses: one in molecular biology (Biology 201L) and one in genetics and evolution (Biology 202L). These courses, which may be taken in any order, are prerequisites to many of the advanced courses in these subject areas. In addition to the gateways, a minimum of eight full courses in at least eight course registrations in the biological sciences, not including the above corequisites or courses specified not for science majors; two of these courses must include related laboratory experience at the 200 level or above; one laboratory independent study course may be counted toward the laboratory requirement. The eight courses must include one course in structure and function (chosen from a list of approved courses), one course in organismal diversity (chosen from a list of approved courses), and one course in ecology (chosen from a list of approved courses). The remaining courses may be elected from among courses numbered 200 or above in biology; or from approved courses in the basic science departments of the School of Medicine; or from approved courses of a basic biological character in related departments. Six of these eight courses must be in biology. A maximum of two independent study or tutorial courses may be counted toward the eight-course minimum. At least one of these eight courses must be an advanced course at the 400 level in biology. This requirement may not be satisfied by a first semester of an independent study but may be satisfied by a second semester continuation of an independent study. The elective courses acceptable for a biology major with an area of concentration (see below) are defined by the requirements for that concentration.

Areas of Concentration
Students may elect to complete requirements in specified areas of concentration. Currently available areas of concentration in the biology major are anatomy, physiology and biomechanics; animal behavior; biochemistry; cell and molecular biology; ecology; evolutionary biology; genetics; genomics; marine biology; neurobiology; pharmacology; and plant biology. For information on areas of concentration see the director of undergraduate studies.

Departmental Graduation with Distinction
Biology majors who achieve excellence in both their studies and a research based thesis may apply for Graduation with Distinction in biology. Students may apply if they have a grade point average of 3.0 or above in biology courses, not including independent study, at the time of application. The award of distinction requires the maintenance of this grade point average and completion of an original research project, usually carried out as an independent study in biology or as an interdisciplinary study that includes biology. The application for distinction must be endorsed by the student's research supervisor. Distinction will be awarded by a three-member faculty committee based on an oral poster presentation and the written thesis. Two levels of distinction are offered in biology: Distinction and High Distinction. See the director of undergraduate studies for more details.

The Minor
Minor Requirements. Five courses in biology, which may include the gateway courses, but not including advanced placement credit (Biology 20); the five courses may include any course numbered 200 or above in biology. A maximum of one course from approved courses in the basic science departments of the School of Medicine or from approved courses of a basic biological character in related departments. A maximum of one independent study or tutorial courses may be counted toward the five courses.

Biomedical Engineering
For courses in biomedical engineering, see page 668.

Biophysics
For courses in biophysics, see

Canadian Studies
Professor Moss, Director; Professor Kelly, Associate Director; Professors Gereffi (sociology), Goodwin (economics), Mayer (public policy studies and political science); O’Barr (cultural anthropology), Vidmar (law), Associate Professor Fenn (history); Professors Emeriti Tiryakian (sociology), Thompson and Wood (history); Lecturer Reisinger; Instructors Ferney and Wittmann

A second major or a minor is available in this program.
The program in Canadian studies seeks to provide the student with an understanding of Canada. Students may undertake the program to supplement another major, or to complete a second major in Canadian studies, or as part of an interdepartmental concentration, or under Program II. Canadian studies may also be an area concentration in the comparative area studies major, described elsewhere in this bulletin. See sections below on the program, the major, and the minor. The courses are described in the departmental and interdisciplinary listings.

Courses in Canadian Studies (CANADIAN)

89S. First Year Seminar in Canadian Studies. Topics vary each semester offered. Instructor: Staff. One course.


190A. Duke-Administered Study Abroad: Special Topics in Canadian Studies. Topics differ by section. Instructor: Staff. One course.

250S. Critical Current Issues in North America. CCI, EI, SS, W A survey course on current critical issues impacting North America, examined from a continental perspective. Specific areas of focus: trade, energy, immigration, the environment, continental defense, organized crime and the border. Course theme: to what extent are these challenges amenable to joint action by the three countries? Taught from the perspective of a U.S. diplomat, with emphasis on cross-cultural awareness - how do Mexicans or Canadians look at these issues? - the history of current problems, and workable policy solutions. Specific skills taught include the basics of effective memo writing and delivering compelling, succinct oral briefings. Instructor: Kelly. One course. C-L: Political Science 223S, Public Policy Studies 221S, International Comparative Studies 251S

312. Europe's Colonial Encounter, 1492-1992. CCI, CZ, EI One course. C-L: see History 312; also C-L: African and African American Studies 212, International Comparative Studies 312, Ethics Courses Offered Through Other Departments

328SA. Made in Québec: Marketing and Cultural Identity. CCI, FL, R, SS One course. C-L: see French 328SA; also C-L: Markets and Management Studies


359S. Canada from the French Settlement. CCI, CZ, R One course. C-L: see History 359S; also C-L: International Comparative Studies

382. Baseball in Global Perspective. CCI, CZ, EI, R, SS One course. C-L: see History 382; also C-L: International Comparative Studies 384


390-2S. Special Topics in Canadian Studies. Topics vary each semester offered. Instructor: Staff. One course.

390-3S. Special Topics in Québec Studies. CCI Topics vary each semester offered. Instructor: Staff. One course.


391. Independent Study in Canadian Studies. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member. Consent of Director of Undergraduate Studies and instructor required. Instructor: Staff. One course.

Other Courses

The following courses offered by other departments count as one course in the five required for the minor in Canadian studies and in the ten required for the major in Canadian studies. Independent studies may also be arranged with Canadian studies faculty.

African and African American Studies
410S. Francophone Literature

Asian & Middle Eastern Studies
202S. Francophone Literature

Cultural Anthropology
170. Advertising and Society: Global Perspective (DS4)
Economics
555S. International Trade
568S. Current Issues in International and Development Economics

French
328SA. Made in Quebec: Marketing and Cultural Identity
417S. Francophone Literature
714. Migration, Literature, Transnational Writers, and Postnational Literature

History
359S. Canada from the French Settlement
382. Baseball in Global Perspective
387S. Francophone Literature

International Comparative Studies
512S. Current Issues in International and Development Economics

Linguistics

Political Science
501S. Politics and Media in the United States
522S. Comparative Party Politics

Public Policy Studies
335. Comparative Health Care Systems

Sociology
160. Advertising and Society: Global Perspective (DS4)
160D. Advertising and Society: Global Perspective (DS4)
371. Comparative Health Care Systems

Visual and Media Studies
170. Advertising and Society: Global Perspective (DS4)

The Major

Prerequisite: Canadian Studies 101
Corequisite: Completion of another major; two years of college-level French

Major Requirements. Ten courses with Canadian content, including Canadian Studies 101 and 250S and eight additional courses, seven of which must be at the 200 level or above. Some of the course requirements may be fulfilled by independent study or special readings courses. No more than four courses required for the first major may be counted for a Canadian studies major. In special cases, an aboriginal or “heritage” language may be substituted for the French requirement.

The Minor

Requirements. Five courses with Canadian content; three must be at the 200 level or above; courses must include Interdisciplinary Canadian Studies 101 (Introduction to Canada) and 250S (Canadian Issues in North America). Strong encouragement for equivalent of two years of college-level French.

For further information, contact the director.

Cell Biology

For courses in cell biology, see biology (on page 180) and Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates (on page 659).

Chemistry

Professor Craig, Chair; Associate Professor Franz, Associate Chair; Associate Professor MacPhail Director of Undergraduate Studies; Lecturer Roy, Associate Director of Undergraduate Studies and Supervisor of First-Year Instruction; Associate Professor Hong, Director of Graduate Studies; Professors Baldwin, Beratan, Craig, Crumbliss, Fitzgerald, Liu, McCaffery, Therien, Toone, Vo-Dinh, Warren, Widenhoefer, and Yang; Associate Professors Franz, Hong, and MacPhail; Assistant Professors Charbonneau, Derbyshire, Hargrove, Malcolmson, Roizen, Wang, and Wiley; Professors Emeriti Arnett, Chesnut, McPhail, Palmer, Quin, Ramsay-Shaw, and Wells; Assistant Professor of the Practice Canelas; Lecturer Roy; Research Assistant Professor Zhang; Research Associate Professor Fischer; Secondary Appointments: Professors Chilkoti, Curtarolo, Donald, Lefkowitz, Oas, Reichert, West, and Zauscher; Associate Professors Ferguson and Zhou; Assistant Professors Lu and Yokoyama; Senior Lecturing Fellow Woerner; Lecturing Fellow Lyle; Instructors, Kasper and McCarthy

A major or minor is available in this department.
Courses in Chemistry (CHEM)

20. General Chemistry Credit. Pre-matriculation credit awarded for a score of 4 on the College Board AP chemistry examination (or the equivalent). Recommended placement is Chemistry 110DL, but a student may choose to take Chemistry 101DL without loss of credit. Students completing both Chemistry 101DL and 210DL, or both Chemistry 110DL and 210DL forfeit entrance credit for Chemistry 20. One course.

21. General Chemistry Credit. Pre-matriculation credit awarded for a score of 5 on the College Board AP chemistry examination (or the equivalent). Recommended placement is Chemistry 201DL, but a student may choose to take Chemistry 110DL without loss of credit. Students completing both Chemistry 101DL and 210DL, or both Chemistry 110DL and 210DL forfeit entrance credit for Chemistry 21. One course.

81S. Introduction to Research in Chemistry. EI, NS, R Active participation in chemistry (or chemistry related) research group, accompanied by seminar classes covering research methodologies, case studies of ethical issues in chemistry, and communication of results of research. Prerequisite: Chemistry 101DL, or 110DL, or 20, or 21. Instructor: Staff. One course.

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

91. Chemistry, Technology, and Society. NS, STS Science, the scientific method, and background topics from chemistry, biochemistry, and environmental chemistry that enable citizens to utilize the inductive-deductive methodology of science to better evaluate the potential benefits and risks associated with selected existing and proposed technologies. Intended primarily for non-science majors. Normally not open to students who have credit for, or are enrolled in, Chemistry 20, 21, or 101DL. Instructor: Staff. One course. C-L: Energy and the Environment

99D. Introduction to Chemistry and Chemical Problem Solving. NS Introductory course for students with limited background in chemistry emphasizing chemical problem solving. Topics include atoms, molecules, ions, compounds, and the periodic table, stoichiometry and chemical reactions, reactions in solution, and an introduction to chemical bonding, thermochemistry, and gas laws. To be followed by Chemistry 101DL. Not open to students who have credit for Chemistry 20, 21 or 101DL. Instructor: Staff. One course.

101DL. Core Concepts in Chemistry. NS Emphasizes core concepts required for organic chemistry, including atomic and molecular structure, chemical equilibrium with applications to acids and bases, thermodynamics, chemical kinetics, and reaction mechanisms. Relevance and integrated nature of these concepts illustrated through applications to a modern theme in chemistry, e.g. in biological, materials, or environmental chemistry. Laboratory illustrates experimental applications of these core concepts. Instructor: Staff. One course.

110DL. Honors Chemistry: Core Concepts in Context. NS Emphasizes core concepts required for organic chemistry, including atomic and molecular structure, chemical equilibrium with applications to acids and bases, thermodynamics, chemical kinetics, and reaction mechanisms. Strong emphasis on applications of these concepts in context of large, interdisciplinary scientific challenge, e.g. in cancer biology or nanoscience. Laboratory illustrates experimental applications of these core concepts. Students may not receive credit for both Chemistry 101DL and 110DL Instructor: Staff. One course.

180. Chemistry Outreach: Sharing Chemistry with the Community. NS Principles of chemistry outreach with emphasis on chemical demonstrations. Activities include readings, discussion, and practice related to staging effective demonstrations, as well as structured service learning experiences in local schools and other venues. Societal issues relevant to chemistry outreach will be examined, along with assessment and pedagogical strategies. Participation in service learning is required. Prerequisites: Chemistry 101DL, or 110DL, or 20, or 21. Instructor: Lyle. One course.

190A. Duke-Administered Study Abroad: Special Topics in Chemistry. Topics differ by section. Instructor: Staff. One course.

190FS. Special Topics in Chemistry. Focus version of Chemistry 190S. Instructor: Staff. One course.

190S. Special Topics in Chemistry. Seminar on special topics in chemistry and chemistry related areas. Content varies by semester. Instructor: Staff. One course.

201DL. Organic Chemistry. NS, STS The structures and reactions of the compounds of carbon and the impact of selected organic compounds on society. Laboratory: techniques of separation, organic reactions and preparations, and
systematic identification of compounds by their spectral and chemical properties. Prerequisite: Chemistry 101DL, or 110DL, or 21. Instructor: Staff. One course.

202L. Organic Chemistry. NS, STS Continuation of Chemistry 201DL. Prerequisite: Chemistry 201DL. Instructor: Staff. One course.

210DL. Modern Applications of Chemical Principles. NS Modern applications of chemistry in context of larger scientific theme, e.g. in biology, materials science, or environmental chemistry. Revisits core concepts from Chemistry 101DL or 110DL, incorporating additional topics including intermolecular interactions, phases of matter, solutions, quantitative treatment of aqueous equilibria, electron transfer reactions, and inorganic and coordination chemistry. Laboratory illustrates experimental approaches to modern problems in biological, materials, and environmental chemistry, as well as analytical and synthetic techniques. Prerequisite: Chemistry 101DL or 110DL. Instructor: Staff. One course.

290S. Special Topics In Chemistry. Seminar on special topics in chemistry and chemistry-related areas. Content varies by semester. Consent of department required. Instructor: Staff. One course.

295. Introduction to Research Independent Study. NS, W Includes research methodology, retrieval techniques for, and use of, the chemical literature, safety in the research laboratory, the ethical conduct of research, and writing a research proposal. Co-requisite: registration for a first course in research independent study in chemistry (393) or a related area. Lecture/discussion. Instructor: Roy. Half course.

301. Elements of Physical Chemistry. NS Survey of physical chemistry including quantum chemistry, molecular structure, molecular spectroscopy, thermodynamics, and kinetics. Prerequisites: Chemistry 210DL; or Chemistry 20 plus 101DL; or Chemistry 20 plus 110DL; or Chemistry 21; Mathematics 112L, and Physics 142L or 152L or 162L or consent of instructor. Instructor: Staff. One course.

301L. Physical Chemistry Laboratory. NS, W Laboratory experiments designed to accompany Chemistry 301. Includes instruction and practice in writing the laboratory notebook and formal laboratory reports. Prerequisite: (or corequisite) Chemistry 301. Instructor: Staff. Half course.

302. Biophysical Chemistry. NS The physical chemical principles of and experimental methods employed in the study of biological macromolecules. Prerequisite: Chemistry 301 or 310, or Biochemistry 301 or consent of instructor. Instructor: Staff. One course.

310. Physical Chemistry. NS Fundamentals of physical chemistry. Emphasizes quantum chemistry, molecular structure, and molecular spectroscopy. Chemistry 310L should be taken concurrently with Chemistry 310. Prerequisites: Chemistry 210DL; or Chemistry 20 plus 101DL; or Chemistry 20 plus 110DL; or Chemistry 21; Mathematics 212, Physics 142L, 152L, or 162L or consent of instructor. Instructor: Staff. One course.

310L. Physical Chemistry I Laboratory. NS, W Laboratory experiments designed to accompany Chemistry 310. Includes instruction and practice in writing the laboratory notebook and formal laboratory reports. Prerequisite: (or corequisite) Chemistry 310. Instructor: Staff. Half course.

311. Physical Chemistry II. NS Continuation of Chemistry 310. Fundamentals of physical chemistry. Emphasizes thermodynamics and kinetics. Chemistry 311L should be taken concurrently with Chemistry 311. Prerequisite: Chemistry 310 or consent of instructor. Instructor: Staff. One course.

311L. Physical Chemistry II Laboratory. NS, W Laboratory experiments designed to accompany Chemistry 311. Prerequisite: (or corequisite). Chemistry 311 or consent of instructor. Instructor: Staff. Half course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


401. Analytical Chemistry. NS Fundamentals of qualitative and quantitative measurement with emphasis on chemometrics, quantitative spectrometry, electrochemical methods, and common separation techniques. Corequisite: Chemistry 401L. Prerequisite: Chemistry 301L or 310L. Instructor: Staff. One course.
401L. Analytical Chemistry Laboratory. NS Laboratory experiments designed to accompany Chemistry 401. Corequisite: Chemistry 401. Instructor: Staff. Half course.

410. Inorganic Chemistry. NS Bonding, structures, and reactions of inorganic compounds studied through physical chemical concepts. Prerequisite: Chemistry 301 or 311. Instructor: Staff. One course.

420L. Advanced Laboratory Techniques. NS Synthesis of less common substances by techniques such as high or low pressure, high or low temperature, and/or inert atmospheres. Characterization of products from measurements such as electrical conductance, optical rotation, ultraviolet-visible spectra, infrared spectra, and/or mass spectra. Prerequisite: (or corequisite) Chemistry 410. Instructor: Staff. Half course.


496. Graduation with Distinction in Chemistry. Course for majors who are candidates for graduation with distinction in chemistry. Includes preparation of the research thesis, preparation and presentation of a poster describing student's research, and oral defense of the research thesis. Pre- or co-requisite: two semesters of research independent study. Lecture/discussion. Satisfactory/Unsatisfactory grading only. Instructor: Staff. Half course.


506. Biomolecular Mass Spectrometry. Advanced topics in the mass spectral characterization of biopolymers with an emphasis on protein and DNA analysis. Fundamental and practical aspects of the ionization processes and the instrumentation associated with MALDI- and ESI-Mass spectrometry discussed along with applications of these techniques to structural problems in chemistry and biochemistry. Prerequisite: Chemistry 501 or consent of instructor. Instructor: Fitzgerald. Half course.

511. Chemistry of Biomolecular Interactions. Chemistry of the noncovalent interactions governing biological systems. Topics include: review of biomacromolecules; chemical principles of non-covalent interactions and the use of model systems; experimental methods to determine binding interactions; interactions responsible for molecular recognition in biological systems; and applications in signal regulation. Recommended precursor to Chemistry 518. Instructor: Hargrove. One course.

518. Chemical Biology. The application of chemical concepts and methods to solving problems in molecular and cell biology, with emphasis on the use of small molecules to elucidate and control information transfer in biological systems. Provides relevant background on both useful chemical tools and new biological targets. Instructors: Hong, Toone, McCafferty, and Wang. One course.


524. Bioinorganic Chemistry. Topics covered include metal activated enzymes in hydrolysis, oxygen carriers, nitrogen fixation, iron storage and transport, photosynthesis, protein electron transfer, and DNA mediated electron transfer. Instructors: Crumbliss, Therien, and Franz. Variable credit.


531. Organic Chemistry. Bonding and structure, stereochemistry, conformational analysis, substitution, addition, and elimination reactions, carbon reactive intermediates, concerted reactions, photochemistry, carbon alkylation, carbonyl addition nucleophilic substitution, electrophilic additions, reduction, cycloadditions, rearrangements, main group organometallics, oxidation. Instructors: Baldwin, Craig, Hong, Toone, and Widenhoefer. One course.

532. Organic Reactions. Highlights strategic operations that enable selective synthesis of small molecules, including organic ligands, natural products, and molecular probes. Topics include chemical synthesis and retrosynthetic analysis; arrow-pushing mechanisms of polar, radical, transition metal-mediated and pericyclic reactions; protecting groups, oxidation, reduction, enolate reactivity; stereoselective reactions and conformational analysis; cross-coupling transformations. Instructor: Roizen. One course.


535. Organic Synthesis. NS Application of organic reactions to the synthesis of structurally and biologically interesting compounds. Topics include synthetic design, retrosynthetic analysis, synthetic methods, and total syntheses of natural products. Prerequisite: Chemistry 532 or consent of instructor. Instructor: Hong. One course.


542. Quantum Mechanics. Special emphasis on chemical applications. Topics include: linear algebra, the uncertainty relations, angular momentum, perturbation theory, time-dependent phenomena, molecules in electromagnetic fields, group theory, and electron correlation. Prerequisite: Chemistry 541 or consent of instructor. Instructors: Beratan, Warren, and Yang. One course.

543. Statistical Thermodynamics. Introduction to statistical thermodynamics, with an emphasis on ideal systems and selected model approaches to more complex systems, for example, lattice models. Instructors: Beratan, Charbonneau, MacPhail, and Yang. One course.


590. Special Topics in Chemistry. NS Special topics in chemistry and chemistry-related areas. Content varies by instructor. Instructor: Staff. One course.

590-1. Special Topics in Chemistry. NS Special topics in chemistry and chemistry-related areas. Content varies by instructor. Instructor: Staff. Half course.

601. Biosensors. Theory and applications of biosensors. Basic principles of interactions between analytes and bioreceptors and various transduction techniques: optical, electrochemical, ion-selective electrode-based, voltametric, conductometric, and mass-sensitive techniques as well as novel nanotechnology-based biosensing systems including nanosensors, plasmonic nanoprobes, quantum dots, carbon nanotubes, molecular beacons, and molecular sentinel systems. Applications in chemical, environmental, biological and medical sensing. Paired with Biomedical Engineering 567. Prerequisites: senior or graduate standing or instructor's consent. Instructor: Vo-dinh. One course.

For the AB Degree

Prerequisites. Chemistry 101DL or 110DL or 21; Mathematics 111L-112L, or 122L; Physics 141L-142L or 151L-152L, or 161L-162L.

Major Requirements. Chemistry 201DL, 202L, 210DL or 20 or 21, 301 and 301L, or 310 and 310L and 311, 401, 401L plus one of the following three course options:
• Three of the following: Chemistry 302, 410, any 500 or 600 level courses; Biochemistry 301, 302.
• One of the following: Chemistry 302 or 311, 410, any 500 or 600 level courses; Biochemistry 301 plus Chemistry 393 and 394 or the equivalent in an approved chemistry-related discipline.
• One of the following:
  • Physics emphasis. Chemistry 302 or 311; plus two of the following: Physics 264L, 361, 362.
  • Mathematics emphasis. Chemistry 302 or 311; plus either of the following pairs of courses: Mathematics 221 and Mathematics 356, or Mathematics 216 and Mathematics 353.
  • Biology emphasis. Biochemistry 301 plus two of the following: Biology 201L, 214L, 220, 227, 329L, 414LS, and 515.

In certain cases, substitutions may be made for courses outside the chemistry department with consent of the director of undergraduate studies.

For the BS Degree

Prerequisites. Chemistry 101DL or 110DL or 21; Mathematics 111L-112L, or 122L, 212; Physics 141L-142L or 151L-152L, or 161L-162L.

Major Requirements. Chemistry 201DL, 202L, 210DL or 20 or 21, 310, 310L, 311, 311L, 393 (or its equivalent in an approved chemistry-related discipline), 401, 401L, 410, 420L; plus two additional courses selected from the following: Biochemistry 301\(^1\); Chemistry 302, 394\(^1\) (or its equivalent in an approved chemistry-related discipline)\(^1\), and any chemistry courses at the 500 or 600 level.

The Concentration in Biochemistry

In cooperation with the Department of Biochemistry in the School of Medicine, the chemistry department offers both an AB and a BS degree in chemistry with concentration in biochemistry. Certification of this concentration is designated on the official transcript.

For the AB Degree with Concentration in Biochemistry

Prerequisites. Chemistry 101DL or 110DL or 21; Mathematics 111L-112L, or 122L; Physics 141L-142L or 151L-152L, or 161L-162L; Biology 201L.

Major Requirements. Chemistry 201DL, 202L, 210DL or 20 or 21, 301 and 301L, or 310 and 310L and 311, 401, 401L; Biochemistry 301, 302; plus one of the following: (Chemistry 393, Biology 293, or Biochemistry 593).

For the BS Degree with Concentration in Biochemistry

Prerequisites. Chemistry 101DL or 110DL or 21; Mathematics 111L-112L, or 122L; Physics 141L-142L or 151L-152L, or 161L-162L; Biology 201L.

Major Requirements. Chemistry 201DL, 202L, 210DL or 20 or 21, 301 and 301L and 302, or 310 and 310L and 311, 401, 401L, 410; Biochemistry 301, 302; Biology 220; plus one of the following: Chemistry 393, Biology 293, or Biochemistry 593.

The Concentration in Pharmacology

In conjunction with the Department of Pharmacology in the School of Medicine, the chemistry department offers both an AB and a BS degree in chemistry with a concentration in pharmacology. Certification of the concentration is designated on the official transcript.

For the AB Degree with Concentration in Pharmacology

Prerequisites. Chemistry 101DL or 110DL or 21; Mathematics 111L-112L, or 122L; Physics 141L-142L or 151L-152L, or 161L-162L; Biology 201L.

Major Requirements. Chemistry 201DL, 202L, 210DL or 20 or 21, 301 and 301L, or 310 and 310L and 311, 401, 401L; Biochemistry 301; Pharmacology 350 and 360; plus two semesters of independent study involving some aspect of pharmacology (Chemistry 393, 394 or Pharmacology 493, 494).

1. Certification of the BS degree by the American Chemical Society requires Biochemistry 301, Chemistry 394, plus Chemistry 295.
For the BS Degree with Concentration in Pharmacology

**Prerequisites.** Chemistry 101DL or 110DL or 21; Mathematics 111L-112L, or 122L; Physics 141L-142L or 151L-152L, or 161L-162L; Biology 201L.

**Major Requirements.** Chemistry 201DL, 202L, 210DL or 20 or 21, 301 and 301L and 302, or 310 and 310L and 311, 401, 401L, 410; Biochemistry 301; Pharmacology 350 and 360; plus two semesters of independent study involving some aspect of pharmacology (Chemistry 393, 394 or Pharmacology 493, 494).

The Concentration in Environmental Chemistry

In conjunction with the Nicholas School of the Environment, the chemistry department is pleased to offer both an AB and a BS degree in chemistry with concentration in environmental chemistry. Official recognition of the completion of the requirements given below will appear on the permanent transcript of a major.

For the AB Degree with Concentration in Environmental Chemistry

**Prerequisites.** Chemistry 101DL or 110DL or 21; Mathematics 111L-112L, or 122L; Physics 141L-142L or 151L-152L, or 161L-162L; Biology 201L.

**Major Requirements.** Chemistry 201DL, 202L, 210DL or 20 or 21, 301 and 301L, or 310 and 310L and 311, 401, 401L; Environment 360 or Civil Engineering 461L; plus two of the following: Environment 239, 540, 542; plus one semester of independent study involving some aspect of environmental chemistry (Chemistry 393 or Environment 393 or Civil Engineering 391).

For the BS Degree in Chemistry With Concentration in Environmental Chemistry

**Prerequisites.** Chemistry 101DL or 110DL or 21; Mathematics 111L-112L, or 122L; Physics 141L-142L or 151L-152L, or 161L-162L; Biology 201L.

**Major Requirements.** Chemistry 201DL, 202L, 210DL or 20 or 21, 301 and 301L and 302, or 310 and 310L and 311, 401, 401L, 410; Environment 360 or Civil Engineering 461L; plus two of the following: Environment 239, 540, 542; plus one semester of independent study involving some aspect of environmental chemistry (Chemistry 393 or Environment 393 or Civil Engineering 391).

Departmental Graduation with Distinction

The department offers a program for Graduation with Distinction in chemistry. Selection for the honor by the Chemistry Department Undergraduate Awards Committee is based on fulfilling the following requirements: at least a B average in chemistry courses at the time of application and at graduation, satisfactory completion of at least two courses of research independent study in chemistry (or in an approved chemistry-related area), enrollment and participation in Chemistry 295 (Introduction to Research Independent Study) and Chemistry 496 (Graduation with Distinction in Chemistry), submission of a high quality research thesis based upon the results of independent study, nomination for the honor by the research advisor, presentation of a poster on the research project, and an oral defense of the research thesis.

The Minor

**Requirements.** Chemistry 101DL or 110DL or 21; plus four additional courses selected from the following: Chemistry 180, 201DL, 202L, 210DL or 20, Chemistry courses numbered above 210; Biochemistry 301, 302; Biology 372A; Environment 540, 542; Pharmacology 350, 360, 533.

In certain cases, substitutions may be made for courses outside the chemistry department with the consent of the director of undergraduate studies.

Child Policy Research

Assistant Research Professor Muschkin, **Director**

A certificate, but not a major, is available in this program.

The goal of the certificate in child policy research is to provide undergraduates with the opportunity to engage in interdisciplinary inquiry to solve problems facing today’s children and families. Because of the complexity of these problems, the certificate allows students the opportunity to study issues by incorporating the perspectives of
numerous disciplines, including psychology, sociology, public policy, economics, and education. The certificate emphasizes engagement in empirical research; each student will work closely with a faculty member to produce an original research paper. Examples of research topics that may be pursued with this certificate include social and economic inequalities in schooling, the pervasiveness of gang violence in high schools, or the long-term consequences of childhood obesity. The certificate program culminates in a capstone seminar, in which students build upon the research experience by exploring real-world implications and translating their scholarship to policy solutions.

Certificate Requirements

In order to complete the certificate, students must take six courses: the cornerstone course Child Policy Research 250S, the capstone course Child Policy Research 495S (Multidisciplinary Approaches to Contemporary Children's Issues), two electives, one research course, and one methods course. The research course is an independent study: students may register for Child Policy Research 350S or for an independent study in public policy or another department. The research course requirement also may be fulfilled through completion of an honors thesis in the student's home department. The methods course can either be Child Policy Research 241 (Multi-Method Approaches to Social and Policy Research) (cross-listed with Public Policy 241) or a methods course in the student's home department. Both the research course and the methods course must be approved by the certificate director. The two electives may be drawn from a list of pre-approved electives. Two courses that are counted toward this certificate may also be used to satisfy the requirements of any major, minor, or other certificate program. Three of the courses that count toward the certificate may originate in a single department or program. More information is available at [http://childandfamilypolicy.duke.edu/students/child-policy-research-certificate/](http://childandfamilypolicy.duke.edu/students/child-policy-research-certificate/). The certificate director is available to provide additional information and guidance. Contact muschkin@duke.edu.

Courses in Child Policy Research (CHILDPOL)

89S. First-Year Seminar. SS Topics vary each semester offered. Open only to first year students. Instructor: Staff. One course.


250S. Child Policy Research. R, SS Major developmental stages of childhood and influences in a child's life: parents/family life, schools, communities, the economy Emphasis on 1) applying of theory for analyzing complex societal problems (often involving issues of race, class, and gender; 2) using material and methodologies from psychology, sociology, economics, and public policy. Required course for certificate program Child Policy Research, but open to all undergraduate students. Instructor: Staff. One course. C-L: Public Policy Studies 242S

290. Selected Child Policy Research Topics. R, SS Topics vary but pertain to the development and social and economic well-being of children and their families. Interdisciplinary in nature and drawing material from disciplines such as sociology, psychology, public policy, economics, and education. An elective course for students pursuing Child Policy Research certificate. Instructor: Staff. One course.


393. Research Independent Study. R, SS Individual research on a topic of special interest under the supervision of a faculty member, the central goal of which is a substantive paper containing significant analysis and interpretation. Consent of instructor and director of the Child Policy Research certificate program required. Instructor: Staff. One course.

495S. Multidisciplinary Approaches to Contemporary Children's Issues. R, SS An integrative, multi-disciplinary study of the psychological, social, and political factors that affect American children and families. Specific topics to be determined by students and instructor, for example, the behavioral and economic consequences of juvenile delinquency; the implications of different family structures on infants, children, and adolescents; or the civic and social responsibilities of public education. Individual and group research projects required. Capstone course required for the Child Policy Research certificate program. Consent of Director of that certificate program required. One course. C-L: Public Policy Studies 420S
590. Advanced Child Policy Research Topics. SS Topics vary but pertain to the development and social and economic well-being of children and their families. Interdisciplinary in nature and drawing material from disciplines such as sociology, psychology, public policy, economics, and education. An elective course for students pursuing Child Policy Research certificate. Instructor: Staff. One course.


634S. Making Social Policy. R, SS One course. C-L: see Public Policy Studies 563S; also C-L: Sociology 634S

Electives
Students will choose two electives from the following list of preapproved courses. If a student wishes to take a course for certificate credit that is not on the preapproved list, then the certificate director will decide on the appropriateness of that course on a case-by-case basis.

**African and African American Studies**
549S. Schooling and Social Stratification

**Cultural Anthropology**
249. Cross-Cultural Perspectives on Human Development: A View From Modern-Day Japan

**Documentary Studies**
202S. Children and the Experience of Illness

**Education**
237. Contemporary Issues In Education
240. Educational Psychology (C, D)
241. Promising Paradigms: Issues and Innovations in American Classrooms
243S. Children, Schools, and Society
309. Global Education
321S. Infancy, Early Childhood, and Educational Programs
542S. Schooling and Social Stratification

**Linguistics**
336S. Issues in Language Development (C, D)

**Psychology**
207. Child Clinical Psychology (A,D)
237. Social Development (D,S)
239. Adolescence (D)
240. Educational Psychology (C, D)
241. Cross-Cultural Perspectives on Human Development: A View From Modern-Day Japan
304. Child Observation (D)
336S. Issues in Language Development (C, D)
337S. Infancy (C, D, S)
436. Clinical Interventions with Children and Families (A,D)
675S. Children's Peer Relations (D)

**Public Policy Studies**
243S. Children, Schools, and Society
245. Promising Paradigms: Issues and Innovations in American Classrooms
395S. Children and the Experience of Illness
542S. Schooling and Social Stratification
544S. Schools and Social Policy
563S. Making Social Policy
608S. Economics of the Family

**Sociology**
111. Contemporary Social Problems
217. Childhood in Social Perspective
219. Juvenile Delinquency
350. The Changing American Family
634S. Making Social Policy

**Visual and Media Studies**
211S. Children and the Experience of Illness

**Chinese**
For courses in Chinese, see page 156, under “Asian and Middle Eastern Studies.”
Civil and Environmental Engineering

For courses in civil and environmental engineering, see page 677.

Classical Studies

Professor Antonaccio, Chair; Professor Janan, Director of Undergraduate Studies; Professors Antonaccio, Boatwright, Janan, and Johnson; Associate Professors Sosin and Woods; Assistant Professors Atkins and González; Professors Emeriti Clay, Newton, Richardson, Rigsby, and Stanley; Research Professors Burian and Davis

A major or a minor is available in this department.

The objective of classical studies is to increase knowledge and understanding of the civilizations of Greece and Rome, part of the roots of Western culture. Toward this aim, the department offers courses in three areas (Latin, Greek, and classical studies) and two majors (classical languages, classical civilization). Concentration in the languages offers students opportunities to explore at first hand the literature, history, and thought of antiquity. In the process of learning Greek and/or Latin, students will gain a deeper insight into language itself, as well as an appreciation of the problems of interpretation and the varieties of evidence upon which interpretation may be based. For students interested in history, ancient art, or archaeology, courses in classical civilization offer a means of assessing the culture and the material remains of Greece and Rome in their own rich and varied context.

Students considering careers not in classical studies or a closely related discipline will also enjoy the benefits from either major offered by the department. The experience of analyzing language, literature, artifacts and architecture, and other ancient subjects will hone their intellectual abilities well for any profession.

Courses In Classical Studies (CLST)

89S. First-Year Seminar. CCI Topics in classical literature and/or art and archaeology vary each semester. Instructor: Staff. One course.

121. Medieval Cultures. ALP, CCI, CZ One course. C-L: see Medieval and Renaissance Studies 151; also C-L: Art History 121, History 241

144. Principles of Archaeology. CCI, CZ, EI Introduction to the many disciplines of archaeology, using a survey of cultures and civilizations to explain archaeological techniques, methods, theory, results, and ethics. Instructor: Antonaccio. One course.

181S. Greek Civilization. CCI, CZ The culture of the ancient Greeks from the Bronze Age to Alexander the Great: art, literature, history, philosophy, and religion. Not open to students who have had, or are taking, Classical Studies 283. Instructor: Staff. One course.

181SK. Greek Civilization: the Origins of Western Culture. CCI, CZ The culture of the ancient Greeks from the Bronze Age to Alexander the Great — art, literature, history, philosophy, and religion — studied critically through the lens of various narratives that see the Greeks as the originators of western culture, such as the (supposed) invention of the alphabet, the beginnings of (western) ideas of the writing of history, the (so-called) perfection of classical architecture and sculpture, the origins of (western) drama, the origins of (western) rhetoric and philosophy. Taught at Duke Kunshan University. Instructor: Johnson.

182S. Roman Civilization. CCI, CZ The culture of the ancient Romans from their beginnings to Constantine: art, literature, history, philosophy, and religion. Not open to students who have taken or are taking Classical Studies 284. Instructor: Staff. One course.

186FS. Ancient and Modern Liberty. CCI, CZ, E1, SS One course. C-L: see Political Science 184FS

187. The World of the Greek Theater. ALP, CCI, CZ The tragedies and comedies of the fifth-century theater as a window on Athens: the conventions and public context of performance; the plays as indicators of social values, debates, and limits; the literary consciousness of authors and audience. Instructor: Staff. One course.

204. Ancient and Medieval Epic. ALP, CCI Reading the major epics of antiquity in translation (Gilgamesh, Homer's Iliad and Odyssey, Vergil's Aeneid) and the European Middle Ages (Beowulf, Song of Roland, Dante's Inferno), emphasizing the changing definition and concept of the hero. Instructor: González, Janan, or Staff. One course. C-L: Medieval and Renaissance Studies 303
206. Classics of Page and Screen: Exploring the Iconic in Literature and Film. ALP, CCI, CZ Exploration of ancient, medieval and modern conceptualizations of good and evil as found in the iconic heroes, villains, and buffoons of literature and film; film and literature as windows onto their contemporary historical contexts, and as indicators of social values, debates, and limits. Instructor: Janan. One course. C-L: Arts of the Moving Image 271

208. Ancient Myth. ALP, CCI, CZ Myth in Ancient to Medieval contexts, from Homer and Hesiod to Boccaccio. Attention to nature of myth, its cultural functions, its adaptation to various literary forms, its reuse, possible interpretive approaches to myth, and its representation in art. Instructor: Woods, Janan or Staff. One course. C-L: Medieval and Renaissance Studies 301

240L. Virtual Museums: Theories and Methods of 21st Century Museums. ALP, R, STS One course. C-L: see Visual and Media Studies 332L; also C-L: Information Science and Information Studies 305L


248. Art and Archaeology of Ancient Athens. ALP, CCI, CZ One course. C-L: see Art History 208

250. The Art of Greece and Rome. ALP, CCI, CZ One course. C-L: see Art History 210

252LS. Reconstructing Ancient Worlds. CCI, CZ, R, STS One course. C-L: see Visual and Media Studies 275LS

262. Ancient Athletics. ALP, CCI, CZ The athletic festivals of the ancient Greeks and Romans are among the most enduring legacies of the Classical world, and provide a particularly accessible introduction to the study of antiquity. Through examination of literary and historiographical sources (in translation) and of the material remains at the ancient sites, this course introduces students to the origins and development of the major athletic contests (especially the Olympic Games), the methods and practicalities of ancient training, and the changing role of athletics in ancient and modern education, religion, and politics. We end with a survey of the modern Olympic movement, from the nineteenth century to the present. Instructor: Staff. One course. C-L: History 231

264. Greek and Roman Religion. CCI, CZ Topics in Greek and Roman religion from the Bronze Age through the rise of Christianity, based on literary, documentary, and archaeological sources. Coverage within the chronological boundaries via survey, case-studies, or a combination of both. Topics might include the relationship of myth and ritual, hero cult, mysteries, festivals, interface between philosophy and religion, “public” and “private” religion, religious “imports” and exoticism, architecture and landscape of religion. Instructor: González or Staff. One course. C-L: Religion 215

268S. Daily Life in Antiquity. ALP, CCI, CZ Daily life in Greek and Roman antiquity through written sources and material culture. Topics may include gender, sexuality, and family; slavery, class and order in Greek and Roman society; diet and dining; population and popular culture; discourse on the emotions and private letters. Instructor: Antonaccio, Boatwright or Janan. One course. C-L: Women's Studies 218S

271. History of Ancient Philosophy. CCI, CZ One course. C-L: see Philosophy 203

272A. The Birth of Reason in Ancient Greece. CCI, CZ, EI One course. C-L: see Philosophy 236A

275. Democracy: Ancient and Modern. CCI, CZ, EI, SS Examines democracy in its ancient and modern forms, with special attention to Athenian and American democracy. Does modern democracy fulfill the promise of ancient democracy, or betray its fundamental tenets? Topics may include democratic institutions; corruption, demagoguery, and the tyranny of the majority; freedom, rights, and equality; democracy and empire; democracy, knowledge, and decision-making; democratic literature; citizenship; and rhetoric. Instructor: Arkins. One course. C-L: Political Science 211, History 234

283. Greek History. CCI, CZ The political and intellectual history of the Greeks from earliest times to the death of Alexander the Great. Not open to students who have had, or are taking, Classical Studies 181S. Instructor: Sosin, Johnson, or Staff. One course. C-L: History 230

284. Roman History. CCI, CZ, W From the founding of Rome by Romulus to the founding of Constantinople by Constantine: social, cultural, and political history. Not open to students who have taken or are taking Classical Studies 182S. Instructor: Boström, or Sosin. One course. C-L: History 233

290. Special Topics in Classical Studies. CCI Aimed at first and second-year students. Instructor: Staff. One course.


291. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

293. Research Independent Study. Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or project containing significant analysis and interpretation of a previously approved topic. Open only to qualified juniors and seniors; for seniors, the paper or project may partially fulfill the requirements for graduation with distinction. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

304. Drama of Greece and Rome. ALP, CCI, CZ Reading in translation selected tragedies (Aeschylus, Sophocles, Euripides, Seneca) and comedies (Aristophanes, Menander, Plautus, Terence) with emphasis on political, social, and cultural developments, contemporary theatrical practice, and later influence on world theater and other media. Instructor: González or Staff. One course. C-L: Theater Studies 227, Visual and Media Studies 240

308. Greek and Roman Law. CCI, CZ Law of Greece and Rome from the birth of the Greek polis and Rome's Twelve Tables to the Digest of Justinian. Coverage within the chronological boundaries via survey, case-studies, or a combination of both. Topics might include murder trials, political trials, civil law and procedure, family law, delict, religious "laws," oratory, and others. Instructor: Atkins or Sosin. One course. C-L: History 240, Political Science 381

308S. Greek and Roman Law. CCI, CZ Law of Greece and Rome from the birth of the Greek polis and Rome's Twelve Tables to the Digest of Justinian. Coverage within the chronological boundaries via survey, case-studies, or a combination of both. Topics might include murder trials, political trials, civil law and procedure, family law, delict, religious "laws," oratory, and others. Instructor: Atkins or Sosin. One course.

320A. Mediterranean Cultures (Study Abroad). CCI, CZ Examination of diverse cultures and cultural interactions in ancient Sicily, including the Sicels, the Phoenicians, the Greeks, and the Romans. Particular attention paid to the identities developed and projected by the Greek colonies in relation to the native Sicels, the mainland Greeks and Phoenician settlements. Taught at the Intercollegiate Center for Classical Studies in Catania. Instructor: Staff. One course.

324S. Special Studies in Greek History. CZ Investigation into a topic chosen from Greek history from the Bronze Age to the consolidation of the Roman Empire in 30 BC. Individual topics might include the rise of the Macedonian Kingdom, the fourth century, Hellenistic Kingdoms, interactions between (Greek) colonizers and colonized, and the Roman presence in the Greek world vel sim. Instructor: Antonaccio, Johnson, Sosin, or staff. One course. C-L: History 232S

328S. Special Studies in Roman History. CZ Investigation into a topic chosen from Roman history from Romulus to Justinian. Topics might include Roman military, the lives of provincials and freedmen, women in Roman politics and society, games and spectacles, imperial dynasties, the rise and triumph of Christianity, Roman law, and the emergence of Byzantium vel sim. Instructor: Atkins, Boatwright, or staff. One course. C-L: History 235S

340A. Rome: History of the City. ALP, CCI, CZ On-site study of the development of Rome's urban plan and its major monuments through the ages; the influence of the ancient Republic and Empire, the Papacy, and the modern secular state; change and continuity in artistic forms and daily life. (Summer program in Italy.) Instructor: Boatwright. One course. C-L: Art History 209A, History 238A

341A. The Ancient City. CCI Examination of the archaeological monuments of Rome and other Italian sites, as well as literary sources, inscriptions, and works of art. Consent required. Taught in Rome as part of the Intercollegiate Center for Classical Studies program. Students must register for both 341A-1 and 341A-2. Instructor: Staff.

341A-1. Art and Archaeology. ALP, CCI Instructor: Staff (Study Abroad). One course.

341A-2. Political, Social, and Cultural Context. CCI, CZ Instructor: Staff (Study Abroad). One course.
342A. Archaeology Field School in Crete. CCI, CZ, SS Practicum in archaeological fieldwork and finds processing. Introduces students to archaeological excavation in Greece through “hands-on” experience. Students assist field archaeologists and various specialists (e.g., surveyors, palaeoethnobotanists, conservators, etc.). Required service work alongside local villagers, members of local and regional cultural groups, and researchers on conservation and field preservation activities. Presentations by instructors and specialist staff; weekly trench tours by trench supervisors; lectures by archaeologists; occasional visits to other nearby sites and museums. Instructor consent required. Instructor: Antonaccio. Two courses.

344. Early Greek Archaeology: From the Fall of Mycenae to the Persian Wars. ALP, CCI, CZ Greek material culture in its social, economic, and historical contexts, 1200 to 480 BCE. Instructor: Antonaccio. One course. C-L: Art History 206

346S. Classical Sculpture. ALP, CZ, W One course. C-L: see Art History 340S

348. Classical Greek Archaeology, Archaic to Classical. ALP, CCI, CZ The archaeology of the Greek city-state including its historical context. Emphasis on both themes (sanctuaries, death and burial, warfare) and the ability to understand material culture in context. Instructor: Antonaccio. One course. C-L: Art History 207

352. The Aegean Bronze Age. ALP, CCI, CZ Survey of Greek prehistory, from the final Neolithic to the end of the era in ca. 1200 BCE. Issues to be considered include the historicity of the Trojan War, the relationship of this period to later Greek history and cultural identity. Instructor: Antonaccio. One course. C-L: Art History 205

354. Roman Spectacle. ALP, CCI, CZ, EI One course. C-L: see Art History 334

356S. Etruscans and Pre-Roman Archaeology. CCI, CZ Study of one of the most important civilizations of ancient Italy and deeply influencing the Classic world and the Mediterranean basin. Study and comparative analyses of pre-urban and urban settlements, necropolis, art, art history, cultural assets and archaeological remains of Etruscan and Italic world. Study of epigraphy and language. Archaeological comparison between Etruscan and other Italic societies in the first millennium BCE. Instructor: Forte. One course.

364. Ancient Science and Technology. CZ, STS Development of scientific thought and technological innovation in the Ancient Near East, Greece, and Rome. Topics might include the rise of scientific thought, as against myth; impact of scientific and technological developments on Greek and Roman society and culture; history of medicine; history of mathematics; military technology. Instructor: González. One course. C-L: History 236

366. Inventing Sickness: The Science and Practice of Medicine in Ancient Greece. CZ, EI, SS, STS Exploration of conceptual developments that led to the emergence of medicine in ancient Greece as a science and an art and as a contentious subject of speculative discourse. We will situate these developments firmly within their corresponding cultural, intellectual, and social contexts. Concepts examined include: notions of disease; competing views of human anatomy and physiology; natural versus supernatural causation; the ethics of medical (non-)treatment and research; the rise of the doctor; dietetic, pharmacological, and surgical practices; the doctor-patient relationship. Instructor: Gonzalez. One course. C-L: History 236

368. The Afterlife of Classics. ALP, CCI, CZ The appropriation of classical antiquity by later cultures and its reinterpretation by different audiences and for different purposes, with emphasis on the use of antiquity in the construction of social/cultural identities. Topics may include examination of various "classical revivals" in the arts, e.g., architecture, opera, epic; classics and ancient history in film; the use and misuse of ancient political thought and structures to shape and interpret modern institutions and historical discourse. Instructor: Atkins, Janan, Woods, or Staff. One course.

368S. The Afterlife of Classics. ALP, CCI, CZ The appropriation of classical antiquity by later cultures and its reinterpretation by different audiences and for different purposes, with emphasis on the use of antiquity in the construction of social/cultural identities. Topics may include examination of various "classical revivals" in the arts, e.g., architecture, opera, epic; classics and ancient history in film; the use and misuse of ancient political thought and structures to shape and interpret modern institutions and historical discourse. Instructor: Atkins, Janan, Woods, or staff. One course.

371. Aristotle. CZ, EI One course. C-L: see Philosophy 317

374. Ancient Political Theory. EI, SS, W One course. C-L: see Political Science 269; also C-L: Study of Ethics
480S. Capstone Seminars in Classical Studies. ALP, CCI, CZ, R, W Specific aspects of the history, art, and literature of classical Greece and Rome. Open only to qualified juniors and seniors; some knowledge of classical studies and history desirable, but not strictly necessary; research paper required. Instructor: Staff. One course.


491. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

493. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or project containing significant analysis and interpretation of a previously approved topic. Open only to qualified juniors and seniors; for seniors, the paper or project may partially fulfill the requirements for graduation with distinction. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

524S. Greek History from the Bronze Age to the fifth century BCE. CZ Study of Greek history from the Bronze Age to the fifth century BCE via survey, case-studies, or a combination of both. Offerings might include Fifth-century Greece, Archaic Greece, The Athenian Empire, Western Greeks, Ancient Democracy, vel sim. Instructor: Johnson or Sosin. One course. C-L: History 533S

528S. Greek History: Fifth Through First Centuries BC. CZ Studies in later Greek History from the fifth through first centuries BC. Coverage within these chronological boundaries via survey, case-studies, or a combination of both. Offerings might include Fourth-century Greece, The Hellenistic World, Ptolemaic Egypt, vel sim. Instructor: Johnson or Sosin. One course. C-L: History 528S

532. The Roman Republic. CCI, CZ, R The rise of Rome, to its mastery of the Mediterranean; the political, social, and cultural consequences. Instructor: Boatwright. One course. C-L: History 516

532S. Roman History from Romulus to Augustus. CCI, CZ Study of Roman history from its earliest beginnings to the age of Augustus. Coverage via survey, case-studies, or a combination of both. Offerings might include The Roman Republic, Conflict of the Orders, Roman Revolution, vel sim. Instructor: Boatwright. One course. C-L: History 534S

536. The Roman Empire. CCI, CZ, R The foundation, consolidation, and transformation of Roman rule from Augustus to Diocletian. Instructor: Boatwright. One course. C-L: History 538

536S. Roman History from Augustus through Late Antiquity. CCI, CZ Study of Roman history from Augustus to the early medieval period via survey, case-studies, or a combination of both. Offerings might include The Roman Empire, The Julio-Claudians, The Second Sophistic, The Severans, The Third-Century Crisis, Late Antiquity, vel sim. Instructor: Boatwright. One course. C-L: History 539S

541S. Greek Art and Society: Archaic To Classical. ALP, CCI, CZ, R One course. C-L: see Art History 501S

542S. Greek Art: Hellenistic to Roman. ALP, CCI, CZ One course. C-L: see Art History 502S

556SL. Roman Topography: Urban Life and Cityscapes in Ancient Rome. CCI, CZ, R, SS Advanced undergraduate and graduate seminar on ancient Rome's great monuments and humble buildings, public spaces and streets, and infrastructure and natural features used by and influencing its inhabitants and visitors from 1st c. BCE to 4th c. CE. We turn to traditional topographical research and new visual technologies alike. Survey of ancient Rome's topographical data and methodologies, followed by student team projects. Course plus lab. Instructor: Boatwright. C-L: Art History 560SL, Visual and Media Studies 570SL


560. Etruscan Cities. CCI, CZ Focuses on concept and definition of “city” in Etruscan society and its socio-political role in territorial organization. Main topics include pre-urban and urban development of Etruscan society, the first settlements, space and rituals, formation and development of Etruscan City “States, cities and landscapes, cultural models between Greeks and Etruscans, colonies and emporia, transformations and changes in Roman times. Primary evidence for all the above will be visualization of material remains from antiquity. Instructor: Forte. One course. C-L: Art History 561
568. The Legacy of Greece and Rome. ALP, CCI, CZ. The reception of classical antiquity—its literature, art and architecture—in subsequent ages, from the early medieval period to the present day. Instructor: Woods. One course. C-L: Medieval and Renaissance Studies 648

571S. Ancient Political Philosophy. CCI, EI, SS. One course. C-L: see Political Science 575S; also C-L: Philosophy 571, Study of Ethics

572S. Plato. CZ. One course. C-L: see Philosophy 511S

573S. Aristotle. CZ. One course. C-L: see Philosophy 512S

580S. Proseminar: Introduction to Classical Studies. Credit/no credit grading only. Instructor: Staff. One course.

590. Special Topics in Greek Art. ALP. One course. C-L: see Art History 590S-01

590LS. Special Topics in Roman Archaeology. ALP, CZ. Studies in Roman art and archaeology on focused themes, or on particular assemblages or problems. Offerings might include Art and Architecture of Pompeii, Roman Portraiture vel sim. Includes laboratory component. Instructors: Boatwright, Forte, or staff. One course. C-L: Art History 590S-10

690S. Special Topics in Classical Studies. CCI, CZ. Topic varies from semester to semester. Instructor: Staff.

691. Directed Reading and Research. Credit to be arranged. Instructor: Staff. Variable credit.

Greek Courses in Greek (GREEK)

101. Elementary Greek. FL. Structure of the language (grammatical forms, syntax, vocabulary, and pronunciation); introduction to reading. Instructor: Staff. One course.

102. Elementary Greek. FL. Second half of Greek 101,102. Prerequisite: Greek 101. Instructor: Staff. One course.

203. Intermediate Greek. CZ, FL. Readings in classical Attic prose literature. Prerequisite: Greek 102 or equivalent. Instructor: Staff. One course.


204. Advanced Intermediate Greek. CZ, FL. Introduction to Athenian Drama. Prerequisite: Greek 203 or the equivalent. Instructor: Staff. One course.


291. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

292. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


304S. Greek Historians. ALP, CZ, EI, FL. Historians. Readings in Greek historians illuminating key themes, periods, historiographical conventions, especially historiography's role as font of ancient moral and ethical exempla.
Authors might include Herodotus, Thucydides, Xenophon, Polybius, Diodorus Siculus, vel sim. Must have 2 years of Greek (or equivalent). Instructors: Johnson, Sosin or Staff. One course.

308S. Greek Philosophy. CZ, EI, FL Philosophy. Investigation into key trends, themes, developments in Greek Philosophy, especially moral and political, through readings from the Pre-Socratic philosophers, Plato, Aristotle, Epicurus, and/or others. Must have 2 years of Greek (or equivalent). Instructor: González or Staff. One course.

312S. Greek Oratory and Rhetoric. ALP, CCI, CZ, FL Oratory/Rhetoric. Exploration of the theory and practice of ancient oratory and rhetoric, especially as regards negotiation of power through public speech. Includes readings from Antiphon, Andocides, Lysias, Isocrates, Isaeus, Demosthenes, Gorgias, Alcidamas, Aristotle, Ps.-Longinus, Demetrios' On Style, and/or others. Must have 2 years of Greek (or equivalent). Instructor: Johnson, González, Sosin, or Staff. One course.

324S. Greek Epic. ALP, CCI, FL Epic. Readings in Greek epic, with attention to language, meter, oral poetics, characterization, narrative structure, ancient and modern interpretation, the epic tradition beyond Greece and Rome, epic poems as codifiers of socially constructed cultural norms. Authors and works might include Homer, Hesiod, and the Homeric Hymns. Must have 2 years of Greek (or equivalent). Instructor: González or Staff. One course.

328S. Lyric and Hellenistic Poetry. ALP, CCI, FL Lyric and Hellenistic Poetry. Readings in Greek lyric and Hellenistic poetry. Possible authors and works include selected fragments from the major lyric poets, Pindar, Theocritus and/or others, particularly as they illuminate construction, testing, examination of Greek cultural identity. Must have 2 years of Greek (or equivalent). Instructor: González or Staff. One course.

332S. Greek Drama. ALP, EI, FL Drama. Reading and interpretation of selected plays by Aeschylus, Sophocles, Euripides, Aristophanes, and Menander, with attention to language, meter, staging, characteristic themes and conventions, and especially the cultural context of ancient drama and its use as an instrument and venue of public ethical and political debate. Must have 2 years of Greek (or equivalent). Instructor: González or Staff. One course.

491. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of instructor and Director of Undergraduate Studies required. Instructor: Staff. One course.

493. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or project containing significant analysis and interpretation of a previously approved topic. Open only to qualified juniors and seniors; for seniors, the paper or project may partially fulfill the requirements for graduation with distinction. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

504. Historians. ALP, CCI, FL Investigation of the Greek concept and practice of writing history from Atthis to Agathius, with attention to key themes, periods, historiographical conventions. Authors and works might include Herodotus, Thucydides, Xenophon, Polybius, Diodorus Siculus, Arrian, Appian, Eusebius, Procopius, Agathius. Instructor: Johnson, Sosin, or staff. One course.

508S. Rhetoric, Literary Criticism, and Philosophy. ALP, CCI, CZ, FL Readings of rhetorical speeches and treatises (e.g. Demosthenes, Isocrates, Aristotle's Rhetoric, Rhetorica ad Alexandrum); and/or of ancient literary criticism (e.g. Aristotle, Ps.-Longinus); and/or of philosophical works (e.g. Plato's Dialogues, fragments of the pre-Socratics); and/or of authors, works, trends in Greek literature of the Roman Empire. Instructors: Johnson, González or Staff. One course.

524. Epic and Lyric. ALP, CCI, FL Readings in Greek epic and/or Lyric, with attention to language, meter, poetics, characterization, narrative structure, ancient and modern interpretation, traditions beyond Greece and Rome, epic poems as codifiers of socially constructed cultural norms, lyric construction, and examination of Greek cultural identity. Authors and works might include selections of fragmentary works, Pindar, Bacchylides, Callimachus, Theocritus, the Greek Anthology, and others. Instructor: González. One course.

528. Drama. ALP, CCI, CZ, EI, FL Readings in the dramatic and mimetic genres, especially Attic Tragedy and Comedy, with attention to language, meter, staging, characteristic themes and conventions, and especially the cultural context of ancient drama and its use as an instrument of public ethical and political debate. Authors may include Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Sophron, Herodas, Lycophron. Instructor: Staff. One course.
580. Survey of Greek Literature. ALP, CCI, FL Instructor: Staff. One course.

582S. Greek Epigraphy. CZ, FL Introduction to the field of Greek Epigraphy, its history, methods, and place within the field of Classical Studies. Close attention to reading and translation of the variety of inscribed documentary and literary Greek. Instructor: Sosin. One course.

586S. Papyrology. CZ, FL Introduction to the field of Greek Papyrology, its history, methods and place within the field of Classical Studies. Close attention to reading and translation of the variety of documentary and/or literary papyrological Greek. Instructor: Johnson or Sosin. One course.

691. Directed Reading and Research. Instructor: Staff. Variable credit.

Latin

Courses in Latin (LATIN)

25. Introduction to Literature. This number represents course credit for a score of 4 or 5 on one or more of the College Board Advanced Placement tests in Latin. One course.

101. Elementary Latin. FL Study of the structure of the language (i.e., forms, vocabulary, syntax, and pronunciation); selected readings in prose and poetry. Instructor: Staff. One course.


203. Intermediate Latin. CZ, FL Politics and thought in the late Republic: Caesar and Cicero. Instructor: Boatwright or staff. One course.


204. Advanced Intermediate Latin. CZ, FL The culture of Republican and Augustan Rome: selections from Cicero, Catullus, Vergil, Horace, Ovid or similar. Prerequisite: Latin 203 or equivalent. Instructor: Staff. One course.


291. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

292. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


304S. History and Biography. ALP, CZ, EI, FL Readings in one or more Roman historical works, illuminating key themes, periods, historiographical conventions, and especially ancient historiography's role as font of moral and ethical exempla. Authors might include Caesar, Sallust, Livy, Tacitus, Velleius, Ammianus Marcellinus, Gregory of Tours, Suetonius, vel sim. Students must have two years of Latin or equivalent. Instructor: Boatwright, Woods, or Staff. One course.

308S. Latin Epistle. ALP, FL Readings in the form, function, history, and conventions of the Latin epistle. Material might range from the letters of Cicero, Cyprian, Augustine, Jerome, or medieval collections; from Seneca's Letters to Lucilius to Ovid's Heroides or Pliny's correspondence with the Emperor Trajan. Students must have two years of Latin or equivalent. Instructor: Boatwright, Sosin, Woods, or staff. One course.

312S. Oratory/ Rhetoric. ALP, CCI, FL Readings in Roman oratory and rhetoric. Focus on negotiation of power through public speech, definitions of identity, and public construction of cultural norms. Authors and works might
include Cicero, Quintilian’s Institutes of Oratory, Tacitus’ Dialogue on Oratory, Seneca the Elder, selected speeches from Roman historians, vel sim. Students must have two years of Latin or equivalent. Instructor: Boatwright, Janan, or Staff. One course.

316S. Latin Novel. ALP, CCI, CZ, FL Readings in Latin novel, with special attention to the form's literary predecessors and its particular illumination of social, economic, and cultural features of the Roman world. Authors include Petronius and/or Apuleius. Students must have two years of Latin or equivalent. Instructor: Boatwright, Janan, or Staff. One course.

324S. Latin Epic. ALP, CCI, FL Readings in Roman Epic with attention to genre, language, meter, characterization, narrative structure, and the epic tradition in and beyond Greece and Rome, and the genre’s role in construction of cultural identity. Authors might include Vergil, Ovid, and Lucan. Students must have two years of Latin or equivalent. Instructor: Boatwright, Janan, or Staff. One course.

328S. Elegy and Lyric. ALP, CCI, FL Readings in Latin Elegy and Lyric, with special attention to Roman responses to Greek literary traditions and to the contemplation of human passions and vices, within a specifically Roman culture. Authors might include Catullus, Tibullus, Propertius, Ovid, Horace, and Martial. Students must have two years of Latin or equivalent. Instructor: Janan or staff. One course.

332S. Drama. ALP, CCI, FL Readings in Roman Comedy and Tragedy. Special attention to Roman 'translation' and reception of the Greek literary tradition before it; the genre’s illumination of social, economic, and cultural conditions; the form's scrutiny of core cultural ideals. Authors include Plautus, Terence, and Seneca. Instructor: Janan, Woods or staff. One course.

336S. Satire. ALP, CCI, CZ, EI, FL Readings in Roman Satire with special attention to the genre's self-critical posture and its ethical critique of Roman culture and the Latin literary tradition. Authors might include Lucilius, Horace, Persius, and Juvenal. Students must have two years of Latin or equivalent. Instructors: Janan, Sosin, or staff. One course.

364S. Educating Rome. ALP, CCI, EI, FL Readings in the very Roman category of ‘didactic.’ How Romans thought to educate themselves and others about the world they controlled and lived in; Roman education as cultural, moral education. Authors and works might include Ovid’s Ars Amatoria, Vitruvius’ handbook on architecture, Lucretius’ De rerum natura, Columella on farming. Students must have two years of Latin or equivalent. Instructor: Boatwright, Janan, Woods, Staff. One course.

368S. Snapshots of Rome. ALP, CCI, CZ, FL Readings in Latin literature from a specific time period and historical context, such as the Age of Augustus; Nero and His Times; Life in the Late Republic; or the Fall of the Roman Empire. Emphasis on how literature and society construct and inform each other at critical moments in Roman history. Students must have two years of Latin or equivalent.Instructor: Boatwright, Janan, Woods, Staff. One course.

372S. Interpreting Rome. ALP, CCI, CZ, FL Readings on retrospective views on Rome’s past; how cultures view themselves through the lens of others. Topics may include late ancient scholia and commentaries and the texts they sought to illuminate, Christian views of a pagan past, Medieval perspectives on ancient texts and history. Students must have two years of Latin or equivalent. Instructor: Woods or staff. One course. C-L: Medieval and Renaissance Studies 304S

376S. Roman Culture. CCI, CZ, FL Readings on Roman cultural themes, trends, or characteristics. Emphasis on variety of viewpoints from which to understand Roman culture. For example, public spectacle, Stoic cultural commentary, popular culture, 'street' Latin found in inscriptions, papyri, and graffiti, or Roman attitudes toward provincials and provincials' toward Romans. Students must have two years of Latin or equivalent. Instructor: Boatwright or staff. One course.

390S. Special Topics in Latin Literature. ALP, CCI, FL Prerequisite: the completion of second-year or third-year Latin, depending on the topic. Instructor: Staff. One course.

491. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of instructor and Director of Undergraduate Studies required. Instructor: Staff. One course.
493. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or project containing significant analysis and interpretation of a previously approved topic. Open only to qualified juniors and seniors; for seniors, the paper or project may partially fulfill the requirements for graduation with distinction. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

504S. Selections From Latin Texts/Authors in the Genres of History, Oratory, and/or Philosophy. ALP, CZ, EI, FL Detailed study of selections from one or more genres. Typical iterations might investigate Roman concept and practice of writing history from Cato to Ammianus Marcellinus; study of Roman oratory (readings might include Cicero, Quintilian, Tacitus); and/or philosophical texts (readings might include Lucretius, Seneca, Pliny the Elder, Vitruvius, Augustine, Boethius). Instructor: Atkins, Boatwright or Staff. One course.

508S. Medieval and Renaissance Latin. ALP, CCI, CZ, FL Detailed study of selections from one or more authors or genres. Selections either constitute a survey of Latin literature from late antiquity through the Renaissance, or focus on specific locations or periods (e.g. Insular Writers, or the Carolingian "Renaissance", or the Long Twelfth Century). Authors and readings might include Augustine, Isidore of Seville, Bede, Einhard, Carolingian poetry, Hrotsvita, the Carmina Burana, Heloise and Abelard, Hildegard of Bingen, Petrarch, Lorenzo Valla, Leonardo Bruni. Topics may vary. Instructor: Woods. One course. C-L: Medieval and Renaissance Studies 608S

524S. Latin Poetry: Epic, Lyric, and Elegy. ALP, CCI, CZ, FL Detailed study of selections from one or more genre. Authors and readings might include Vergil, Ovid, Lucan, Statius' Thebaid and Silvae, Valerius Flaccus, Silius Italicus, Catullus, Horace, Tibullus, Propertius, Martial, Juvenecus, medieval Latin court poetry and love lyric. Instructor: Janan. One course.

528S. Selections From Latin Texts/Authors in the Genres of Drama, Satire, and/or the Novel. ALP, CCI, CZ, FL Detailed study of selections from one or more of the genres Drama, Satire, Novel. Authors and readings might include Plautus, Terence, Seneca, Horace, Persius, Juvenal, Petronius, Apuleius. Instructor: Janan or Staff. One course.

580. Survey of Latin Literature from its Beginnings to Late Antiquity. ALP, CCI, FL Instructor: Staff. One course.

581S. Latin Prose Syntax and Style. CCI, FL Latin prose composition combined with analysis of the style and syntax of select Latin prose authors. Instructor: Staff. One course.

584S. Latin Palaeography. ALP, CZ, FL Introduction to the field of Latin Palaeography, its history and methods; also the role of the book in the intellectual life of the medieval and Renaissance periods. Particular emphasis placed on learning to read Latin scripts from antiquity to the Renaissance. Instructor: Woods. One course. C-L: Medieval and Renaissance Studies 647S

585S. Latin Epigraphy. CZ, FL Introduction to the field of Latin epigraphy, its history, methods, and place within the field of Classical Studies. Close attention to reading and translation of the variety of inscribed documentary and literary Latin texts, and to the original physical and social contexts of inscriptions. Instructor: Boatwright. One course.

691. Directed Reading and Research. Credit to be arranged. Instructor: Staff. Variable credit.

The Major

Classical Languages (Greek and Latin)

Major Requirements. Knowledge of both Greek and Latin through the second year: through Greek 204 and Latin 204 or the equivalent. Eight courses in Greek and/or Latin, at least six of which must be at or above the 300-400 level; one course in Classical Studies 200–400; Classical Studies 480S (Capstone Seminar). Total: Ten courses.

For double majors in classical languages and classical civilization, no more than two courses may be counted toward both majors.

Classical Civilization (Ancient History, Culture, Literature, Archaeology)

Major Requirements. Two required introductory courses: Option 1: Classical Studies 181S or 283 and 182S or 284; Option 2: two courses in Greek or Latin below the 300 level. Note: The two options may not be combined (e.g., Classical Studies 181S and Latin 102 do not satisfy the requirement). Seven classical studies courses at or above the

216 Classical Studies
200–400 level; literature in the original language, at or above the 300–400 level. Courses must be in at least three of the following areas: literature in translation at or above the 200 level, or in the original language at or above the 300–400 level; history; art and archaeology; philosophy. (Note: Classical Studies 283/4 may not be counted toward the seven advanced courses.) Classical Studies 480S (Capstone Seminar). Total: Ten courses.

For double majors in classical languages and classical civilization, no more than two courses may be counted toward both majors.

**Departmental Graduation with Distinction**

Graduation with Distinction is available to majors. Eligible students have a 3.5 grade point average in the major on beginning their project. In the context of a research independent study (Classical Studies/Greek/Latin 493) the candidate writes a major research paper. A committee of three faculty members votes whether to award Distinction, High Distinction, or Highest Distinction for the work. Majors interested in applying shall consult the director of undergraduate studies by the spring of their junior year.

**The Minor**

Four minors are offered by the department, as listed below. No courses used to fulfill the requirements of one minor may be used for another, or for the majors in classical languages or classical civilization.

**Classical Archaeology**

**Requirements.** Five courses in ancient art and archaeology, at least three at or above the 200–400 level, at least three of these originating in the Department of Classical Studies.

**Classical Civilization**

**Requirements.** Five courses in classical studies, at least three at or above the 200–400 level; literature in the original language, at or above the 300–400 level. Courses must be in at least two of the following areas: literature in translation at or above the 200–400 level, or in the original language at or above the 300–400 level; history; art and archaeology; philosophy.

**Greek**

**Requirements.** Five courses in ancient Greek, at least three at or above the 300–400 level.

**Latin**

**Requirements.** Five courses in Latin, at least three at or above the 300–400 level.

**Comparative Literature**

For courses in comparative literature, see page 419.

**Computer Science**

Professor Parr, *Chair*; Associate Professor of the Practice Lucic, *Associate Chair*; Professor of the Practice Astrachan, *Director of Undergraduate Studies*; Associate Professor Munagala, *Director of Graduate Studies*; Professors Agarwal, Bryant, Calderbank, Chakrabarty, Chase, Conitzer, Donald, Harer, Hartemink, Henriquez, Lebeck, Lenoir, Maggioni, Maggs, Parr, Reif, Rose, Sun, Tomasi, Trivedi, and J. Yang; Associate Professors Babu, Board, Cox, Dwyer, Ferrari, Kim, Mukherjee, Munagala, Ohler, Schmidler, Sorin, and X. Yang; Assistant Professors Benson, Engelhardt, Farsi, Gordân, Heller, Lee, Machanavajjhala, and Panigrahi; Professors Emeriti Biermann, Ellis, Gallie, Loveland, Patrick, Ramm, Starmer and Wagner; Professors of the Practice Astrachan and Rodger; Associate Professors of the Practice Forbes and Lucic; Assistant Professor of the Practice Hilton; Adjunct Professors Arge, Baldine, Edelsbrunner, Fowler, Hsu, LaBean, Lombardi, Pitsianis, Pormann, and Roy Choudhury; Adjunct Senior Research Scientist Brady; Lecturer Duvall

A major or a minor is available in this department.

The Department of Computer Science provides courses on the concepts of computing and computers, their capabilities, and uses. In most courses students make extensive use of the available computing facilities. Students who wish to take a single introductory course, as part of their general education, usually elect Computer Science 92, 94 or 101.
Courses in Computer Science (COMPSCI)

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course. C-L: Information Science and Information Studies

92L. Technical and Social Analysis of Information and the Internet. EI, QS, STS Study of standards, software, policy, and the impact of computing and the Internet on science and society. Analysis and creation of software and other computational and digital artifacts to solve problems in many domains using different approaches, including data mining, web-based communication, algorithmic and data-driven approaches, crowd-sourcing. Use of real-world problems in understanding evolving international standards. Analysis of tradeoffs in ethical, economic, and technical areas. Instructor: Astrachan. One course. C-L: Information Science and Information Studies 101L, Policy Journalism and Media

94. Programming and Problem Solving. QS Programming and problem solving in a specific domain such as robotics, virtual worlds, web programming, biology, genomics, or computer science. Students learn the basics of programming by studying problems in one application area. Instructor: Astrachan, Duvall, Forbes, or Rodger. One course. C-L: Information Science and Information Studies

101. Program Design and Analysis I. QS Introduction to the practices and principles of computer science and programming and their impact on and potential to change the world. Algorithmic, problem-solving, and programming techniques in domains such as art, data visualization, mathematics, natural and social sciences. Programming using high-level languages and design techniques emphasizing abstraction, encapsulation, and problem decomposition. Design, implementation, testing, and analysis of algorithms and programs. No previous programming experience required. Instructor: Astrachan or staff. One course. C-L: Information Science and Information Studies 101L

101L. Introduction to Computer Science. QS Introduction practices and principles of computer science and programming and their impact on and potential to change the world. Algorithmic, problem-solving, and programming techniques in domains such as art, data visualization, mathematics, natural and social sciences. Programming using high-level languages and design techniques emphasizing abstraction, encapsulation, and problem decomposition. Design, implementation, testing, and analysis of algorithms and programs. No previous programming experience required. Instructor: Astrachan or staff. One course. C-L: Information Science and Information Studies

102S. Constructing Immersive Virtual Worlds. QS One course. C-L: see Information Science and Information Studies 270S; also C-L: Visual and Media Studies 287S

104FS. Introduction to Computational Genomics and Computer Science. QS, STS The role of computation in prior and current biological research, both in large-scale genomics projects such as the human genome project and in basic biology and medical research. Introduction to programming possibly including scripting, CGI programming, dynamic programming, web protocols. Introduction to specific algorithms, tools, and resources for biological research including genome sequence alignment and database design and mining. Technical and social implications of genomics and genome studies made possible by advances in algorithms, computational methods, and computational models. For Focus Program students only. One course. C-L: Genome Sciences and Policy

107. Complex Systems & Evolving Multiagent Simulations. QS, SS, STS One course. C-L: see Information Science and Information Studies 170; also C-L: Visual and Media Studies 172

107FS. Artificial Life, Culture, and Evolution. QS, SS, STS One course. C-L: see Information Science and Information Studies 170FS; also C-L: Visual and Media Studies 172FS

110. Information, Society & Culture: Bass Connections Gateway. CZ, STS One course. C-L: see Information Science and Information Studies 110; also C-L: Philosophy 110, Public Policy Studies 110

149S. Computer Science Education Research Seminar. EI, QS, STS Project-based robotics course linked with community service. Designing and implementing the software and hardware architecture of a LEGO robot to perform tasks such as line tracking and simple map building. Reactive and deliberative control. Mentoring students in local schools. Course promotes ability to reason about core algorithms and challenges present in field of autonomous mobile robotics, and to effectively convey and formulate mobile robotics curricula for middle or high school students. Prerequisite: None. One course. C-L: Education 149S

190. Topics in Computer Science. QS Instructor: Staff. One course.
190A. Duke-Administered Study Abroad: Special Topics in Computer Science. Topics differ by section. Instructor: Staff. One course.

190FS. Focus Program: Topics in Computer Science. Topics vary by semester. Open only to students in the Focus program. Instructor: Staff. One course.

190S. Topics in Computer Science. QS Seminar version of Computer Science 190, topics from various areas of computer science, changing each year. Instructor: Staff. One course.

201. Data Structures and Algorithms. QS Analysis, use, and design of data structures and algorithms using an object-oriented language like Java to solve computational problems. Emphasis on abstraction including interfaces and abstract data types for lists, trees, sets, tables/maps, and graphs. Implementation and evaluation of programming techniques including recursion. Intuitive and rigorous analysis of algorithms. Prerequisite: Computer Science 101 or Engineering 110L, or equivalent. Instructor: Astrachan, Forbes, or Rodger. One course. C-L: Information Science and Information Studies

220. Introduction to Numerical Methods and Analysis. QS Theory, algorithms, and software that concern numerical solution of linear equations, approximation and interpolation of functions, numerical solution of nonlinear equations, and numerical solution of ordinary differential equations. Prerequisite: Computer Science 101; Mathematics 21; 122; 221 or 111. Instructor: Rose or Sun. One course.

223. Computational Microeconomics. QS Use of computational techniques to operationalize basic concepts from economics. Expressive marketplaces: combinatorial auctions and exchanges, winner determination problem. Game theory: normal and extensive-form games, equilibrium notions, computing equilibria. Mechanism design: auction theory, automated mechanism design. Prerequisites: 100-level Statistical Science and 100-level Mathematics or consent of instructor. Instructor: Conitzer. One course.


230. Discrete Math for Computer Science. QS Mathematical notations, logic, and proof; linear and matrix algebra; graphs, digraphs, trees, representations, and algorithms; counting, permutations, combinations, discrete probability, Markov models; advanced topics from algebraic structures, geometric structures, combinatorial optimization, number theory. Prerequisites: Computer Science 101 and Mathematics 112 or equivalent. Instructor: Agarwal, Donald, or Rodger. One course.

249S. CompSci Majors - Project-based Robotics Course with Service Learning. EI, STS Project-based robotics course linked with community service. Introduction and implementation of algorithms for navigation, map building, and object recognition. Representing uncertainty in robot motion and sensing. Mentoring students in local schools. After taking this course, students should be able to reason about the core algorithms and challenges present in the field of autonomous mobile robotics; and effectively convey and formulate mobile robotics curricula for middle or high school students. Prerequisite: Computer Science 201 or equivalent programming experience. Instructor: Forbes. Half course.


260. Introduction to Computational Genomics. NS, QS A computational perspective on the analysis of genomic and genome-scale information. Focus on exploration and analysis of large genomic sequences, but also attention to issues in structural and functional genomics. Topics include genome sequence assembly, local and global alignment, gene and motif finding, protein threading and folding, and the clustering and classification of genes and tissues using gene expression data. Students to learn computational approaches to genomics as well as to develop practical experience with handling, analyzing, and visualizing information at a genome-scale. Instructor: Hartemink. One course. C-L: Genome Sciences and Policy
270. Introduction to Artificial Intelligence. QS Algorithms and representations used in artificial intelligence. Introduction and implementation of algorithms for search, planning, decision, theory, logic, Bayesian networks, robotics and machine learning. Prerequisite: Computer Science 201. Instructor: Conitzer, Parr, or Tomasi. One course. C-L: Information Science and Information Studies

288. Logic and Its Applications. One course. C-L: see Mathematics 388; also C-L: Philosophy 350

290. Topics in Computer Science. QS Topics from various areas of computer science, changing each year. Prerequisite: Computer Science 201 or equivalent. Instructor: Staff. One course.


290S. Topics in Computer Science. QS Seminar version of Computer Science 290. Instructor: Staff. One course.

308. Software Design and Implementation. QS Techniques for design and construction of reliable, maintainable and useful software systems. Programming paradigms and tools for medium to large projects: revision control, UNIX tools, performance analysis, GUI, software engineering, testing, documentation. Prerequisite: Computer Science 201. Instructor: Duvall. One course. C-L: Information Science and Information Studies


310. Introduction to Operating Systems. QS Basic concepts and principles of multiprogrammed operating systems. Processes, interprocess communication, CPU scheduling, mutual exclusion, deadlocks, memory management, I/O devices, file systems, protection mechanisms. Also taught as Electrical and Computer Engineering 353. Prerequisites: Computer Science 201 and either of Computer Science 250 or Electrical and Computer Engineering 250L. Instructor: Chase, Cox, or Maggs. One course.

316. Introduction to Database Systems. QS Databases and relational database management systems. Data modeling, database design theory, data definition and manipulation languages, storing and indexing techniques, query processing and optimization, concurrency control and recovery, database programming interfaces. Current research issues including XML, web data management, data integration and dissemination, data mining. Hands-on programming projects and a term project. Prerequisite: Computer Science 201. Instructor: Yang. One course. C-L: Information Science and Information Studies

330. Introduction to the Design and Analysis of Algorithms. QS Design and analysis of efficient algorithms including sorting, searching, dynamic programming, graph algorithms, fast multiplication, and others; nondeterministic algorithms and computationally hard problems. Prerequisites: Computer Science 201 and 230. Instructors: Mungala, Panigrahi, or Reif. One course.

334. Mathematical Foundations of Computer Science. QS An introduction to theoretical computer science including studies of abstract machines, the language hierarchy from regular sets to recursively enumerable sets, noncomputability, and complexity theory. Prerequisites: Computer Science 201, recommended Computer Science 230. Instructor: Reif or Rodger. One course.

342S. Technical and Social Analysis of Information and the Internet. EI, R, SS, W The development of technical and social standards governing the Internet and information technology in general. The role of software as it relates to law, patents, intellectual property, and IETF (Internet Engineering Task Force) standards. Written analysis of issues from a technical perspective with an emphasis on the role of software and on how standards relate to social and ethical issues. Current events as a driver for writing in traditional and online formats related to technology and policy. Prerequisites: Computer Science 201. Instructor: Astrachan and Forbes. One course. C-L: Information Science and Information Studies

344. Computer Graphics. QS Overview, motivation, and history; Graphic software and APIs; coordinate systems and geometric transforms; drawing routines, antialiasing, supersampling; 3d object representation, spatial data structures, constructive solid geometry; hidden-surface-removal algorithms, z-buffer, A-buffer; illumination and shading models, surface details, radiosity; achromatic light, color specification, colorimetry, different color models; graphics pipeline; animation, levels of detail. Prerequisites: Computer Science 201. Instructor: Duvall. One course. C-L: Visual and Media Studies 241

356. Computer Network Architecture. This course will introduce students to the fundamentals of computer networks. The layered architecture of the network protocol stack will be the focus of discussion. A variety of case studies will be drawn from the Internet, combined with practical programming exercises. At the end of the semester, students will well understand several concepts (including the Internet architecture, HTTP, DNS, P2P, Sockets, TCP/IP, BGP, Routing protocols, and wireless/mobile networking) and use them to answer questions such as how to achieve reliable/secure communications over unreliable/insecure channels, how to find a good path through a network, how to share network resources among competing entities, how to find an object in the network, and how to build network applications. Prerequisites: Electrical and Computer Engineering 250L and Computer Science 308 and Computer Science 210 or equivalents. Instructor: Roy Choudhury or X. Yang. One course. C-L: Electrical and Computer Engineering 356, Information Science and Information Studies.

390. Topics in Computer Science. QS, R Topics from various areas of computer science, changing each year. Includes research intensive work exposing the student to computer science research methodology and resulting in a major document or project. Prerequisite: Computer Science 201. Instructor: Staff. One course.

391. Independent Study. Individual work in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper, project, or written report covering a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper, project, or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


408S. Delivering Software: From Concept to Client. R, STS, W Development of software in teams that benefits a real-world client in the client's area of expertise. Meet client demands and needs including technology management skills such as feasibility assessment, project planning, project implementation, usability testing, documentation, marketing, and roll-out. Create significant software product, understand software development cycle at scale, create written work to accompany software. Prerequisite: Computer Science 308 or similar team programming experience. Instructor: Duvall and Lucic. One course.

430. Algorithmic Paradigms. QS Applications include dynamic data structures, graph algorithms, randomized algorithms. Intractability and NP completeness. Prerequisite: Computer Science 100 and 102. Instructor: Agarwal, Munagala, or Reif. One course.

434. Topology with Applications. QS One course. C-L: see Mathematics 412.

445. Introduction to High Dimensional Data Analysis. QS One course. C-L: see Mathematics 465.

510. Operating Systems. QS Fundamental principles of operating system design applied to state-of-the-art computing environments (multiprocessors and distributed systems) including process management (coscheduling and load balancing), shared memory management (data migration and consistency), and distributed file systems. Instructor: Chase, Cox, or Maggs. One course.

512. Distributed Information Systems. Principles and techniques for sharing information reliably and efficiently in computer networks, ranging from high-speed clusters to global-scale networks (e.g., the Internet). Topics include advanced distributed file systems, distributed programming environments, replication, caching and consistency, transactional concurrency control, reliable update and recovery, and issues of scale and security for Internet information services. Prerequisites: Computer Science 210 or 510 and Computer Science 514, or consent of the instructor. Instructor: Chase, Cox, or Maggs. One course.

515. **Wireless Networking and Mobile Computing.** One course. C-L: see Electrical and Computer Engineering 556

516. **Data-Intensive Computing Systems.** QS, R Data-Intensive Computing Systems. Principles and techniques for making intelligent use of the massive amounts of data being generated in commerce, industry, science, and society. Topics include indexing, query processing, and optimization in large databases, data mining and warehousing, new abstractions and algorithms for parallel and distributed data processing, fault-tolerant and self-tuning data management for cloud computing, and information retrieval and extraction for the Web. Prerequisites: Computer Science 316 or an introductory database course or consent of instructor. Instructor: Babu or J. Yang. One course.


524. **Nonlinear Dynamics.** QS, R One course. C-L: see Physics 513

527. **Introduction to Computer Vision.** Image formation and analysis; feature computation and tracking; image motion analysis; stereo vision; image, object, and activity recognition and retrieval. Prerequisites: Mathematics 221 or 216; Mathematics 230 or Statistical Science 230; Computer Science 101. Instructor: Tomasi. One course.

528. **Introduction to Computational Science.** QS Introduction to scientific computing and its applications to facilitate interdisciplinary collaborative research. Brief intro to contemporary high performance computer architectures, basic linear algebra, numerical analysis, programming languages and widely available software packages. Study high performance algorithms in finite elements, fast transforms, molecular dynamics, high dimensional optimization, computational quantum mechanics and visualization. Parallel lab sessions by experts offer further specialization. Prerequisite: programming experience in Fortran or C, calculus, numerical linear algebra or equivalent. Instructor: Staff. One course.


534. **Computational Complexity.** QS Turing machines, undecidability, recursive function theory, complexity measures, reduction and completeness, NP, NP-Completeness, co-NP, beyond NP, relativized complexity, circuit complexity, alternation, polynomial time hierarchy, parallel and randomized computation, algebraic methods in complexity theory, communication complexity. Prerequisite: Computer Science 334 or equivalent. Instructor: Agarwal or Reif. One course.

550. **Advanced Computer Architecture I.** QS, R Fundamental aspects of advanced computer architecture design and analysis. Topics include processor design, pipelining, superscalar, out-of-order execution, caches (memory hierarchies), virtual memory, storage systems, simulation techniques, technology trends and future challenges. Prerequisite: Computer Science 250 or Electrical and Computer Engineering 350 or equivalent. Instructors: Board, Lebeck, or Sorin. One course. C-L: Electrical and Computer Engineering 552

553. **Compiler Construction.** One course. C-L: see Electrical and Computer Engineering 553

554. **Fault-Tolerant and Testable Computer Systems.** One course. C-L: see Electrical and Computer Engineering 554

555. **Probability for Electrical and Computer Engineers.** One course. C-L: see Electrical and Computer Engineering 555; also C-L: Information Science and Information Studies

561. **Computational Sequence Biology.** Introduction to algorithmic and computational issues in analysis of biological sequences: DNA, RNA, and protein. Emphasizes probabilistic approaches and machine learning methods, e.g. Hidden Markov models. Explores applications in genome sequence assembly, protein and DNA homology detection, gene and promoter finding, motif identification, models of regulatory regions, comparative genomics and phylogenetics, RNA structure prediction, post-transcriptional regulation. Prerequisites: basic knowledge algorithmic design (Computer Science 530 or equivalent), probability and statistics (Statistical Science 611 or equiv-
570. Artificial Intelligence. QS Design and analysis of algorithms and representations for artificial intelligence problems. Formal analysis of techniques used for search, planning, decision theory, logic, Bayesian networks, robotics, and machine learning. Prerequisite: Computer Science 201 and Computer Science 330. Instructor: Conitzer or Parr. One course.


579. Statistical Data Mining. QS One course. C-L: see Statistical Science 622

590. Advanced Topics in Computer Science. QS Instructor: Staff. One course.

624. Nanoscale and Molecular Scale Computing. One course. C-L: see Electrical and Computer Engineering 611

630. Randomized Algorithms. QS Models of computation, Las Vegas and Monte Carlo algorithms, linearity of expectation, Markov and Chebyshhev inequalities and their applications, Chernoff bound and its applications, probabilistic methods, expanders, Markov chains and random walk, electric networks and random walks, rapidly mixing Markov chains, randomized data structures, randomized algorithms for graph problems, randomized geometric algorithms, number theoretic algorithms, RSA cryptosystem, derandomization. Prerequisite: Computer Science 530. Instructor: Agarwal, Munagala, or Reif. One course.

632. Approximation Algorithms. QS Cover traditional approximation algorithms with combinatorial and linear programming techniques; extended survey of cut problems and metric embeddings; embeddings, dimensionality reduction, locality sensitive hashing, and game theory. Instructor: Agarwal or Munagala. One course.

634. Geometric Algorithms. QS Models of computation and lower-bound techniques; storing and manipulating orthogonal objects; orthogonal and simplex range searching, convex hulls, planar point location, proximity problems, arrangements, linear programming and parametric search technique, probabilistic and incremental algorithms. Prerequisite: Computer Science 530 or equivalent. Instructor: Agarwal. One course. C-L: Computational Biology and Bioinformatics 634

636. Computational Topology. QS Introduction to topology via graphs; facts about curves and surfaces; representing triangulations; discussion of simplicial complexes; emphasis on Delaunay and alpha complexes and on homology groups; computational via matrix reduction; Morse functions; PL functions; Reeb graphs; development of persistent homology; proof of stability; applications and extensions. Prerequisite: Computer Science 530. Instructor: Harer. One course. C-L: Mathematics 619

650. Advanced Computer Architecture II. QS Parallel computer architecture design and evaluation. Design topics include parallel programming, message passing, shared memory, cache coherence, memory consistency models, symmetric multiprocessors, distributed shared memory, interconnection networks, and synchronization. Evaluation topics include modeling, simulation, and benchmarking. Prerequisite: Computer Science 550 or Electrical and Computer Engineering 552 or consent of instructor. Instructor: Lebeck or Sorin. One course. C-L: Electrical and Computer Engineering 652

662. Computational Systems Biology. NS, QS, R Provides a systematic introduction to algorithmic and computational issues present in the analysis of biological systems. Emphasizes probabilistic approaches and machine learning methods. Explores modeling basic biological processes (e.g., transcription, splicing, localization and transport, translation, replication, cell cycle, protein complexes, evolution) from a systems biology perspective. Lectures and discussions of primary literature. Prerequisites: basic knowledge of algorithm design (Computer Science 530 or equivalent), probability and statistics (Statistical Science 611 or equivalent), molecular biology (Biology 201L or equivalent), and computer programming. Alternatively, consent of instructor. Instructor: Hartemink. One course. C-L: Computational Biology and Bioinformatics 662, Genome Sciences and Policy

663. Algorithms in Structural Biology and Biophysics. NS, QS, R Introduction to algorithmic and computational issues in structural molecular biology and molecular biophysics. Emphasizes geometric algorithms, provable approximation algorithms, computational biophysics, molecular interactions, computational structural biology,
proteomics, rational drug design, and protein design. Explores computational methods for discovering new phar-
aceuticals, NMR and X-ray data, and protein-ligand docking. Prerequisites: students should have some familiarity
with algorithms, and a basic knowledge of molecular biology. Alternatively, consent of instructor. Instructor:
Donald. One course. C-L: Computational Biology and Bioinformatics 663

664. Computational Structural Biology. QS, R Introduction to theory and computation of macromolecular
structure. Principles of biopolymer structure: computer representations and database search; molecular dynamics
and Monte Carlo simulation; statistical mechanics of protein folding; RNA and protein structure prediction (secondary
structure, threading, homology modeling); computer-aided drug design; proteomics; statistical tools (neural
networks, HMMs, SVMs). Prerequisites: basic knowledge algorithmic design (Computational Biology and Bioinfor-
matics 230 or equivalent), probability and statistics (Statistical Science 611 and 721 or equivalent), molecular
biology (Biology 118 or equivalent), and computer programming. Alternatively, consent of instructor. Instructor:
Schmidler. One course. C-L: Computational Biology and Bioinformatics 550, Statistical Science 614

673S. Computer Models and the Treatment of Psychiatric Disorders. NS, QS One course. C-L: see Psychology
673S; also C-L: Information Science and Information Studies 673S, Pharmacology and Cancer Biology 673S

The Major

For the AB Degree

Prerequisites. Computer Science 101, Mathematics 111L, 112L or equivalents

Major Requirements. Computer Science 201, 230, 250, 210, and 330. Three 200-level and above electives: one
in computer science (not an independent study course) and two in either computer science (independent study
possible), electrical and computer engineering, mathematics, statistics, or a related area approved by the director of
undergraduate studies.

For the previous curriculums, see http://www.cs.duke.edu/education/undergrad/ba_pre2012.

For the BS Degree

Prerequisites. Computer Science 101, Mathematics 111L, 112L, or equivalents

Major Requirements. Computer Science 201, 230, 250, 210, and 330. Three 200- or 500-level electives in
computer science (not independent study courses). Two courses at the 200-level and above in Computer Science
(including independent study), electrical and computer engineering, mathematics, statistical science, or a related area
approved by the director of undergraduate studies. Mathematics 230 or a statistics course at or above 111. Also one of
Mathematics 202, 216, 221, or 222.

For the previous curriculums, see http://www.cs.duke.edu/education/undergrad/ba_pre2012.

Departmental Graduation with Distinction

A program for Graduation with Distinction in computer science is available. Candidates for a degree with
Distinction, High Distinction, or Highest Distinction must apply to the director of undergraduate studies and meet
the following criteria. Candidates for Graduation with Distinction must have a grade point average of 3.0 or higher
in computer science courses numbered above 200. Candidates must complete a substantial project, representing at
least one year's work and including at least one independent study, under the guidance of a faculty member in
computer science who oversees and endorses the project. The project should represent a significant intellectual
endeavor including the writing of a report. A presentation of the project must be made to a committee of three
faculty members, two of whom will normally be from computer science although for interdisciplinary projects this
restriction can be relaxed. Graduation with High or Highest Distinction is awarded at the discretion of the faculty
committee in consultation with the director of undergraduate studies. Graduation with High or Highest Distinction
is typically awarded for projects that are of publishable quality. In addition, candidates for a degree with high or
highest distinction should have a grade point average of 3.5 or higher in those computer science courses related to the
area of research; these courses must include at least one course at the 500 level.

The Minor

Computer Science

Five courses in computer science (including the prerequisite), at least four of which must be at the 200 level or
above.
Prerequisites. Computer Science 101, or equivalent

Requirements. Computer Science 201 and 250. All 200-level and above courses count in meeting the minor requirements

Computational Biology and Bioinformatics

Prerequisites. Mathematics 111L, 112L, and 100-level statistics course

Requirements. Five courses at the 200 level or above (not including the prerequisites); three from computer science and two from biology, as follows: Computer Science 201, Computer Science 260. One course from Computer Science 220, 224, 270, or any 500-level course, or as approved by the director of undergraduate studies in computer science, e.g., an independent study in an area related to bioinformatics or computational biology. Biology 201L; one biology course from the following: 220, 251, 214L, 414LS, 556, 413L or as approved by the director of undergraduate studies in computer science in consultation with the director of undergraduate studies in biology.

Cultural Anthropology

Professor Piot, Chair; Professor Silverblatt, Director of Undergraduate Studies; Professors Allison, Baker, Ho, Nelson, O’Barr, Piot, Silverblatt, and Starn; Associate Professors Litzinger, Meintjes, and Stein; Assistant Professors Makhulu, McIntosh, and Solomon; Professor of the Practice Thompson; Professors Emeriti Apte, Ewing, Friedl, and Quinn; Secondary Appointments: Professors Andrews (Slavic languages), Mignolo (romance studies), and Reddy (history); Associate Professor Tetel (English) and Wilson (Women’s Studies); Assistant Professors Holsey (African and African American Studies)

A major or minor is available in this department.

Cultural anthropology is a comparative discipline that studies the world’s peoples and cultures. It extends perspectives developed from anthropology’s initial encounter with the “primitive” world to studies of complex societies including rural and urban segments of the global South and contemporary industrial countries, with an emphasis on power, identity, and social justice.

Cultural anthropologists at Duke concentrate on political economy, culture, ideology, history, mass media, and discourse, and the relations among them. These concerns lead them to such specific research and teaching interests as: colonialism and state formation; the politics of representation and interpretation; histories of race and racism; popular culture, music, film, and advertising; the bases of ideological persuasion and resistance; gender ideology; language use in institutional contexts; class formation and political consciousness; war, peace-making, and human rights, and the creation and use of ethnic and national identities. The department also offers courses that introduce the various traditional subfields and methods of cultural anthropology, and other, integrative courses on world areas. Faculty draw on their fieldwork in various geographic areas, with special strengths in Africa and the African diaspora, Latin America, Middle East, Japan, China, and the United States. Students without prerequisites for a course may ask the instructor for admission.

Courses in Cultural Anthropology (CULANTH)

80S. Studies in Special Topics. SS Opportunities for first-year students to engage with a specific issue in cultural anthropology, with emphasis on student writing. Topics vary each semester offered. Instructor: Staff. One course.

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. Introduction to Cultural Anthropology. CCI, CZ, SS Theoretical approaches to analyzing cultural beliefs and practices cross-culturally; application of specific approaches to case material from present and/or past cultures. Instructor: Staff. One course. C-L: International Comparative Studies 101

101D. Introduction to Cultural Anthropology. CCI, CZ, SS Same as Cultural Anthropology 101 except instruction is provided in lecture and discussion group each week. Instructor: Staff. One course. C-L: International Comparative Studies 101D, International Comparative Studies

105. Introduction to African Studies (DS3 or DS4). ALP, CCI, CZ One course. C-L: see African and African American Studies 103; also C-L: History 129, Political Science 108, International Comparative Studies 110

120. Alcohol and Culture. CCI, EI, SS Examination of cultural and social dimensions of alcohol use cross-culturally, with special attention to ethical issues surrounding control of alcohol use, frameworks for judging "abuse," and the political and social agendas of researchers and caregivers in a range of societies. Local field research (on and off campus). Instructor: Staff. One course.

130. Anthropology and Film. SS The study of feature films and documentaries on issues of colonialism, imperialism, war and peace, and cultural interaction. An introduction to critical film theory and film production in non-Western countries. Instructor: Allison or Litzinger. One course. C-L: International Comparative Studies 104, Visual and Media Studies 130, Documentary Studies, Arts of the Moving Image

130D. Anthropology and Film. SS Same as Cultural Anthropology 130 except instruction is provided in lecture and discussion group each week. Instructor: Litzinger. One course. C-L: Arts of the Moving Image

131. World Music: Aesthetic and Anthropological Approaches. ALP, CCI, CZ One course. C-L: see Music 130; also C-L: International Comparative Studies, Documentary Studies

133S. African Mbira Music: An Experiential Learning Class. ALP, CCI, CZ One course. C-L: see Music 133S; also C-L: African and African American Studies 109S

137. Music, Social Life, and Scenes. ALP, CCI, CZ, R, W One course. C-L: see Music 137; also C-L: Documentary Studies

170. Advertising and Society: Global Perspective (DS4). CCI, SS History and development of commercial advertising; advertising as a reflector and/or creator of social and cultural values; advertisements as cultural myths; effects on children, women, and ethnic minorities; advertising and language; relation to political and economic structure, and advertising and world culture. Emphasis on American society complemented by case studies of advertising in Canada, Japan, Mexico, Russia, Western Europe, and selected other countries. Instructor: O'Barr. One course. C-L: Sociology 160, Linguistics 170, Visual and Media Studies 170, International Comparative Studies 169, Women's Studies, Canadian Studies, Arts of the Moving Image, Markets and Management Studies, Policy Journalism and Media

170D. Advertising and Society: Global Perspective (DS4). CCI, SS Same as Cultural Anthropology 170 except instruction is provided in lecture and discussion group each week. Instructor: O'Barr. One course. C-L: Sociology 160D, Linguistics 170D, Visual and Media Studies 170D, Markets and Management Studies


190FS. Special Topics in Focus. Selected topics vary each semester. Open only to students in the Focus Program. Instructor consent required. Instructor: Staff. One course.

195. Comparative Approaches to Global Issues. CCI, CZ, SS, W One course. C-L: see International Comparative Studies 195; also C-L: History 103, Political Science 110, Sociology 195, Women's Studies 195, Marxism and Society

201. Introduction to Linguistics. CCI, SS One course. C-L: see Linguistics 201; also C-L: International Comparative Studies

202. Languages of the World. CCI, SS One course. C-L: see Linguistics 202; also C-L: Russian 362, International Comparative Studies 210

203. Marxism and Society. CZ, EI, SS One course. C-L: see Literature 380; also C-L: Education 239, Sociology 339, Political Science 371, International Comparative Studies, Marxism and Society

204. Self and Society (S). CCI, SS The nature of human social identities, the contexts in which they are shaped, and the processes by which they change. May include an optional service-learning component. Instructor: Staff. One course. C-L: Psychology 224, International Comparative Studies 234, Women's Studies

205. The Law and Language. CCI, CZ, EI, SS One course. C-L: see Linguistics 205

206. Anthropology of Law. CCI, EI, SS Comparative approach to jurisprudence and legal practice, dispute resolution, law-making institutions and processes, and the relation of law to politics, culture, and values. Instructor: O'Barr. One course. C-L: International Comparative Studies 238
207. Anthropology of Sports. CCI, CZ, SS The role of sports in different cultures in the contemporary world. Dynamics of race, gender, sexuality, fantasy and desire, mythmaking and the culture of celebrity, commercial and mass media. Instructor: Starn. One course.

208. The Anthropology of Race. CCI, EI, SS Human variation and the historical development of concepts of race; science and scientific racism; folk-concepts of race; and the political and economic causes of racism; ethics of racism. Instructor: Staff. One course. C-L: African and African American Studies 251, International Comparative Studies 239

208FS. The Anthropology of Race. CCI, EI, SS Same as Cultural Anthropology 208 but taught as part of the FOCUS program. Instructor: Baker. One course.

209. Sport As Performance. ALP, CCI, EI, SS One course. C-L: see Theater Studies 201; also C-L: Sociology 201, International Comparative Studies 247

210. Global Culture. CCI, SS Globalization examined through some of its dominant cultural forms—the marketing of pop music, the globalization of TV culture, the spread of markets and commodities, the export of political ideologies. Special focus given to the way in which these forms both affect and are transformed by local cultures in Africa, South Asia, East Asia, and Latin America. Instructor: Allison, Ho, Litzinger, Piot, or Starn. One course. C-L: Visual and Media Studies 247, Markets and Management Studies

212. Language and Society. CCI, SS One course. C-L: see English 395; also C-L: Linguistics 451, Slavic and Eurasian Studies 385, International Comparative Studies 395

213. Cyborgs. CCI, SS, STS, W Philosophical, cross-cultural, historical, mass media, and political assumptions about what it means to be human that serve as the foundation for technological development. Instructor: Nelson. One course. C-L: Women's Studies 215, International Comparative Studies 241, Policy Journalism and Media


215S. Indian Civilization. CCI, CZ, EI, SS, W One course. C-L: see History 219S; also C-L: Asian & Middle Eastern Studies 257S

216. Global Migration and Ethics. EI, SS Examine current scholarship on anthropology of global migration, and key ethical predicaments at center of contemporary forms of human mobility. Consider particularities of migratory experiences, and different types of local and global moral economies that emerge under such conditions. Identify political questions that arise when human compassion runs into conflict with desire to preserve cultural integrity of one's national identity. Explore these topics and engage an anthropological examination of current debates drawing on ethnographic texts, legal and policy materials, biography, literature and film. Instructor: McIntosh. One course. C-L: Study of Ethics 262

216S. Global Migration and Ethics. EI, SS Same as Cultural Anthropology 216 except in seminar format. Instructor: McIntosh. One course. C-L: Study of Ethics 262S, International Comparative Studies 244S


218S. Anthropology and Global Health. EI, SS, STS One course. C-L: see Global Health 220S

221SL. Capoeira: Practice and Culture. ALP, CCI, SS, W One course. C-L: see Dance 235SL; also C-L: African and African American Studies 221SL, Romance Studies 235SL

222S. Sound in Social Life. ALP, CCI, STS Considers sonic environments as socially cultivated and sound production (recording, processing, mixing) and listening as cultural practices, shaped by acoustic space. Includes study of music, recorded soundscapes (films, games, installations, field recordings), built and ecological environments (rainforests, cities, institutions), and the history and use of sound technology (sound production, reproduction, reception, acoustic materials). Instructor: Meinjtes. One course. C-L: Music 239S, International Comparative Studies 246S

225. Magical Modernities. CCI, SS One course. C-L: see African and African American Studies 356

227. Anthropology and Psychology (C, P). CCI, SS Cross-cultural approaches to the psyche, including applications of social psychology, psychoanalysis, and trans-cultural psychiatry to anthropological questions such as culturally expressed psychic conflicts and pathologies, gender and sexuality, communication, rationality, affect, and motivations. Instructor: Staff. One course. C-L: Psychology 227

230D. The History of Emotions. CCI, CZ, R, W One course. C-L: see History 264D

231D. The History of Romantic Love. ALP, CCI, CZ, EI, W One course. C-L: see History 263D; also C-L: International Comparative Studies 262D

232. Gender and Language. CCI, R, SS One course. C-L: see Russian 364; also C-L: International Comparative Studies 207, Women's Studies 232, Linguistics 364

234S. Anthropology and Education. CCI, EI, SS One course. C-L: see Education 234S


236S. Farmworkers in North Carolina: Roots of Poverty, Roots of Change. CCI, SS One course. C-L: see Documentary Studies 332S; also C-L: Latino/a Studies in the Global South

237. Psychological Anthropology (C, D, S). CCI, SS Examines how culture is learned and expressed, and comes to be more or less compelling for individuals and more or less widely shared by them. Applies theory from psychoanalysis, child development studies, cognitive science, and psychological anthropology to cross-cultural ethnographic evidence. Considers, from a comparative perspective, topics including child rearing, the self and personality, emotion and motivation, gender and sexuality, language and thought, individualism versus collectivism, human universals and cultural variation. Prerequisites: none. Instructor: Quinn. One course. C-L: Psychology 260

238S. Politics of Food: Land, Labor, Health, and Economics. ALP, CCI, EI, R One course. C-L: see Documentary Studies 341S; also C-L: Public Policy Studies 380, International Comparative Studies 342S


240S. The Anthropology of Hinduism: From Encounter to Engagement. ALP, CCI, CZ, R One course. C-L: see Religion 310S; also C-L: Documentary Studies, Ethics Courses Offered Through Other Departments

241. Culture and Politics in China. CCI, CZ, SS Introduction to the study of contemporary China, including Taiwan and the Chinese Diaspora. Key themes include family and kinship, sex and gender, regional diversity, ethnic minority relations, the politics of modernity, revolution, and reform, and the representation of Chinese identity through popular media, film, and travel. Instructor: Litzinger. One course. C-L: Asian & Middle Eastern Studies 231, International Comparative Studies, Marxism and Society


243. Culture and Politics in Latin America. CCI, CZ, EI, SS Key themes in Latin American societies, including art, literature, history, violence and human rights, economic development, and rebellion and revolution. Instructor: Nelson or Starn. One course. C-L: International Comparative Studies 325, Documentary Studies, Marxism and Society

245. Culture and Politics of South Asia. CCI, CZ, SS Explores the politics, history, cultures, art, and literature of societies and nation-states across the South Asian continent. Focus on issues such as urbanization; internal/external migration; linguistic, religious, and ethnic identities and conflicts; the impact of colonialism, development, and globalization. Instructor: Staff. One course. C-L: Asian & Middle Eastern Studies 259

246S. Civil/Human Rights Activism: In the Spirit of Pauli Murray. ALP, CCI, CZ, R One course. C-L: see Documentary Studies 347S; also C-L: African and African American Studies 236S
247. Indigenous Medicine and Global Health. CCI, SS One course. C-L: see Global Health 301; also C-L: International Comparative Studies 398


254. Cultures and Politics of the América Borderlands. CCI, EI, SS, STS Américas borderlands refers to the intersection of North and Latin America through the movement of people, products, ideas, and technologies with focus on culture and agri-culture, including the production of food and pharmaceuticals-legal and illegal; explores dirt as concept of matter out of place and people without place and how sustenance can become poison; examines histories of Latin American bodies as "terrain" for US-based scientific experiments. Instructor: Nelson. One course. C-L: Latino/a Studies in the Global South 254, Latino/a Studies in the Global South.

255. World of Korean Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 471; also C-L: Literature 212, Arts of the Moving Image 256, Visual and Media Studies 234.

256. Islamic Civilization I. CCI, CZ, EI One course. C-L: see Religion 375; also C-L: History 210, Medieval and Renaissance Studies 268, Asian & Middle Eastern Studies 327, Study of Ethics, Information Science and Information Studies, Islamic Studies.

257. Islamic Civilization II. CCI, CZ, EI One course. C-L: see Religion 376; also C-L: History 211, Medieval and Renaissance Studies 269, International Comparative Studies, Study of Ethics, Islamic Studies.

258S. OUR CULINARY CULTURES. ALP, CCI, W One course. C-L: see Documentary Studies 344S; also C-L: International Comparative Studies 344S.


259S. Around the Bloc: Cold War Culture in the USSR and Eastern Europe. CCI, CZ, EI, SS One course. C-L: see Slavic and Eurasian Studies 240S; also C-L: Literature 241S, Arts of the Moving Image 240S.


263. Black Europe: Race, Ethnicity and Diaspora in Contemporary Europe. CCI, CZ, EI, SS Exploration of the historical and contemporary presence and impact of the African diaspora throughout Europe. Course engages an anthropological examination of ethnographic texts, including examples of biography, film and visual culture. Instructor: McIntosh. One course. C-L: African and African American Studies 263.

265. Culture and Politics in Contemporary Europe: Citizenship, Migration, and National Belonging. CCI, CZ, EI, SS Critically examine current scholarship on the anthropology of Europe, and social and political theories concerning perplexities of identities, citizenship, nationalism, and national identity formation, with focus on related ethical questions and dilemmas. Instructor: McIntosh. One course.


271. Gender and Culture. CCI, SS Explanation of differing beliefs about gender cross-culturally, by comparison with dominant themes about gender in our own cultural history and contemporary ideological struggles. Instructor: Allison or Silverblatt. One course. C-L: International Comparative Studies 203, Women's Studies 217, Women's Studies, Study of Sexualities.
272S. Advertising and Masculinity. CCI, SS Gender representations in advertising, focusing on masculinity. Consideration also given to representations of femininity in advertising, to the nature and complexity of gender, and to the history and place of advertising in society and culture. Case materials drawn primarily from contemporary American advertising, with examples from other time periods and other national advertising traditions. Consent of instructor required. Instructor: O’Barr. One course. C-L: International Comparative Studies 273S, Women’s Studies, Markets and Management Studies, Policy Journalism and Media

274D. Global France. ALP, CCI, CZ, EI One course. C-L: see French 480D; also C-L: History 274D, International Comparative Studies 480D


278. Sex/Gender - Nature/Nurture: Intersections of Biology and Society. NS, STS One course. C-L: see Women’s Studies 278; also C-L: Neuroscience 278, Psychology 226, Study of Sexualities 278

290. Current Issues in Anthropology. Selected topics in methodology, theory, or area. Instructor: Staff. One course.


290S. Current Issues in Anthropology. Same as Cultural Anthropology 290 except instruction is provided in seminar format. Instructor: Staff. One course.

291. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic product. With consent of instructor and director of undergraduate studies. One course. Instructor: Staff. One course.

293. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. With consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

301. Theoretical Foundations of Cultural Anthropology. CCI, SS Major schools and theories of cultural anthropology. Open to seniors and juniors. Sophomores by permission only. Instructor: Staff. One course. C-L: International Comparative Studies, Marxism and Society

302. Fieldwork Methods: Cultural Analysis and Interpretation. EI, R, SS, W Anthropology as a discipline (a field of study) and the site where anthropologists work: the field. Combines theories of anthropological fieldwork methods with practice, including participation, observation, and interviews. Students undertake original research in a local fieldsite of their choice and produce their own mini-ethnography. This requirement may also be satisfied by taking Cultural Anthropology 290A Duke in Ghana Anthropological Field Research. Instructor: Staff. One course. C-L: Global Health


308T. BorderWork(s): At Home/On the Wall: between Belfast and Durham. CCI, CZ, R, W BorderWork(s)lab course. Working in teams, students research specific questions related to walls, human rights and the ways communities shape the divisions in their lives; we start by looking at walls and partitions around us in Durham and in places like Belfast, Northern Ireland, then at divisions in other contemporary societies like Israel and the Occupied Territories, India/Pakistan, and North Africa. Instructor: Kirk. One course. C-L: International Comparative Studies 395T

310S. Conflict Analysis in Africa (case studies). CCI, CZ, SS One course. C-L: see African and African American Studies 310S; also C-L: Public Policy Studies 218S

314. Representing Slavery. ALP, CCI, EI, SS One course. C-L: see African and African American Studies 314; also C-L: Visual and Media Studies 326
322. The Modern Caribbean after Emancipation. CCI, CZ One course. C-L: see History 321; also C-L: African and African American Studies 240, Romance Studies 321, International Comparative Studies 319


328S. Doing Good: Anthropological Perspectives on Development. CCI, EI, R, SS Course will move through the evaluation of the impact of development projects to consider the role of development as a global phenomenon that affects both what it means to be American and how the ‘other’ is constructed. Instructor: Staff. One course. C-L: International Comparative Studies 366S, Public Policy Studies 224S

333S. The Wire. CCI, EI, SS One course. C-L: see African and African American Studies 333S

334. Traffic in Women: Cultural Perspectives on Prostitution in Modern China. ALP, CCI, SS One course. C-L: see Asian & Middle Eastern Studies 333; also C-L: Women's Studies 233, Study of Sexualities 233, Arts of the Moving Image 270

335. The History of Hip-Hop. ALP, CCI One course. C-L: see African and African American Studies 335; also C-L: Music 335, Visual and Media Studies 337

340. Anthropology and Public Policy. CZ, EI, SS Explore legacy of anthropological policy research to get a sense of its conflicts and contributions, since the end of the 19th century to the present. Survey anthropological inquiry into development, migration, global agriculture, indigenous peoples’ advocacy, public health, gender, human rights, and bioethics. Ethnographically examine how policy makers construct policy problems to be solved in particular ways, and discuss and critique anthropological approaches to understanding these problems. Instructor: McIntosh. One course. C-L: Public Policy Studies 226

341. Survival in Precarious Times. CCI, CZ, EI, SS Examines contemporary conditions (economic, environmental, militaristic, social) of risk in the world today, the differential effects this has on segments of the population, and various strategies people adopt to survive. Explores these issues in terms of real-life subjects—migration, homelessness, addiction, wartime, cancer, joblessness in cross-cultural comparison: W. Africa, Japan, the U.S., India, China. Instructor: Allison. One course.

342. Displacements: Migration and Human Trafficking. ALP, CCI, EI, R, SS One course. C-L: see African and African American Studies 343; also C-L: Latin American Studies 343, Sociology 343


344. Troubling Pasts: Slavery, Genocide, and Terror. ALP, CCI, EI, SS One course. C-L: see African and African American Studies 344; also C-L: International Comparative Studies 345

364S. Minor Japan. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 469S

365S. The World of Japanese Pop Culture. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 365S

366S. Trauma and Space in Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 410S; also C-L: Arts of the Moving Image 410S, International Comparative Studies 410S


368. Visualizing the Caribbean. ALP, CCI, R, SS One course. C-L: see African and African American Studies 321; also C-L: International Comparative Studies 318, Latin American Studies 321

385S. Cultures of the African Diaspora. CCI, CZ, SS One course. C-L: see African and African American Studies 385S

393A-1. Research Independent Study on Contemporary China. R Research and field studies culminating in a paper approved and supervised by the resident director of the Duke in China Program. Includes field trips on cultural and societal changes in contemporary China. Offered only in the Duke in China Program. Instructor: Staff. One course.

395AS. Environment, Health, and Development in China. CCI, EI, SS, STS Critical overview and investigation of the culture, politics, and political economy of environment, health, and development issues in contemporary China, with special attention to case studies exploring a range of issues from public health panics, HIV and AIDS, sex work, migrant workers, the Beijing Olympics, water politics, earthquake relief, and environmental protest. Includes readings across disciplines, and engagement with the work of government, academic, multilateral and nongovernmental groups. Instructor consent required. Course taught in China as part of the Global Study Abroad Program. Instructor: Litzinger. One course. C-L: Global Health 383AS, Political Science 299SA, Study of Ethics

396AS. Health Policy in Transition: Challenges for China. CCI, CZ, EI, SS, STS Critical introduction to the dynamics and challenges of health policy in China, from the early twentieth century to the present, with a particular focus on the reform period. Topics to be addressed: health care and economic development, state responsibility and welfare systems, privatization, and disparities in access to health services; history of state policy on regional health planning, community health services, rural health provisions in poverty areas, and the developments in public health infrastructure urban and rural settings. Instructor consent required. Course taught in China as part of the Global Study Abroad Program. Instructor: Guo and Litzinger. One course. C-L: Global Health

397S. Language in Immigrant America. ALP, CCI, R One course. C-L: see English 396S; also C-L: Linguistics 396S, Slavic and Eurasian Studies 396S, International Comparative Studies 396S

399. Global Russia. CCI, CZ, EI, SS One course. C-L: see Russian 399; also C-L: Public Policy Studies 223, International Comparative Studies 399

403S. Politics and Obligations of Memory. CCI, CZ, EI, SS Explores political contexts, and often competing visions, surrounding construction and reproduction of public memory. Asks how sites of memory, presenting an image of the past, express understandings, desires, and conflicts of the present. Particular focus on how times of crisis and trauma are commemorated, challenged, or hidden. Open only to juniors and seniors. Instructor: Silverblatt. One course. C-L: History 403S, International Comparative Studies 403S

405. Religion and Social Transformation in South Asia. CCI, EI, SS Considers the making of religious identity in colonial and postcolonial South Asia and contemporary debates over secularism, conversion, and citizenship. Some key issues: the relationship between religious identity and state formation; the role of religion in the modern public sphere; the relationship between religious community and democratic participation. One course. C-L: Religion 225, Islamic Studies


416S. Capstone Seminar: Imperialism and Islamism. CZ, R, SS One course. C-L: see History 453S; also C-L: International Comparative Studies 453S, Islamic Studies

417S. The Middle East in Popular Culture. CCI, CZ, SS Popular culture in the Middle East and images of the Middle East in United States' popular culture, covering a variety of cultural forms, including film, music, and comic books. How cultural forms relate to political and historical processes. Wars and political conflicts; gender, race, sexuality, and ethnicity. Instructor: Stein. One course. C-L: Asian & Middle Eastern Studies 215S, Islamic Studies

419S. Global Environmentalism and the Politics of Nature. CCI, CZ, SS, STS Exploration of several themes: how local, national, and transnational organizations manage the environment, discuss it, study it, protect and defend it; who speaks for nature and to what ends; the differences between capitalist and socialist approaches to the environment; how relations among natures, nations, social movements, individuals, and institutions have changed over time. Case studies from Africa, East and Southeast Asia, India, Latin America, and the United States; study of

422. Myth, Ritual, Symbol. CCI, CZ, SS, W Cross cultural examination of roles of myths, rituals, and symbols in meaning-making, creation of identity, reproduction of cultural forms and challenges to the construction of "normal." Draws on ethnography, classical anthropological theory, film and participant-observation. Explores functionalist, psychoanalytic, structuralist, and feminist modes of analysis. Culture areas include Ndembu of Zambia, Maya of Guatemala, Turkish village life, Nazi Germany, and present-day United States. Instructor: Nelson. One course.

423. Sex and Money. CCI, SS Sexual practices that involve transactions of money in different cultural and historical settings, including "regular" marriage practices that involve exchanges of money and goods as well as extramarital practices where one party is selling bodily acts. Examination of the ethics and politics of these exchanges questioning who benefits from them (and who not) and how to also assess other bodily transactions including prostitution and surrogacy. Reading materials on sexual practices in different cultural contexts (including Tonga, Thailand, Brazil, India, Ghana, China, Japan, Russia, Turkey, Indonesia). Comparisons made in terms of culture, religion, ethical systems, politics, and economy. Instructor: Allison. One course. C-L: Islamic Studies, Marxism and Society


425. Globalization and Anti-Globalization. CCI, CZ, SS The politics and process of globalization in light of the responses, ideologies, and practices of the anti-globalization movement. Focus on the interrelationship between the analysis of globalization and policy formulation on such topics as social justice, labor, migration, poverty, natural resource management, and citizenship. Case studies from the United States, Latin America, South and East Asia, Africa, and Europe. Instructor: Litzinger. One course. C-L: International Comparative Studies 404, Markets and Management Studies

426S. Anthropology of Space. CCI, SS Explores relationship between space and culture; ways in which communities make and negotiate space; space both a locus of control and a tool of resistance, as well as other issues. Interdisciplinary readings include scholarship from anthropology, geography, critical theory, history, and literary studies. Topics include identity formation, globalization, migration, popular culture, race and racism, gender and sexuality with attention to the ways that space and place intersect with these issues. Instructor: Stein. One course. C-L: Literature 235S, Women's Studies 280S, Islamic Studies

427S. The Invention of Ethnography. CCI, SS Focus on Bronislaw Malinowski and his role in the invention of the ethnographic method through his fieldwork in the Trobriand Islands in the early decades of the 20th century. Malinowski's publications examined in the light of the tradition of ethnography they spawned. Malinowski's biography, field notes, and diaries will be considered as will more recent criticisms of Malinowski and the ethnographic method itself. Instructor: O'Barr. One course.

429. Gender and Sexuality in Latin America. CCI, CZ, SS Gender and sexuality as strands within complex fabrics of identification. Anthropological case studies, including ethnography, film, and theoretical analyses, drawn from Latin America; the possibility of specific gender formations in that geographical region. Relations among men, women, "cochones," "machos," "virgenes," "Malinches," "mestizos," "mujeres Mayas," "travestis," revolutionaries, gringos and gringas, throughout the whole continent of the Americas. How gender and sexuality affect and are affected by other forms of identification such as race and ethnicity, class, colonialism, nationalism, and globalization. The role of stereotypes. Instructor: Nelson. One course. C-L: Women's Studies 429, International Comparative Studies 426, Latin American Studies, Marxism and Society, Study of Sexualities

431. Diasporic South Asia. CCI, SS Explores histories of migration from South Asia and the cultural politics of identity and rights in a variety of host societies including, Malaysia, South Africa, Fiji, Trinidad, Uganda, United Kingdom, and the United States. Instructor: Staff.

431S. Global Tibet. CCI, CZ, EI, SS Exploration of Tibet in regional, national, and global perspective, from the nineteenth century to the present; critical appraisal of the Tibet Question, the global image of Tibet as a mystical and utopian Shangri-la; and the geopolitical and socioeconomic dimensions of social movements to know, develop, free,

432S. Gender, Sex and Citizenship. CCI, EI, SS Explore current issues and debates relating to the relationship between gender, sexuality and global flows of people, labor, capital and ideas. Consider feminist analyses of the citizen-subject and foundational questions central to this area of study relationship between cultural representation, queer subjectivities, and sexual citizenship. Examine scholarship on gendered vulnerability and the welfare state; the politics of 'terror', security, and stereotyped masculinities; domestic labor and contemporary slavery; and the controversial debates about the connections between sex tourism, human trafficking and commercial sex work. Prereq: Previous gender studies course or consent of the instructor.Instructor: McIntosh. One course. C-L: Study of Sexualities 432S, Women's Studies 432S, International Comparative Studies 428S

433. The New Middle East. CCI, EI, SS An interdisciplinary approach to the study of the Middle East, focusing on interplay between regional political and cultural processes over the last decade, and ways that global and transnational processes have altered the social and political landscape. Examines culture/politics linkage in the Middle East and Middle Eastern communities in the US and Europe. Draws upon recent scholarship from the fields of anthropology, history, geography and literature and employs a variety of primary documents including graphic novels, literary texts, and human rights reports. Visual and new media will be centrally employed as archives. Instructor: Stein/Gokner. One course. C-L: Asian & Middle Eastern Studies 419, Turkish 433

433S. Childhood in Theory and Practice. CCI, EI, SS Critical examination of childhood as both a social construction and a diversely lived experience linked to notions of race, class, gender and national identity. In addition to examining how they function as objects of moral panics and political projects, we will also approach children as agents of change. We will consider topics such as education, human rights, child labor, consumerism, media, and adoption. Instructor: Staff. One course. C-L: International Comparative Studies 433S

434S. Cultures of New Media. ALP, SS, STS Anthropological look at 'new media' - their varied forms and histories, how they are used and understood, and their meanings and effects within different communities of users. Charts a number of technologies deemed “new” in their day and the social meanings and communities that such technologies generated. Explores new media in domains of art and literature, as well as issues of race, gender, sexuality and how other indices of difference come to bear on new media and its use. Grounded in anthropology, readings will also draw on media studies, visual studies, cultural studies and critical theory, queer and gender theory, history and geography. Instructor: Stein. One course. C-L: Literature 412S, Visual and Media Studies 412S, International Comparative Studies 432S, Asian & Middle Eastern Studies 425S

439. Queer China. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 439; also C-L: Literature 439, Arts of the Moving Image 439, Visual and Media Studies 439, Women's Studies 439

465S. Global Cities. CCI, EI, SS One course. C-L: see African and African American Studies 465S; also C-L: International Comparative Studies 465S, International Comparative Studies

475S. Variation in the African Diaspora. CCI, NS, SS, STS One course. C-L: see African and African American Studies 475S; also C-L: Genome Sciences and Policy 475S

490S. Special Topics. Advanced Special Topics in Cultural Anthropology. Instructor: Staff. One course.

498S. Senior Seminar Distinction Program Sequence. R No credit for Cultural Anthropology 498S without satisfactory completion of Cultural Anthropology 499S. Consent of director of undergraduate studies required. Instructor: Staff. One course.

499S. Senior Seminar Distinction Program Sequence. W Continuation of Cultural Anthropology 498S, and required for credit for 498S. Consent of director of undergraduate studies required. Instructor: Staff. One course.

501S. Anthropology and History. SS Recent scholarship that combines anthropology and history, including culture history, ethnohistory, the study of mentalité, structural history, and cultural biography. The value of the concept of culture to history and the concepts of duration and event for anthropology. Prerequisite: major in history, one of the social sciences, or comparative area studies; or graduate standing. Instructor: Staff. One course. C-L: History 572S, Romance Studies 521S
525S. Culture, Power, History. CCI, SS Debates in cultural theory and anthropology: identity and nationalism, memory and tradition, globalization, and poststructuralist, feminist and postcolonial theory. Some previous coursework in anthropology and or cultural theory recommended. Instructor: Starn and Stein. One course. C-L: International Comparative Studies 525S

530S. Millennial Capitalisms: Global Perspectives. CCI, CZ, R, SS Critical examination of the problematic of capital from the late nineteenth century until the present moment. Anthropological frameworks and related disciplinary approaches to the multiple cultural productions and lived experiences under divergent forms of capitalism in the new millennium. Focus on East Asia. Theories of capitalism, globalization and anti-globalization movements, “imaginaries” and fantasies, nature and the virtual, consumption, and disciplinary practices of the body. Instructors: Allison and Litzinger. One course.


539S. Queer China. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 539S; also C-L: Women's Studies 502S, Literature 539S, Arts of the Moving Image 539S, Visual and Media Studies 539S

540S. Masculinities. CCI, CZ, R, SS How masculinities are constructed, performed and inhabited. Theorization of the masculine subject in sociocultural, political and psychodynamic terms within colonial and modernizing contexts. Issues of gendered citizenship. Role of scholarship and the media in constituting hegemonic, subaltern, ethnic, female, and stigmatized masculinities. Instructor: Staff. One course. C-L: Women's Studies 581S

545S. Transnationalism and Public Culture. CCI, SS Critical examination of issues in transnational studies in anthropology and beyond. Tracking the theories of contemporary scholars of the global, and examining new multisited strategies of method, we explore the emerging ethnographic landscape of the global and the role transnational studies is playing in a revitalized anthropology of the twenty-first century. Instructor: Piot. One course.

555S. Development, Modernity, and Social Movements. CCI, SS Modernization and ideologies of progress and nationalism; social movements, revolution, and political protest in the United States and around the world. Some prior background in cultural anthropology or social theory preferred. Consent of instructor required for undergraduate students. Instructor: Starn. One course.

560S. African Modernities. CCI, SS One course. C-L: see African and African American Studies 645S; also C-L: International Comparative Studies

561S. Africa in a Global Age. CCI, EI, SS Africa's participation in globalization has not simply been a matter of "joining the world economy." Rather, Africa's inclusion has been selective, uneven, and partial. This is quite a different proposition than arguing, as many social theorists, economists, and journalists have suggested that the Continent is somehow structurally irrelevant to the process of globalization. This course responds to this debate by retracing the history of globalization, beginning with the Atlantic trade in human beings and concluding with an account of Africa's place in the global circulation of people, things, ideas, and currencies in early twenty-first century. Instructor: Makhulu. One course. C-L: African and African American Studies 510S, History 561S, Political Science 527S, International Comparative Studies 510S

563S. Nightmare Japan. ALP, CCI, CZ, EI, R One course. C-L: see Asian & Middle Eastern Studies 563S

565. The World of Japanese Pop Culture. ALP, CCI, CZ, R One course. C-L: see Asian & Middle Eastern Studies 565; also C-L: International Comparative Studies

570S. Ethnohistory of Latin America. CCI, CZ, R, SS Analysis of what can be known about nonwestern cultures described in texts written by European colonizers. Focus on native peoples whose lives were transformed by Spanish colonialism, with particular attention to post-Inca Andean Societies. Instructor: Silverblatt. One course. C-L: History 540S, Literature 573S

590. Selected Topics. Special topics in methodology, theory, or area. Instructor: Staff. One course.

590S. Seminar in Selected Topics. Same as Cultural Anthropology 590 except instruction provided in seminar format. Instructor: Staff. One course.
594S. Cultural (Con)Fusions of Asians and Africans. CCI, CZ, SS One course. C-L: see African and African American Studies 594S; also C-L: Latin American Studies 594S, Sociology 594S

605. East Asian Cultural Studies. ALP, CCI, CZ, R One course. C-L: see Asian & Middle Eastern Studies 605; also C-L: Literature 571, International Comparative Studies 605, International Comparative Studies

611. Global Mental Health. CCI, NS, R, SS, STS One course. C-L: see Global Health 660; also C-L: Psychology 611

641S. Citizen and Subject in a Neoliberal Age. CCI, EI, SS One course. C-L: see African and African American Studies 641S; also C-L: Sociology 645S

The Major

Major Requirements. A total of ten courses distributed in the following manner: Cultural Anthropology 101, 301, and 302; six courses at the 100 level or above, including at least one at the 400 level or above; one additional cultural anthropology course at any level. Students must take at least five of their ten courses with instructors whose primary appointment is in the Department of Cultural Anthropology. No more than three courses may be transferred from other institutions or study abroad.

Suggested Work in Related Disciplines. Related courses in other departments are strongly advised. Each student’s advisor will recommend a program of related work to complement the student’s concentration and interests in cultural anthropology.

Departmental Graduation with Distinction

The department offers an intensive and personalized Graduation with Distinction program to qualified seniors, who research and write a senior thesis on a topic of their own choice in close collaboration with members of the cultural anthropology faculty. Admission to the program requires a 3.0 grade point average overall and a 3.3 grade point average in the major, both of which must be maintained to graduation for the student to be eligible for distinction. Qualified juniors will be notified each year by the director of undergraduate studies about their eligibility. To pursue distinction, students must then enroll in the senior seminar, Cultural Anthropology 498S and Cultural Anthropology 499S, in the fall and spring of their senior year, where they will learn about research methods and prepare a thesis. Credit for Cultural Anthropology 498S and Cultural Anthropology 499S is given for a passing grade whether or not the student is awarded distinction. The thesis can be based on original fieldwork on a topic of the student’s choice, archival or library research, or some combination of various anthropological methods. Previous topics have ranged from studies of the influence of feminism in cultural anthropology to causes of revolution in Latin America, patterns of socialization of Mormon youth in Utah, music in the African diaspora (drawing on summer study in Ghana), and the consolidation of Korean-American identity through the 1992 Los Angeles rebellion. The student also forms a supervisory committee for the thesis during the fall of the senior year. Due in April of the senior year, the thesis must be judged of at least B+ quality by the supervisory committee to receive distinction. The student must pass an oral examination on the thesis, which is given on its completion by the supervisory committee, and present their findings to the public. Students who fulfill the above requirements graduate with distinction in cultural anthropology.

A typical sequence would be: select a research topic; take the senior seminar in fall and spring; form a supervisory committee; complete the research and writing by April and submit the final draft to the supervisory committee; schedule the oral defense for some time in early or mid-April; defend the thesis in an oral examination given by the supervisory committee.

The Minor

Requirements. A total of five courses distributed in the following manner: Cultural Anthropology 101; three courses at the 200 level or above; and one additional course at any level (this may include courses taken in the Focus Program).
Dance

Associate Professor of the Practice Shah, Director of the Program; Associate Professor of the Practice Vinesett, Director of Undergraduate Studies; Professor DeFrantz; Professor of the Practice Dickinson; Associate Professor of the Practice of Ballet T. Walters; Associate Professor of the Practice Woods Valdés; Assistant Professor of the Practice J. Walters; Professor of the Practice Emeritus Taliaferro; Associate Professor of the Practice Emeritus Dorrance

A major or a minor is available in this program.

The field of dance includes the practice, creation, observation, and analysis of theatrical, social, and culturally specific dance forms both contemporary and historical. Choreographic and developmental processes and technical disciplines are the foundations that define every dance form. Cultural body behaviors are the movement vocabularies from which dance forms are made. The observation and analysis of dance in its cultural context is central to the study of cultures and a vital aspect of exploration in cross-cultural inquiry. A culture's values are embodied (literally and figuratively) in its dance forms, and for most civilizations of the world, dance is one of the most important expressions of their world-view.

Because dance integrates the physical, creative, emotive, and intellectual spheres, the dance program emphasizes a balanced integration between the creative/performance and the historical/theoretical aspects of dance, and provides a learning environment that challenges the student's intellectual, expressive, and physical capabilities. The aim of the program is to develop students who are sensitive and articulate physical and verbal communicators of the visual art of dance and who are proficient in the analysis of dance in its cultural manifestations.

Courses in technique and performance (partial credit courses) and theory courses (full course credit) are offered. Courses in technique and performance may be repeated for credit. A maximum total of four course credits (made up of partial credit courses) in technique and performance courses may count toward the thirty-four courses required for graduation.

Students are encouraged to enroll in a summer session with the American Dance Festival. One course credit earned at the American Dance Festival may be counted toward the requirements of the major or minor.

Through the Duke in New York Arts Program a student has the opportunity in the fall semester of the junior or senior year to pursue the study of the arts in New York City. Appropriate courses taken at New York University may fulfill a requirement of the major or minor.

Courses in Dance (DANCE)

Courses in Technique and Performance (Half-credit Courses)

110. Modern Dance I. A movement course exploring modern dance through technique, improvisation, and composition. No previous dance experience necessary. Instructor: Dickinson, Khalsa, or staff. Half course.

111. Modern Dance II. Prerequisite: Dance 110 or equivalent. Instructor: Dickinson, Khalsa, Woods Valdés, or staff. Half course.


121. Ballet I. Barre work concentrating on body alignment and correct placement within the ballet vocabulary followed by center adagio and allegro sequences. Prerequisite: a semester of ballet or equivalent. Instructor: T. Walters. Half course.

122. Ballet II. Barre work concentrating on body alignment and correct placement within the ballet vocabulary followed by center adagio and allegro sequences. Prerequisite: Dance 121 or equivalent. Instructor: J. Walters. Half course.

130. African Dance Technique I. Introduction to African dance styles and related rhythmic structures from selected countries such as Guinea, Senegal, Nigeria and Cote d'Ivoire. Taught in the context of their social, occupational, and religious functions. Instructor: A. Vinesett, Johnson, or staff. Half course.

131. Capoeira: Brazilian Dance/Martial Art. Introduction to Capoeira, the dynamic art form that emerged in Brazil during the era of the Atlantic Slave Trade and blends music, ritual, acrobatic movement, and combat. Instructor: Staff. Half course.

132L. African Dance Percussion. Practice in rhythms and techniques of selected West African, Afro-Brazilian and Haitian percussion. Integration of music and dance will be a focal point, experienced through live accompaniment of
African dance. Includes two sessions per week, one with the instructor, and one with the dance class. Instruments include dun-dun, djembe, atabaques, congas and bells. Half course. Instructor: R. Vinesett. Half course. C-L: Music 101L-6


141. Swing Dance. A studio course to learn the "lindy-hop" (jitterbug) and a variety of related steps and partnering including simple lifts. Instructor: Badu. Half course.

142. Hip Hop I. Hip-Hop, an inner-city culture that has created its own art, language, fashion, music and dance styles. This is a beginning level of Hip Hop dance. Using dance as a time-line the course explores the history, development and core elements of hip-hop dance culture. Instructor: Staff. Half course.

143. Hip Hop II. Hip-Hop, an inner-city culture that has created its own art, language, fashion, music and dance styles. This is the second level of Hip Hop dance and requires previous dance experience with the form. Using dance as a time-line the course explores the history, development and core elements of hip-hop dance culture. Instructor: Staff. Half course.

151. Kundalini Yoga. Practice course to experience the components of Kundalini Yoga - breath work (pranayam), movement, postures (asanas, mudras), focus techniques (meditation, drishti), use of sound current (mantra), and relaxation techniques. For a more intensive study of Kundalini Yoga that includes practice, lecture, writing and discussion, see full credit course Dance 357L. Instructor: Khalsa. Half course.


210. Modern Dance III. Increased complexity of movement sequences and greater emphasis on clarity of expression and quality of performance. Prerequisite: Dance 111 or equivalent. Instructor: Dickinson, Khalsa, Woods Valdés, or staff. Half course.

220. Ballet III. Greater complexity of barre and center sequences with increased emphasis on correctness of style and quality of performance. Prerequisite: Dance 122 or equivalent. Instructor: Walters or staff. Half course.


240. Jazz Dance II. Prerequisite: Dance 140 or equivalent. Instructor: Wheeler. Half course.

241. Intermediate/Advanced Tap Dance. Prerequisite: previous training at the intermediate level. Instructor: Medler or DeFranz. Half course.

280. Individual Dance Program: Special Topics. An individualized program of study of dance technique from existing class sessions. Consent of instructor required. Half course.

310. Modern Dance IV. Continuation of Dance 210. Prerequisite: Dance 210 or equivalent. Instructor: Dickinson, Khalsa, Woods Valdés, or staff. Half course.

320. Ballet IV. Progression of Dance 220 with increased emphasis on line, style, and performance-level quality and technique. Diverse batterie, pirouettes, and tours included in allegro combinations. Prerequisite: Dance 220 or equivalent. Instructor: Walters or staff. Half course.

321. Pointe and Variations: Advanced Study of Pointe Work for Ballet. Classical and contemporary pointe technique and variations. Refinement of the classical style and the exploration of contemporary studies en pointe in the ballet lexicon. Training in and analysis of the principles of classical and neoclassical variations and their historical and aesthetic context. Development of interpretative skills, enhancement of style and performance qualities through coaching and informal showings. Prerequisite: Dance 220 or Dance 320 or Dance 420 or permission of instructor. Instructor: J. Walters. Half course.
410. Modern Dance V. Prerequisite: Dance 310 or equivalent. Instructor: Dickinson, Khalsa, Woods Valdés, or staff. Half course.

412. Repertory: Modern. The study of choreography and performance through participation in the mounting of a dance work from inception through rehearsal to performance. Consent of instructor required. Instructor: Dickinson, Khalsa, Woods Valdés, or staff. Half course.

420. Ballet V. Continuation of Dance 320. Daily training for the performing student at the advanced/professional level. Prerequisite: Dance 320 or equivalent. Instructor: Walters or staff. Half course.

422. Repertory: Ballet. The study of choreography and performance through participation in the mounting of a dance work from inception through rehearsal to performance. Separate enrollment in dance technique is required. Consent of instructor required. Instructor: Walters, J. or Walters, T. Half course.


442. Repertory: Jazz Dance. Study of choreography and performance through participation in the mounting of a dance work in the jazz idiom from inception through rehearsal to performance. Separate enrollment in dance technique is required. Consent of instructor required. Instructor: Wheeler or Staff. Half course.


472. Repertory: Dance Theater. The study of choreography and performance through participation in the mounting of a dance work from inception through rehearsal to performance. Separate enrollment in a dance technique course required. Consent of instructor required. Instructor: DeFrantz. Half course.

Theory Courses
89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. Introduction to Dance. ALP, CCI Dance as a reflection of historical and current cultural values. Introduction to some of the major forms of world dance (for example, classical dances of Europe, Asia and Africa, and American modern dance); how dance forms illuminate and define gender, personal and group identity, political and religious status, aesthetic values, and the intentions of the dance-makers; dance as an educative force, a facilitator of cultural acquisition, and a reflection of cultural change; the function of dance in various cultural settings; how to look at dance, to analyze movement, and to read the text of dance structure. Instructor: Dickinson or Shah. One course. C-L: International Comparative Studies 102

105S. Dance Composition. ALP, R The basic elements of movement (time, space, weight, flow) and their choreographic applications explored through structured improvisation, short movement studies, viewing of videotaped dances, and selected readings. Experimentation with devices for movement manipulation and choreographic forms through longer movement studies. Prerequisite: a beginning level dance technique course (modern, ballet, jazz, or African) or consent of instructor. Instructor: Dickinson, Khalsa, or Woods Valdés. One course.

165. Let's Dance! Live Art and Performance. ALP, CCI, CZ This introductory course offers an examination of the major movements in the history of concert and social dance, including ballet, tap, jazz, modern dance, musical theater, and different cultural forms. Considerations of popular culture and reality competition dance programs; feminist foundations of modern dance; contemporary performance idioms that involve the presence of the body. Instructor: DeFrantz. One course. C-L: Theater Studies 104, Music 165

195FS. The Art of Transformation: A Workshop in Movement and Theater. ALP One course. C-L: see Theater Studies 195FS

205T. Advanced Dance Composition. ALP, R Continuation of the basic elements of movement, choreographic devices and forms explored in Dance 105S. The use of props, sets, lighting and costuming; the relationship of music
to dance. Choreographing and directing ensembles. Prerequisite: Dance 105S or consent of instructor. Instructor: Dickinson. One course.

206S. Solo Performance. ALP, W One course. C-L: see Theater Studies 340S

207S. Performance and Social Change. ALP, EI Service learning course based on the body of work of Brazilian theater director, writer, activist and legislator Augusto Boal. Examination of Boal's ideology and philosophy of "liberatory" theater and physical and vocal exploration of Boal's "arsenal" of theater techniques. Service learning teams work with community non-profit organizations to lead workshops and/or develop and perform interactive Forum theater. Instructor: Khalsa. One course. C-L: Theater Studies 204S, International Comparative Studies 227S

208. Contemporary Performance. ALP, R Workshop/Exploration of modes of contemporary performance including dance theater, live art, participatory events including flash mobs, and immersive theater. Histories and theories of contemporary performance explored, along with the practice of visiting artists. Students create brief performances as part of coursework. Instructor: DeFrantz. One course. C-L: African and African American Studies 229, Theater Studies 208, Art History 229

235SL. Capoeira: Practice and Culture. ALP, CCI, SS, W Lecture/lab course introducing the movement, music and culture of capoeira, an Afro-Brazilian martial art that combines dance, self-defense and acrobatics. Created by male African slaves in Brazil several hundred years ago, viewed as a social threat and outlawed in the 19th century, celebrated as an element of national identity in the 20th century, today capoeira is rapidly crossing national, racial and gender borders as it becomes a popular global practice. Studio classes twice a week focus on the basic movements, percussive music and call-and-response singing. Seminar once a week focuses on the historical, cultural and socio-political dynamics that shape capoeira in Brazil and beyond. Instructor: Wesolowski. One course. C-L: Cultural Anthropology 221SL, African and African American Studies 221SL, Romance Studies 235SL

255. T'ai Chi and Chinese Thought. CCI, CZ One course. C-L: see Religion 247

277S. Movement for the Theater. ALP One course. C-L: see Theater Studies 244S

279SA. The Economics of Art (The Chicago Scene). ALP, CCI One course. C-L: see Theater Studies 217SA; also C-L: Visual and Media Studies 221SA, Arts of the Moving Image 217SA, Music 217SA, Markets and Management Studies

290. Special Topics Lecture. ALP Content to be determined each semester. Instructor: Staff. One course.

290S. Special Topics Seminar. ALP Content to be determined each semester. Instructor: Staff. One course.

305T. Choreography. ALP, R Advanced study in dance composition designed to develop the student's personal mode of expression. Prerequisites: Dance 105S, Dance 205T, and consent of instructor. Instructor: Dickinson. One course.

306S. Dance for the Camera. ALP, R, STS The choreographic and bodily experience essential to dance for the camera. Hands on experience in videodance production through the exploration/production of several short individual and group videodance projects. Issues in creative and conceptual thinking, experimentation, pre/post video production, camera techniques, non-linear editing (Final Cut Pro), choreography for the camera. Viewings of seminal as well as experimental videodance works; discussions; readings; internet site visits; computer lab and dance studio/shooting location time; gallery/museum or video installation site visits. Prerequisite: Intermediate or above level of any dance technique, or Dance 105S. Instructor: Woods Valdes. One course. C-L: Documentary Studies 242S, Arts of the Moving Image 343S

307SA. stARTup Project. ALP, R One course. C-L: see Theater Studies 316SA; also C-L: Visual and Media Studies 315SA, Arts of the Moving Image 316SA, Music 316SA, Markets and Management Studies

308. Performance and Technology: Composition Workshop. ALP, STS Workshop exploration of technologies embedded in performance: robots, media, computer interface. Students create performance projects and discuss theoretical and historical implications of technologies in performance. Open to dancers, actors, musicians, spoken word artists and all those interested in technology and the arts. No previous experience or programming skills required. Instructor: DeFrantz. One course. C-L: Theater Studies 364, Information Science and Information Studies 376
315S. History of Modern Dance, 1880-1950. ALP, CCI Modern dance as an art of individuals who created new dance styles that challenged established systems of culture and pushed the boundaries of good taste. Reflection and commentary on contemporary mores and events, international influences from France, new anthropological studies, German expressionism and the religions of Asia, Native Americans and African Americans. The Americanization of theatrical dance in the bicultural environment of the United States during the 1930s and '40s. Instructor: Dickinson or Shah. One course. C-L: International Comparative Studies 315S

316S. Postmodernism in Dance, 1950-2000. ALP, W An examination of American modern dance since the 1950s, which restructured what kinds of movements were considered "dance" and what kind of dance was considered art. Postmodern dance as iconoclastic and inclusive, embracing performance art and film, theater and hip hop, fostering the rebirth of modern dance in Europe between 1970-90, and now re-absorbing and recycling the new forms it helped to create. Videos of dancing, guests, workshops, performances. Instructor: Shah. One course.

325. Ballet, Science and Technology: the First 400 Years. ALP, CZ, STS Ballet history from 1500 through 1910 studied through the lens of contemporary science and philosophy, and as facilitated by technological developments. Ballet’s beginnings in the Italian City-States of the Renaissance and the court of Louis XIV of France, to the classical ballet form forged by Marius Petipa in Russia. Topics include: Descartes’ principles of reason and mathematics made manifest in the aristocratic world view, physical behavior and Ballets du Cour at the court of Louis XIV; gas lighting, hashish, French Romanticism and ballet iconography in theatrical presentation of the Romantic period; the human body as machine and the development of ballet technique. Instructor: Dickinson and T. Walters. One course.


327. Ballet Masterworks of the Twentieth Century. ALP Works by Fokine, Nijinski, Balanchine, Tudor, Tharp, Forsythe, and other major choreographers in the classical idiom, and how they initiated, influenced, absorbed and responded to modernist and post-modernist ideas and trends. The transformation of the classical aesthetic through the century. Instructor: Walters. One course.

335L. West African Rootholds in Dance. ALP, CCI, CZ Lecture and dance laboratory exploring three West African traditional dance forms and their relationship to religious and social life in Africa and the Diaspora. Continuity and transformation of physical texts as cultural heritage, examined historically and aesthetically. Guest lecturers, videos, research project. Two lab sections, one for students with prior training in African Dance, and one for students with no experience. Instructor: A. Vinesett. One course. C-L: African and African American Studies 220, Religion 240


356. Dance and Dance Theater of Asia. ALP, CCI, CZ Asian dance and dance theater performance genres and the cultural aesthetics that inform them. Cultural traditions of China, Korean, Japan, India, Indonesia, Thailand and Cambodia. Religious, ritual, folk and royal court forms of artistic performance. The mythology, legends and symbolic interpretations that underlie the thematic core of these performance traditions; spiritual importance of disciplined training; the intercultural translation and adaptation of Asian performance disciplines to the West. Instructor: Shah. One course. C-L: Theater Studies 233, Religion 241

357L. Kundalini Yoga and Sikh Dharma. ALP, CCI, CZ Introduction to Kundalini Yoga and meditation and yogic lifestyle as taught by Yogi Bhajan through practice, lecture, writing and discussion. Overview of the basic
philosophy of Sikh Dharma and the development of Sikhism and Kundalini Yoga in the Western Hemisphere. Instructor: Khalsa. One course. C-L: Religion 242

365L. The Art and Cultural History of Flamenco. ALP, CCI, CZ A lecture and dance laboratory course that examines the history of Flamenco, a dance and music form of southern Spain forged by a remarkable intercultural exchange among Arabic, Judaic, and Iberian cultures, inhabitants of Spain, and subsequently enriched by rhythms and influences from the East Indian gypsies and from Latin America. Examination of the three elements of flamenco: cante (song); baile (dance); and toque (guitar). Flamenco's place in the cultural life of Spain and its evolution to contemporary forms. Lab component introduces students to the complex footwork, rhythms, and physical style of flamenco. Taught in English. Instructor: Santana. One course. C-L: Spanish 364

367. Dance and Religion in Asia and Africa. ALP, CCI, CZ Dance and dance-theatre forms in relation to religious beliefs, concepts, and mystic practices within Asian and African cultures. How religion shapes the way the body is perceived, and how spiritual power and energy is symbolically transmitted to the dancer through religious practices. Impact of colonialism and globalization on traditional religious performances. Instructors: Shah and Vinesett. One course. C-L: Religion 244, African and African American Studies 222, International Comparative Studies 214

368. Gender in Dance and Theatre. ALP, CCI, CZ Ways in which gender and sexuality are conceptualized in selected performance cultures. Interprets these historically constituted social formations through an examination of the diverse cultural constructions of gender meanings, representations and ideologies as interpreted and expressed in dance and theatre. Symbolic meanings of gender in relation to forms of social life and theatrical experience. The Devadasi in India, the concept of the male embodied Onnagata, and the notion of the female embodied Otokoyaku in the dance-theatre of Japan. Instructor: Shah. One course. C-L: Women's Studies 212, Theater Studies 236, International Comparative Studies 215, Study of Sexualities

375. Music for Dancers. ALP Exploration of the elements of music, music structures, and their relationship to movement and dance. Practical emphasis on rhythmic fundamentals, rhythm notation, musicality, mindful listening, and how they apply to choreography/composition and dance class. Daily movement, rhythm and/or choreographic exercises, both solo and in groups, along with written assignments. Useful for dance students interested in the dance/music connection. Instructor: Hanks. One course. C-L: Music 342

376. Functional Anatomy for Dancers. ALP The functional anatomy of the musculoskeletal system (muscles, bones, and joints) as specifically applied to dance technique approached through observation, analysis, and movement exploration. Concepts of efficient use and questions of misuse of the body in motion or at rest. Instructor: Staff. One course.

377S. Dance Science: An Evolutionary Approach to Functional Anatomy. ALP, NS, R One course. C-L: see Evolutionary Anthropology 336S

378S. Beyond Technique: The Art of Performance. ALP, R Examination of the complex artistic process of performance necessary to realize the choreographer's intent; development of interpretive abilities beyond the mastery of technique and style; classic and contemporary approaches to embodying content. Readings in the literature of performance and imaging; written analysis of performance; vigorously coached rehearsal sessions. Prerequisite: intermediate/advanced level of modern, ballet, or African dance technique. Instructors: Dickinson and T. Walters. One course.

379S. Legal Issues for the Performing Arts. EI, SS One course. C-L: see Theater Studies 311S; also C-L: Public Policy Studies 363S, Economics 223S

390. Special Topics. ALP Content to be determined each semester. Instructor: Staff. One course.

390L. Special Topics. ALP Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

390S. Special Topics. ALP Content to be determined each semester. Instructor: Staff. One course.

391. Independent Study. Individual directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic or artistic product. Consent of instructor and the director of undergraduate studies required. Instructor: Staff. One course.
393. **Research Independent Study. R** Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

394. **Research Independent Study. R** See Dance 393. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

487S. **Capstone Seminar: Research Methods in Dance Studies and Choreographic Performance. ALP, CCI, CZ, R, W** Research Methods in Dance Studies and Choreographic Performance. Methods used in dance theory, history, ethnography, education and choreography/practice. Interviewing and documentation; examination of issues concerning participatory experience and objectivity in ethnographic research. Students develop a research paper that culminates in an extensive individual project completed in this course, or, in the case of dance majors, in Dance 489T. Prerequisites: Junior or senior standing, Dance 101, and one additional course in dance history, theory or world cultures of dance. Consent of instructor required. Instructor: Shah. One course.

488T. **Capstone Tutorial: Senior Written Project. ALP, R, W** A research paper written under dance faculty supervision. Writing intensive with multiple paper drafts. Open only to seniors earning a major in dance and with permission to seniors earning a minor in Dance. Consent of instructor required. Instructor: Staff. One course.

489T. **Capstone: Senior Project. ALP, R** A research paper, choreographic project, or performance program with appropriate written documentation under dance faculty supervision. Open only to seniors earning a major in dance and with permission to seniors earning a minor in Dance. Consent of instructor required. Instructor: Staff. One course.

490S. **Special Topics in Dance. ALP** Special Topics in Dance. Instructor: Staff. One course.

499S. **Capstone Seminar: Distinction Project. ALP, R, W** A substantial historical, analytical, empirical or theoretical paper of 30-50 pages in length, or a major choreographic or performance project with a written component of 15-25 pages in length that analyzes and elucidates the project's conceptual, thematic and technical aspects. One course.

535S. **AfroFuturism. ALP** One course. C-L: see African and African American Studies 620S; also C-L: Theater Studies 535S, Visual and Media Studies 524S

545S. **Selected Topics in Dance Theory. ALP** Topics vary. Instructor: Staff. One course.

645S. **Black Performance Theory. ALP, CCI, R** One course. C-L: see African and African American Studies 621S; also C-L: Visual and Media Studies 621S

**The Major**

**Major Requirements:** To major in dance, a student must take a minimum of twelve courses.

**I. Theory courses—Ten course credits**

- Dance 101 (Introduction to Dance)
- Dance 105S (Dance Composition)
- One course in dance history, theory, or world cultures of dance selected from the following list. Students cannot select a course that is also listed under their chosen concentration (below).
  - Dance 208 (Contemporary Performance)
  - Dance 315S (History of Modern Dance, 1890-1950)
  - Dance 316S (Postmodernism in Dance, 1950-2000)
  - Dance 325 (Ballet, Science and Technology; The First 400 Years)
  - Dance 326S (The Diaghilev Ballet, 1909-1929)
  - Dance 327 (Ballet Masterworks of the Twentieth Century)
  - Dance 355 (History and Practice of Dance of India)
  - Dance 356 (Dance and Dance Theater of Asia)
  - Dance 367 (Dance and Religion in Asia and Africa)
  - Dance 368 (Gender in Dance and Theatre)
• Dance 375 (Music and Movement)
• Two courses chosen from one of the following three concentrations:
  • **Dance of the Twentieth and Twenty-first Centuries**
    • Dance 195FCS (The Art of Transformation (Focus Program))
    • Dance 208 (Contemporary Performance)
    • Dance 306S (Dance for the Camera)
    • Dance 327 (Ballet Masterworks of the Twentieth Century)
    • Dance 315S (History of Modern Dance, 1890-1950)
    • Dance 316S (Postmodernism in Dance, 1950-2000)
    • Dance 207S (Performance and Social Change)
    • Dance 308 (Performance and Technology: Composition Workshop)
    • Dance 326S (The Diaghilev Ballet, 1909-1929)
    • Dance 535S (AfroFuturism)
  • **Dance and Human Movement in its Cultural Context**
    • Dance 205T (Advanced Dance Composition)
    • Dance 206S (Solo Performance)
    • Dance 207S (Performance and Social Change)
    • Dance 255 (T’ai Chi and Chinese Thought)
    • Dance 335L (West African Rootholds in Dance)
    • Dance 305T (Choreography)
    • Dance 306S (Dance for the Camera)
    • Dance 308 (Performance and Technology: Composition Workshop)
    • Dance 355 (History and Practice of Dance of India)
    • Dance 356 (Dance and Dance Theater of Asia)
    • Dance 357L (Kundalini Yoga and Sikh Dharma)
    • Dance 365L (The Art and Cultural History of Flamenco)
    • Dance 367 (Dance and Religion in Asia and Africa)
    • Dance 368 (Gender in Dance and Theatre)
  • **Choreography and Performance**
    • Dance 376 (Functional Anatomy for Dancers)
    • Dance 378S (Beyond Technique: The Art of Performance)
    • Dance 487S (Capstone Seminar: Research Methods in Dance Studies and Choreographic Performance)
    • Dance 488T (Capstone Tutorial: Senior Written Project), Dance 489T (Capstone: Senior Project), or Dance 499S (Capstone Seminar: Distinction Project)
    • Two additional full-credit courses in dance at the 200 level or above.
    • In addition, students may petition for credit for courses offered in other programs and departments, with clear documentation of their intellectual value to the overall goals of the major.

**II. Technique and performance half-credit courses—equivalent to two course credits**

• Two courses (one in each of two different dance forms) in dance technique at the 200 level or above
• Two courses in repertory chosen from Dance 412, 422, 432, 442, 443, 452, and 472.

Students majoring in dance are expected to attain and/or maintain the high intermediate level of modern dance or ballet or African dance technique. Twenty hours total of crew and production work are required of each student. This may be completed at any time during the four-year undergraduate experience.

**The Minor**

**Requirements.** To earn the minor in dance, students take six course credits: two semesters (equivalent of one course credit) of repertory chosen from Dance 412, 422, 432, 442, 443, 452, and 472 and five full-credit courses including 101 (Introduction to Dance); Dance 135S (Dance Composition); one course in dance history, theory, or world cultures of dance selected from the list below; and two additional courses in dance at the 200 level or above.

Courses in dance history, theory or world cultures of dance:
• Dance 208 (Contemporary Performance)
• Dance 315S (History of Modern Dance, 1890-1950)
• Dance 316S (Postmodernism in Dance, 1950-2000)
Dance 325 (Ballet, Science and Technology; The First 400 Years)
Dance 326S (The Diaghilev Ballet, 1909-1929)
Dance 327 (Ballet Masterworks of the Twentieth Century)
Dance 335L (West African Rootholds in Dance)
Dance 365L (The Art and Cultural History of Flamenco)
Dance 355 (History and Practice of Dance of India)
Dance 356 (Dance and Dance Theater of Asia)
Dance 367 (Dance and Religion in Asia and Africa)
Dance 368 (Gender in Dance and Theatre)

The student is expected to attain and/or maintain the intermediate level of at least one of the following: modern dance, ballet, or African dance technique. Twenty hours total of crew and production work are required of each student. This may be completed at any time during the four-year undergraduate experience. With the permission of the student's dance faculty advisor and the director of undergraduate studies, a student may be allowed to substitute other dance courses for the above requirements.

Documentary Studies
Lecturing Fellow Chris Sims and Professor of the Practice Thompson, Codirectors

A certificate, but not a major, is available in this program.

The goal of this interdisciplinary program is to introduce, broaden, and enhance the technical skills and the theoretical and ethical awareness of students who specialize in one or more of the following modes of community-based fieldwork: photography, oral history, audio, filmmaking, folklore, and ethnographic writing. Courses in this area are offered through the Center for Documentary Studies, and the departments of African and African American studies, art, cultural anthropology, arts of the moving image, history, and public policy studies. The Center for Documentary Studies also houses a number of documentary projects that address issues of literacy, collaborative photography, oral history, and farm worker advocacy that students will be exposed to through their affiliation with this program. A major goal of this program is to connect student experience and creativity to community life.

Documentary studies courses teach an arts-and-humanities-based fieldwork research methodology.

Achievement of the program’s goal is facilitated by an integrated curriculum of required and elective courses that allow students to specialize in one or more areas of documentary work, and to complete a major documentary project under the guidance of participating faculty members. An active advisory procedure assists students in planning fieldwork projects and other learning opportunities. A certificate is available for students who complete program requirements. Participation in documentary studies courses, with the exception of the capstone course, is available to all undergraduates whether or not they seek the certificate.

The certificate in documentary studies is awarded to students who successfully complete six courses approved as part of the documentary studies program. These include a required survey course titled Traditions in Documentary Studies, four related courses from the approved courses (including electives) listed in this undergraduate bulletin, and a required capstone course, Seminar in Documentary Studies. During the seminar, students are expected to bring to completion one major documentary project (using audio, video, photos, and/or ethnographic writing methods) and to present this project to an audience outside the classroom by the semester’s end. The Seminar in Documentary Studies is designed as the culminating experience of the certificate program and is therefore open only to students enrolled in the program. Electives chosen by the student under the guidance of the program codirector should facilitate the completion of the final project.

Courses in Documentary Studies (DOCST)

89S. First Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. Traditions in Documentary Studies. ALP, CCI Traditions of documentary work seen through an interdisciplinary perspective, with an emphasis on twentieth-century practice. Introduces students to a range of documentary idioms and voices, including the work of photographers, filmmakers, oral historians, folklorists, musicologists, radio documentarians, and writers. Stresses aesthetic, scholarly, and ethical considerations involved in representing other people and cultures. Instructor: Staff. One course. C-L: Visual and Media Studies 103, International Comparative Studies 111
105S. The Documentary Experience: A Video Approach. ALP, R, SS A documentary approach to the study of local communities through video production projects assigned by the course instructor. Working closely with these groups, students explore issues or topics of concern to the community. Students complete an edited video as their final project. Not open to students who have taken this course as Film/Video/Digital 105S. Instructor: Hawkins. One course. C-L: Cultural Anthropology 106S, Arts of the Moving Image 331S, History 125S, Political Science 105S, Public Policy Studies 170S, Visual and Media Studies 106S, Policy Journalism and Media Studies

107. History of Documentary Film. ALP, CCI One course. C-L: see Arts of the Moving Image 202; also C-L: Visual and Media Studies 265

110S. Introduction to Oral History. CZ, R Introductory oral history fieldwork seminar. Oral history theory and methodology, including debates within the discipline. Components and problems of oral history interviewing as well as different kinds of oral history writing. Instructor: Staff. One course. C-L: History 126S

111S. Documentary Writing: Creative Nonfiction Through Fieldwork. ALP, R, W Techniques of independent field research and reporting in the documentary tradition. Emphasis on structure, development, and style of factual narrative-including exercises in redrafting and editing-culminating in a final piece of documentary writing based on students' fieldwork experience. Historical development of documentary writing in relation to the diverse cultures that produced it. Instructors: Staff. One course. C-L: English 111S, Policy Journalism and Media Studies

115S. Introduction to Photography. ALP Foundation class in photography utilizing black and white film and a wet darkroom. Shoot, process, and print individual student work throughout the semester. Emphasis on continual visual exploration of meaning and metaphor in the form of regular assignments, slide lectures of important historic and contemporary photographic work, and critiques of each other's work. No textbooks are required, though students will need to budget a comparable amount for supplies and equipment. Consent of instructor required. Instructor: Sharp. One course. C-L: Visual Arts 115S, Visual and Media Studies 115S

135S. Introduction to Audio Documentary. ALP, R Recording techniques and audio mixing on digital editing software for the production of audio (radio) documentaries. Various approaches to audio documentary work, from the journalistic to the personal; use of fieldwork to explore cultural differences. Stories told through audio, using National Public Radio-style form, focusing on a particular social concern such as war and peace, death and dying, civil rights. Instructor: Biewen. One course. C-L: Policy Journalism and Media Studies 135S, Information Science and Information Studies

153FS. The U.S./Mexico Border. CCI, CZ, EI, SS Focus on the border/frontera: a scar, a divide, a wall between friendly nations, a challenge for policy-makers, a line of demarcation for human rights abuses, a law enforcement nightmare, a pass-through for trade and NAFTA, a net for the poor. Study history, culture, policy, creative writing and art about the only border dividing two nations with such disparity in wealth. Look at the issue as it relates to Mexican farm workers and their work in U.S. fields. Think about solutions together. Learn what this all means for the future of the United States and how its citizens define themselves. Know where you stand along this deadly line in the sand. Students will engage in a service-learning project related to immigrant laborers and will conduct this work in coordination with a local group such as Student Action with Farmworkers or El Centro Hispano. Instructor: Thompson. One course. C-L: International Comparative Studies 153FS

190S. Special Topics. Special topics in Documentary Studies. Instructor: Staff. One course.


209S. A Digital Approach to Documentary Photography: Capturing Transience. ALP Documentary photography as a tool for exploring public education in Durham. Learn digital techniques including camera function, Photoshop, ink-jet printing, audio capture and production of audio-visual slide shows. Discuss ethical issues that emerge as a result of digital photographic impermanence. Service-learning environment consisting of fieldwork
215. Documentary Photography and the Southern Culture Landscape. ALP, CCI Emphasis on the tradition and practice of documentary photography as a way of seeing and interpreting cultural life. The techniques of black-and-white photography - exposure, development, and printing - diverse ways of representing the cultural landscape of the region through photographic imagery. The role such issues as objectivity, clarity, politics, memory, autobiography, and local culture play in the making and dissemination of photographs. Instructor: Rankin. One course. C-L: Visual Arts 216, Visual and Media Studies 215

217S. Photo Workshop. ALP Examines historical and contemporary photographic artists for whom a particular photographic technique is essential to the creation of their work. Investigates strategies of intentional lighting. Explores techniques most suited to the documentation of individual student’s chosen subject matter and create a cohesive body of work by semester’s end employing that strategy. May use digital or analog equipment. No textbooks are required, though students will need to budget a comparable amount for supplies and equipment. Instructor consent required. Prerequisite: DOCST 115S or ARTSVIS 115S or VMS 115S. Instructor: Sharp. One course. C-L: Visual Arts 218S


221S. Visual Research and the American Dream. ALP, R, SS A documentary and sociological approach to the idea of the American Dream, using readings, photography, films, and visual sociological research. Ideology of attainable prosperity by different groups of people; cultural and material symbols of the dream. Field-based course. Consent of instructor required. Instructor: Staff. One course. C-L: Sociology 228S, Visual and Media Studies 217S


227S. Sociology through Photography. ALP, SS Documentary photography used as a tool to see the world through a sociological lens. Photographs and the social construction of reality; generic components of social organization (codes of conduct, mechanisms of social control); power relations and social inequalities; and social identities (how they’re formed in relation to structures, experiences, history and culture). Consent of instructor required. Instructor: Hyde. One course. C-L: Sociology 352S, Visual and Media Studies 218S

230S. Small Town USA: Local Collaborations. ALP, CCI, R Theory and practice of documentary photography in a small-town context. Students working in collaboration with one nearby small town complete a documentary photographic study of one individual or group within that town. Includes analysis of the documentary tradition, particularly as it relates to locally situated work and to selected individual projects; building visual narrative, developing honest relationships with subjects, responsibility to subjects and their communities, and engaging with and portraying a community as an outsider. Photo elicitation and editing techniques. Consent of instructor required. Required participation in service learning. Instructor: Post-Rust. One course. C-L: Visual Arts 232S, Public Policy Studies 389S, Visual and Media Studies 224S, Policy Journalism and Media


239S. The Photographic Essay: Narratives Through Pictures. ALP Documentary field work course. Students create four distinct photographic essays, studying the ways other photographers have created photographic essays
aimed at wide audiences. Students create, choose, sequence, and pace their images while studying classic and contemporary masters of photography. Instructor: Harris. One course. C-L: Visual Arts 241S, Public Policy Studies 399S

242S. Dance for the Camera. ALP, R, STS One course. C-L: see Dance 306S; also C-L: Arts of the Moving Image 343S

245S. Photography in Context. ALP, R Uses the Duke Library Photography Archive as a resource to challenge students to think critically about photography. Considers how photography offers insights into areas of academic study such as social change, sexual identity, and regional culture, and how images have shaped collective understanding of these issues. Focuses on analyzing and contextualizing bodies of photographic work, the historical moment in which the pictures were made, personal history and artistic sensibility of the photographer, tools of the medium, along with considering personal responses to images and the ways in which all factors come together. Instructor: Sartor. One course. C-L: Visual Arts 254S, Visual and Media Studies 252S, International Comparative Studies 245S

248S. Environmental Conservation and Documentary Photography. ALP, EI, R One course. C-L: see Environment 222S; also C-L: Marine Science and Conservation

264. Introduction to Film Studies. ALP One course. C-L: see Arts of the Moving Image 201; also C-L: Theater Studies 278, English 181, Literature 110, Visual and Media Studies 289, Policy Journalism and Media Studies

270. Contemporary Documentary Film: Filmmakers and the Full Frame Documentary Film Festival. ALP, CCI, STS One course. C-L: see Arts of the Moving Image 205; also C-L: Political Science 276, Public Policy Studies 374, Visual and Media Studies 264

271S. Video for Social Change. ALP, CCI, SS Documentary film course focusing on the production of advocacy videos for social change. Covers methods and traditions of community organizing, introduces knowledge and skill sets needed to make effective videos for grassroots organizations, and explores how video is integrated into organizing strategies to achieve better results. Includes instructor-supervised fieldwork with community partner organization; student groups will research, write, direct, and produce a class video for a campaign to improve educational and economic opportunities in Durham’s low-income communities. Instructor: Orenstein. One course. C-L: Public Policy Studies 375S, Arts of the Moving Image 335S

272S. Documentary and Policy: How Documentary Influences Policy. ALP Examines documentaries as catalysts for change in local, state, and federal laws and regulations, with special attention to relationships between film and organizations with political influence. Looks at how documentaries have altered public sentiment and political outcomes. Uses case studies of documentary films (essay-style, journalistic, information-driven films; narrative, story-driven films; propaganda; art films; and hybrids of all of the above). Explores the question of how a film achieves influence: for example, with a high-profile theatrical and/or television release, by utilization as an educational tool, or by ‘going viral’ to become part of a public conversation. Instructor: Price. One course. C-L: Arts of the Moving Image 336S, Public Policy Studies 228S

273S. Planning the Documentary Film: From Concept to Treatment. ALP, R Historical documentary film preparation through narrative, character-driven stories. Using the raw material of real life, students organize the conceptual process for historical documentary films, framing a logical sequence of events structured for dramatic effect. Focus on the pre-production activities and principles that lead to a treatment that is the foundation for an efficient shooting schedule. Instructor: James. One course. C-L: Arts of the Moving Image 332S, Visual and Media Studies 220S, Information Science and Information Studies

275S. The Documentary Essay: Exploration, Research, and the Peripatetic Tradition in Documentary Writing. ALP, R, W Writing workshop course exploring the intersection of documentary fieldwork methods and the exploratory traditions and practices of the essay. Grounded in the recognition that the documentary essay engages the world first, seeking knowledge and understanding, gathers the material of art by direct experience, and turns more outward than inward. Out-of-class exploration emphasized: on foot in the tradition of the flâneur; through careful exploration of the special collections of Duke University; and by pursuing a common subject as a class. Wide readings in documentary essays, workshop discussion of student work, and the eventual goal of publication in the new CDS student documentary magazine. Instructor: Murell. One course. C-L: English 213S

277S. Sound for Film and Video. ALP, STS One course. C-L: Arts of the Moving Image 350S, Music 121S, Information Science and Information Studies 243S
278S. Producing Docu-Fiction. ALP One course. C-L: see Arts of the Moving Image 334S

279S. Editing the TV Documentary: From Creativity to Collaboration to Negotiation. ALP One course. C-L: see Arts of the Moving Image 333S; also C-L: Visual and Media Studies 274S, Policy Journalism and Media Studies

281S. Cinematography. ALP One course. C-L: see Arts of the Moving Image 355S; also C-L: Visual and Media Studies 260S, Visual Arts 248S

285. Visiting Filmmaker Master Course: Special Topics. ALP One course. C-L: see Arts of the Moving Image 385

285S. Visiting Filmmaker Master Courses: Special Topics. ALP One course. C-L: see Arts of the Moving Image 385S; also C-L: Visual Arts 325S

288S. Editing for Film and Video. ALP One course. C-L: see Arts of the Moving Image 357S; also C-L: Information Science and Information Studies 248S

290. Special Topics in Documentary Studies. Selected topics in methodology, theory, or area in lecture format. Instructor: Staff. One course.

290S. Special Topics in Documentary Studies. Selected topics in methodology, theory, or area in seminar format. Instructor: Staff. One course. C-L: Policy Journalism and Media

310S. The Short Audio Documentary. ALP, R Introductory to intermediate audio techniques. Includes instructor-supervised fieldwork with an audio recorder in a variety of settings using creative approaches; students produce four short pieces (roughly three minutes long) in varying styles (journalistic, personal, artistic) for posting on iTunes and on public multimedia websites. Consent of instructor required. Instructor: Biwien. One course. C-L: Policy Journalism and Media Studies 310S, Information Science and Information Studies, Policy Journalism and Media

317S. Veterans Oral History Project. CCI, SS Explore methods of oral history, specifically focusing on interviewing U.S. military veterans who have served during times of conflict. Weekly readings concerning ethics of oral history work and the particulars of interviewing veterans. Learn techniques for conducting successful oral history interviews and master technical skills involving recording equipment. Conduct multiple interviews with veterans throughout semester. Discuss interviews and transcriptions with classmates. Assignments include written responses and a final presentation on conducted interviews. Includes a service-learning component involving work in the community. Instructor: Lanier. One course. C-L: History 381S


324S. Documenting Black: Tales Along the Color Line, 1865 - 2004. ALP, CCI, CZ Focus on politics and narratives of the way "race" and African American history and culture have been invented and re-invented by their depictions on any side of the color line. Humanities embedded in particular histories and cultures that speak to questions of race, nation, citizenship and freedom. Course materials may include history, fiction, music, poetry, documentary theater, film, and the visual arts. Active engagement, two in-class essays, short research paper, take-home final. Instructor: Tyson. One course. C-L: African and African American Studies 241S

326. The South in Black and White. ALP, CCI, CZ Focus on present-day and historical documentary traditions in American South, with an emphasis on call and response between black and white cultures. The arts and humanities as imbedded in particular histories and cultures found in the South, and as performed in music and theater; and portrayed in documentary films, civil rights photography, Southern literature, and historical and autobiographical writing. Includes historical texts, oral histories and testimonies of living persons, along with documentary films, photographs, and writings from people in Durham and elsewhere in the region. Instructor: Tyson. One course. C-L: African and African American Studies 230, History 358

329S. Collaborative Art: Practice and Theory of Working Within a Community. ALP Approaches of various contemporary artists to creating collaborative work resulting in artworks that express a variety of social and aesthetic positions and include progressive educational philosophies and radical democratic theory. Field work with a community institution or small group in Durham to produce collaborative work in a medium of students' own

332S. Farmworkers in North Carolina: Roots of Poverty, Roots of Change. CCI, SS Focus upon those who bring food to our tables, particularly those who labor in the fields of North Carolina and the Southeast. Farm work from the plantation system and slavery to sharecropping, and to the migrant and seasonal farmworker population today. Documentary work and its contributions to farmworker advocacy. Instructor: Thompson. One course. C-L: Cultural Anthropology 236S, Latino/a Studies in the Global South

335S. Who Cares and Why: Social Activism and its Motivations. CCI, R, SS, W Documentary fieldwork-based research on the lives of people who have committed themselves to changing society. Life history interviews exploring personal and societal transformations with special attention to the antecedents to personal change leading to examined lives of commitment. Attention to various areas of social change, including human rights, civil rights, international activism, labor rights, and environmental activism. Focus on societal and personal questions regarding motivations for, and the effectiveness of, good works in several cultural settings. Instructor: Thompson. One course. C-L: Cultural Anthropology 239S

341S. Politics of Food: Land, Labor, Health, and Economics. ALP, CCI, EI, R Explores the food system through fieldwork, study, and guest lectures that include farmers, nutritionists, sustainable agriculture advocates, rural organizers, and farmworker activists. Examines how food is produced, seeks to identify and understand its workers and working conditions in fields and factories, and, using documentary research conducted in the field and other means, unpacks the major current issues in the food justice arena globally and locally. Fieldwork required, but no advanced technological experience necessary. At least one group field trip, perhaps to a local farm or farmers market, required. Instructor: Thompson. One course. C-L: Cultural Anthropology 238S, Public Policy Studies 380, International Comparative Studies 342S

344S. OUR CULINARY CULTURES. ALP, CCI, W Documentary approach to the world of food using fieldwork research. Topics of food and its preparation examined through deep stories of how food is raised, prepared, and presented in order to explore how the myriad ways in which what we eat reveal key biographical, economic, religious, and other truths about our cultures. Introduces students to the history of food writing and the concept of food in general as a nonverbal tool of communication. Photography, audio, and documentary writing employed. Instructor: Alexander. One course. C-L: Cultural Anthropology 258S, International Comparative Studies 344S

347S. Civil/Human Rights Activism: In the Spirit of Pauli Murray. ALP, CCI, CZ, R Documentary fieldwork course exploring the legacy of civil and human rights activism in Durham through the life and work of noted historian, lawyer, poet, activist and priest Pauli Murray. Students will utilize scholarship, primary source archival materials and contemporary documentary projects to set a context for their fieldwork in Durham. Working with the instructor and local social change leadership engaged in work related to the “Face-Up Project,” students will deepen fieldwork skills - photography, writing, audio or filmmaking - and develop documentary projects in collaboration with culturally diverse community groups. Requires fieldtrips to communities in Durham. Instructor: Lau. One course. C-L: Cultural Anthropology 246S, African and African American Studies 236S

350S. Documenting Black Experiences. ALP, CCI Interpretations of the black diaspora in documentary film from slavery to the present. Interdisciplinary study of black religions, cultures, histories, aesthetics, politics, and their representations, both globally and in the U.S. Students will view and study a variety of films and approaches to film and study film's evolution through numerous lenses from early ethnographic film to recent works by indigenous filmmakers, and understand the politics of representation, from D.W. Griffith to Spike Lee; read relevant works in the genres represented; and hear from guest critics, scholars of African and African American history and culture, and filmmakers. Instructor: James. One course. C-L: African and African American Studies 225S, Arts of the Moving Image 214S, Cultural Anthropology 262S, Public Policy Studies 387S, International Comparative Studies 368S

351S. Documentary Biography. ALP, R Explores process of researching and writing biography using a documentary frame. Investigates literary traditions and authors' intentions of telling nonfiction stories about an individual's life, whether person is well-known or unsung. Study classic works of biography and literary profile-writers who construct them. Learn and utilize methods of oral history and archival research. Practice writing a compelling narrative in literary, documentary writing that appeals to broad audiences. Final writing project to be based on some fieldwork and modeled after New Yorker magazine profiles, or chapters from a book-length biography. Instructor: Stephenson. One course. C-L: English 386S
352S. Documentary Publishing from Gutenberg to the Web: History and Practice. ALP, CCI, R, SS, STS
Publishing course leading to publication of a digital documentary magazine; grounded in cultural, technical, and
aesthetic history of documentary periodicals, from 16th century Venetian avvisi through 18th century English
gentlemen's magazines through mid-20th century "Golden Age" of American magazines, to current age of digital
documentary publication; speakers and advisors from publishing industry and the Center for Documentary Studies;
wide readings in international history of periodicals and documentarism; production of a digital magazine conceived,
created, edited, designed and built by students in accordance with professional standards and practices. Instructor:

One course. C-L: see Environment 289A; also C-L: Marine Sciences, Marine Science and Conservation

356S. Magazine Journalism. SS, W One course. C-L: see Policy Journalism and Media Studies 366S; also C-L:
Public Policy Studies 366S, Visual and Media Studies 306S, Policy Journalism and Media Studies Core

357S. 16mm Film Production. ALP One course. C-L: see Arts of the Moving Image 356S; also C-L: Visual and
Media Studies 362S, Visual Arts 356S

362S. Women, Fire, and Dangerous Things: Gendered Activism in the American South. CCI, EI, R, SS
Immersion in the dangerous and contentious history of women's activism in the American South. Explores methods
for documenting and creating narratives of women's social activism using oral history, archival research methods, and
cultural production. Examines historical and contemporary women's activism including: campaigns to end racial
profiling and mass incarceration, preventing environmental destruction, improving public education, advocating for
undocumented workers, creating safe spaces for GLBTQ youth, and championing reproductive justice. Final project
(written or multimedia) consists of documentary exploration of one specific type of southern girls' or women's

415S. Advanced Documentary Photography. ALP, SS An advanced course for students who have taken Public
Policy Studies 397S or have had substantial experience in documentary fieldwork. Students complete an individual
photographic project and study important works within the documentary tradition. Prerequisite: Visual Arts 217S,
Public Policy Studies 397S, or consent of instructor. Instructor: Harris, Rankin, or staff. One course. C-L: Visual Arts
415S, Public Policy Studies 398S, Visual and Media Studies 415S, Arts of the Moving Image, Policy Journalism and
Media Studies

450S. Documentary Engagement Through Field-Based Projects. ALP Documentary photography as a tool for
social engagement in preparation for intensive field-based projects. Students study documentary photographers while
planning and refining their own documentary projects through which they will address societal issues locally,
nationally, or abroad. Students learn and refine valuable technical skills such as Photoshop, inkjet printing, and web-
based methods in order to complete a preliminary documentary project by the end of the semester. Consent of
instructor required. Required participation in service learning. Instructor: Harris. One course. C-L: Public Policy
Studies 396S

460S. Multimedia Documentary: Editing, Production, and Publication. ALP Edit and shape fieldwork material
into a Web-based multimedia presentation. Learn current technologies and techniques for multimedia publications.
Examine unique storytelling strategies for on-line presentations and compare this medium to traditional venues for
documentary work such as exhibitions, books, and broadcast. Instructor: Staff. One course. C-L: Visual Arts 460S,
Visual and Media Studies 460S

470S. Advanced Documentary Filmmaking. One course. C-L: see Arts of the Moving Image 470S; also C-L:
Public Policy Studies 383S, Visual and Media Studies 470S, Information Science and Information Studies

480S. Capstone Seminar in Documentary Studies. ALP, R Immersion in fieldwork-based inquiry and in-depth
projects that serve as Certificate in Documentary Studies capstone experiences for students. Methods of documentary
fieldwork, including participant observation, and modes of arts and humanities interpretation through a variety of
media (including papers, film, photography exhibits, radio pieces, and performances). Consent of instructor and
director of undergraduate studies required. Prerequisite: Documentary Studies 101 and four Documentary Studies
electives. Instructor: Staff. One course.
511. Documentary and East Asian Cultures. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 511; also C-L: Arts of the Moving Image 641, International Comparative Studies 513

611. Documentary Writing Workshop. ALP, R, W Workshop in the art and practice of writing in the long-form traditions of narrative nonfiction, literary journalism, and documentary writing. Write, share, and refine one major work of narrative nonfiction throughout the semester. Discuss research methods and resources, especially those useful for creative writers. Intended for advanced writers who would like to work on ambitious nonfiction work in an intensely creative and supportive workshop. Instructor: Murrell. One course.

615S. Environmental Issues & the Documentary Arts. ALP Survey how filmmakers, authors, photographers, and other artists have brought environmental issues to the public's attention in the last century, and in some cases instigated profound societal and political change. Examine the nebulous distinctions between persuasion and propaganda, agenda and allegory, point of view and content. Evolve as a viewer of the environment and a maker of documentary art. Initiate your own projects to address and/or depict environmental issues in one form of a broad range of media. Instructor: Espelie. One course. C-L: Environment 615S, Arts of the Moving Image 643S

Program Courses
African and African American Studies
206. Africans in America to the Civil War
207. African Americans Since the Civil War

Art History
303. History of Photography, 1839 to the Present

Arts of the Moving Image
263S. Screening the Holocaust: Jews, WWII, and World Cinema

Asian & Middle Eastern Studies
341S. Screening the Holocaust: Jews, WWII, and World Cinema
355. Contemporary Culture in South Asia

Cultural Anthropology
130. Anthropology and Film
131. World Music: Aesthetic and Anthropological Approaches
137. Music, Social Life, and Scenes
240S. The Anthropology of Hinduism: From Encounter to Engagement
243. Culture and Politics in Latin America

History
346. Africans in America to the Civil War
347. African Americans Since the Civil War

International Comparative Studies
104. Anthropology and Film
325. Culture and Politics in Latin America

Jewish Studies
266S. Screening the Holocaust: Jews, WWII, and World Cinema

Literature
263S. Screening the Holocaust: Jews, WWII, and World Cinema

Music
130. World Music: Aesthetic and Anthropological Approaches
137. Music, Social Life, and Scenes

Philosophy
262. Human Rights in Theory and Practice

Political Science
272. Human Rights in Theory and Practice

Public Policy Studies
231. Human Rights in Theory and Practice
371. News as Moral Battleground

Religious Studies
268. Religion and Film
310S. The Anthropology of Hinduism: From Encounter to Engagement

Visual Arts
206. Digital Imaging
219S. Photography

Visual and Media Studies
130. Anthropology and Film
206. Digital Imaging
269. Documentary Photography and Film of the Nuclear Age
303. History of Photography, 1839 to the Present
For courses in ecology, see biology (on page 180) and the environmental sciences and policy program (on page 302).

Earth and Ocean Sciences

Professor McGylnn, Chair; Lecturer Glass, Director of Undergraduate Studies; Professors Baker, Boudreau, Chameides, Corliss, Golden, Haff, Jackson, Kay, Klein, Lozier, Marani, McGylnn, Murray, Pratson and Vengosh; Associate Professors of the Practice Golden, Johnson; Assistant Professors Cassar, Li; Professors Emeriti Barber, Heron, Livingstone, Perkins, and Pilkey; Lecturer Glass

A major or a minor is available in this division.

The Division of Earth and Ocean Sciences offers introductory and advanced courses in climatology, coastal processes, environmental geology, hydrology, geochemistry, geomorphology, oceanography, paleontology, petrology,marine geology, and energy and the environment. A bachelor of science degree is offered for those students wishing to pursue further studies in the earth and ocean sciences, and for those who intend to work professionally in earth sciences. A bachelor of arts degree is offered for those students who wish to understand more fully local and global environmental issues. The majors are administered by the Nicholas School of the Environment. Additional information about the division can be found on the divisional website at http://www.nicholas.duke.edu/eos.

Courses in Earth and Ocean Sciences (EOS)

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. The Dynamic Earth. NS, STS Introduction to the dynamic processes that shape the Earth and the environment and their impact upon society. Volcanoes, earthquakes, seafloor spreading, floods, landslides, groundwater, seashores and geohazards. Emphasis on examining the lines of inductive and deductive reasoning, quantitative methods, modes of inquiry, and technological developments that lead to understanding the Earth's dynamic systems. Instructors: Klein or Glass. One course.

102. The Dynamic Oceans. NS, STS The oceans and their impact on the Earth's surface, climate, and society. Topics include seafloor evolution, marine hazards, ocean currents and climate, waves and beach erosion, tides, hurricanes/cyclones, marine life and ecosystems, and marine resources. Emphasis on the historical, society and economic roots of oceanography, the formulation and testing of hypotheses, quantitative assessment of data, and technological developments that lead to understanding of current and future societal issues involving the oceans. Includes a field trip at the Duke University Marine Laboratory. Instructors: Glass. One course. C-L: Biology 157, Marine Science and Conservation

202. Atmosphere and Ocean Dynamics. NS, R Introduction to the dynamics of ocean and atmospheric circulations, with particular emphasis on the global climate cycle. Prerequisites: Mathematics 21 and 122, Physics 141L or consent of instructor. Instructor: Lozier. One course. C-L: Marine Science and Conservation


226S. Field Methods in Earth and Environmental Sciences. NS, R, W Introduction to basic field methods used in the earth and environmental sciences. Field investigations focus on topics such as groundwater and surface water movements, soil chemistry and identification, topographic and geologic mapping, the atmosphere/soil interface, and plant identification and distributions. Design of a field investigation, collection of data to address a specific goal, and interpretation and reporting of the results. Emphasis on learning to report field results in the format of scientific
publications. Visits to five local field sites. Open only to juniors and seniors. Instructor: Klein or Dwyer. One course.

C-L: Environment 226S

230. Meteoritics and Solar System History. NS One course. C-L: see Information Science and Information Studies 230

272A. Analysis of Ocean Ecosystems. NS One course. C-L: see Biology 272A; also C-L: Environment 272A, Marine Sciences, Marine Science and Conservation


288A. Biogeography in an Australian Context. NS, STS One course. C-L: see Biology 288A; also C-L: Environment 288A


315. Waves, Beaches, and Coastline Dynamics. NS, STS Oceanographic and geologic processes responsible for the evolution of nearshore features; fluid motions of many time scales in the nearshore environment, including waves and currents. Conceptual basis for models of how fluid motions interact with the shape of the beach and bed in the surf zone, giving rise to features such as beach cusps, bars, channels, and barrier islands. Various attempted engineering and coastal management solutions to the global retreat of shorelines. Instructor: Murray. One course. C-L: Marine Science and Conservation

316A. Beach and Island Geological Processes. NS Field seminar on the evolution of beaches and barrier islands with emphasis on the interactions between nearshore processes and human development. Prerequisite: Earth and Ocean Sciences 315/515 or consent of instructor. Also taught as Earth and Ocean Sciences 716A. Instructor: Murray. Half course.

321S. Methods and Tools in Earth Science Research. NS, QS, R, STS Introduction to tools and methods used for research in the earth and environmental sciences. Emphasis on hands-on activities and projects to teach skills that can be applied to a broad range of topics in earth science research. Course modules vary by semester, including oceanographic data analysis and modeling, geologic field skills, and/or geochemical analysis. May include a local field trip. Pre-requisites: Mathematics 111, Earth and Ocean Sciences 101 and 102, or consent of instructor. Instructor: Klein. One course.

321S-1. Methods and Tools in Earth Science Research. NS, QS, R, STS Half-credit version of EOS 321S. Introduction to tools and methods used for research in the earth and environmental sciences. Emphasis on hands-on activities and projects to teach skills that can be applied to a broad range of topics in earth science research. Course modules vary by semester, including oceanographic data analysis and modeling, geologic field skills, and/or geochemical analysis. May include a local field trip. Pre-requisites: Mathematics 111, Earth and Ocean Sciences 101 and 102, or consent of instructor. Instructor: Klein. Half course.

322. Hydrologic and Environmental Data Analysis. NS, QS Focus on acquisition of skills necessary to extract information from observations of hydrological and environmental processes, connect extracted information with physical processes generating data, and estimate physical quantities at ungauged locations/times. Emphasis on process understanding via data analysis techniques, rather than techniques themselves. Applications used as a way to understand general concepts, with examples drawn from water science. Prerequisites: Basic computer skills, Algebra, Calculus (Math 111L or equivalent) required. Experience with computational software (e.g. Matlab or R) helpful but not required. Instructor consent required. Instructor: Marani. One course. C-L: Environment 322, Civil and Environmental Engineering 365

323. Landscape Hydrology. NS An introduction to hydrology by examining how rainfall and snowmelt become streamflow, evapotranspiration, and groundwater with emphasis on hydrological processes inside watersheds. Topic areas include: hydrologic cycle and water balances, evapotranspiration and snow energy balances, vadose zone hydrology, hydrogeology, hyporheic zones, riparian zones, streamflow generation mechanisms, biogeochemical budgets, and field measurement techniques. Linkages between physical hydrology and broader ecological and
environmental sciences will be highlighted. Includes local field trips. Instructor consent required. Instructor: McGlynn. One course.

325. The Anthropocene: The Next Epoch of Geologic History. NS, STS Introduction to the next epoch of geologic history. The evolution of the technosphere, the global human-technological system that increasingly dominates biology, hydrology, and other major natural earth systems. The future of the earth and humanity. Instructor consent required. Prerequisite: Earth and Ocean Sciences 101 or 203. Instructor: Haff. One course.


341. Dinosaurs with Feathers and Whales with Legs: Major Evolutionary Transitions in the Fossil Record. NS, STS Focus on the fossil record of the differentiation of the major vertebrate groups. Study and critical evaluation of the paleontological and neontological evidence for four major macroevolutionary transitions in the history of life: fish to tetrapods, the reptile/mammal differentiation, the evolution of birds from dinosaurs, and the origin of whales. Stresses the importance of the fossil record in the reconstruction of transitions but also covers genetic, physiological, and developmental evidence gathered from living representatives. Prerequisite: Prior course work in Earth and Ocean Sciences or Biology or consent of instructor. Instructor: Glass. One course. C-L: Biology 345


358. Introduction to Satellite Remote Sensing. NS Introduction to the field of remote sensing and approaches used in image processing and analysis of remote sensing data. Students will acquire an operational knowledge of various remote-sensing tools and data types, with emphasis on their application in environmental and earth science problems. Content will include theory, in-class laboratory exercises, and projects with environmental applications. Prerequisite: introductory or AP physics preferred. Instructor: Silvestri. One course. C-L: Environment 358

359. Fundamentals of GIS and Geospatial Analysis. NS, QS One course. C-L: see Environment 359

364S. Changing Oceans. NS, STS Our oceans are under severe stress. This seminar will explore human disturbances of marine environments, including ocean warming, sea level rise, melting of ice caps and sea ice, ocean acidification, coastal eutrophication, changes in primary production and food web dynamics, invasive species, overfishing, increased subsurface hypoxia, changes in circulation, stratification, and physical, chemical (e.g. oil spills) and noise pollution. Instructor: Cassar. One course. C-L: Environment 362S, Energy and the Environment, Marine Science and Conservation

365. Introduction to Weather and Climate. NS Introduction to weather and climate. Topics include atmospheric structure, composition, circulation and energy properties; severe weather events such as cyclones, hurricanes, and tornadoes; ozone depletion; natural climate variability; climate change and global warming. Instructor: Li. One course.

370A. Introduction to Physical Oceanography. NS, QS, STS One course. C-L: see Environment 370A; also C-L: Marine Sciences, Marine Science and Conservation

374LA. Marine Ecology. NS, R, W One course. C-L: see Biology 273LA; also C-L: Environment 273LA, Marine Sciences, Marine Science and Conservation

377LA. Marine Invertebrate Zoology. NS, R Variable credit. C-L: see Biology 377LA; also C-L: Environment 377LA, Marine Sciences, Marine Science and Conservation

385K. Water Resources. NS, STS Fundamental concepts of aquatic geochemistry and biogeochemistry applied to water pollution and resources. Marine and freshwater case studies will be presented. Taught at Duke Kunshan University. Instructors: Cassar and Vengosh.

390. Special Topics in Earth and Ocean Sciences. Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

390S. Special Topics in Earth and Ocean Sciences. Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

391. Independent Study. Directed reading or individual projects. Term paper required. Open only to qualified juniors and seniors by consent of director of undergraduate studies and supervising instructor. Instructor: Staff. One course. C-L: Marine Sciences


392. Independent Study. See Earth and Ocean Sciences 391. Term paper required. Open only to qualified juniors and seniors by consent of director of undergraduate studies and supervising instructor. Instructor: Staff. One course. C-L: Marine Sciences

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open only to qualified juniors and seniors by consent of director of undergraduate studies and supervising instructor. Instructor: Staff. One course. C-L: Marine Sciences


393A. Research Independent Study. R Marine Lab version of EOS 393. Offered at Beaufort. Instructor: Staff. One course. C-L: Marine Sciences

394. Research Independent Study. R See Earth and Ocean Sciences 393. Open only to qualified juniors and seniors by consent of director of undergraduate studies and supervising instructor. Instructor: Staff. One course. C-L: Marine Sciences

394A. Research Independent Study. Marine lab version of EOS 394. Offered at Beaufort. Instructor: Staff. One course. C-L: Marine Sciences

401. Field Exploration of the Geology of North Carolina. NS, STS Introduction to the geological history of North Carolina with an emphasis on active learning and field-based inquiry. Class time serves as preparation and background for two one-day and one overnight weekend field trips. An introductory geology background is useful but not required. Instructor: Glass. One course.

402S. Volcanology: Geology of Hawaii. NS, R Geology of volcanic processes and the benefits and hazards they present to society. Lectures, discussion and student presentations of independent research reports. Required field trip to Hawaii during spring break. Prerequisite: Earth and Ocean Sciences 101 recommended. Consent of instructor required. Instructor: Boudreau. One course.


404S. Geology of Tropical Marine Environments. NS, R Spatial and temporal analysis of the geology of tropical shallow marine environments. Includes class discussions, required spring-break field trip to South Florida, Belize, Turks and Caicos Islands, or similar setting, in-class and field trip presentations, post-trip research paper. Examination of tropical shallow marine sedimentary environments including reefs, mudbanks, and mangrove forests and islands, and their ancient counterparts in rock outcrops and sediment cores. Includes a field trip with a required fee for the trip. Prerequisite: Earth and Ocean Sciences 101 or 102, or consent of instructor. Instructor: Dwyer. One course. C-L: Marine Science and Conservation

405S. The American Southwest. NS Geomorphic and geologic features of arid terrain, including volcanism, tectonics, soils and weathering, paleo-lakes, wind-blown sand and dust, landslides, and alluvial fans. Reconstruction of paleo-landscape processes based on observations of present landforms. Interpretation of landform development and process from geomorphic field evidence. Focus on the Mojave Desert region of California and Nevada. Includes week-long field trip with fees required for the trip. Prerequisite: Earth and Ocean Sciences 101, and consent of instructor. Instructor: Haff. One course.
406. Israel Experience: Environment, Science, Technology, and Innovation. NS, SS, STS Introduction to environmental challenges facing Israel and neighboring countries and the emerging innovated science and technology solutions. Provides introduction to basic geography, geology, hydrology, and environmental issues in Israel, with focus on emerging environmental issues related to climatic changes. Required field trip to Israel over spring break. Some prior science coursework preferred but not required. Instructor: Vengosh. One course. C-L: Environment 406, Energy 406

410S. Senior Capstone Experience. NS, R, STS Senior capstone field trip course. Field location varies. Topics in geology, hydrology, biology, climate, and other environmental subjects as appropriate for field area, especially human impact on the earth and the role of earth scientists as observers and teachers of earth-system change. Course content partially determined by students. Prerequisites: Open only to senior Earth and Ocean Sciences majors. Department consent required. Instructor: Staff. One course.

507S. The Amazon: Geology, Climate, Ecology, and Future Change. NS This course will study the natural history of the Amazon including its biodiversity, geological evolution, and modern climate and hydrology. The present development of the Amazon and best strategies for its future conservation will be discussed. Instructor: Baker. One course.


509S. Paleoclimate. NS, R Nature and mechanisms of climate variability throughout Earth history. Topics include general theory of climate, paleoclimate modeling and comparisons with observations, methodologies of reconstructing past climate variations, the observational record of paleoclimate extending from the Precambrian through the Ice Ages and Holocene to present, and the impact paleoclimate on biotic evolution/paleogeography and human cultural history. Consent of instructor required. Instructor: Baker. One course.

510S. Paleoenvironmental Analysis. NS Methods of paleoenvironmental and paleoclimatic analysis. Includes radiometric and other methods of dating, stable isotopes, trace elements, paleobiotic and other methods of reconstructing climate, hydrology and environment of the past. Also includes approaches to modeling paleoenvironmental data. Instructor: Baker. One course.

511. The Climate System. NS, R Components of the climate system: observed climate change, concept of energy balance, basic circulation of the atmosphere and ocean, introduction to climate models, sample applications of climate models, interactions between the atmosphere/ocean/ and biosphere, land surface, cryosphere (snow and ice), and chemistry of the atmosphere. Prerequisite: consent of instructor. Instructor: Staff. One course.

512. Climate Change and Climate Modeling. NS, R, STS Course aims to provide knowledge and understanding of physics of climate system and Earth system modeling for scientists, engineers and policy students with physics and mathematics background. Fundamental principles controlling physical and dynamic structure of climate system; discussion of relative roles of natural climate variability and external forces and anthropogenic influences. Explore numerical methods, develop computing skills, and deal with data handling as a means to an end of quantifying climate system behavior. Pre-requisite: Earth and Ocean Sciences 511. Instructor: Li. One course.


515. Mountain Ecohydrology Field Course -Montana. NS, R, STS Study of watershed ecohydrology and the interactions and feedback among hydrological and ecological processes in the western United States. Includes required pre-semester week-long field trip to Montana (with required fee), where participants visit active research watersheds, some of the most intensively instrumented ecohydrological research sites in the country. Students learn techniques to collect hydrologic and ecological field data and work with instructors to collect a comprehensive suite of ecohydrological data, to be interpreted and presented during series of follow-up class meetings. Prerequisite: General background in Earth and Environmental Sciences. Instructor: McGlynn.
520. Introduction to Fluid Dynamics. NS Conservation equations for mass, momentum and heat, with an emphasis on large temporal and spatial scales; application to the earth, ocean, and environmental sciences. Some background in differential equations highly recommended. Instructor: Lozier. One course.

524. Water Quality Health. Explore basic concepts of water quality and human health with focus on the global water cycle, global water demand and availability, chemical properties of water, contaminants in water, health implications, and environmental isotope hydrology. Highlights relationships between human activities, water scarcity, water quality degradation, and ecological and health consequences. Addresses some policy implications related to conflicts over water resources and impact of energy production on water resources. Prerequisites: prior knowledge of introductory calculus and chemistry or consent of instructor. Instructor: Vengosh. One course. C-L: Environment 524, Global Health 534, Energy 524

525. Fundamentals of Water Biogeochemistry and Pollution. NS Course is designed to present students with a comprehensive introduction to the sources and impacts of pollution in marine and freshwater environments. Fundamental concepts and principles of aquatic biogeochemistry will first be introduced: marine and freshwater chemistry, primary production and food webs. Topics to be covered include biological (e.g. pathogens, invasive species), physical (e.g. thermal, plastics), and chemical (e.g. nutrient loading, oil, pesticides, metals) pollutants. Instructor: Cassar. One course.

526S. Water Forum Speaker Series. NS, STS Seminar including visiting scholars covering a broad array of issues on water including water quality, hydrogeology, biogeochemistry, water management, water treatment, ecology, water economy, and water policy and law at both the national and international levels. Instructor: Vengosh. One course.

527. International Water Resources. NS, SS, STS Overview of the hydrology, hydrogeology, water quality, and management of major international water resources. Focus on cross-boundary international rivers and aquifers, up-stream versus down-stream water users, the politics of water sharing and disputes, the role of science in water management, and prospects and implications for future utilization of contaminated rivers and stressed aquifers. Examples from international rivers such as the Tigris, Euphrates, Nile, Jordan, Colorado, Indus, Ganges, and Mekong and international aquifer systems such as the Mountain aquifer, Gaza Strip, Disi, and Nubian basins in northern Africa. Instructor: Vengosh. One course.

528S. Biological-Physical Couplings in Coastal Environments; Responses to Changing Forcing. NS, R Focus on select examples of biological-physical couplings that shape coastal environments (i.e. coastal "ecomorphodynamics") and help determine how those environments respond to changing climate and land use. Environments include: barrier islands, tidal wetlands. Grading based on in-class presentations, and a final project (in the form of a research proposal). Instructor consent required. Instructor: Murray. One course.

530. Remote Sensing in Coastal Environments. NS, QS Introduction to the field of remote sensing and image processing with focus on applications to coastal monitoring and currently open research questions. Students will acquire an operational knowledge of various remote-sensing tools and data types, with emphasis on their application in coastal areas. Content will include theory, in-class laboratory exercises, and projects with environmental applications. Prerequisite: introductory or AP physics preferred or permission of instructor. Instructor: Silvestri. One course. C-L: Environment 530, Civil and Environmental Engineering 574


542S. New Perspectives and Methods in Surface Process Studies. NS Nonlinear dynamics and related approaches to understanding, modeling, and analyzing physical systems, with emphasis on applications in geomorphology. Consent of instructor required. Instructor: Murray. One course.

543S. Landscape Dynamics. NS How landscape changes with time. The dynamics and mechanisms of earth surface processes underlying landscape change. Hillslope, fluvial, marine, glacial, volcanic, tectonic and aeolian processes. Reading and discussion of primary literature; several field trips to Duke Forest. Prerequisite: Earth and Ocean Sciences 101 or consent of instructor. Instructor: Haff and Pratson. One course.
544S. Geoengineering. EI, NS, SS, STS Discussion of proposals for large-scale intentional modification and/or control of climate. Physical mechanisms, intended benefits, risks, costs, scenarios for deployment, historical analogs, possible unintended physical and social consequences, ethical dilemmas, oath for earth and environmental scientists. Prerequisite: one course in Earth and Ocean Sciences or consent of instructor. Instructor: Haff. One course. C-L: Energy and the Environment

545S. Nanoenvironment. NS, SS, STS Introduction to the emerging world of the 21st century, "the neoenvironment," where life, environment, and social interaction are increasingly engineered by novel technologies. Topics include transition of science from observation and understanding to manipulation and control, acceleration of technology, emergence of the internet and other global networks, novel life forms, redesigning of humans, artificial intelligence, virtual worlds, proliferation of computation and surveillance in the environment, numericalization of nature and society. Prerequisite: one course in Earth and Ocean Sciences or consent of instructor. Instructor: Haff. One course.

551S. Global Environmental Change. NS, R Topics in the seminar will include climate change, earth surface alteration, prediction, water and carbon cycling, sea-level rise and coastal erosion, biodiversity, fossil fuels and energy resources, water resources, soil fertility, human impact on coastal zone ecosystems. Prerequisite: consent of instructor. Instructor: Baker. One course.

567. Analyzing Time and Space Series. NS, QS Ways to extract information from data; methods for probing time or spatial series including spectral and wavelet analyses, correlation techniques, and nonlinear-dynamics approaches for determining how deterministic and linear the processes producing the data are, and for reconstructing and quantitatively comparing state-space plots. Instructor: Murray. One course.

569. Thermodynamics of Geological Systems. NS Introductory thermodynamics applied to geologic problems through understanding of phase equilibrium. Prerequisites: Earth and Ocean Sciences 201; and Mathematics 122 or consent of instructor. Instructor: Boudreau. One course.

571. Stable and Radioactive Isotopes in Environmental Sciences. NS, QS Theory and applications of stable and radioactive isotope distributions in nature (including oceanographic, geologic, hydrologic, and biological processes). Prerequisites: Chemistry 210DL and Mathematics 122. Instructor: Baker or Vengosh. One course.

573S. Analytic Techniques. NS An introduction to advanced analytic procedures used in the earth sciences: such as electron microbeam techniques (scanning electron microscopy, electron microprobe analysis) and plasma emission/absorption spectroscopy. Consent of instructor required. Instructor: Boudreau. One course.

575S. Mineral Resources. NS Introduction to the mineralogy, geological setting, and genesis of metallic and nonmetallic deposits (gold, copper, iron, aluminum, gypsum, phosphates, diamonds, e.g.). Includes methods of mineral exploration and exploitation, and the environmental consequences of utilizing mineral resources. An introductory geology course background useful but not required. Instructor: Boudreau. One course.


579LA. Biological Oceanography. NS, R Variable credit. C-L: see Environment 579LA; also C-L: Biology 579LA, Marine Sciences

590. Special Topics in Earth and Ocean Sciences. Content to be determined each semester. Consent of instructor required. Instructor: Staff. Variable credit.

590S. Special Topics in Earth and Ocean Sciences. Content to be determined each semester. Consent of instructor required. Instructor: Staff. Variable credit.

The Major

The Division of Earth and Ocean Sciences offers one AB degree and one BS degree.
For the AB Degree

The AB degree in earth and ocean sciences is designed as a flexible major for those students interested in how the earth, atmosphere, and oceans work. The major is intended to provide a general knowledge of scientific issues that shape and control the environment in which we live.

Required courses include Earth and Ocean Sciences 101 or 102, plus any six earth and ocean sciences courses of which five must be 200 level or higher, plus three additional 200-level or higher courses in either earth and ocean sciences or related fields (biology, chemistry, environment, evolutionary anthropology, mathematics, physics, or statistics), as approved by the director of undergraduate studies.

Concentration in Natural History. Students may elect to complete the requirements in the area of natural history; intended for students interested in an integrative study of topics selected from ecology, botany, zoology, anthropology, history, hydrology, geology, oceanography, and the environment. For information on this area of concentration see the director of undergraduate studies.

For the BS Degree

The BS degree provides a background for subsequent graduate work for those who wish to follow an academic or professional career track in the earth and ocean sciences.

Prerequisites: Earth and Ocean Sciences 101 and 102; Chemistry 101DL and either Chemistry 210DL or 201DL, or equivalents; Mathematics 111L and 112L; Physics 141L; Biology 202L.

Major requirements. Earth and Ocean Sciences 201L, 202, 203S, and 204L, plus five additional earth and ocean sciences courses at the 200 level, including one field-oriented class. Up to two courses from a related field (biology, environment, evolutionary anthropology, mathematics, physics, or statistics) may be substituted with the approval of the director of undergraduate studies.

Marine Science

An exciting area in earth and ocean sciences is the study of the marine realm. Majors in earth and ocean sciences may fulfill elective requirements with courses in marine science by studying at the Duke Marine Laboratory on the coast in Beaufort, North Carolina, which often include fieldwork excursions to other areas of the world (e.g., Hawaii, Trinidad, Singapore). Approved courses include: marine ecology; biological oceanography; analysis of ocean ecosystems; marine invertebrate zoology (see full course listings at www.nicholas.duke.edu/marinelab/programs). Students typically also perform a research independent study project on a topic of interest supervised by a faculty member of the marine laboratory.

Graduation with Distinction

The Division of Earth and Ocean Sciences through Trinity College offers Graduation with Distinction through successful completion of a student research project. A candidate for Graduation with Distinction in the earth and ocean sciences must have a divisional grade point average of 3.2 at the beginning of the project to qualify for nomination. The student will apply for consideration for Graduation with Distinction by the beginning of his or her senior academic year by submitting an application to the director of undergraduate studies describing the project. The student must solicit a faculty advisor who will review the student’s record and decide to admit or reject the application and oversee the project. The student will normally do the work as part of independent study courses (Earth and Ocean Sciences 393, 394) completed during one academic year. The project will consist of an original piece of scientific research which will be summarized by a written report in the style of a scientific publication. The student will also make an oral presentation to students and faculty of the division before the end of classes of the student’s final semester. The decision on granting Graduation with Distinction will be made by a vote of the student’s project committee, with a majority in favor needed for Graduation with Distinction.

The Minor

The Division of Earth and Ocean Sciences offers an option for a minor in earth and ocean sciences.

Minor Requirements. Earth and Ocean Sciences 101 or 102, plus any four additional earth and ocean sciences courses, of which three must be 200-level or higher.
Teacher Certification

A major in the Division of Earth and Ocean Sciences who is interested in teaching in secondary schools is encouraged to earn a comprehensive science teaching certificate in addition to the bachelor’s degree. The teaching certificate, which is earned by fulfilling requirements prescribed by the state of North Carolina, is generally accepted in most of the fifty states by reciprocal agreement. In addition to completion of any of the earth and ocean sciences major tracks as described above (the AB option is particularly suited for those interested in a teaching certificate), the requirements for the comprehensive science teaching certificate include coursework in biology, chemistry, physics, an appropriate course in psychology, and several courses in education. The last semester of the senior year is devoted to the student-teaching block, including two special, accelerated courses and ten weeks of full-time teaching and observation in the schools, working with a certified teacher and with Duke faculty. Anyone considering secondary school teaching should contact the Program in Education as soon as possible.

East Asian Studies

Professor Simon Partner, Director

A certificate, but not a major, is available in this program.

The undergraduate certificate in East Asian Studies is administered by the Asian/Pacific Studies Institute (APSI). This certificate provides students with the opportunity for interdisciplinary, in-depth study of historical and contemporary East Asian societies and cultures. In addition to offering the certificate, the Asian/Pacific Studies Institute also sponsors lectures, films, and other events; administers the Duke-in-China study abroad programs; and offers scholarships for study abroad in East Asia. Undergraduates also have the opportunity to publish their academic work for the certificate in the student-run Duke East Asia Nexus Journal.

Students interested in earning a certificate in East Asian studies are encouraged to declare it by their fifth semester. The course of study for program participants is intended to be interdisciplinary. Students working toward a certificate in East Asian studies will declare a major in an academic department. To qualify for the certificate, students must take an approved gateway course and an approved capstone seminar, fulfill the indicated language requirement, and take four additional electives, all of which must be at or above the 200 level. Also, students must take courses for the certificate in at least two different academic departments, and no more than three courses from any single department or major may count toward the certificate.

Program Requirements

The following requirements must be met in order to earn a certificate in East Asian Studies:

• Students must take at least six courses from the designated East Asian studies course list—note that this is in addition to any courses taken to meet the language requirement (see http://web.duke.edu/apsi/academics/courses.html for course list)

• Students must take courses across at least two departments or programs.

• No more than three courses from any single department or major may count toward the certificate.

• One of the six courses must be an approved introductory course for the certificate.

• One of the six courses must be an approved capstone seminar course.

• At least four of the courses must be at the 200 level or above.

• No more than two of the courses may also be used to satisfy the requirements of any major, minor, or other certificate program.

• In addition to the six courses taken for certificate, students must meet a language requirement. Students must either complete year two of the Duke language program in Chinese, Japanese, or Korean, or they must demonstrate equivalent competence by passing a proficiency test, to be administered by Asian and Middle Eastern studies.

• Students are required to complete an e-portfolio that reflects their accomplishments in the certificate program. E-portfolios need to include twelve entries; one major piece of work for each of the six courses taken in the certificate along with a self-report for each piece on how it meets the certificate goals.

For more information on the East Asian studies certificate, visit http://web.duke.edu/apsi/academics/.

Courses in East Asian Studies

A list of approved East Asian studies courses is updated each semester on the APSI website at http://web.duke.edu/apsi/academics/courses.html. Approved courses from previous semesters can be found in the course archives at http://web.duke.edu/apsi/academics/archives.html.
Economics

Professor Bayer, Chair; Professor Nechyba, Director of Economics Center for Teaching; Professor of the Practice Fullenkamp, Director of Undergraduate Studies; Visiting Assistant Professor Falba, Associate Director of Undergraduate Studies; Professors Abdulkadiroglu, Adler, Ambrus, Anton, Arcidiacono, Ariely, Bansal, Bollerslev, Burnside, Clotfelter, Cohen, Coleman, Conitzer, Cook, Darity, De Marchi, Frankberg, Gallant, Goodwin, Hoover, Horz, Hsieh, Jaimovich, Khan, Kimbrough, Kramer, Kranton, Kuran, Ladd, Lewis, Lopomo, Marx, McAdams, McElroy, Munger, Newell, Pattanayak, Patton, Peretto, Pfaff, Rampini, Rubio-Ramirez, Sanders, Sloan, Tauchen, Taylor, Thomas, Timmins, Tower, Vigdor, Viswanathan, and Weintraub; Associate Professors Bugni, Conrad, Daley, Field, Hamilton, Leventoglu, Sarver, Smith, Sweeting, and Yildirim; Assistant Professors Ananat, Bellemare, Bennear, Bianchi, Chen, Dix-Carneiro, Garlick, Hamoudi, Ilut, Leventoglu, Li, Macartney, Masten, Maurel, Mohanan, Ridley, Roberts, Sadowski, Serrato, Wang, and Xu; Professors Emeriti Burmeister, Grabowski, Graham, Kelley, Naylor, Treml, and Wallace; Research Professors Becker, Caldwell, and Tonio; Professors of the Practice Leachman and Connolly; Associate Professor of the Practice Rasiel; Senior Research Scholars Boyd

A major or a minor is available in this department, as well as a finance concentration for majors and a finance minor.

Economics courses develop the critical and analytical skills essential for understanding economics and institutions, in both their contemporary and historical settings. Although no particular vocational or professional goal is emphasized, these courses provide the academic background necessary for positions in industry, for work in many branches of government service, for law school, and for graduate study in business administration, economics, and the social sciences.

Students planning to do graduate work in economics are advised to take as many of the following courses in mathematics (listed in preferential order) as their schedules permit: Mathematics 212, 221, 222, 356, and 431.

Courses in Economics (ECON)

21. Principles of Microeconomics. This is the equivalent for Principles of Microeconomics from Advanced Placement on the basis of a score of 4 or 5 on the Advanced Placement Microeconomics exam, or credit for a sufficient score on a Duke-recognized international examination such as the International Baccalaureate. Only Economics 21 and Economics 22 together substitute for Economics 101. One course.

22. Principles of Macroeconomics. This is the equivalent for Principles of Macroeconomics from Advanced Placement on the basis of a score of 4 or 5 on the Advanced Placement Macroeconomics exam, or credit for a sufficient score on a Duke-recognized international examination such as the International Baccalaureate. Only Economics 21 and Economics 22 together substitute for Economics 101. One course.

23. Principles of Microeconomics. This is the equivalent for Principles of Microeconomics taken at another school or Duke-In Program. Only Econ 23 and Econ 24 together substitute for Econ 101. One course.

24. Principles of Macroeconomics. This is the equivalent for Principles of Macroeconomics taken at another school or Duke-In Program. Only Econ 23 and Econ 24 together substitute for Econ 101. One course.

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. Economic Principles. SS Basic microeconomic concepts such as demand and supply, market structures and pricing, market efficiency and equilibrium. Macroeconomic concepts such as inflation, unemployment, trade, economic growth and development. Different perspectives on issues of monetary and fiscal policy. Emphasis on public policy issues and the logic behind the economic way of thinking. Open to all students. Instructor: Fullenkamp, Leachman, or staff. One course.

101D. Economic Principles. SS Basic microeconomic concepts such as demand and supply, market structures and pricing, market efficiency and equilibrium. Macroeconomic concepts such as inflation, unemployment, trade, economic growth and development. Different perspectives on issues of monetary and fiscal policy. Emphasis on public policy issues and the logic behind the economic way of thinking. Open to all students. Instructor: Staff. One course.

111D. Introduction to the History of the Economic and Business Cultures. CZ, EI, SS One course. C-L: see History 107D
119. Introduction to Political Economy. EI, SS One course. C-L: see Political Science 145; also C-L: Energy and the Environment, Markets and Management Studies

174. Financial Accounting. QS, SS Introductory course in financial accounting. How and why information is created and communicated. Purposes of financial accounting. Bookkeeping for basic business transactions that map into the statements. Analyze corporate reports. Interpret key financial information. Course is designed for students with little or no background in accounting. Does not count for economics major or minor requirements. Instructor: Skender or staff. One course.

190. Selected Topics In Economics. Topics vary by semester. Instructor: Staff. One course.

190A. Duke Administered Study Abroad: Special Topics in Economics. Topics vary by section. Instructor: Staff. One course.

190AS. Duke Administered Study Abroad: Special Topics in Economics. Topics differ by section. Instructor: Staff. One course.

190FS. Focus Program Topics in Economics. SS Open only to students in the Focus Program. Topics vary each semester offered. Instructor: Staff. One course.

190S. Selected Topics in Economics. Topics differ by section. Check individual semester offerings for prerequisites. Instructor: Staff. One course.

201D. Intermediate Microeconomics I. SS Introduction of the concepts of preferences and technologies. Intermediate development of the theory of demand, supply and competitive equilibrium from individual preferences and technologies. Income and substitution effects, uncompensated demand and marginal willingness to pay. Conditions under which competitive markets result in efficient outcomes. Conditions under which government policy has the potential to increase efficiency. Tension between economic efficiency and different notions of equity. Prerequisites: Economics 21 and 22 or 101; and Mathematics 211 or 105L and 106L, or 112L, 122, 202, 212 or higher level math. Instructor: Staff. One course.

205D. Intermediate Microeconomics II. QS, SS Calculus-based generalization of the theory of demand and supply developed in Economics 201D. Individual behavior in environments of risk and uncertainty. Introduction to game theory and strategic interaction. Adverse selection, moral hazard, non-competitive market structures, externalities, public goods. Prerequisite: Economics 201D; Mathematics 202 or Mathematics 212 or Mathematics 222 or any higher-level mathematics course with Mathematics 212 as a prerequisite. Instructor: Levetoglu or staff. One course.

208D. Introduction to Econometrics. QS, R Introduction to the theory and practice of econometrics. Estimation, hypothesis testing and model evaluation in the linear regression model. Observational and experimental methods to identify causal effects including instrumental variable and panel data methods. Lectures are supplemented by labs that use STATA. Prerequisites: Mathematics 112L, 122L, 202, 212, or higher; and Statistical Science 111, 130, 230, or 250 or Mathematics 230 or 342. Instructor: Thomas or Staff. One course. C-L: Information Science and Information Studies

210D. Intermediate Macroeconomics. QS, SS, STS Intermediate level treatment of macroeconomic models, fiscal and monetary policy, inflation, unemployment, economic growth. Prerequisite: Economics 201D, and Mathematics 202, 212, or 222. Economics 205D is also required as a prerequisite or a co-requisite to be taken concurrently with Econ 210D. Instructor: Staff. One course.

212. Engineering Systems Optimization and Economics. SS One course. C-L: see Engineering 305

222D. American Business History. CCI, CZ, R, W One course. C-L: see History 364D; also C-L: Markets and Management Studies

223S. Legal Issues for the Performing Arts. EI, SS One course. C-L: see Theater Studies 311S; also C-L: Public Policy Studies 363S, Dance 379S


247S. Non-Profit Cultural Institutions. EI, SS One course. C-L: see Theater Studies 310S; also C-L: Visual and Media Studies 329S
248. Racial and Ethnic Economic Inequality: A Cross National Perspective. CCI, EI, SS One course. C-L: see Public Policy Studies 294; also C-L: African and African American Studies 244


270. Life Within Capitalism: A History of its Values, Measures and Struggles. CZ, EI One course. C-L: see Study of Ethics 271; also C-L: History 284, Political Science 252

271. Basic Finance and Investments. QS, R, SS A survey of investments and corporate finance. The basic financial instruments, how they are used, traded, and priced; the financial decision-making processes of the firm: project selection, dividend, and debt policy. Economics 271 is not open to students who have taken Economics 471, 372, and/or 373. Prerequisites: Economics 101; and Statistical Science 111, or 130, or 230, or 250, and Mathematics 202 or higher. Instructor: Fullenkamp. One course. C-L: Information Science and Information Studies, Markets and Management Studies


285. Denial, Faith, Reason: Sustainability and Survival. EI One course. C-L: see Study of Ethics 285; also C-L: Political Science 249, Environment 276, History 292

290. Selected Topics In Economics. Topics vary each semester offered. Instructor: Staff. One course.

290A. Duke-Administered Study Abroad: Special Topics in Economics. Topics differ by section. Check individual semester offerings for prerequisites. Instructor: Staff. One course.

290AS. Duke-Administered Study Abroad: Special Topics in Economics. Topics differ by section. Check individual semester offerings for prerequisites. Instructor: Staff. One course.

290FS. Focus Program Topics in Economics. SS Open only to students in the Focus Program. Topics vary each semester offered. Instructor: Staff. One course.

290S. Selected Topics In Economics. Topics vary each semester offered. Instructor: Staff. One course.

295. Intellectual Property and Innovation: Law, Policy & Entrepreneurship. EI, SS, STS One course. C-L: see Markets and Management Studies 425; also C-L: Sociology 425

302. Introduction to Economic History. CCI, CZ, SS A survey of Western economic history: population, production, exchange, and institutions; from antiquity to the present. Prerequisite: Economics 201D. Instructor: Staff. One course. C-L: History 306, International Comparative Studies 303

303A. Political Philosophy of Globalization. CCI, CZ, EI, SS One course. C-L: see Philosophy 237A; also C-L: Political Science 297A, Public Policy Studies 204A
304. The International Economy, 1850-Present: From Globalization to Globalization. CCI, CZ, SS Developments in the international economy (trade, migrations, capital movements), their causes and impact, against the background of “modern economic growth.” The rapid integration of the Atlantic economy from the 1850s to the early 1910s, the subsequent “globalization backlash” (war, great depression and war again), and the slow reconstruction of international economic networks since 1945. Comparison of the current second globalization with the first one that came to an abrupt end in August 1914. Prerequisites: Economics 21 and 22 or 101 and Mathematics 21, or 122, or 122L, or 202, or 212 or higher level math. Instructor: Zanalda or Staff. One course. C-L: History 310, International Comparative Studies 304

305S. History of International Financial and Monetary Crises. CZ, EI, SS Course examines monetary/financial crises plaguing world since 16th century. Analyzes origin, unfolding, and impact of crises, debates generated by them, and formulation/implementation of policy measures. Attention to international implications/connections on European/Asian money supply, banking/credit systems; reaction to South Sea Bubble and John Law Credit Systems in numerous European nations; experiments with paper money in America; rise/demise of gold standard in 19th/20th century; currency and exchange rate problems of last three decades. Case studies will be selected and assigned according to participants' interests. Prerequisites: Economics 205D and 210D. Instructor: Staff. One course. C-L: History 305S, International Comparative Studies 305S

306. Economic History and Modernization of the Islamic Middle East. CCI, CZ, SS, W Economic development of the Middle East from the rise of Islam to the present. Transformation of the region from an economically advanced area into part of the underdeveloped world. Role of religion in economic successes and failures. Obstacles to development today. Topics: Islamic economic institutions, economic roles of Islamic law, innovation and change, political economy of modernization, interactions with other regions, economic consequences of Islamism. Prerequisite: Economics 101 or 21 and 22 or instructor consent. Instructor: Kuran. One course. C-L: Political Science 351, Islamic Studies

310S. Monetary Markets 4000BC-2000AD. CZ, SS A reading and discussion course covering the "invention" of money and the development of money markets and institutions over the past 6000 years. How the need to lower transaction costs and to stabilize the value of monetary instruments over time shaped the payment technology and the underlying institutions. Prerequisites: Economics 205D and 210D. Instructor: Toniolo. One course.


312. Adam Smith and the System of Natural Liberty. SS, STS The writings of Adam Smith, including close readings of The Wealth of Nations and The Theory of Moral Sentiments, and selections from Mandeville, Hutcheson, Hume, Quesnay, Turgot, and Bentham. Focus on eighteenth-century views on the nature of society and the origins of prosperity, the luxury debate, and links between natural philosophy (including medical thought), and moral philosophy. Economics 311 desirable prior to taking this course. Prerequisites: Economics 201D. Instructor: De Marchi. One course. C-L: History 308, International Comparative Studies

312S. Adam Smith and the System of Natural Liberty. SS, STS Seminar version of Economics 312. The writings of Adam Smith, including close readings of The Wealth of Nations and The Theory of Moral Sentiments, and selections from Mandeville, Hutcheson, Hume, Quesnay, Turgot, and Bentham. Focus on eighteenth-century views on the nature of society and the origins of prosperity, the luxury debate, and links between natural philosophy (including medical thought), and moral philosophy. Economics 311 desirable prior to taking this course. Prerequisites: Economics 201D. Instructor: DeMarchi. One course. C-L: History 308S

313. The Uses of Economics. CZ, R, SS, STS, W The various ways economics is used in contemporary society: in the scholarly community, government, private sector, civil society, other disciplines, and popular culture. Readings in original texts and interpretative commentaries. Prerequisites: Economics 201D. Instructor: Goodwin. One course.

314. The History of Modern Macroeconomics from Keynes to the Present. SS, W Examination of key developments in macroeconomics from the 1930s through the present. Case studies of the evolution of macroeconomics in political and social context. Topics include the theory of unemployment in the Great Depression; growth theory and the rise of business cycle modeling in the aftermath of World War II; the trade-off between inflation and
unemployment in the 1950s and 1960s; the debate over monetarism in the age of stagflation; and the rise of the New Classical Macroeconomics in its aftermath. Prerequisite: Economics 210D. Instructor: Hoover. One course. C-L: History 309

316. History of Modern Economics. SS, STS Selective survey of the development of economic thinking in the twentieth century, with emphasis on the construction of economics as a science. Prerequisite: Economics 201D and 210D. This course is only open to Juniors and Seniors; Sophomores may register with instructor's consent. Instructor: Weintraub. One course.

316S. History of Modern Economics. R, SS, STS, W Selective survey of the development of economic thinking in the twentieth century, with emphasis on the construction of economics as a science. Research papers required. Prerequisite: Economics 201D and 210D. This course is only open to Juniors and Seniors; Sophomores may register with instructor's consent. Instructor: Weintraub. One course.

317S. Innovation, Entrepreneurs & VCs. R, SS, STS Importance of technological innovation as a source of competitive advantage and role of start-up and mature firms in innovative activity. Particular attention given to financial institutions and venture capital firms in innovation process. Focus on market and policy developments in United States, but includes comparison with other countries. Case analyses and term paper required. Instructor: Staff. One course.

318S. Economic Science Studies. SS, STS Application of science and technology studies to problems in the history, philosophy, methodology, and sociology of economics. Addresses modern economics as an illustrative case of issues arising in Studies of Scientific Knowledge. What counts as "fact" in economics? Who decides? Why has mathematical economics enjoyed such success in recent decades? Close readings in texts across the sciences and in modern economics, and the history of mathematics, culminating in a research project. Prerequisite: Economics 201D. This course is only open to Juniors and Seniors; Sophomores must obtain instructor consent. Instructor: Weintraub. One course.

319. The Philosophy and Methodology of Economics. EI, SS, W One course. C-L: see Philosophy 345

321S. Art and Markets. ALP, CCI, R, SS One course. C-L: see Visual and Media Studies 567S; also C-L: Markets and Management Studies

322S. Crime and Economics. SS Crime and public policies affecting crime and punishment is an increasingly important aspect of U.S. society. Increasing current and former prison populations make it important to analyze effects this "sector" has on the economy and society as a whole. Introduce students to the decision to commit a crime modeled in a rational framework. Analysis of several economic models of crime and investigation of effects of crime on the public and the criminal. Topics: public economics, labor economics, racial disparities and inequalities, control theory, and anomie. Prerequisites: Economics 205D and 210D. Economics 208D recommended. Instructor: staff. One course.

322SA. Economics of Creative Goods. R, SS Creative industries (especially the arts, entertainment) often distinguish by peculiarities of product (for example, non-durable), by special nature of financing and contracting (for example, option contracts), and by challenges they present to conventional analysis of pricing and consumption. Research report required. (Taught only in the Duke-in-Venice Program.) Prerequisites: Economics 201D or instructor's consent. Instructor: De Marchi. One course.

323. Microfinance. SS Grameen Bank and founder Muhammad Yunus won a Nobel Peace Prize for innovations in poverty alleviation through microfinance. Microfinancing as a development tool and agent of social change has spread to developing countries and has been adapted for use in developed nations. Course focuses on historical/theoretical basis of microfinance and reviews empirical findings regarding the success of microfinance. Students gain factual/historical information concerning development of the "microfinance revolution," learn basic theoretical/analytical tools needed to design microfinance programs, and engage in critical thinking regarding recent debates in field of microfinance. Prerequisites: Economics 205D and 210D. Instructor: Miller. One course.

323S. Cities as Incubators of Growth. CZ, R, SS, W Comparative and historical analysis of cities as natural incubators of innovation and growth. Exploration through analytical and empirical literature of the positive externalities created by close human contact, including knowledge and information exchange and concentrations of talent. Perspectives of economists, city planners and architects considered. Research project required. Prerequisite: Economics 201D. Instructor: De Marchi. One course. C-L: International Comparative Studies 325S
324A. International Finance. SS For students in Duke-in-NY Financial Markets & Institutions Program only. Provides working knowledge of international business finance, including currency, markets and manager behavior of international corporations. Emphasis on mechanics of foreign exchange market, reviewing tools used to hedge exchange rate risk. Construct building blocks of international finance: interest rate parity, purchasing power parity and international Fisher arbitrage equation. Address management issues, such as transfer pricing, offshore banking, working capital management, international M&A, business planning, and optimal international portfolios. Analyze international financial scams, swindles and trading abuses. Instructor: Connolly. One course.

325S. Economic Analysis of Current Energy Issues. SS, STS Examination of present-day sources and end-users of energy in U.S. and selected foreign nations with attention to external cost of energy systems. Fossil fuel prospects, new and renewable energy sources and nuclear power. Opportunities for increasing energy productivity. Proposals for dealing with climate change. Course equips students to evaluate proposals and arguments from all sides of the energy debates using facts and analysis. Prerequisite: Economics 201D. Instructor: Boyd or staff. One course. C-L: Energy 325S

326. Islam and the State: Political Economy of Governance in the Middle East. CCI, CZ, R, SS Lecture version of Economics 326S. Introduction to political history of Middle East from advent of Islam 14 centuries ago to modern era. Four objectives: (1) familiarize students with institutions responsible for characteristics of political development in region; (2) examine particular transformations/selected cases of inertia to derive lessons about mechanisms that govern political development, including democratization; (3) investigate how religion shaped region's political trajectory; (4) identify social forces, especially economic forces, driving contemporary rediscovery/reinterpretation of Islam's political organization and requirements, by both Islamists and secular political actors. Instructor: Kuran. One course. C-L: Political Science 308, Islamic Studies

326S. Islam and the State: Political Economy of Governance in the Middle East. CCI, CZ, R, SS Seminar version of Economics 326. Introduction to political history of Middle East from advent of Islam 14 centuries ago to modern era. Four objectives: (1) familiarize students with institutions responsible for characteristics of political development in region; (2) examine particular transformations/selected cases of inertia to derive lessons about mechanisms that govern political development, including democratization; (3) investigate how religion shaped region's political trajectory; (4) identify social forces, especially economic forces, driving contemporary rediscovery/reinterpretation of Islam's political organization and requirements, by both Islamists and secular political actors. One course. C-L: Political Science 308S

327S. Decision Making in Business. QS, R, SS This course introduces commonly used quantitative tools of managerial economics and management science in practice. Situations often require ability to identify decision situations, model complex processes, use information available to make a choice. Specific topics include spreadsheet modeling, decision and risk analysis, Monte Carlo simulation, and optimization. Areas of application include inventory management, financial instruments, insurance, and capital budgeting, planning and marketing. Topics based on students' general interests will also be discussed. Prerequisites: Economics 205D and 210D. Instructor: staff. One course.

328. Regulation and Deregulation in Public Utilities. QS, SS Explores historical basis for regulation of public utilities, with focus on energy utilities, from an economic and legal perspective. Application of standard monopoly microeconomics leading to rate of return regulation is developed leading to discussion of evolution of economic thought on electric power system economics and changes in some states to "deregulate" the regulation of electricity markets. Case studies of recent developments in these markets, market clearing entities (e.g. PJM), basis for location marginal pricing, measures of market power, and pricing of capacity and reliability. Prerequisites: Economics 205D and 210D. Instructor: Boyd. One course.

329S. Medical Malpractice. EI, R, SS, W Seminar will focus on each of four medical malpractice "system" markets. Students will write a term paper on one aspect of one market. A book and readings from journal articles will be assigned. The seminar will be of interest to anyone who wants to learn more about medical malpractice, tort, how legal markets and insurance operate, and the political economy and ethical implications of "tort reform." Instructor: Sloan. One course.

331SA. The Economics of the Energiewende in Germany. EI, SS, STS One course. C-L: see German 362SA; also C-L: Environment 367SA
332S. **Time Series for Financial Analysis.** QS, R, SS Theoretical/empirical tools & techniques in financial econometrics for modeling conditional distributions in discrete time. Topics include modeling conditional mean through ARMA models, variance through GARCH models, and exploring alternative distributions to capture conditional asymmetry and fat tails. Models used in finance to measure value-at-risk of portfolios, price European options & forecast term structure of interest rates. Individual research projects will advance overall understanding of conditional density modeling/testing, with possibility of continuing as senior honors thesis. Prerequisites: Economics 208D and one 300-level, or higher, Economics finance elective. Instructor: Staff. One course.

334. **Health Economics.** SS Economic aspects of the production, distribution, and organization of health care services, such as measuring output, structure of markets, demand for services, pricing of services, cost of care, financing, mechanisms, and their impact on the relevant markets. Prerequisite: Economics 205D or Public Policy Studies 303D. Instructor: Falba, Sloan or staff. One course. C-L: Public Policy Studies 331

338. **Economics of the Public Sector.** SS One course. C-L: see Public Policy Studies 304

343. **The Contemporary Art Market.** ALP, R, SS Historical and analytical study of the way art objects have been produced and marketed. Peculiarities of the product, applicable sales techniques, and pricing procedures. Attention to the role of dealers, auctioneers, the art of criticism and formation of preferences, and innovation. Comparative and longitudinal examinations of the evolution of practices, institutions, and the regulatory environment in art markets. Pre-req: Economics 201D. Instructor: De Marchi. One course. C-L: Art History 261, Markets and Management Studies

344. **History of Art Markets.** R, SS, STS One course. C-L: see Visual and Media Studies 242


346. **Philosophical and Conceptual Problems of Entrepreneurship.** SS One course. C-L: see Philosophy 447

347. **African Economic Development.** R, SS, W This course will seek to provide students with a realistic picture of African economies and societies today, emphasizing their heterogeneity and accomplishments, as well as focusing on reasons for continued widespread poverty throughout the continent. The course develops behavioral models that can be used to explain and predict household, market, and government behaviors and outcomes. Students are expected to quickly acquire basic stylized facts and economic models, and then analyze one of the many data sets now available. Instructor: Becker. One course.

348. **Women in the Economy.** CCI, EI, R, SS Economics of gender including the status of women in the labor market; feminist economic theories; ethical considerations of gender-based inequalities; gendered division of labor within the family and between the household and labor market. Situation of women in developing countries undergoing transition to market economies; gender-related measurements and indicators; explanations and remedies for female/male occupational segregation and wage differentials. Prerequisite: Economics 201D. Instructor: McElroy or staff. One course. C-L: Women's Studies 230, International Comparative Studies 348

351S. **The Economic and Political Performance of Civilizations.** CCI, CZ, R, SS Critical survey of theories concerning the economic and political development of major civilizations, with an emphasis on the causes of differences that took shape and persisted over long time periods. The theories covered address the roles of institutions, cultures, legal systems, beliefs, family structures, religions, institutions, technologies, geography, and natural resources. Interactions between economic and political development. Prerequisite: Econ 201D, or instructor consent. Instructor: Kuran. One course. C-L: Political Science 3278

352. **Economic Growth.** CCI, R, SS Examination of the enormous differences in living standards across countries, which reflect differences in growth experiences. Course studies both analytical foundations of modern growth theory and the most recent advances in modeling to shed light on old and new questions about such experiences. Instructor: Peretto. One course. C-L: International Comparative Studies 356
353. Financial Institutions. SS, STS The operations of commercial and central banking and non-banking financial institutions and instruments in the United States, determination of monetary aggregates and interest rates, the financial impacts of Treasury operations, and the linkages from Federal Reserve actions to price level, employment, economic growth, and balance of payments objectives. Coverage of models of monetary economics (for example the Cagan money demand function, cash in advance models). The dynamics and real effects of inflation. Prerequisite: Economics 210D. Instructor: Leachman, Kimbrough, or Staff. One course.

355. International Trade. CCI, SS, STS, W Topics include United States trade policies and protectionism, the North American Free Trade area, trade and economic relations with industrialized countries, policies toward developing countries and multilateral institutions, macroeconomic policy coordination, and relations with Europe. Prerequisites: Economics 201D. Instructor: Leachman or staff. One course. C-L: Public Policy Studies 288, International Comparative Studies 358, Markets and Management Studies

355A. International Trade. CCI, SS, STS, W Topics include United States trade policies and protectionism, the North American Free Trade area, trade and economic relations with industrialized countries, policies toward developing countries and multilateral institutions, macroeconomic policy coordination, and relations with Europe. Director of Undergraduate Studies consent required. Offered through Duke in New York Program. Prerequisites: Economics 201D. Instructor: Leachman. One course.

361. Prisoner’s Dilemma and Distributive Justice. EI, SS One course. C-L: see Political Science 331; also C-L: Philosophy 246, Ethics Courses Offered Through Other Departments, Information Science and Information Studies

362. Psychology for Economists. R, SS Behavioral economics couples scientific research on the psychology of decision making with economic theory to better understand what motivates investors, employees, and consumers. An examination of topics such as how emotion rather than cognition determines economic decisions, “irrational” patterns of how people think about money and investments, how expectations shape perceptions, economic and psychological analyses of dishonesty by presumably honest people, and how social and financial incentives combine to motivate labor by everyday workers and CEOs alike. Prerequisites: Economics 205D and 210D. Instructor: Ariely. One course.

362S. International Trade: Research Frontiers. SS, W Students introduced to articles of recent research in international trade and investment. Students will engage with literature, rewrite to make more accessible to classmates, evaluate it and propose how to extend it. By end of course, students will complete a pilot project, which may be extended to an honors thesis or a masters project. Prerequisites: Econ 205D and 210D. Instructor: Tower. One course.

367. Models of Conflict and Cooperation. SS Cooperative and noncooperative game theory with applications to trading, imperfect competition, cost allocation, and voting. Prerequisite: Economics 205D. Instructor: Graham. One course.

368. Behavioral Finance: A Taxonomy of Money Mistakes. SS Uses popular and accepted theories of human behavior from the fields of psychology and decision-making to characterize some prevalent features of irrational behavior in financial markets. Includes discussion of typical errors made by financial market participants as a result of behavioral biases, and examination of the extent to which irrationality can affect financial markets at the aggregate level ("bubbles"), how long irrationality may persist, and what factors will eventually cause these bubbles to burst ("crashes"). Instructor consent required. Prerequisite: Economics 205. Instructor: Rasiel. One course.


371. Labor and Family Economics. QS, R, SS Bridges gap between economic theory and real world data by giving students guided experience in answering real research questions using real data, drawing examples from the literature. Oral presentations and written summary/critiques of published papers in a workshop setting. Students work with cross-section and panel data sets, with the aim of learning to manage such data and give credible answers to research questions by coping with problems such as omitted variable and selection bias, unobserved differences across agents, and endogeneity. Research questions drawn from labor, family, and public economics. Prerequisites: Economics 205D and 208D. Instructor: McElroy. One course.

372. Intermediate Finance. QS, SS Integrates micro and macro economics with topics in finance. Utility maximization within mean variance framework for portfolio analysis and capital asset pricing model. Corporate valuation and discounted cash flow analysis. Capital structure and principal-agent problem will lead into a discussion of the Efficient Markets Hypothesis and underlying assumptions. Market pricing, forecasting, and financial crises. Prerequisites: Economics 101 (or Econ 21 and Econ 22); Statistical Science 111, or 130, or 230, or 210; Economics 205D, or Mathematics 212 or Mathematics 222, or Mathematics 216. Students may not enroll if Economics 168 already completed. Instructor: Rasiel. One course.

373. Corporate Finance. QS, R, SS Major corporate decisions from the perspective of the firm with an emphasis on the interaction of the firm with financial markets: quantitative project evaluation for investment, choice between borrowing and issuing stock, dividend policy, organizational form (for example, mergers and acquisitions). Introduction to financial markets: asset pricing, issuing stocks, analyzing financial performance using relative value tools, and options. Prerequisites: Economics 372 or Economics 205D and Economics 208D. Instructor: Fullenkamp. One course. C-L: Markets and Management Studies

374S. New Ventures Operating Plan. SS Course allows teams to follow structured process in carrying out analysis aimed at development of complete operating/business plan for new corporate venture. Four major areas form basis of operating plan: core competencies, elements of operating plan, budget, and financing plan. Instructor: Staff. One course.

375. The Economics of Entrepreneurship. SS Application of microeconomic theory, such as game theory and industrial organization, to analyze business start-ups and their development. Focus on evaluation of the role of entrepreneurs in the macroeconomy, and the microeconomic performance of young businesses. The effects of government policies and economic fluctuations on entrepreneurs will be addressed, as well as an understanding of the organization and financial structure, development, and allocational decisions of growing entrepreneurial ventures. Prerequisite: Economics 201D. Instructor: Kim. One course.


377A. The Economics of Financial Derivatives & Financial Engineering. QS, SS Duke-in-NY Finance Program. Introduction to derivatives focused on economic functions as tools for hedging/risk management. Topics include: forwards, futures, swaps, options, parity conditions, binomial options pricing, Black-Scholes formula, financial engineering for risk management Value-at-Risk (VAR). Emphasis on intuition and common sense implementation of technical material. Abuses and potentials for arbitrage profits considered. Prerequisites: Economics 205D and 210D; and either a statistics/probability course or demonstrated knowledge of basic probability concepts such as means, variances, and covariances. 300 or 400 level finance class helpful but not required. DUS consent required. Instructor: Tauchen. One course.

379. Emerging Markets: Finance, Trade, Institutions and the World Economy. CCI, CZ, EI, SS Analyzes rise of emerging markets/economies and their new role in the context of global economy. Focus on post-1970s growth of countries such as China, India, South Korea, Chile, Mexico, and Brazil (and/or other countries according to students' interests) with particular emphasis on financial, industrial/trading and institutional aspects, linking such rise to the emergence of vast global economic imbalances and new trend in capital and trade flows of the last decade. Explores economic and policy challenges these countries and their companies increasingly face and implications for the world economy. Prereqs: Econ 205D and Econ 210D. Instructor: Zanalda. One course. C-L: International Comparative Studies 379

389. Politics, Philosophy, and Economics Capstone. R, SS One course. C-L: see Political Science 449; also C-L: Philosophy 465

390. Selected Topics in Economics. Topics vary by semester. Prerequisite: Economics 201D; check individual semester offerings for additional prerequisites. Instructor permission usually an option. Instructor: Staff. One course.

390A. Duke-Administered Study Abroad: Advanced Special Topics in Economics. Topics differ by section. Prerequisite: Economics 201D; check individual semester offerings for additional prerequisites. Instructor: Staff. Variable credit.

390AS. Duke-Administered Study Abroad: Advanced Special Topics in Economics. Seminar version of Economics 390A. Topics differ by section. Prerequisite: Economics 201D; check individual offerings for additional prerequisites. Instructor: Staff. One course.

390S. Selected Topics in Economics. Topics vary by semester. Prerequisite: Economics 201D; check individual semester offerings for additional prerequisites. Instructor permission usually an option. Instructor: Staff. One course.

391. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic product. Consent of instructor and director of undergraduate studies required. Prerequisite: Economics 201D. Instructor: Staff. One course.

392. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic product. Consent of instructor and director of undergraduate studies required. Prerequisite: Economics 205D and Economics 210D. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Prerequisite: Economics 201D. Instructor: Staff. One course.

394. Research Independent Study. R Same as Economics 393, but for second-semester juniors and seniors. Consent of director of undergraduate studies required. Prerequisite: Economics 205D and 210D. Instructor: Staff. One course.

411. Microeconometrics. QS, R, SS Empirical research in microeconomics, with emphasis on three main sub-fields: labor economics, public economics, and industrial organization. Focus on current empirical research in these areas and student independent analysis of current research using statistical software. Prerequisite: Economics 208D or 608D. Instructor: Staff. One course.

413. Forecasting Financial Markets. QS, SS Introduces statistical models for financial price and risk. ARMA, GARCH, Value-at-Risk. Covers both theory underlying these models and practical implementation using statistical software (MATLAB). Prerequisites: Mathematics 202, or 212, or 216, or 221, or 222; and Economics 208D, or Statistical Science 111, or Statistical Science 130, or Statistical Science 230/Mathematics 230, or Statistical Science 250/Mathematics 342. Instructor: Patton. One course. One course.

431. Research Methods: Energy Markets and Environmental Impacts. R, SS, W Course accommodates students pursuing honors research, particularly with empirical focus. Topic of future honors research is student's choice; develop research skills drawn from examples in energy & environment. Format includes empirical replication paper, oral presentations, short written critiques. Subject matter drawn from published research studies in the field of energy/environmental economics (both macro & micro). Topics: world oil supply/demand, electricity energy trading markets, markets for pollution emissions allowances, energy efficiency and other sector specific analyses. Focus on
research methods used to solve economic question(s) presented. Prerequisites: Economics 205D & 210D. Instructor: Boyd. One course.

431S. Research Methods: Energy Markets/Environmental Impacts. R, SS, W Course accommodates students pursuing honors research, particularly with empirical focus. Topic of future honors research is student’s choice; students develop research skills drawn from examples in energy and environment. Format includes empirical replication paper, oral presentations, short written critiques. Subject matter drawn from published research studies in the field of energy/environmental economics (both macro & micro). Topics: world oil supply/demand, electricity energy trading markets, markets for pollution emissions allowances, energy efficiency and other sector specific analyses. Focus on research methods used to solve economic question(s) presented. Prerequisites: Economics 205D and 210D. Instructor: Boyd. One course. C-L: Energy and the Environment

433. The Economics of Wages and Employment. R, SS Demand for and supply of labor, including human fertility, human capital, hours of work, and labor force participation. Effects of family structure, marriage laws, taxes and transfers (welfare, earned income tax credit) on labor supply and the distribution of income across families and individuals. Labor market discrimination, unions. Prerequisites: Economics 205D; and Statistical Science 111, 130, 230, 250, or Mathematics 230 or 342. Instructor: McElroy or Sloan. One course.

438. Public Finance. QS, SS Economic aspects of the allocative and distributive role of government in the economy, the incidence and efficiency of taxation, the effects of taxation on behavior, and analysis of major government spending programs. Prerequisite: Economics 205D or Public Policy Studies 303D. Instructor: Serrato or staff. One course. C-L: Public Policy Studies 289

439. Economics of the Environment. SS, STS The role of the environment in the theory and practice of economics. Topics include ways in which markets fail to efficiently allocate resources in the presence of pollution, along with the array of policies regulators used to correct those failures; the empirical techniques used by economists to put values on environmental commodities; and an examination of questions related to everyday environmental issues, particularly those confronting the developing world. Prerequisites: Economics 201D and one Statistical Science course; Economics 208D recommended. One course. C-L: Environment 363, Marine Science and Conservation, Energy and the Environment. Instructor: Timmins. One course. C-L: Environment 363, Energy and the Environment, Marine Science and Conservation

442. Development Economics: Theory, Evidence and Policy. CCI, R, SS An exploration of leading issues in economic development, policy. Examination of roles of education, health, gender, demographic change, and urbanization. Analysis of structural change including roles of agriculture, technical change, industrialization, and international trade. Eclectic empirical emphasis using cross national evidence, the historical record, and country case studies. A "research mind set" based in part on critical analyses of exemplary empirical research is emphasized throughout. Prerequisites: Economics 205D and 210D. Instructor: Staff. One course.

445. Urban Economics II. EI, R, SS Historical evolution of cities from an economic perspective, considering the factors driving urban growth and decline at different points in history and the evolving organization of economic activity and social living within cities. Additional topics include dynamics of suburbanization and inner city decline, racial and ethnic segregation; urban industrial structure and spatial distribution of jobs; and impact of metropolitan political structure on urban sprawl and provision of public goods. Economics 205D required; Economics 208D (Econometrics) strongly recommended. Instructor: Bayer. One course.

446. Economics of Global Health. QS, R, SS Application of economic methods to examine key emerging issues in global health, with focus on health disparities. Emphasis on using economic models to better understand global health challenges and using econometric methods to empirically test hypotheses that seek to explain global health disparities. Discusses measurement of health and data quality. Explores individual, family and society-level determinants of health; impact of health on economic and social prosperity; demand and supply of health care. Discusses policy implications in each case. Prerequisites: Economics 205D and 208D; or Public Policy Studies 303D and Statistical Science 111 or 250; or consent of the instructor. Instructor: Thomas. One course. C-L: Global Health 431

455. International Finance. CCI, SS Analysis of the determinants of international capital movements, trade imbalances, and nominal and real exchange rates. Policy debates such as the foreign indebtedness of the United States, emerging market debt crises, exchange-rate-based inflation stabilization, and balance-of-payment crises. Prerequisites: Economics 372 or 205D and 210D. Instructor: Burnside or staff. One course.
461. How Markets Work: Theory, Evidence and Empirical Tools. QS, R, SS Uses theoretical models & empirical tools to understand how markets work and implications for public policy/firm strategy. Introduces main theoretical models and empirical techniques used to study range of markets, applying these methods to understand issues/markets in detail. Topics may include auctions, mergers/antitrust policy, collusion, dynamic pricing of new products, price discrimination, insurance markets and advertising. Students will read/evaluate research papers and complete empirical problem sets, highlighting areas suitable for future research. Prerequisites: Economics 208D. Instructor: Sweeting or Roberts. One course.

462. Behavioral Economics. QS, SS Introduction to the insights gained from incorporating psychology into economic modeling. Based exclusively on original, often recent, scientific publications. Focus on empirical evidence, theoretical models and economic implications. Equilibrium analysis is essential analytical tool. Participants will each give a presentation of a scientific paper from the reading list. This course will build on mathematics covered in Mathematics 202/212/222. Prerequisite: Economics 205D. Instructor: Sadowski. One course.

463. Law and Economics. EI, QS, SS A qualitative and quantitative introduction to economic analysis of legal issues and legal reasoning. Case studies in accident law, product liability, and the value of life. Other topics include contracts, property, affirmative action, civil procedure, and the economics of criminal behavior. Some models examined include a calculus-based approach. Prerequisite: Economics 205D. Instructor: Graham or staff. One course.

464. Competitive Strategy and Industrial Organization. QS, SS Foundations of the field of industrial organization, including the theory of the firm, models of competition, market structure, pricing and dynamic models. Emphasis on theory with support from specific industries, including telecommunications, retail and airlines. Prerequisite: Economics 205D. Instructor: Khan or Yildirim. One course. C-L: Markets and Management Studies

471. Financial Markets and Investment. QS, SS The structure and workings of financial markets. Topics include risk-return relationships, aspects of portfolio selection, the capital asset pricing model, the arbitrage pricing theory, fixed income analysis, and aspects of derivatives. Prerequisites: Economics 205D or Economics 372; and Statistical Science 111, 230, 130 or 250, or Mathematics 230 or 342. Instructor: Bollerslev, Rasiel, or staff. One course.

473. Corporate Finance Theory: Governance, Incentives and Valuation. QS, SS Uses tools of contract theory (information economics, mechanism design, and game theory) to analyze key features of corporate structure, performance, and valuation. Investigates critical interactions among stakeholders in a modern business enterprise (directors, executives, management, labor, financiers, shareholders, and regulators) in achieving goals and objectives of the corporation. Topics include: reform of corporate governance and auditing; role of private equity, financial markets, and takeovers; efficient determination of leverage, dividends, liquidity, risk management, and design of managerial incentive packages. Prerequisite: Economics 205D. Instructor: Taylor. One course.

480S. Honors Junior Research Workshop in Finance. QS, R, SS Application of tools and techniques developed in statistics and economics to research into the structure of financial markets at the very high frequencies. Topics include testing for jumps in financial prices, the role of high frequency micro-structure noise that masks fundamental price, the importance of macroeconomic news announcements, the roles of various asymmetries such as volatility feedback, and interactions across financial markets at the very high frequency. Research project analyzing large data samples. Prerequisites: Mathematics 212, Statistical Science 111, Economics 205D, 210D, 208D and one finance course (Economics 471, 372, 373). Economics 208D and finance may be taken concurrently. Consent of instructor required. Instructors: Bollerslev and Tauchen. One course.


490. Selected Topics in Economics. Topics vary by semester. Prerequisite: Economics 205D; check individual semester offerings for additional prerequisites. Instructor permission usually an option. Instructor: Staff. One course.
490A. Duke-Administered Study Abroad: Advanced Special Topics in Economics. Topics differ by section. Prerequisite: Economics 205D; check individual semester offerings for additional prerequisites. Instructor permission usually an option. Instructor: Staff. One course.

490AS. Duke-Administered Study Abroad: Advanced Special Topics in Economics. Topics differ by section. Prerequisite: Economics 205D; check individual semester offerings for additional prerequisites. Instructor permission usually an option. Instructor: Staff. One course.

490S. Selected Topics in Economics. Seminar version of Economics 490. Prerequisite: Economics 205D; check individual semester offerings for additional prerequisites. Instructor permission usually an option. Instructor: Staff. One course.

493. Honors Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is the production of an honors thesis, containing significant analysis and interpretation of a previously approved topic. Prerequisites: Economics 205D and Economics 210D. Consent of instructor and Director of Undergraduate Studies required. Instructor: Staff. One course.

495S. Honors Seminar I. R, SS, W First course in two-semester honors sequence. Guided research on student-selected topics. Iterative presentations and writing assignments on current literature related to student-selected topics and of student-developed research proposals. Course requires completion of research proposal suitable for write-up as honors thesis in Economics 496S. Prerequisites: Economics 205D, 208D and 210D. Instructor: Connolly, Kimbrough, or Staff. One course.

496S. Honors Seminar II. R, SS, W Following Economics 495S, iterative forum for conducting original research culminating in a substantive research project suitable for submission as an honors thesis. Prerequisites: Economics 205D and 210D. Consent of instructor required. Instructor: Connolly, Kimbrough, or staff. One course.

502S. Law, Economics, and Organizations. SS One course. C-L: see Public Policy Studies 602S

503S. Microeconomics of International Development Policy. SS One course. C-L: see Public Policy Studies 603S

505. International Trade and Policy. SS One course. C-L: see Public Policy Studies 605

506. Macroeconomic Policy and International Finance. SS One course. C-L: see Public Policy Studies 606

507. The Uses of Economics. The various ways economics is used in contemporary society: in the scholarly community, government, private sector, civil society, other disciplines, and popular culture. Readings in original texts and interpretative commentaries. Combined with Economics 311, this course may yield a written product suitable for submission for graduation with distinction. Graduate pairing for Econ 313; graduate students will receive additional writing assignments. Instructor: Staff. One course.

512. Equity Valuation and Financial Statement Analysis. High-level course for those who have previously had experience in corporate finance and accounting. Designed to give the student a deeper insight into important concepts relating to equity valuation and financial statement analysis, including such topics as international standards conversion, tax implications, long term liabilities and leases, and employee compensation. Prerequisites: Economics 174, and either Economics 372 or Economics 373. Instructor: Staff. One course.

513. Structuring Venture Capital and Private Equity Transactions. Design and implementation of corporate merger and acquisition transactions, including acquisitions of stock and assets of non-public corporations and acquisitions of publicly-held corporations in negotiated and hostile transactions. Covers federal securities law and state corporate law issues, including important forms of private ordering, such as poison pills, lock-ups, earn outs and the allocation of risks by the acquisition agreement. Relevant accounting, tax and antitrust issues and various regulatory considerations will also be covered. Prerequisites: Economics 174, and either Economics 372 or Economics 373. Instructor Staff. One course.

514. Fixed Income Markets and Quantitative Methods. QS Areas of focus include: The value of money and discounted cash flow concepts, statistics, probability concepts, correlation & regression, understanding risks associated with bonds, and bonds with embedded options, and mortgages and the mortgage markets. Prerequisites: Economics 372. Instructor: Staff. One course.

515. Introduction to Law & Economics. One course. C-L: see Law 359
521. Evaluation of Public Expenditures. SS One course. C-L: see Public Policy Studies 596; also C-L: Environment 532


523. Microfinance. Microfinancing, in which small loans are given to those who are impoverished/lack collateral, has been credited for alleviating poverty/raising the incomes of millions of people in developing countries. Is it really so successful? Course focuses on historical/theoretical basis of microfinance. Students engage in a critical assessment of microfinance. Overall, students gain factual/historical information concerning the 'microfinance revolution', learn the basic theoretical/analytical tools needed to design microfinance programs, and engage in critical thinking regarding recent debates in the field. Graduate pairing for Econ 323; graduate students will receive additional writing assignments. Instructor: Staff. One course.

527. Regulation and Deregulation in Public Utilities. Class explores historical basis for regulation of public utilities from an economic/legal perspective. Application of standard monopoly microeconomics leading to rate of return regulation is developed. This background sets stage for evolution of economic thought on electric power system economics and changes in some states, to "deregulate," the electricity markets. Class will explore case studies of developments in these markets, including evolution of regional market clearing entities like PJM, the basis for location marginal pricing, measures of market power, and pricing of capacity/reliability. Graduate pairing for Econ 328; graduate students will receive additional writing assignments. Instructor: Staff. One course.

529S. Medical Malpractice. Seminar will focus on each of four medical malpractice "system" markets. Students will write a term paper on one aspect of one market. A book will be assigned and readings from journal articles. The seminar will be of interest to anyone who wants to learn more about medical malpractice, tort, how legal markets and insurance operate, and the political economy of "tort reform." Graduate pairing for Econ 329S; graduate students will receive additional writing assignments. Instructor: Staff. One course.

530. Resource & Environmental Economics I. SS C-L: see Energy 520; also C-L: Public Policy Studies 576, Marine Science and Conservation

530D. Resource and Environmental Economics and Policy. One course. C-L: see Environment 520D; also C-L: Public Policy Studies 575D

530L. Resource and Environmental Economics. One course. C-L: see Environment 520L; also C-L: Public Policy Studies 575L, Marine Science and Conservation

530S. Investment Strategies. Course examines issues in personal investment strategies. Read/discuss a number of books/articles. Topics include behavioral finance, mutual funds, data-mining, Islamic funds, junk bonds, inflation indexed bonds, life cycle investing, market timing, passive versus active investing, predicting performance, pumping performance, rebalancing, sector funds, stock market anomalies, survivorship bias, tax managed investing, time zone arbitrage, and Tobin's Q. Substantive research paper required as well as midterm and final exams. Graduate pairing for Econ 272S; graduate students will receive additional writing assignments. Instructor: Staff. One course.

531. Resource & Environmental Economics II. SS Variable credit. C-L: see Environment 521; also C-L: Public Policy Studies 584

541S. Global Inequality Research Seminar. ALP, CCI, R, SS One course. C-L: see African and African American Studies 642S; also C-L: Sociology 642S, Political Science 642S, Public Policy Studies 645S

542S. Social Change, Markets, and Economy in China. CCI, SS One course. C-L: see Sociology 651S

544S. Computer Modeling. Introduction to the use of computer techniques in economic policy evaluation; policy applications to international economics, public finance and development economics; computer analysis of linearized and nonlinear models using Excel and GAMS. Students required to complete a major modeling project. Graduate pairing for Econ 344S; graduate students will receive additional writing assignments. Instructor: Staff. One course.

547S. Economy, Society, and Morality in Eighteenth-Century Thought. R, SS One course. C-L: see Political Science 675S

548S. Political Economy of Growth, Stabilization and Distribution. R, SS One course. C-L: see Political Science 645S; also C-L: Public Policy Studies 630S

550S. Global Responses to the Rise of China. CCI, SS One course. C-L: see Sociology 650S
553. **Labor Economics.** Demand for and supply of labor, including human fertility, human capital, hours of work, and labor force participation. Effects of family structure, marriage laws, taxes and transfers (welfare, earned income tax credit) on labor supply and the distribution of income across families and individuals. Labor market discrimination, unions. Background in microeconomics and econometrics recommended. Similar to Economics 433, but intended for MA students. Instructor: Staff. One course.


555S. **International Trade.** R, SS International trade, investment and migration, commercial policy, and the political economy of trade. Prerequisite: Economics 205D; and Economics 210D. Instructor: Staff. One course. C-L: Canadian Studies

557S. **International Macroeconomics.** Analysis of the determinants of international capital movements, trade imbalances, and nominal and real exchange rates. Policy debates such as the foreign indebtedness of the United States, emerging market debt crises, exchange-rate-based inflation stabilization, and balance-of-payment crises. Same as Economics 455 but with additional work. This course is not open to students who have taken Economics 455. Prerequisites: Economics 205D and 210D. Instructor: Staff. One course.

561. **African Economic Development.** Same as undergraduate course of the same name but requires an additional paper. This course will seek to provide students with a realistic picture of African economies and societies today, emphasizing their heterogeneity and accomplishments, as well as focusing on reasons for continued widespread poverty throughout the continent. The course develops behavioral models that can be used to explain and predict household, market, and government behaviors and outcomes. Students are expected to quickly acquire basic stylized facts and economic models, and then analyze one of the many data sets now available. Instructor: Staff. One course.

564. **Competitive Strategy and Industrial Organization.** SS, STS Foundations of the field of industrial organization, including the theory of the firm, models of competition, market structure, pricing and dynamic models. Emphasis on theory with support from specific industries, including telecommunications, retail and airlines. Similar to Economics 464, but requires additional assignment. Not open to students who have taken Economics 464. Instructor: Staff. One course.

567. **Computer Modeling.** QS, R, SS, W Introduction to the use of computer techniques in economic policy evaluation; policy applications to international economics, public finance and development economics; computer analysis of linearized and nonlinear models using Excel and GAMS. Students required to complete a major modeling project. Prerequisites: Economics 205D and 210D. Instructor: Staff. One course.

568S. **Current Issues in International and Development Economics.** SS, W Issues of income distribution within and between countries, vehicles for growth, regional development, the role of politics in economic policy, multinational institutions. Cross-country and cross-time comparisons. Emphasis on individual research projects. Prerequisite: Economics 205D and Economics 210D. Instructor: Staff. One course. C-L: International Comparative Studies 512S, Canadian Studies

570. **International Finance.** Analysis of the determinants of international capital movements, trade imbalances, and nominal and real exchange rates. Policy debates such as the foreign indebtedness of the United States, emerging market debt crises, exchange-rate-based inflation stabilization, and balance-of-payment crises. Graduate pairing for Econ 455; graduate students will receive additional writing assignments. Instructor: Staff. One course.
571. Financial Markets and Investments. QS, R  
Same as Economics 471, but requires an additional paper. Prerequisite: Economics 205D; Economics 210D; and Statistical Science 101, 111, 230, 130 or 250, or Mathematics 230 or 342. Instructor: Staff. One course.


580. Law and Economics. A qualitative and quantitative introduction to economic analysis of legal issues and legal reasoning. Case studies in accident law, product liability, and the value of life. Other topics include contracts, property, affirmative action, civil procedure, and the economics of criminal behavior. Some models examined include a calculus-based approach. Graduate pairing for Econ 463; graduate students will receive additional writing assignments. Instructor: Staff. One course.

590. Selected Topics in Economics. SS  
Instructor: Staff. One course.

590S. Selected Topics in Economics. SS  
Seminar version of Economics 590. One course.

591. Independent Study. Individual non-research, directed reading, or individual project in a field of special interest under the supervision of a faculty member. Consent of instructor and director of graduate studies or MA program director required. Instructor: Staff. Variable credit.

593. Research Independent Study. R  
Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of graduate studies or MA program director required. Instructor: Staff. Variable credit.

597. Economic Science Studies. SS, STS  
Application of techniques of science and technology studies to problems in the history, philosophy, methodology and sociology of economics. Addresses modern economics as a illustrative case of issues arising in Studies of Scientific Knowledge. What counts as "fact" in economics? Who decides, and by what processes of negotiation? Does accepting that knowledge in economics as a construct reduce the usefulness of that knowledge and affect the notion of progress in economic science? Why has mathematical economics enjoyed such success in recent decades? Close readings in texts across the sciences and in modern economics, and the history of mathematics, culminating in a research project. (Similar in context to Economics 318S, but requires an additional assignment. Not open to students who have taken Economics 318S) Prerequisites: Economics 205D; and Economics 210D or 248; and consent of instructor. Instructor: Staff. One course.

601. Microeconomics. QS, SS  
Topics include theory of consumer choice, demand, uncertainty, competitive and imperfectly competitive firms, factor markets, producer theory, and general equilibrium. Intended for master's students. Prerequisites: Intermediate microeconomics and multivariate calculus necessary. Matrix algebra and differential equations useful. Instructor: Staff. One course.

602. Macroeconomic Theory. Micro-founded dynamic general equilibrium models have become the standard tool for macroeconomic analysis. Course provides guidance on how to work with these models. Our baseline New Keynesian model will feature sticky prices combined with monopolistic competition. We will show that the result in framework is appealing from an empirical point of view and we will use it to assess the desirability of alternative arrangements for the conduct of monetary policy. Prerequisite: Economics 601. Instructor: Staff. One course.

606. Advanced Macroeconomics II. This course will briefly introduce you to some of the most widely used core models of modern macroeconomics. At the same time it will provide a strong theoretical and practical background that can be helpful if pursuing further studies in (macro-)economics. In particular we will build, step-by-step, one of the standard workhorses to study the business cycles, the real business cycles (RBC) model. We will start from its ancestor, the Solow growth model, pass by its origins, the deterministic neoclassical growth model, and work all the way up to its current dynamic stochastic general equilibrium (DSGE) model version. Instructor: Staff. One course.

608D. Introduction to Econometrics. QS, R  
Data collection, estimation, and hypothesis testing. Use of econometric models for analysis and policy. (Same as Economics 208D but requires additional term paper; not open to
students who have taken Economics 208D.) Economics MA's only. All other students require permission number. Prerequisites: Economics 21 and 22 or 201D; Mathematics 212 (co-requisite); Statistical Science 101, 111, 230, 130 or 250, or Mathematics 230 or 342. Instructor: Staff. One course.

612. Time Series Econometrics. SS Empirical research in macroeconomics and international finance, providing students with a series of econometric tools for empirical analysis of time-series and an introduction to the current empirical research in macroeconomics, international finance, and forecasting. Small project and simple empirical research required. Prerequisites: Satisfactory performance (as judged by the instructor) in Econometrics (Economics 208D) plus a course in Linear Algebra or consent of the instructor. A course in macroeconomics (Economics 210D) is very useful but not strictly enforced. Instructor: Staff. One course.

613. Applied Econometrics in Microeconomics. QS, R, SS Empirical research in microeconomics, with emphasis on three main sub-fields: labor economics, public economics, and industrial organization. Focus on current empirical research in these areas and student independent analysis of current research using statistical software. Same as Economics 411, but additional work required. Not open to students who have taken Economics 411. Prerequisite: Economics 208D or 608D. Instructor: Staff. One course.


673. Mathematical Finance. QS One course. C-L: see Mathematics 581

674. Financial Derivatives. One course. C-L: see Mathematics 582

675. Corporate Finance Theory: Governance, Incentives and Valuation. QS, SS Course uses tools of contract theory (information economics, mechanism design, and game theory) to analyze key features of corporate structure, performance, and valuation. Investigates critical interactions among stakeholders in a modern business enterprise (directors, executives, management, labor, financiers, shareholders, and regulators) in achieving goals and objectives of the corporation. Topics include: reform of corporate governance and auditing; role of private equity, financial markets, and takeovers; efficient determination of leverage, dividends, liquidity, and risk management, and design of managerial incentive packages. Prerequisite: Economics 205D. Instructor: Staff. One course.

690. Selected Topics in Economics. SS Instructor: Staff. One course.

690-82. Topics in Mathematical Finance. One course. C-L: see Mathematics 690-82

690S. Selected Topics in Economics. SS Seminar version of Economics 690. Instructor: Staff. One course.

The Major

The undergraduate degree in economics signifies achievement of proficiency in quantitative skills and experience in applying these to economics.

For the AB Degree

Prerequisites: Economics 21 and 22; or 101. Economics 201D. Mathematics 122 and 202; or 212, or 222, or any higher-level mathematics course with Mathematics 212 as a prerequisite. Statistical Science 111, Statistical Science 230/Mathematics 230, Statistical Science 130 or Statistical Science 250/Mathematics 342. Statistical Science is a prerequisite for Economics 208D and many other 300/400-level economics courses and therefore should be taken by the fall of sophomore year. Prerequisites for the major, as well as requirements, may not be taken Satisfactory/Unsatisfactory.

Requirements: Three core courses: Economics 205D, Economics 210D, and Economics 208D. Students are encouraged to complete these classes no later than the spring of their sophomore year. Five electives chosen from economics courses at the 300 level or above with at least one course at the 300 level and at least one course at the 400 level. Courses 500-549 can only be counted toward the major with the approval of the director of undergraduate studies. For students entering in Fall 2002 or later, at least one of these five courses must be in either economic history or the history, philosophy, or sociology of economics (Economics 322SA, Economics 302/History 306, Economics 319/Philosophy 345, Economics 304/History 310, Economics 312/History 308, Economics 311/History
307, Economics 313, Economics 314, Economics 316S or Economics 318S, or other courses with the approval of the director of undergraduate studies).

For the BS Degree

Students who contemplate graduate study in economics are urged to develop skills in intermediate calculus (Mathematics 212), linear algebra (Mathematics 221), differential equations (Mathematics 356), and advanced calculus (Mathematics 431).

Prerequisites: Economics 21 and 22; or 101. Economics 201D. Mathematics 122 and 202; or 212, or 222 or any higher-level mathematics course with Mathematics 212 as a prerequisite. Statistical Science 111, Statistical Science 230/Mathematics 230, Statistical Science 130 or Statistical Science 250/Mathematics 342. Statistical Science is a prerequisite for Economics 208D and many 300/400-level economics courses and therefore should be taken by the fall of sophomore year. Prerequisites for the major, as well as requirements, may not be taken Satisfactory/Unsatisfactory.

Requirements: Three core courses: Economics 205D, Economics 210D, and Economics 208D. Students are encouraged to complete these classes no later than the spring of their sophomore year. Five electives chosen from any economics courses at the 300 level or above with at least one course at the 300 level and one course at the 400 level. Courses 500-549 can only be counted toward the major with the approval of the director of undergraduate studies.

Substitution of similar courses in other departments at Duke for courses in the Department of Economics used toward major requirements is not permitted. A maximum of two transfer and/or study abroad credits may be counted toward major requirements. (The only exception applies to study abroad credit from the full year program at the London School of Economics, from which a maximum of four transfer and/or study abroad credits may be counted toward major requirements.)

For the BS Degree with Concentration in Financial Economics

The economics department also offers a BS degree with a concentration in financial economics. Certification of this concentration is designated on the official transcript. Students who wish to pursue this designation must complete the requirements for the BS degree with the addition of the following requirements.

Requirements: Economics 372 (Intermediate Finance). Three electives chosen from among the following economics courses: Economics 274, 305S, 324A, 373, 376A, 377A, 378, 379, Biomedical Engineering 385, 413, 453, 471, 473, 480S, 486S, 490S, 512, 513, 514, 673/Mathematics 581 674/Mathematics 582 and others with approval of DUS. Students graduating with a concentration in financial economics may not include Economics 372 as one of the five electives required for the BS degree in economics.

The Department of Economics maintains online resources to guide economics majors and minors at http://econ.duke.edu/undergraduate.

Departmental Graduation with Distinction

Awarding of Distinction

A student will be awarded distinction upon graduation if he/she has satisfied all of the following requirements:
• A minimum grade point average of 3.3 in the major and 3.3 overall;
• Completion of five electives commensurate with an undergraduate AB or BS degree; and
• Completion of an honors paper with a minimum grade of B+ determined by the primary instructor and an outside reader if taking Path 1 (see below). If taking Path 2, the honors committee will determine if the honors thesis qualifies for Graduation with Distinction.

Awarding of High Distinction

A student will be awarded High Distinction upon graduation if he/she has satisfied all of the requirements for Distinction and his/her honors thesis is selected by our honors committee from among nominated theses.

Awarding of Research Distinction

In recognition of the strong independent research dimension required of a successful honors thesis, a student will be awarded Research Distinction upon graduation if the honors committee determines his/her thesis qualifies for Graduation with Distinction regardless of whether or not the student meets the university and departmental GPA standards for Graduation with Distinction. These students will be recognized in the departmental graduation program.
Paths to the Honors Thesis

An honors thesis is a research paper completed during the senior year of the economics major. It represents a degree of research and critical thinking sufficiently complex and sophisticated as to require two to three semesters' worth of work. The thesis is planned, researched, drafted, and revised over the course of two to three semesters, using research tools and techniques commensurate with an undergraduate BS degree.

To be considered for Graduation with Distinction in economics, students must pursue one of two paths outlined below.

- **Path 1: Honors Workshop Courses:** The best setting in which to foster the research process is a two-semester workshop, resembling graduate workshops. In a workshop setting, students meet with their professor(s) and each other to observe advanced research (professors from outside the university, Duke economics graduate students, and Duke economics professors present their own research to the students), and then, in turn, develop and later present their own research on a regular biweekly basis, continually receiving feedback from their peers and from professors and graduate students.

  The department offers two distinct two-semester research workshop sequences for students interested in writing an honors thesis: Economics 495S (Honors Seminar I) and Economics 496S (Honors Seminar II); and for those students interested specifically in finance, Economics 480S (Honors Junior Research Workshop) and Economics 486S (Honors Senior Research Workshop). Students do not necessarily have to qualify for Graduation with Distinction in order to enroll in these research workshop sequences, nor will completion of either sequence guarantee Graduation with Distinction. Students who follow Path 1 will qualify for Graduation with Distinction or High Distinction if the honors thesis is awarded a minimum grade of B+. This grade will be determined by the instructor and confirmed by an outside reader. Note: Should a problem arise that prevents a student from completing this sequence, they can switch to Path 2 described below.

  Students who follow Path 1 may begin as early as the spring semester of their junior year. Davies Fellowships are available to sponsor some of these juniors (and their mentors) to enable them to do research full time under the supervision of their advisor during the summer between their junior and senior years.

- **Path 2: Independent Study Courses:** Students choosing this path enroll in Economics 394 (Research Independent Study) in either the spring of their junior year or the fall of their senior year, under the instruction of the mentoring faculty member. In the following semester (or in a subsequent semester), the student enrolls in an Economics 493 (Honors Research Independent Study) and completes the thesis. For the independent study courses (Economics 394 and Economics 493), students must enlist the approval of a specific faculty member (through submission of an approval form to the director of undergraduate studies) indicating that the faculty member is willing to work with the student for an entire academic year in an independent study format to produce an honors thesis.

  Students who start on Path 2 may switch to Path 1 by enrolling in Economics 496S (Honors Seminar II) with the signature of their faculty mentor and the approval of the 496S instructor (which is gained by submission of a satisfactory thesis proposal).

The Minor

**Requirements:** Economics 21 and 22; or 101. Economics 201D. Three additional economics courses, of which no more than one course may be at the 200 level other than Economics 205, 208, and 210, which may all be counted toward the minor; and two courses at the 300 level or higher. Courses 500-549 can only be counted toward the minor with the approval of the director of undergraduate studies. Substitution of similar courses in other departments at Duke for courses in the Department of Economics used toward minor requirements is not permitted.

Minor in Financial Economics

**Minor Requirements:** Economics 21 and 22; or Economics 101. Statistical Science 111 or Statistical Science 130 or Statistical Science 210; or both Statistical Science 230/Mathematics 230 and Statistical Science 250/Mathematics 342. Mathematics 222 or Mathematics 216; or both Mathematics 212 and Mathematics 221. Economics 372. Three electives to be selected from among the following: Economics 274, 305S, 324A, 353, 370, 373, 376A, 377A, 378, 379, Biomedical Engineering 385, 390S, 413, 455, 461, 471, 480S, 486S, 512, 513, 514, 673/Math 581, 674/ Math 582, and others with approval of DUS.
Education

Associate Professor of the Practice Riggsbee, Director of the Program; Associate Professor of the Practice Malone, Director of Undergraduate Studies; Associate Professors of the Practice Jentleson, Stephens, and Wynn; Instructors Allman and Anderson; University Distinguished Service Professor Emeritus O’Barr; Professors of the Practice Emeriti Ballantyne and Bookman; Associate Professor of the Practice Emeritus Di Bona; Secondary Appointments: Professor Plessor (Physics); Associate Professor of the Practice Reynolds (Biology); Assistant Professor of the Practice Roberts (Duke Institute for Brain Sciences); Lecturer Roy (Chemistry); Professor Schwartz-Bloom (Pharmacology and Cancer Biology); Affiliated Faculty: Adjunct Professor Trask; Adjunct Associate Professors Crumley and Pittman; Adjunct Senior Lecturing Fellow Fox; Adjunct Lecturing Fellows Alden, Daly, Januzzi-Godfrey, and McDonald; Adjunct Research Scholar Brewster; Adjunct Instructor Miglarese

A minor, but not a major, is available in this department.

Courses in Education (EDUC)

89S. First-Year Seminar. Topics vary each semester. Instructor: Staff. One course.


111FS. Pursuit of Equality: Rethinking Schools - Lens of Social Justice. CCI, EI, SS In 1954 the Supreme Court case Brown versus the Board of Education forever changed American schools by ending segregation and creating educational equity. Or did it? Are today’s schools any more inclusive or socially just than schools were 50 years ago? Examination of ways schools may or may not perpetuate and reproduce social inequities. Focus on recent efforts to imagine and create socially-just schools. Discussion of our ethical responsibilities as civically engaged citizens to work towards educational equality and provide support of schools that are inclusive, culturally responsive, and democratic. Required service-learning experience working with children in a Durham public school. Instructor: Malone and Riggsbee. One course.

190S. Special Topics. Topics vary each semester. Instructor: Staff. One course.

209S. A Digital Approach to Documentary Photography: Capturing Transience. ALP One course. C-L: see Documentary Studies 209S; also C-L: Visual Arts 212S, Visual and Media Studies 212S, Information Science and Information Studies

234S. Anthropology and Education. CCI, EI, SS Exploration of different conceptions of culture and the importance of employing cultural lenses to examine the process of education. Investigation, in particular, of the impact of culture and issues of race, class and gender in American schools. Instructor: Airall. One course. C-L: Cultural Anthropology 234S

237. Contemporary Issues In Education. CCI, EI, SS Investigation of current issues and problems in the field of education including areas of race, gender, equity, and educational policy. Examines issues from an interdisciplinary perspective. Includes fieldwork in local public schools. Required participation in service learning. Instructor: Anderson or staff. One course. C-L: Child Policy Research, Study of Ethics

239. Marxism and Society. CZ, EI, SS One course. C-L: see Literature 380; also C-L: Cultural Anthropology 203, Sociology 339, Political Science 371, International Comparative Studies, Marxism and Society

241. Promising Paradigms: Issues and Innovations in American Classrooms. EI, SS, STS Examination of promising educational initiatives and reform efforts, analysis of federal and state mandates and policies concerning educational issues, and exploration of innovative ideas and programs designed to advance classrooms into the 21st century. Focus given to the ethical and political implications of reforming America's schools within the context of policy development. Note: This is an online course with both synchronous and asynchronous components. Contact the instructor for additional information. Consent of instructor required. Instructor: Stephen. One course. C-L: Public Policy Studies 245, Child Policy Research

243S. Children, Schools, and Society. CCI, EI, SS, W The processes by which children are educated in the United States. Ways children acquire through schooling social skills, moral values, and a sense of their role in society. Evaluation of the appropriateness of these goals for schooling, how schooling shapes children's development, and how the education policies that sanction these processes are formed. Application of theory and research for solving complex societal problems that confront children, schools, and communities. Required participation in service learning. Instructor: Wynn. One course. C-L: Public Policy Studies 243S, Child Policy Research, Study of Ethics

244S. Children's Self Expression: Literacy Through Photography. EI, SS One course. C-L: see Documentary Studies 224S; also C-L: Visual and Media Studies 207S

255S. Literacy, Writing, Tutoring. SS, W Theories of literacy and high school and college level teaching tutoring practices. Composition studies, literacy studies, and writing center/tutoring theories. Includes tutoring students. Instructor: Russell. One course.

290. Selected Topics. Instructor: Staff. One course.

290A. Duke-Administered Study Abroad: Special Topics in Education. Topics differ by section. Instructor: Staff. One course.

290S. Selected Topics. Selected topics seminar. Instructor: Staff. One course.

290T. Freshman-Sophomore Tutorials (TOP). Small group discussions of significant books, authors, and ideas in education. May be repeated. Consent of instructor and Director of Undergraduate Studies required. Instructor: Staff. Half course.

307S. Issues of Education and Immigration. CCI, FL One course. C-L: see Spanish 307S; also C-L: Latino/a Studies in the Global South 307S

309. Global Education. CCI, EI, SS, STS Major educational changes and reforms in selected countries designed to illustrate general similarities and differences in the policies of developing and industrialized societies. Emphasis on American educational issues in the context of the emerging global economy with a focus on how policies affect various cultural groups due to economic, social, cultural, or gender diversity. Exploration of the ethical dimensions that decision makers must face in formulating policy. Investigation of the ways technological innovation is changing schools and the teaching/learning process. Instructor: Staff. One course. C-L: Child Policy Research


321S. Infancy, Early Childhood, and Educational Programs. CCI, EI, SS A comprehensive introduction to the field of early childhood education and child development from infancy to age eight. Examines programs, strategies, trends, and methods that reflect current educational practice and research. Involves structured service learning experiences in which students engage in comparative analysis of children of various cultures. Students also examine ethical issues encountered in early childhood programs. Instructor: Staff. One course. C-L: Child Policy Research

333S. Legal Issues in Education. R, SS, W A case analysis approach giving students an opportunity to identify and review past, current, and emerging legal issues and theories in education. Topics include students' rights (for example search and seizures, due process), institutional liability and teacher's rights at the elementary and secondary levels and in the college setting. Instructor: Wasiolek. One course.
356S. Digital Durham. ALP, STS One course. C-L: see Information Science and Information Studies 356S; also C-L: Visual and Media Studies 358S

363. Educational Leadership In and Beyond the Classroom. EI, R, SS, W Introduction to study of culture, organization, and leadership in K-12 schools. Exploration of the history of leadership theories and practices and their application to current educational settings. Focus on moral dilemmas, ethical concepts, and general nature of ethical reasoning in varied school settings. Contrast the current focus on school reform through increased accountability, high stakes testing, and standards with the power of shared systems of norms, values, and traditions. Study of essential skills of leadership: communication, human relations, shared decision making, and conflict resolution. Includes a service-learning component involving work in the community. Instructor: Wynn. One course.

366. Exceptional Learners: Policies and Practices. R, SS Provides a foundation of legal, social, educational, and psychological concepts focusing on understanding of exceptional learners. Explores social, cultural, and family context in which exceptional children live and learn. Educational approaches discussed within context of educational restructuring, with emphasis on determining appropriateness of educational placement of students viewed as exceptional. Overviews of various approaches to instructional interventions for students with exceptionalities are also examined. Prerequisites: Education 101, 240 or 243S. Instructor consent required. Instructor: Stephens. Half course.

385S. Higher Education and The News Media. SS One course. C-L: see Policy Journalism and Media Studies 385S; also C-L: Public Policy Studies 385S

390T-1. Junior-Senior Tutorials (Topics). Small group discussions of significant books, authors, and ideas in education. The availability of tutorials, their content, and the instructors will be announced before preregistration. Consent of instructor required. Instructors: Staff. Half course.


391. Independent Study. Directed readings in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or project on a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive research paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


408S. Teaching Practices in Elementary Language Arts and Social Studies. CCI, EI, SS Research-based teaching practices in elementary language arts and social studies for culturally diverse populations. Emphasis on literacy development across grade levels and content areas. Readings and field experience promoting critical analysis of ethical teaching practices, role of teachers and schools in society, and impact of teacher affect on environment and student learning. Consent of instructor required. Includes a service-learning component involving work in the community. Instructor: Riggsbee. One course. C-L: Study of Ethics

409S. Elementary Curriculum. Analysis, development, and evaluation of elementary curriculum with emphasis on integrating the expressive arts with literacy, mathematics, social studies, and science. Using Gardner's multiple intelligences model of learning, students write comprehensive curriculum units that focus on meeting the needs of learners from diverse social, ethnic, and cultural groups. Consent of instructor required. Instructor: Riggsbee or Stephens. One course.

410S. Research/Reflective Practice Elementary Education. R, SS, W Classroom-based action research and structured reflection to promote the development of inquiry-oriented teachers. Systematic, long-term research project focused on meeting the diverse needs of learners in the elementary classroom. Consent of instructor required. Instructor: Staff. One course.
420. Elementary Education: Internship. EI Engagement, as part of a teaching internship in elementary schools, in active classroom research projects by designing, implementing, and evaluating units of instruction. Creation of a portfolio of products to demonstrate technology competencies for teaching certification. Students also reflect and write on ethical issues involved in their service experiences in public schools. Consent of instructor required. Instructor: Riggsbee or Stephens. Two courses.

420-1. Elementary Education: Internship. EI Engagement, as part of a teaching internship in elementary schools, in active classroom research projects by designing, implementing, and evaluating units of instruction. Creation of a portfolio of products to demonstrate technology competencies for teaching certification. Students also reflect and write on ethical issues involved in their service experiences in public schools. Includes an optional pre-semester week-long guided study in New Delhi, India, focused on cross-cultural teaching and learning. Consent of instructor required. Instructor: Riggsbee. Two courses.

430S. Women and the Professions. EI, R, SS, W Interdisciplinary analysis of the history of ideas about women and the professions with emphasis on women's actions, past, present and future. The changing status of women in professional life; ethical and political implications of public and personal decision-making. Study of research and writing by and about women in professional fields; interviews with working women. Research paper integrating students' major, the internship experience and their future goals required. Senior seminar open only to Baldwin Scholars. Consent of instructor required. Instructor: Staff. One course. C-L: Sociology 430S, Study of Ethics

460S. Early Childhood Internship. EI Structured supervised internship in an early childhood program integrated with a reflective seminar in which students examine ethical issues in early childhood education. Includes comparative analysis of childhood experiences in different cultures. Instructor: Jentleson. One course.

490A. Duke-Administered Study Abroad: Advanced Special Topics in Education. Topics differ by section. Instructor: Staff. One course.

490S. Selected Topics. Selected topics seminar. Instructor: Staff. One course.

495. Teaching Practices in Secondary Education. Secondary School curriculum and instruction with special emphasis placed on meeting the needs of high school students from diverse cultural backgrounds. Includes field-based experience with a focus on examining ethical teaching practices. Instructor: Staff. One course.

496S. Secondary School Issues: Pedagogy, Culture, and Methods. CCI, EI, SS, STS Examination of schools and classrooms of the twenty-first century with focus on values, beliefs, and assumptions underlying teaching and learning in high school. Emphasis on ethical issues in teaching, pedagogical and methodological practices, teacher leadership, and impact of technology on schooling. Exploration of social fabric of schools as related to diversity, educational philosophies, and school culture by viewing these constructs from divergent perspectives. Students complete an extensive research project based on fieldwork in a local high school. Instructor: Wynn. One course. C-L: Study of Ethics


498-1. Secondary Education: Internship. CCI, R, SS Supervised internship in a local high school focused on integration of educational theories and effective teaching practices. Design, implementation, and evaluation of units of instruction. Creation of portfolio to demonstrate competencies for teaching certification in a specific secondary content field. Includes an optional pre-semester two-week guided study in New Delhi, India, focused on cross-cultural teaching and learning. Consent of instructor required. Instructor: Wynn. Two courses.

514. Technology, Society, and Schools. SS Role of technology in schools and society. Introduction for preservice teacher candidates to technology tools including Photoshop, web design, and digital storytelling. Emphasis on integrating technology into instruction and utilizing technology to become educational leaders. Includes elements of design through completion of online portfolio. Designed to meet the North Carolina Department of Public
Instruction technology requirements for teaching licensure. Consent of instructor required. Instructor: Crumley. Half course.


620. Nature and Needs of the Gifted Learner: Introduction to Characteristics and Educ/Affective Needs. Introduction to characteristics and unique educational and affective needs of gifted learners. Analysis of philosophical considerations, historical perspectives, definitions and types of giftedness, incidence, and evaluation procedures. Cultural comparisons of the manifestations of giftedness, ways of reversing underrepresentation of minority students in programs for the gifted, and affective social-emotional topics/issues relating to giftedness. This course is a post-bacc, non-degree course not open to Duke undergraduates. Consent of instructor required. Instructor: Staff. One course.

621. Methods and Materials for Teaching the Gifted Learner: Procedures for Differentiating Instruction. Fundamental procedures for differentiating instruction for gifted and talented students. Comparison of theories and research models regarding instructional practice. Focus on research based instructional strategies. Apply, analyze, implement, and evaluate various methods and models of gifted education. This course is a post-bacc, non-degree course not open to Duke undergraduates. Consent of instructor required. Instructor: Staff. One course.

622. Differentiating Curriculum for the Gifted Learner: Program Planning and Curriculum Development. Organize and deliver appropriate curriculum for gifted and talented students. Focus on program planning, exemplary program models, development of differentiated curriculum with appropriate modifications to content, process, product and learning environment. Instructor: Staff. One course.

623. Practicum and Seminar in Gifted Education. Supervised practicum with gifted learners in a differentiated education program. Students plan, develop, and evaluate educational experiences, with a special emphasis on the social and emotional development of gifted learners. Instructor consent required. Instructor: Staff. One course.

690S. Selected Topics Seminar. SS May be repeated. Consent of instructor required. Instructor: Staff. One course.

The Minor

The minor in education is designed to provide students who are majoring in arts and sciences disciplines with opportunities to combine coursework in their majors with academic and field-based experiences focused on the complex social, psychological, economic, historical, political, and cultural issues that impact schools and school children.

Requirements. A total of five courses including three required courses: Education 101; Education 240; and a third required education course chosen from a group of courses that address pedagogical theory and practice and the impact of individual differences and social diversity on teaching and learning; this third required course must be approved by the director of undergraduate studies in education, and involve a field-based experience. The fourth and fifth courses are electives that must be education courses at the 200 level or above. Only one of the five courses may be taken at an institution other than Duke.

University Teacher Preparation Programs

The Duke University Teacher Preparation Programs offers secondary teacher licensure programs at both the undergraduate and master’s levels and an elementary licensure program at the undergraduate level. A common conceptual framework—preparing knowledgeable and skilled instructors who conduct themselves professionally and ethically as they practice reflective teaching—links the Teacher Preparation Programs. As students complete general education requirements of Trinity College and of a selected major, they may also fulfill requirements of an approved Duke Teacher Preparation Program and become licensed to teach. Licensure by the Duke-approved program is authorized through the State Board of Education in North Carolina and is reciprocal with most states. A license to teach along with an undergraduate degree are required by most public school systems and recommended by many independent schools.

Brief descriptions of two undergraduate programs based on bachelor of arts or bachelor of science degrees (secondary school teaching and elementary teaching) are followed by a description of a program for secondary
teaching based on a master of arts in teaching degree. The goals of and criteria for admission to any of these programs are available from the respective offices.

Duke University is accredited by the North Carolina Department of Public Instruction (DPI) and the National Council for Accreditation of Teacher Education (NCATE) and has reciprocal approval for initial licensure with most of the fifty states. Title II data is available upon request.

Secondary School Teaching (AB or BS degree)

The Program in Education offers secondary school teacher licensure programs in English (open to English majors only), mathematics (open to mathematics majors only), social studies (open to majors in cultural anthropology, economics, history, political science, psychology, public policy, religion, or sociology) and science (open to majors in evolutionary anthropology, biology, chemistry, environmental studies, geology, or physics). Prospective teachers are advised to consult with the academic advisors in their majors and the secondary program director concerning their interest in teaching and in being accepted into this licensure program.

Interested undergraduate students may apply to the secondary school teaching program beginning in the sophomore year. Students are accepted by competitive criteria into a program which includes education courses with field experiences in local schools and an intensive senior spring semester teaching internship. During the internship, students teach high school classes in their respective disciplines under the supervision of an experienced teacher and a university professor.

Upon successful completion of the senior year spring semester internship and the four-year Trinity College undergraduate degree, students earn a teaching license and the minor in education.

Elementary School Teaching (AB or BS degree)

Undergraduate students who plan to teach young children (kindergarten through sixth grade) may become eligible for licensure to teach while at Duke in addition to completing any academic major offered by Trinity College. The Elementary Teacher Preparation Program includes education courses with field experiences in diverse classroom settings and an intensive senior spring semester internship.

Interested undergraduate students may apply to the elementary program beginning in the sophomore year. Students are selected by competitive criteria for participation in the program. An intensive senior spring semester links together a teaching internship in a local public school, curriculum design and implementation, and independent directed research (four course credits). Students selected for the elementary teaching program are placed as interns with mentor teachers in an elementary school and are also supervised by a Duke professor.

Upon successful completion of the senior year spring semester internship and the four-year Trinity College undergraduate degree, students earn a teaching license and the minor in education.

Master of Arts in Teaching (MAT) in Secondary Schools

The Master of Arts in Teaching Program is designed for students who wish to teach their discipline in secondary schools by completing a graduate degree. The normal sequence for MAT coursework may begin in the spring semester of the senior year. Courses may not be double-counted toward both the bachelor's and MAT degrees. Additional information is available from the MAT office. This program is approved for teacher licensure by the State Board of Education in North Carolina and is reciprocal with most states.

Electrical and Computer Engineering

For courses in electrical and computer engineering, see page 688.

Energy and the Environment

Professor Klein and Professor Knight, Codirectors

A certificate, but not a major, is available in this program.

The undergraduate certificate in energy and the environment is designed to provide Duke undergraduates with an understanding of the breadth of issues that confront our society in its need for clean, affordable, and reliable energy. An expertise in energy will expand the students' career options in the private, nonprofit, government, and academic sectors. In addition to integrative core and capstone courses, the certificate will expose students to the three key disciplines in the study of energy and the environment: markets and policy; environmental impacts and resources; and energy technology. The goal of the certificate is to develop innovative thinkers and leaders who
understand the energy system as a whole and the important interconnections among policy, markets, technology, and the environment.

Beyond traditional coursework, the certificate in energy and the environment will offer a variety of activities intended to provide students with a real-world perspective and hands-on experiences. These include field trips, guest speakers such as visiting executives and practitioners, research opportunities, and internships. Additional information may be obtained from the Undergraduate Programs Office for the Nicholas School.

Program Requirements

The certificate requires a total of six courses, no more than three of which may originate in a single department. No more than two courses counted toward the certificate in energy and the environment may also satisfy the requirements of any major, minor, or other certificate program. AP credit may not fulfill certificate requirements.

Energy use is a multifaceted problem that draws upon the perspectives and expertise of a variety of disciplines; the certificate in energy and the environment is therefore similarly interdisciplinary.

The following requirements apply to students who declare their intent to pursue the certificate in Fall 2013 or thereafter. Students who declared prior to Fall 2013 will follow the previous requirements, or may petition to follow the new requirements.

- **One introductory course:** Earth and Ocean Sciences/Environment/Energy 330 (Energy and the Environment)
- **One elective course from each of the following three areas:** Markets and Policy; Environment; and Energy Science and Technology (see approved elective courses below).
- **One additional elective course,** selected from elective course list below, other energy courses, or approved independent study.
- **One Capstone Project Course (choose 1):** Environment 452L (for Trinity students)/Engineering 424L (for Pratt students) (Energy and Environment Design). Teams of students explore the feasibility of a new or modified energy resource, technology or approach. An integrative design course addressing both creative and practical aspects of the design of systems related to energy and the environment. The capstone course may be co-listed as specific Bass Connections in Energy course section intended for Energy and Environment Certificate students.

Electives (one from each area)

Three elective courses are required, with one from each area (markets and policy, environment, and energy science and technology) taken from the below list. The most up-to-date version of this list can be found on the program’s website at [http://nicholas.duke.edu/programs/certificate-energy-and-environment-undergraduates-only](http://nicholas.duke.edu/programs/certificate-energy-and-environment-undergraduates-only).

**Markets and Policy**

Civil and Environmental Engineering
- 315. Engineering Sustainable Design and the Global Community

Economics
- 119. Introduction to Political Economy
- 431S. Research Methods: Energy Markets/Environmental Impacts
- 439. Economics of the Environment

Environment
- 212. United States Environmental Policy
- 345. Environmental Politics in the United States
- 363. Economics of the Environment
- 365. Engineering Sustainable Design and the Global Community
- 544S. Collective Action, Property Rights, and the Environment
- 577. Environmental Politics
- 583S. Energy and U.S. National Security

**Political Science**

- 145. Introduction to Political Economy
- 344. Environmental Politics in the United States
- 549S. Collective Action, Property Rights, and the Environment
- 663S. Energy and U.S. National Security

**Public Policy Studies**

- 211. Engineering Sustainable Design and the Global Community
- 275. United States Environmental Policy
- 281. Environmental Politics in the United States
- 577. Environmental Politics
- 583S. Energy and U.S. National Security
Energy and the Environment
Chemistry
91. Chemistry, Technology, and Society
Civil and Environmental Engineering
461L. Chemical Principles in Environmental Engineering
462L. Biological Principles in Environmental Engineering
Earth and Ocean Sciences
355. Global Warming
364S. Changing Oceans
514. Energy and Ecology
544S. Geoengineering
Environment
102. Introduction to Environmental Sciences and Policy
245. The Theory and Practice of Sustainability
362S. Changing Oceans
Energy Science and Technology
Note: in selecting the elective course in energy science and technology, it is important to consider which course will provide optimal preparation for the student's capstone project course. Students should discuss their selection of this elective with a co-director of the program.
Energy
310. Introduction to Energy Generation, Delivery, Conversion and Efficiency
630. Transportation and Energy
Energy Engineering
310. Introduction to Energy Generation, Delivery, Conversion and Efficiency
490. Special Topics in Energy Engineering
Environment
630. Transportation and Energy
631. Energy Technology and Impact on the Environment
Mechanical Engineering and Materials Science
461. Energy Engineering and the Environment
490. Special Topics in Mechanical Engineering
Physics
137S. Energy in the 21st Century and Beyond
Students may take the following as their fourth elective course for the certificate:
Energy 395/396. Connections in Energy: Projects. Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing energy issues. Teams may also include postdoctoral fellows, visiting energy fellows, and other experts from business, government, and the nonprofit sector. A team’s work may run in parallel with or contribute to an ongoing research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Instructor consent required.
Energy Initiative
Energy education at Duke capitalizes on the university’s broader Energy Initiative, a university-wide interdisciplinary collaboration addressing today’s pressing energy challenges related to the economy, the environment, and security. Duke students—at all levels—will gain the training, skills, and experiences needed to play leadership roles in a rapidly evolving energy future. For more details see energy.duke.edu.
There are many different curricular opportunities within the energy designation. Undergraduate students may opt to enroll in a certificate program through the energy and environment certificate, and Pratt School of Engineering students may also choose to minor in energy engineering. Professional students may choose to concentrate in energy within many of their programs. In addition, students may register for an energy gateway course or go deeper by registering for one of the energy depth courses.
In addition to the traditional courses, students may also choose to become involved with the Energy Theme within Bass Connections. Bass Connections in Energy independent study courses engages students and faculty in team-oriented, problem-focused education across disciplines, educational levels, and schools; geographic boundaries; and boundaries between the university, business, civil society, and government.
Courses in Energy (ENERGY)
239. Our Changing Atmosphere: From Air Pollution to Climate Change. NS, STS One course. C-L: see Environment 239
310. Introduction to Energy Generation, Delivery, Conversion and Efficiency. One course. C-L: see Energy Engineering 310; also C-L: Energy and the Environment

364. Green Germany: World Leader in Environmental Policy. CCI, CZ, EI, SS, STS One course. C-L: see German 364; also C-L: History 250, Environment 366

395. Connections in Energy: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing energy issues. Teams may also include postdoctoral fellows, visiting energy fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires substantive paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. One course.

395-1. Connections in Energy: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing energy issues. Teams may also include postdoctoral fellows, visiting energy fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires substantive paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. Half course.

396. Connections in Energy: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing energy issues. Teams may also include postdoctoral fellows, visiting energy fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires substantive paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. One course.

396-1. Connections in Energy: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing energy issues. Teams may also include postdoctoral fellows, visiting energy fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires substantive paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. Half course.


452L. Energy and Environment Design. NS, R One course. C-L: see Environment 452L

520. Resource & Environmental Economics I. SS C-L: see Environment 520; also C-L: Economics 530, Public Policy Studies 576

524. Water Quality Health. One course. C-L: see Earth and Ocean Sciences 524; also C-L: Environment 524, Global Health 534

590S. Advanced Topics in Energy. Selected topics vary by semester. Instructor: Staff. One course.

630. Transportation and Energy. SS, STS One course. C-L: see Environment 630; also C-L: Energy and the Environment

635. Energy Economics and Policy. SS C-L: see Environment 635

638L. Environmental Life Cycle Analysis & Decision. NS, R, STS C-L: see Environment 638L

795. Connections in Energy: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing energy issues. Teams may also include postdoctoral fellows, visiting energy fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will partic-
ipate in seminars, lectures, field work and other learning experiences relevant to the project. Requires substantive paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. One course.

795-1. Connections in Energy: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing energy issues. Teams may also include postdoctoral fellows, visiting energy fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires final paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff.

796. Connections in Energy: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing energy issues. Teams may also include postdoctoral fellows, visiting energy fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires substantive paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. One course.

796-1. Connections in Energy: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing energy issues. Teams may also include postdoctoral fellows, visiting energy fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires final paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff.

Engineering

For courses in engineering, see page 698.

English

Professor Tennenhouse, Chair and Director of Undergraduate Studies; Professors Aers, Aravamudan, Armstrong, Beckwith, Clum, Davidson, Ferraro, Holloway, Khanna, Mitchell, Mackey, Moi, Pfau, Pope, Porter, Strandberg, Tennenhouse, Tetel, Torgovnick, and Wald; Associate Professors, Moses, Psomiades, Sussman, Wallace, and Willis; Assistant Professor Baran; Professor of the Practice Donahue; Associate Professor of the Practice Malouf; Assistant Professor of the Practice Hillard and Vadde; Lecturers Askounis, Carlson-Hijuelos

A major or a minor is available in this department.

Courses in English (ENGLISH)

20. Literature and Composition. Credit for Advanced Placement on the basis of the College Board examination in literature and composition. One course.

22. Composition and Language. Credit for Advanced Placement on the basis of the College Board examination in composition and language. One course.

89S. First-Year Seminar on Literature. ALP Topics vary each semester offered. Prior to the drop/add period, this course is restricted to first-year students who have not fulfilled their seminar requirement. Instructor: Staff. One course.

90S. Special Topics in Literature. ALP, W Topics vary by semester; emphasis on development of writing skills. Instructor: Staff. One course.

110S. Introduction to Creative Writing. ALP, W A multi-genre course designed for students who have little or no previous experience producing imaginative literary texts. This course does not count toward the English major, but would count toward the minor in creative writing. Instructor: Staff. One course.
111S. Documentary Writing: Creative Nonfiction Through Fieldwork. ALP, R, W One course. C-L: see Documentary Studies 111S; also C-L: Policy Journalism and Media Studies


171. Representative American Writers. ALP, W Continuation of English 161. Selections and complete works. James, Frost or Robinson, Crane or Dreiser, O'Neill, Faulkner, Hemingway, and others. Instructor: Staff. One course.

180. Introduction to Cultural Studies. ALP One course. C-L: see Literature 150; also C-L: Visual and Media Studies 180, Arts of the Moving Image, Marxism and Society

181. Introduction to Film Studies. ALP One course. C-L: see Arts of the Moving Image 201; also C-L: Theater Studies 278, Literature 110, Visual and Media Studies 289, Documentary Studies 264, Policy Journalism and Media Studies

182S. Reading Historically. ALP, W An introduction to the skills of critical reading through the study of representative writings selected from various historical periods, contextualized with the cultural and historical background of their times. Instructor: Staff. One course.

184S. Readings in Genre. ALP, W An introduction to the skills of critical reading and the vocabulary of critical analysis by close examination of poetry, fiction, and drama (or other media such as film) from a range of historical periods. Instructor: Staff. One course.

186S. Reading Thematically. ALP, W An introduction to the skills of critical reading through the close examination of representative literary works that deal with a common theme, problem, or concept. Instructor: Staff. One course.

190A. Duke-Administered Study Abroad: Special Topics in English. Topics differ by section. Instructor: Staff. One course.

190FS-2. Focus Program Seminar: Topics on Literature. ALP Topics vary each semester offered. Instructor: Staff. One course.

190FS-3. Focus Program Seminar: Topics on Linguistics. SS Topics vary each semester. Instructor: Staff. One course.

190S-1. Special Topics in Language and Literature. Topics vary each semester. Instructor: Staff. One course.

190SFA. Literature of the Sea. ALP, W Travel narratives, poetry, novels, drama, epics, and film that take place at sea, or on island shores, as well as secondary literature that theorizes on physical, political, and philosophical possibilities in supra- and transnational spaces. Emphasis on the social, cultural, and political structures that function at sea, focusing on exile, imperial travel, the Middle Passage, cosmopolitan journeys, shipwreck, and tourism. Material can include eco-criticism/fiction on Marine Lab travel sites: Singapore, Hawaii, Trinidad, Carolina islands. Given at Beaufort. Instructor: Staff. One course.

204. English Historical Linguistics. SS Introduction to methods and principles of historical linguistics, as exemplified by the history of the English language from Proto-Indo-European to the present. Not open to students who have taken English 208S. Satisfies the Criticism, Theory, and Methodology (CTM) for English majors. Instructor: Staff. One course. C-L: Linguistics 204, International Comparative Studies 220

205. Introduction to Old English. ALP, CCI, CZ, R Introduction to the literature and culture of England before 1100 with focus on learning to read the written language of this period, beginning with short, simple prose texts and poems and arriving at more sophisticated literature. Satisfies the Area I requirement for English Majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 308

206. Variety in Language: English in the United States. CCI, SS One course. C-L: see Linguistics 206

207. Middle English 1100-1500. ALP, CCI, W The principal forms and examples of English prose, poetry, and drama of the Anglo-Saxon and Middle English periods (excluding Chaucer). Satisfies Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 318

209FS. The Mind and Language. SS Explores how traditional and new models of language interpret the capacity for language in its relationship to the neurosciences, the cognitive sciences, and the social sciences. For Focus Program students only. Instructor: Andresen. One course. C-L: Linguistics 210FS

211S. Digital Writing. ALP, W Theory and practice of emergent forms of writing in digital media; includes advanced instruction in writing for blogs, wikis, and other digital environments. Instructor: Staff. One course.


219A. Science and Nature Writing: Naturalist Narratives, Classic to Contemporary. ALP, STS, W One course. C-L: see Environment 219A; also C-L: Marine Sciences, Marine Science and Conservation

219S. Scientific Writing. ALP, W Prerequisite: Writing 101. Instructor: Staff. One course.

220S. Introduction to the Writing of Poetry. ALP, W The introductory level genre specific workshops are for students with some experience in creative writing who wish to deepen their knowledge of their chosen genre and gain increased mastery of elements of craft. Recommended for students who have taken English 110S. Instructor: Staff. One course.

221S. Introduction to the Writing of Fiction. ALP, W Introductory level genre-specific workshops for students with some experience in creative writing wishing to deepen their knowledge of their chosen genre and gain increased mastery of elements of craft. Recommended for students who have taken English 110. Instructor: Staff. One course.

222S. Introduction to the Writing of Creative Non-Fiction. ALP, W The introductory level genre-specific workshops are for students with some experience in creative writing who wish to deepen their knowledge of their chosen genre and gain increased mastery of elements of craft. Recommended for students who have taken English 110S. Instructor: Staff. One course.

225S. Writing the Movie. Introduction to the Theory and Practice of Writing for the Screen. ALP, W One course. C-L: Arts of the Moving Image 306S

226S. Dramatic Writing. ALP, W One course. C-L: see Theater Studies 280S; also C-L: Arts of the Moving Image

227S. Transforming Fiction for Stage and Screen. ALP, W One course. C-L: see Theater Studies 282S; also C-L: Arts of the Moving Image 302S

231. Medieval English Literature to 1500. ALP, CCI, R The principal forms and examples of English prose, poetry, and drama of the Anglo-Saxon and Middle English periods (excluding Chaucer). Satisfies the Area I for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 317

233. Sixteenth-Century English Literature. ALP May include such authors as Wyatt, More, Sidney, Spenser, Raleigh, Marlowe, and Shakespeare. Satisfies the Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 326


238. Seventeenth-Century English Literature. ALP May include work by such authors as Jonson, Donne, Tournier, Webster, Ford, Bacon, Burton, Browne, and Milton. Satisfies the Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 328

243. Eighteenth-Century English Literature. ALP Major genres and authors such as Dryden, Congreve, Addison, Swift, Pope, Gray, Johnson, Blake, and Defoe or Fielding. Satisfies Area II requirement for the English majors. Instructor: Staff. One course.


247. Victorian Literature. ALP Major works and genres of Victorian literature by such authors as the Brontes, Dickens, Hardy, Tennyson, Carlyle, Browning, Arnold, and Ruskin. Satisfies Area II requirement for English majors. Instructor: Staff. One course.

251. British Literature: 1900 to 1945. ALP Major genres and works by such authors as Yeats, Conrad, Shaw, Joyce, Lawrence, Woolf, Eliot, Auden, among others. Satisfies Area III requirement for English majors. Instructor: Staff. One course.
260. American Literature to 1820. ALP, CCI Works by authors of the colonial period and the early Republic. Satisfies Area II requirement for English majors. Instructors: Staff. One course.

266. African American Literature. ALP, CCI, R Oral and literary traditions from the American colonial period into the nineteenth century, including spiritual as lyric poetry and the slave narrative as autobiography. Not open to students who have taken the former English 167. Satisfies Area II requirement for the English major. Instructor: Staff. One course. C-L: African and African American Studies 223

269. Classics of American Literature, 1820-1860. ALP Prose and poetry by such authors as Emerson, Thoreau, Hawthorne, Poe, Melville, and Whitman. Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

270. Classics of American Literature, 1860 to 1915. ALP, CCI Prose and poetry by such authors as Cather, Chesnutt, Chopin, Crane, Dickinson, DuBois, Freeman, Gilman, James, Jewett, Twain, Washington, Wharton. Satisfies Area II requirement for English majors. Instructor: Staff. One course.


272SA. Transforming Fiction for Stage and Screen. ALP, W One course. C-L: see Theater Studies 282SA; also C-L: Arts of the Moving Image 302SA

275S. Asian American Literature. ALP, CCI, CZ Asian/ American Cultural production from the late nineteenth century read in the context of United States colonialism and Asia/ Pacific wars and resultant migrations. Film and hypertext, lyrics (from poetry to rap), drama, fiction and non-fiction. Not open to students who have taken this course as English 179ES. Satisfies Area III requirement for English majors. Instructor: Staff. One course.

276. African American Literature. ALP Continuation of English 164A. The late nineteenth century to contemporary writers. Not open to students who have taken the former English 168. Satisfies the Area III requirement for English majors. Instructor: Staff. One course. C-L: African and African American Studies 224

278S. Studies in Women's Fiction. ALP, CCI, R, W Readings cover a range of British and American writers from Bronte to Morrison. Focus is on dominant narratives and counter-narratives reflecting differing cultural constructions of gender, class, race, and sexuality in the novels, as well as evolving ideas of female authorship and their relation to the traditional western canon. Area requirements (Area I, II, III) for English majors will be determined by the Director of Undergraduate Studies. Instructor: Staff. One course.

284S. Poetry, Medicine, and Healing Arts. ALP, EI, R The multiple historical and contemporary relationships between the expressive and the healing arts, from representations of the body, to the power of poetry to console, its role in mediating personal and cultural trauma, the neuroscience of emotions, and the growing use of poetry in medical curricula for diagnosis, empathy and ethics training, and developing coping skills for healers and healed alike. Satisfies Area III for the English major. Instructor: Staff. One course.

285. Secularization and Modernity: Cross-Disciplinary Readings 1750-1914. ALP, CCI, CZ, EI, R An exploration of the concept of secularization as the key-concept driving European modernity, with focus on the period from the Enlightenment to the early 20th century; readings to be selected from literary, sociological, philosophical, political, and theological writings; authors may include some of the following: Hume, Rousseau, Kant, Blake, Goethe, Coleridge, Kierkegaard, J. H. Newman, Flaubert, G. Eliot, Dostoevsky, Nietzsche, M. Weber, Durkheim. Original research projects to explore with primary and secondary materials. Instructor: Staff. One course. C-L: Sociology 348, Political Science 374, German 376, Romance Studies 360, Literature 243, Study of Ethics

287. Romantic Fairy Tales: Literary and Folk Fairy Tales from Grimms to Disney. ALP, CCI, CZ One course. C-L: see German 262; also C-L: Literature 252

288K. American Dreams, American Movies. ALP A survey course in selected American films that create as well as reflect American national identity. Through lectures, weekly screenings and students' oral reports, we will study a dozen of the best-loved movies in our popular culture, from "The Gold Rush," "King Kong," and "It Happened One Night" to "Singin' in the Rain," "The Godfather" and "WALL-E." We will examine how these movies, their directors, and their stars, came to define American mythologies in the twentieth century and how they have collected

290-3. Special Topics in English Literature, 1945 to the present. ALP Majors authors, topics, or themes in Literature written in English since 1945. Satisfies the Area III requirement for English majors. Instructor: Staff. One course.


290AS-2. Topics in Nineteenth-Century British Literature. Taught in the Oxford Summer Program. Satisfies the Area II or III requirement for English major. To be determined by the Director of Undergraduate Studies in English. Instructor: Staff. Two courses.

290FS. Special Focus Topics in Writing. ALP Topics vary each semester offered. Open only to students in the Focus program. Instructor: Staff. One course.

290S-1. Special Topics in Medieval and Early Modern Literature. ALP A major author, topic, or theme of the medieval and early modern period (excluding Chaucer). Satisfies the Area I requirement for English majors. Topics vary each semester. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 290S-1

290S-2. Special Topics in Eighteenth and Nineteenth Century Literature. ALP A major author, topic, or theme of eighteenth and nineteenth century literature. Satisfies the Area II requirements for English majors. Topics vary each semester. Instructor: Staff. One course.

290S-3. Special Topics in English Literature: Modern and Contemporary. ALP A major author, topic, or theme of modern and contemporary literature. Satisfies Area III for the English major. Topics vary each semester. Instructor: Staff. One course.

290S-4. Special Topics in Creative Writing. ALP, W Topics vary each semester. Instructor: Staff. One course.

310A. The Business of Art and Media. Duke in New York. The changes experienced by print and visual media (book publishing, magazines, newspapers, TV, films, theatre, advertising) in the twenty-first century in how art and business can, and often must, be done and in how they interact with society. Examinations through readings (including selected case histories) and guest speakers of how technology and technological change affect art and society today. Satisfies Area III requirement for English majors. Instructor: Torgovnick. One course. C-L: Art History 313A, Visual and Media Studies 301A, Policy Journalism and Media


313A. Internship in New York. Immersion in the professional art world through apprenticeship to a sponsoring artist or organization. Students spend fifteen hours per week at the internship and write a substantive paper containing significant analysis and interpretation of the relation of the students' sponsoring institution to the art form of activity as a whole, the system of production and consumption surrounding that art form or activity, and the sponsor's organizational framework, operating mechanics, and role in the creation, preservation, or interpretation of the art form or activity. Open only to students admitted to the Duke in New York Arts Program. Does not count toward the major. Consent of instructor required. Instructor: Staff. One course. C-L: Theater Studies 214A, Art History 312A, Visual and Media Studies 296A

313A-1. Internship in New York. Immersion in the professional world of the arts and media through working with a sponsoring artist, organization, or business. Open only to students admitted to the Duke in New York Arts and Media Program. Does not count toward the major. Consent of Instructor required. Instructor: Staff. C-L: Theater Studies 214A-1, Visual and Media Studies 296A-1

314A. The Business of City Life. A half-credit course to help place your internship in the business of city life. Saturday tours of city neighborhoods (Chinatown, Harlem, Lincoln Square, Central Park) that have been visibly and dramatically impacted by developments in the city's economic life and in cultural or public policy, with coordinated
readings, lectures, and discussion. Topics to include global Chinese identity in Chinatown; gentrification in Harlem; non-profits and conservancies in Lincoln Square/Central Park, Disney in Times Square and Hell's Kitchen. Coordinated cultural events scheduled during evening hours. Open only to students in the Duke in New York: Summer Internships in the City program. Instructor: Torgovnick. Half course. C-L: Theater Studies 215A

317S. Screenwriting. ALP, W One course. C-L: see Theater Studies 273S; also C-L: Arts of the Moving Image 305S

320S. Intermediate Workshop in the Writing of Poetry. ALP, W Intermediate workshops present a higher creative standard than introductory workshops and increased expectations in both quantity and quality of revised, finished work. Pre-requisite: English 110S OR English 220S, or consent of the instructor if prior work merits admission to the class (as judged by the instructor). Instructor: Staff. One course.

321S. Intermediate Workshop in the Writing of Fiction. ALP, W Intermediate workshops present a higher creative standard than introductory workshops and increased expectations in both quantity and quality of revised, finished work. Pre-requisite: English 110S OR English 221S, or consent of the instructor if prior work merits admission to the class (as judged by the instructor). Instructor: Staff. One course.

322S. Intermediate Workshop in the Writing of Creative Non-Fiction. ALP, W Intermediate workshops present a higher creative standard than introductory workshops and increased expectations in both quantity and quality of revised, finished work. Pre-requisite: English 110S OR English 222S, or consent of the instructor if prior work merits admission to the class (as judged by the instructor). Instructor: Staff. One course.

323S. Chaucer I. ALP, CCI, R The first two-thirds of his career, especially Troilus and Criseyde. Satisfies Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 320S


337. Shakespeare After 1600. ALP, EI, R Examination of ten plays by Shakespeare written after 1600. Not open to students who have taken Theater Studies 239A. Satisfies Area I requirement for English majors. Instructor: Staff. One course. C-L: Theater Studies 337, Medieval and Renaissance Studies 332


345. Nineteenth-Century British Novel. ALP Novels by such authors as Scott, Austen, Dickens, Thackeray, Trollope, the Bronte's, George Eliot, Meredith, Collins, Hardy, and others. Satisfies Area II requirement for English majors. Instructor: Staff. One course.

346. Victorian Poetry. ALP Works by such poets as Tennyson, Browning, Barrett, Browning, Arnold, the Rossettis, Swinburne, Morris, and others. Satisfies Area II requirement for English majors. Instructor: Staff. One course.

358. Postcolonial Novel. ALP, CCI Comparative study of representative contemporary fiction from Africa, India, the Middle East, Australia, New Zealand, Latin American, and the Caribbean. All readings in English. Satisfies the Area III requirement for English majors. Instructor: Staff. One course.

359S. Diaspora Literacy: Black Women Novelists of the Third World. ALP, CCI One course. C-L: see African and African American Studies 355S

360. American Literature before the Civil War. ALP Authors, topics, themes of nineteenth-century America. Satisfies Area II for English majors. Instructor: Staff. One course.
360S. Studies in American Literature Before the Civil War. ALP Seminar version of English 360. Topics may vary by semester; may be repeated with permission of DUS. Instructor: Staff. One course.

369. American Literature, Civil War to First World War. ALP Authors, topics, and themes from Reconstruction to American Modernism. Satisfies Area III requirement for English majors. Instructor: Staff. One course.


370. Studies in American Literature 1860-1945. ALP This is a lecture version of English 370S. Instructor: Staff. One course.


371. American Literature, World War I to World War II. ALP Major authors, topics and themes of the middle 20th century. Satisfies Area III for the English major. Instructor: Staff. One course.


373. American Literature, Cold War and After. ALP American authors, topics and themes of the late twentieth and early twenty-first centuries. Satisfies Area III requirement for English majors. Instructor: Staff. One course.

373S. Studies in American Literature, Cold War and After. ALP This is a seminar version of English 373. Instructor: Staff. One course.


375S. Popular Fictions. ALP One course. C-L: see Literature 345S; also C-L: Women's Studies 252S

376. Types of Recent Fiction. ALP One course. C-L: see Literature 347D


378. Beat Generation/Russian New Wave: Cultural Dissent in the Cold War. ALP, CCI, CZ, EI, W One course. C-L: see Russian 330; also C-L: Literature 331

382. American Film Comedy. ALP One course. C-L: see Arts of the Moving Image 211; also C-L: Literature 221, Visual and Media Studies 268

383A. Theater in London: Text. ALP One course. C-L: see Theater Studies 239A

383AS. Theater in London: Text. ALP, CCI One course. C-L: see Theater Studies 239AS

384A. Theater in London: Performance. ALP One course. C-L: see Theater Studies 240A

384AS. Theater in London: Performance (DS4). ALP, CCI One course. C-L: see Theater Studies 240AS

386. Science Fiction Film. ALP, CCI, EI, STS Science fiction film from the 1950s to the present. From talking apes to mind control, forbidden planets to genetic dystopias, alien invasions to travel in time and space, an exploration of classic films in the genre with attention to how the films imagine the relationships among science, politics, and society over time. Attention to visual as well as literary story telling. Instructor: Staff. One course. C-L: Art History 238

387. Asian American Theatre. ALP, CCI One course. C-L: see Theater Studies 232; also C-L: Asian & Middle Eastern Studies 282
388S. Feminist Classics. ALP, CCI One course. C-L: see Literature 365S; also C-L: Philosophy 274S, Women's Studies 365S

389S. American Independent Cinema. ALP, CCI One course. C-L: see Literature 318S; also C-L: Arts of the Moving Image 318S, Theater Studies 373S, Visual and Media Studies 332S

390-1. Special Topics: Single American Author. ALP Area requirements for the English major (Area I, II, or III) to be determined by the Director of Undergraduate Studies. Instructor: Staff. One course.

390-2. Special Topics in a Single British Author. ALP Studies in a single British author. Area requirements for English majors (Area I, II, or III) will be determined by the Dir. of Undergraduate when taught. Instructor: Staff. One course.


390-5. Special Topics in Genre. ALP Area 1, 2, 3, or elective, to be determined by the Director of Undergraduate Studies. Instructor: Staff. One course.


390A. Duke-Administered Study Abroad: Advanced Special Topics in English. Topics differ by section. Instructor: Staff. One course.

390S-1. Special Topics in a Single American Author. ALP Seminar version of 390-1. Area requirements (Area I, II, or III) for English majors will be determined by the Director of Undergraduate Studies. Instructor: Staff. One course.

390S-2. Special Topics in a Single British Author. ALP Studies in a single British author. Area requirements for English majors (Areas I, II, or III) determined by the Director of Undergraduate Studies. Instructor: Staff. One course.

390S-6. Special Topics in Film. ALP A major genre, period, or director. Satisfies the Area III requirement for English majors. Instructor: Staff. One course. C-L: Arts of the Moving Image

390S-7. Special Topics in Language and Literature. ALP Area requirements for majors to be determined by the Director of Undergraduate Studies in English. Instructor: Staff. One course.

391A. Duke in New York Arts and Media Independent Stud. Individual non-research directed study on a previously approved topic, under the supervision of a Duke faculty member, resulting in a substantive paper containing significant analysis and interpretation. Open only to students in the Duke in New York Arts and Media Program. Consent of Instructor required. Instructor: Staff. One course. C-L: Policy Journalism and Media

395. Language and Society. CCI, SS Course examines language as a social practice, focusing on different aspects of its role in social life. Topics addressed include: language and social identity, such as ethnicity, social class, age, and gender; variation in language, including dialects, accents, and registers; multilingualism and language contact; new languages such as pidgins and creoles; language, culture, and intercultural communication; language and ideology; language in education and in the media. Through the discussion of these topics and homework including reading and small research projects, students are introduced to key concepts, theories, and methods in sociolinguistics and linguistic anthropology. Instructor: staff. One course. C-L: Linguistics 451, Slavic and Eurasian Studies 385, Cultural Anthropology 212, International Comparative Studies 395

396S. Language in Immigrant America. ALP, CCI, R Discussion of issues of language in the context of immigration in the United States, from the turn of the 20th century until the present, combining approaches from literature, memoirs, language policy, media studies, and linguistic anthropology. Some fieldwork in an immigrant community. Topics include: identity, assimilation, race, bilingual communities, bilingual education, foreign accents,

420S. Advanced Workshop in the Writing of Poetry. ALP, W Advanced Writing Workshops build on the work done at the intermediate level, and are intended for the most well-prepared and gifted creative writing students. Pre-requisite: English 320S or consent of the instructor if prior work merits admission to the class (as judged by the instructor). Instructor: Staff. One course.

421S. Advanced Workshop in the Writing of Fiction. ALP, W Advanced Writing Workshops build on work done at intermediate level, and are intended for the most well-prepared and gifted creative writing students. Pre-requisite: English 321S or consent of the instructor if prior work merits admission to the class (as judged by the instructor). Instructor: Staff. One course.

422S. Advanced Workshop in the Writing of Creative Nonfiction. ALP, W Advanced Writing Workshops build on work done at intermediate level, and are intended for the most well-prepared and gifted creative writing students. Pre-requisite: English 322S or consent of the instructor if prior work merits admission to the class (as judged by the instructor). Instructor: Staff. One course.

433. Women Writers of the Renaissance: Spain and England. ALP, CCI, CZ One course. C-L: see Spanish 481D; also C-L: Medieval and Renaissance Studies 475D

480S. Studies in the History of Theory. ALP Studies in the history of theory of aesthetics, literary criticism, philosophy of language, Marxist Criticism, and others with a primary focus on materials prior to 1950. Satisfies the criticism, theory, methodology (CTM) requirement for English majors. Instructor: Staff. One course.

482S. Studies in Contemporary Theory. ALP Topics included: psychoanalysis, Marxism, Structuralism, Post-Structuralism, theory of film and the image; theory of race, gender, sexuality, with a concentration on materials since 1950. Satisfies the criticism, theory, methodology (CTM) for English majors. Instructor: Staff. One course.

485S. Ordinary Language Philosophy. ALP One course. C-L: see Literature 486S; also C-L: Philosophy 486S

490. Special Topics in Language and Literature. ALP Area requirements (Area I, II, III) to be determined by the Director of Undergraduate Studies. Instructor: Staff. One course.


490-7. Special Topics in Literature and the Other Arts. ALP Selected topics in the study of the interrelation of literature and other art forms. Area requirements (Area I, II, III) for English majors will be determined by the Director of Undergraduate Studies. Instructor: Staff. One course.

490S. Special Topics in Language and Literature. ALP Seminar version of 173. Area requirements (Area I, II, III) will be determined by the Director of Undergraduate Studies. Instructor: Staff. One course.

490S-1. Special Topics in Linguistics. CCI, R, SS Instructor: Staff. One course.

490S-10. Special Topics in Criticism, Theory, or Methodology. ALP Satisfies the Criticism, Theory, or Methodology (CTM) requirement for English majors. Instructor: Staff. One course.

490S-2. Special topics in African American Literary Studies. ALP, CCI Topics may change each semester. Satisfies Area II or III requirement for English majors. To be determined by the Director of Undergraduate Studies. Instructor: Staff. One course.


490T. Tutorial (Area I, II, or III as determined by instructor). Tutorials under the supervision of a faculty member for two or more students working on related independent projects. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

491. Independent Study. Individual non-research creative writing project directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Open to juniors and seniors. Consent of both the instructor and the director of undergraduate studies required. Instructor: Staff. One course.
493. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to juniors and seniors. Consent of both the instructor and the director of undergraduate studies required. Instructor: Staff. One course.

495. Distinction Creative Writing Independent Study. Open to those whose thesis will be in the field of creative writing. Application and consent of the Director of Undergraduate Studies. Instructor: Staff. One course.

496. Distinction Creative Writing Independent Study. Open to those whose thesis will be in the field of creative writing. Application and consent of the Director of Undergraduate Studies. Instructor: Staff. One course.

497. Distinction Critical Research Independent Study. R Open to those whose thesis will be a critical paper or piece of other research (for example, in linguistics). Application and consent of the Director of Undergraduate Studies. Instructor: Staff. One course.

498. Distinction Critical Research Independent Study. R Open to those whose thesis will be a critical paper or piece of other research (for example, in linguistics). Application and consent of the Director of Undergraduate Studies. Instructor: Staff. One course.

505. Introduction to Old English. ALP An introduction to the language of the Anglo-Saxon period (700-1100), with readings in representative prose and poetry. Not open to students who have taken 113A or the equivalent. Satisfies the Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 605

520S. Writing Poetry: Formal and Dramatic Approaches. ALP, W A workshop comparing meter, stanza, and rhyme with free verse, to illuminate the freedom and form of all poetry. Narrative and conceptual content considered within the poem's emotive, musical dynamic. Group discussion of technique, personal aesthetic and creative process; revisions of poems. Instructor: Staff. One course.


530S. Special Topics is Middle English Literature: 1100 to 1500. ALP, CCI, R Selected topics. Satisfies Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 690S-1

532S. Chaucer and His Contexts. ALP, CCI, R The first two-thirds of his career, especially Troilus and Criseyde. Satisfies the Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 625S

536S. Shakespeare: Special Topics. ALP, R Satisfies the Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 630S

538S. Special Topics in Renaissance Prose and Poetry: 1500 to 1660. ALP, R Selected topics. Satisfies the Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 632S

539S. Special Topics in Seventeenth-Century Literature. ALP, R Topics vary by semester. Satisfies the Area I requirement for English majors. Instructor: Staff. One course.

540. Special Topics in Restoration and Eighteenth-Century Literature. ALP Satisfies the Area II requirement for English majors. Instructor: Staff. One course.


545S. Romantic Literature: 1790 to 1830. ALP Selected topics. Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

546. Special Topics in Victorian Literature. ALP Selected topics. Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

546S. Special Topics in Victorian Literature. ALP, R, W Satisfies the Area II requirement for English majors. Instructor: Staff. One course.
550S. British Literature since 1900. ALP Selected topics. Satisfies the Area III requirement for English majors. Instructor: Staff. One course.

560. American Literature to 1820 (Selected Topics). ALP Selected Topics. Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

580S. Music in Literature and Philosophy. ALP, CCI, R One course. C-L: see German 580S; also C-L: International Comparative Studies 527S

582S. Wittgensteinian Perspectives on Literary Theory. ALP One course. C-L: see Literature 681S; also C-L: Philosophy 681S

583. Theater in London: Text. One course. C-L: see Theater Studies 520A

584. Theater in London: Performance. One course. C-L: see Theater Studies 540A

590-1. Special Topics I. ALP Subjects, areas or themes that cut across historical eras, several national literatures, or genres, medieval to early modern periods. Satisfies the Area I requirement for English majors. Instructor: Staff. One course.

590-2. Special Topics II. ALP Subjects, areas or themes that cut across historical eras, several national literatures, or genres, eighteenth and nineteenth centuries. Satisfies Area II requirement for English majors. Instructor: Staff. One course.

590-3. Special Topics III. ALP Subjects, areas or themes that cut across historical eras, several national literatures, or genres, 1860-Present. Satisfies Area III requirement for English majors. Instructor: Staff. One course.

590-4. Special Topics in Criticism. ALP Satisfies the Criticism, Methodology, Theory (CTM) requirement for English majors. Instructor: Staff. One course.

590-5. Selected Topics in Feminist Studies. ALP Selected Topics in Feminist Studies. Satisfies English Area or Criticism and Methodology requirements for the English major as determined by Director of Undergraduate Studies. Instructor: Staff. One course.

590S-1. Special Topics Seminar I. ALP Subjects, areas or themes that cut across historical eras, several national literatures, or genres, medieval and early modern period. Satisfies Area I requirement for English majors. Instructor: Staff. One course.

590S-2. Special Topics Seminar II. ALP Subjects, areas or themes that cut across historical eras, several national literatures, or genres. Satisfies Area II requirement for English majors. Topics course. Instructor: Staff. One course.

590S-3. Special Topics Seminar III. ALP Subjects, areas or themes that cut across historical eras, several national literatures, or genres, 1860 to the present. Satisfies the Area III requirement for English majors. Instructor: Staff. One course.

590S-4. Special Topics Seminar in Criticism, Theory, or Methodology. ALP Seminar Version of 288. Satisfies the Criticism, Theory, or Methodology (CTM) for English majors. Instructor: Staff. One course.

The Major

The English major is designed to convey to students a broad knowledge of English, American, and Anglophone literature, a sophisticated habit of critically engaging literary and cultural texts, a shared understanding of major problems, trends, and methods of literary and cultural analysis, and the ability to pose questions and organize knowledge in productive and original ways. While offering students clear direction on how to profit most from their study within the English department, the major also seeks to encourage students to assume an enduring habit of questioning and intellectual self-articulation. Each of the four areas of requirement for completion of the major thus invites students, in consultation with their advisor, to devise a coherent, challenging, and intellectually distinctive plan of study.

Requirements

Ten courses, nine of which must be at the 200 level or above. Required courses include one gateway course, four “area study” courses, one criticism, theory, or methodology course, and four electives, as follows:

Gateway Course. Students must select one of the following three courses, and complete it by or before the end of the junior year:
Each student must take at least nine additional courses at the 200 level or above. Five of these courses must satisfy the following requirements:

**Diversified Study.** Students must select at least two courses in the medieval and early modern area (Area I), at least one in the eighteenth and nineteenth centuries area (Area II), and at least one course in the modern to contemporary area (Area III), as outlined below. Courses must be chosen from more than one national literature. Courses that appear in more than one area of study may only count for one designated area as determined by instructor.

- Area I (Medieval and Early Modern); two courses required
- Area II (Eighteenth and Nineteenth Centuries); one course required
- Area III (Modern to Contemporary); one course required

**Criticism, Theory, Methodology (CTM).** Students must select one course on criticism, theory, or methodology. Some courses to satisfy CTM are English 204, 395, 396, 480S, 482S, 490S-10—in addition, other English courses designated as CTM will be posted on the English website each semester.

**Recommendations.** Students planning to enter graduate study in an English department should take additional courses from the early as well as later and modern periods. If eligible, they should also apply for the Distinction Program. Aspiring graduate students should consult their advisor.

**The Minor**

**Minor in English**

**Requirements.** Five courses at or above the 200 level; or English 184S, 182S, or 186S plus four courses at or above the 200 level. One of the 200 level courses must be a designated seminar. Only one of the five courses may be taken at an institution other than Duke. Advanced Placement credits and courses taken on a Satisfactory/Unsatisfactory grading basis may not be used.

**Foreign Languages**

The department recommends that students majoring in English complete at least two years of college-level study, or the equivalent, of a foreign language. Students contemplating graduate work in English should note that many master's programs require examination in one foreign language and that doctoral programs commonly require examination in two. Students interested in linguistics are strongly urged to study at least one non-Indo-European language.

**Teacher Certification**

Each year a number of Duke English majors earn certificates as secondary school teachers. While licensed by the state of North Carolina, these majors are essentially certified for other states, as well. Also, such training is urged for those who consider teaching in independent schools, since most private or parochial schools would prefer candidates who have earned teaching certificates.

Such certification may be gained as part of the English major and is not as time-consuming as is sometimes believed. Candidates should have a solid background in both American and British literature; also helpful are courses in composition and cultural studies. Among the requirements are one course in linguistics (English 396S, 204, 206, or 395), an appropriate course in psychology, and several courses in education.

The last semester of the senior year is devoted to the student-teaching block, including two special, accelerated courses and ten weeks of full-time teaching and observation in the schools, working with a mentor-teacher and with Duke faculty. This experience leads to an English teaching certificate to accompany the bachelor's degree.

Anyone considering secondary school English teaching should confer with the director of secondary school teacher preparation in the Program in Education as soon as possible.

**Minor in Creative Writing**

Five courses are required for the creative writing minor:

- English 110S (Introduction to Creative Writing);
- Two courses in creative writing at the 200 level or above;
- One course at the 300 level or above; and
Departmental Graduation with Distinction

The English department offers its majors two options to earn distinction: the Critical Thesis option or the Creative Writing Thesis option.

**Structure.** Either two independent studies or a “home seminar” and one independent study. (This may be fall/spring or spring/fall). Under most circumstances, a completed length of thirty-five to seventy pages.

**Coursework.** The distinction courses count toward the major. Students must complete eleven total courses to graduate with distinction in the major instead of the standard ten.

**Application.** To apply students must have completed, by the beginning of the senior year, at least five 200-level or above English courses and must have a GPA of at least 3.5 in English courses.

Students submit an application that includes a writing sample of about ten pages from an English course, one letter of recommendation from an English faculty member, and a project description and basic bibliography (one page single spaced). Applications must be submitted to the director of undergraduate studies. Applications are due November 15 for a spring-to-fall option and March 15 for a fall-to-spring option.

**Evaluation procedure.** Upon approval by the instructor, the completed thesis is submitted to the director of undergraduate studies by December 1 (for a spring-to-fall project) or March 31 (for a fall-to-spring project) of the senior year for evaluation by the director of undergraduate studies, the thesis advisor, and one other faculty member. Please deliver three spiral-bound copies to Allen 303AA.

**Levels of distinction.** Three levels: Distinction, High Distinction, or Highest Distinction. Levels of distinction are based on the quality of the completed work. Students who have done satisfactory work in the seminar or independent study but whose thesis is denied distinction will simply receive graded credit for their seminars and/or independent studies. Whereas the standard major in English asks for a total of ten courses, students pursuing honors in English will take nine courses plus either two independent studies or a “home seminar” to be followed by an independent study.

Environmental Sciences and Policy Program

Professor Vidra, Director of Undergraduate Studies

Two majors are offered within the program, leading to either the bachelor of arts degree or the bachelor of science degree within Trinity College of Arts & Sciences. A minor in environmental sciences and policy is also offered.

The majors are administered by the Nicholas School of the Environment. Courses for the majors are taught by Nicholas School faculty and Duke professors in cooperating departments and schools. The degrees are administered by the director of undergraduate studies and advisors within the Nicholas School. For additional information, consult the program website at [http://www.nicholas.duke.edu/programs/undergrad/index.html](http://www.nicholas.duke.edu/programs/undergrad/index.html).

Environmental Sciences and Policy (AB Degree)

The undergraduate major in environmental sciences and policy is offered within the bachelor of arts degree to students interested in the interdisciplinary study of environmental issues. The major permits students to combine studies in the natural sciences and engineering with courses in social sciences and humanities around general focus areas and themes. This major is designed for students with career objectives such as environmental law, policy, science, management, or planning that require in-depth understanding of environmental issues that cross disciplinary boundaries. The prerequisites for the AB degree stress a firm foundation in basic natural, environmental, and social science areas. An intermediate core course focuses on local, regional, and global case studies taught by interdisciplinary teams of faculty. Upper-level focused study courses are selected in consultation with advisors to match a specific environmental theme or career objective. The upper-level curriculum includes a course in
probability and statistics, a policy course, and an independent study, internship, or field experience. At least two courses in the upper-level curriculum must be selected from approved lists in each of the social sciences and sciences/engineering areas.

Environmental Sciences (BS degree)

The undergraduate major in environmental sciences is offered within the bachelor of science degree to students interested in a scientific perspective on environmental issues. The major is designed to encourage breadth in the physical and life sciences and depth in a chosen area of scientific concentration. This major is designed for students with career objectives in environmental sciences, industry, or management that require a strong scientific background, or for students intending to pursue graduate degrees in environmental sciences. The major also merges well with premedical requirements. The prerequisites for the BS degree stress a firm foundation in the physical and life sciences and mathematics. The major requirements include five core courses selected from six course options that focus on the biosphere, the atmosphere, the hydrosphere, the solid earth, chemical cycling, and the interface between humans and the environment. The major also includes a course in probability and statistics. The focused study consists of three upper-level natural science, engineering, or mathematics courses proposed by the student in consultation with his/her advisor to form a concentration area.

Courses in Environmental Sciences and Policy Program (ENVIRON)

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

102. Introduction to Environmental Sciences and Policy. NS, STS An introduction to the study of environmental sciences and policy through exploration of basic environmental principles in the life, physical, and social sciences. Emphasis on understanding how the atmosphere, hydrosphere, lithosphere, cryosphere, and biosphere function, and how these spheres interact with human consumption, production, and technological patterns and processes. Field trips to a local site as well as the Duke University Marine Laboratory. Instructors: Meyer or Vidra. One course. C-L: Energy and the Environment, Marine Science and Conservation

148FS. Genomics of Host-Microbe Interactions: The Symbiotic Web. NS, R, STS One course. C-L: see Genome Sciences and Policy 148FS; also C-L: Biology 148FS

153. Ecosystem Health and Human Well-Being. NS, STS One course. C-L: see Biology 153; also C-L: Global Health

190A. Duke-Administered Study Abroad: Special Topics in Environmental Sciences and Policy. Topics differ by section. Instructor: Staff. One course.

190FS. Topics in Environment. Topics vary semester to semester. Only open to students in the Focus Program. Consent of Instructor required. Instructor: Staff. One course.

190S. Special Topics in Environmental Science and Policy. Content to be determined each semester. Instructor: Staff. One course.

201. Integrating Environmental Sciences and Policy. NS, SS, STS, W Interaction between the natural and the social systems as they relate to the environment. Focus on ecological and earth system cycles, processes, and fundamental relationships. The environmental impact of human-induced change at the local, regional, and global levels. The role of technology and the policy process in determining how environmental problems evolve and are addressed. Use of ethical analysis to evaluate environmental tradeoffs. Use of case studies to integrate multiple disciplinary perspectives on environmental problems and to address issues of environmental justice. Not open to first year students. Prerequisite: Environment 102 or consent of instructor. Instructor: Bennear. One course. C-L: Marine Science and Conservation

205. Marine Megafauna. NS, STS One course. C-L: see Biology 205; also C-L: Marine Sciences, Marine Science and Conservation

209. Food, Farming, and Feminism. CCI, EI, SS One course. C-L: see Women's Studies 275; also C-L: Global Health 225

209S. Food, Farming, and Feminism. CCI, EI, SS One course. C-L: see Women's Studies 275S; also C-L: Global Health 225S
210D. Conserving the Variety of Life on Earth. NS, SS An overview of biological diversity, its patterns, and the current extinction crisis. Historical and theoretical foundations of conservation, from human values and law to criteria and frameworks for setting conservation priorities; island biogeography theory, landscape ecology, and socio-economic considerations in reserve design; management of endangered species in the wild and in captivity; managing protected areas for long term viability of populations; the role of the landscape matrix around protected areas; and techniques for conserving biological diversity in semi-wild productive ecosystems such as forests. Instructor: Pimm. One course.

212. United States Environmental Policy. EI, SS, STS, W An overview of the major environmental legislation in the United States. Topics include: air and water pollution, hazardous waste, agriculture, wildlife, and institutions. Political, economic, ethical, and scientific analysis. Open to juniors or seniors or by consent of instructor. Instructor: Bennear or Mullins. One course. C-L: Public Policy Studies 275, Energy and the Environment, Marine Science and Conservation

213LS. Aquatic Field Ecology. NS, R, W One course. C-L: see Biology 362LS

214S. Ethical Challenges in Environmental Conservation. EI, SS, W Examination of current ethical challenges in environmental conservation. Topics include the philosophical basis and challenges of mankind's responsibility to the natural world; prioritization of often conflicting conservation efforts; balancing the needs of humans and the environment; the disputed role of scientists as advocates; and the philosophical and political obstacles to conservation efforts. Analysis of the evolving environmental movement, in relation to current issues. Instructor: Vidra. One course. C-L: Marine Science and Conservation

216S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding. CCI, EI, SS, W Environmental and natural resources as a source of conflict and/or peacebuilding between and within nations and states. Analysis of the role of the environment in the conflict cycle and international security. Topics include refugees, climate change, water, and infectious disease. Particular focus on post-conflict and rebuilding in war-torn societies. Examination of the role of international organizations, non-governmental organizations, and emerging standards for environmental management. Examples drawn from conflicts such as Rwanda, Israel/Palestine, Nepal, Sierra Leone and others. Instructor: Weinthal. One course. C-L: Public Policy Studies 279S, Political Science 367S, International Comparative Studies 229S, Islamic Studies, Marine Science and Conservation

217. Restoration Ecology: Theory and Applications. EI, NS, STS, W Addresses fundamental principles of ecological restoration. Includes an overview of the discipline, scientific, ethical and philosophical underpinnings, and the legislative framework that guides much of the restoration work in the United States. Principles of ecosystem ecology introduced to provide an understanding of ecosystem processes across landscapes and within specific restoration sites. Students will conduct a comparative study of a restoration site with a reference site and work in small groups to create a monitoring report for this site. Prerequisite: introductory biology or environmental science, or consent of instructor. Instructor: Vidra. One course.

218. Food and Energy: Applying research and theory to local dining practice. R, SS Examination of link between food and energy, both in science and culture. Includes food production, processing, transportation, consumption, and food security. Project groups will design and complete on-campus research and/or evaluation projects around dining at Duke. Application of basic qualitative research methods, including participant observation, personal interview, and content analysis. Instructor: Clark. One course. C-L: Sociology 372

219A. Science and Nature Writing: Naturalist Narratives, Classic to Contemporary. ALP, STS, W Intropective and expository prose is effective in transferring concepts and information from scientists to other segments of society. Students will explore nonfiction writing about marine ecosystems as the basis for discussion and analysis. They will experiment with essays that convey information about the natural world and that target specific audiences (e.g., children, general public, business executives, the blogosphere, etc.) and specific goals. Exercises will stress practice in crafting essays that convey scientific information with a nature writer's eloquence. Particular emphasis will be placed on editing and revision toward publication-quality manuscripts. (Given at Beaufort.). Instructor: Van Dover. One course. C-L: English 219A, Marine Sciences, Marine Science and Conservation

221. Environment as Community. SS One course. C-L: see Sociology 215

222S. Environmental Conservation and Documentary Photography. ALP, EI, R Technical and aesthetic training in creating documentaries to communicate critical environmental issues so as to affect societal change.
History of the essential role of documentary photography in land conservation, social justice, and protection of biodiversity from the early 1800's to today leads into individual documentary projects. Studio, seminar, study of photography in university archives and field trips. Consent of Instructor required. Instructor: Satterwhite. One course. C-L: Documentary Studies 248S, Marine Science and Conservation

226S. Field Methods in Earth and Environmental Sciences. NS, R, W One course. C-L: see Earth and Ocean Sciences 226S

228. Food and Fuel for a Growing Population: Nuts and Bolts of Plant Growth and Production. NS, STS One course. C-L: see Biology 228

239. Our Changing Atmosphere: From Air Pollution to Climate Change. NS, STS One course. C-L: see Energy 239

240S. Biodiversity Issues and Field Methods. NS, R, STS Biodiversity is affected by many factors, both local and global, including climate and climate change, fire regimes, habitat fragmentation, and urbanization. These issues and others will be covered through readings, discussions, and field research. Explores and assesses local biodiversity through field exercises and field trips with emphasis on local flora and fauna identification. Applies field techniques to monitor, compare, and evaluate local communities for biodiversity in both urban and rural settings and their interface. Complements ENVIRON 226, 210, and 217. Instructor: Pippen. One course.

245. The Theory and Practice of Sustainability. EI, NS, R, SS, STS Theories and practices of sustainability explored with application to the campus environment, including economic, social and environmental factors, and a local to global reach. The Duke campus is used as a case study to illustrate institutional practices including building design and operations, utility supply and consumption, carbon offsets design and calculation, transportation, water, sustainability education and communication, behavior change, waste production and recycling, and procurement. In a service-learning project, students might perform sustainability inventories and cost/benefit analyses, or gather behavior change data. Instructor: Clark. One course. C-L: Energy and the Environment

253S. Urban Environmental Design. EI, NS, SS, STS Overview of urban environmental designs, drawing upon natural and social science based evidence to guide solutions. Focus on innovative approaches that protect and restore ecological value, create sustainable spaces, and address ethical dilemmas arising from conflicting public perceptions of sustainability. Review of survey methods used to gather public opinion and participatory planning models that involve the public in solutions. Examination of national and international design examples. Emphasis will be on professional communication including visual and verbal formats. Instructor: Schauman. One course.


261S. Ecosystem Ecology for a Crowded Planet. EI, NS, STS One course. C-L: see Biology 261S

262. Global Disasters: Reasons, Response and Recovery. NS, SS, STS One course. C-L: see Engineering 261; also C-L: Public Policy Studies 277

265. Environmental Law and Policy. SS Legal principles governing environmental problems in the United States, including endangered species, hazardous waste, air pollution. Introduction to the overarching topics in law and in regulatory design that shape the contributions and roles law plays in solutions to environmental problems. Instructor: Staff. One course.

270A. Conservation Biology and Policy. EI, NS, STS One course. C-L: see Biology 270A; also C-L: Marine Sciences, Marine Science and Conservation

271A. Biology for Engineers: Informing Engineering Decisions. NS, STS One course. C-L: see Biology 271A; also C-L: Marine Sciences, Marine Science and Conservation

272A. Analysis of Ocean Ecosystems. NS One course. C-L: see Biology 272A; also C-L: Earth and Ocean Sciences 272A, Marine Sciences, Marine Science and Conservation

273LA. Marine Ecology. NS, R, W One course. C-L: see Biology 273LA; also C-L: Earth and Ocean Sciences 374LA, Marine Sciences, Marine Science and Conservation

274. People, Plants and Pollution: Introduction to Urban Environments. NS, STS One course. C-L: see Biology 262
275SA. Global Fisheries Conflicts: Exploring Local and Global Economic, Ecological, and Social Impacts. EI, SS, STS Interdisciplinary investigation of fisheries management. Theoretical and practical policy questions regarding resource allocation measures (e.g., quota systems, marine protected areas, seasonal closures, and gear restrictions) and place-specific conflicts (e.g., over space, regulatory measures, cultural meanings, and livelihoods). Evaluation of fisheries science and examination of economic, ecological, and social ramifications of different management scenarios. Broad overview of the state of fisheries and fishing practices around the globe; in-depth analysis of local science and policy conflicts. (Given at Beaufort.) Instructor: Staff. One course. C-L: Marine Sciences

276. Denial, Faith, Reason: Sustainability and Survival. EI One course. C-L: see Study of Ethics 285; also C-L: Economics 285, Political Science 249, History 292

278LA. Physiology of Marine Animals. NS, R, W Variable credit. C-L: see Biology 278LA; also C-L: Marine Sciences, Marine Science and Conservation

279LA. Marine CSI: Conservation Forensics in the Marine Environment. NS, R, STS Application of forensic genetic techniques to the study of marine crime. Reveal marketing frauds, mislabeling of seafood, and fishing violations using modern molecular forensic tools. Field trips to acquire samples for forensic analysis from local fishermen, retailers and restaurants; hands-on forensic genetics lab work and group assignments. Techniques include microsatellites and restriction fragment length polymorphism. Statistical approaches to forensics and species/population identity and assignment tests. (Given at Beaufort) Prerequisites: Introductory Biology. Instructor: Schultz. One course. C-L: Marine Sciences

280LA. Sound in the Sea: Introduction to Marine Bioacoustics. NS, R, STS Fundamentals of marine bioacoustics with a focus on current literature and conservation issues. Topics include: introduction to acoustics; acoustic analysis methods and quantitative tools; production and recording of sound; ocean noise; propagation theory; active and passive acoustics; hearing, sound production and communication in marine organisms, potential impacts of anthropogenic noise; and regulation of marine sound. Labs will focus on methodologies used for generating, recording and analyzing marine sounds. Taught in Beaufort. Course prerequisites: AP Biology, introductory biology, or consent of instructor; Physics 141L or 161L (or equivalent Physics courses) or consent of instructor. Instructor: Nowacek. One course. C-L: Electrical and Computer Engineering 384LA, Earth and Ocean Sciences 280LA, Biology 279LA, Marine Sciences, Marine Science and Conservation

281A. Conservation and Management of Protected Areas in South Africa. CCI, SS Management of wildlife and natural resources within the ecological, political, social, historical, and economic context of South Africa. (Taught in South Africa.) Instructor: McClearn. One course.

282A. Environmental Science and Policy of the Tropics. EI, NS, SS, STS Investigates major environmental issues facing tropical nations using concepts from the natural and physical sciences, the social sciences, and resource management. Topics include: climatic and biogeographical patterns, trends in human population size and demography, historical and contemporary issues in resource use and conservation, and sociological and ethical concerns regarding the source and distribution of economic wealth. (Given in Costa Rica.) Prerequisite: Biology 25 or equivalent. Instructor: Shelly. One course.

283A. Hollywood and the Environment: Exploring the Human Connection with Nature Through Film. ALP, CCI, SS Critical assessment of the relationship between people and nature, using film as the springboard for discussion. Assess the human perception of nature, and our place in it, using films representing four major themes: 1) wilderness and the frontier; 2) man vs. nature; 3) international perspectives on nature; and 4) destruction of the environment. Films will be drawn from various genres, including animated film, drama, western, and science fiction. Full-length feature films will be paired with in-class screenings of independent documentary films that are provided to our class by internationally recognized film-makers. (Given at Beaufort) Instructor: Burns. One course. C-L: Marine Sciences

284A. South African Ecosystems and Diversity. NS, STS One course. C-L: see Biology 284A


286A. Marine Policy. EI, SS, STS Policy and policy-making concerning the coastal marine environment. History of marine-related organizations, legislation, and issues and their effects on local, regional, national, and international arenas. Use of theoretical and methodological perspectives, including political science, sociology, and economics.
(Given at Beaufort.) Instructor: Staff. One course. C-L: Public Policy Studies 281A, Marine Sciences, Marine Science and Conservation

287A. Marine Conservation Service Learning Course: Challenges at Sea. NS, STS Introduction to marine conservation biology emphasizing community outreach at local middle schools. Material focuses on issues in marine conservation and how they are addressed. Lectures cover principles of conservation, biodiversity, extinction risks, genetic tools, fishery by-catch, over-exploitation, habitat degradation, invasive species, climate change, and marine protected areas. Based on class discussions, students will develop and teach activities that address local conservation topics for middle school students. (Given at Beaufort.) Prerequisite: introductory biology. Instructor: Johnston and Schultz. One course. C-L: Marine Sciences, Marine Science and Conservation

288A. Biogeography in an Australian Context. NS, STS One course. C-L: see Biology 288A; also C-L: Earth and Ocean Sciences 288A

289A. Views of Environmental Change: Documentary Research in Natural Resource Management. EI, R, SS Hands-on introduction to the practical skills, theoretical grounding, and ethical sensitivities needed to conduct documentary research on controversial environmental issues. Emphasis on responsibly eliciting and representing diverse stakeholder views. Students will conduct fieldwork on land use change in coastal communities as part of an ongoing Duke Marine Lab research project. Methods introduced will include interviewing, video/audio recording, documentary photography, interview data analysis, and basic video editing. Student teams will produce edited video segments for presentation to a community audience. (Given at Beaufort.) Instructor: Cumming. One course. C-L: Documentary Studies 353A, Marine Sciences, Marine Science and Conservation

290. Special Topics in Environmental Sciences and Policy. Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.


290S. Special Topics in Environmental Sciences and Policy. Same as Environment 290 but taught as a seminar. Instructor: Staff. One course.

322. Hydrologic and Environmental Data Analysis. NS, QS One course. C-L: see Earth and Ocean Sciences 322; also C-L: Civil and Environmental Engineering 365


344S. Plant Diversity: a Field Approach. NS One course. C-L: see Biology 344S

345. Environmental Politics in the United States. EI, SS, STS One course. C-L: see Political Science 344; also C-L: Public Policy Studies 281, Energy and the Environment


350S. Marine Science and Conservation Leadership. EI, NS, SS, STS Exploration of the complex interactions among science, policy and economics in the use of marine resources. Topics explored include the role individuals play in promoting marine conservation and environmental sustainability. Students will evaluate trade-offs systematically and learn to assess how different policy options affect the incentives of resource users and polluters. Serves as the capstone for the Marine Science and Conservation Leadership Certificate. Prerequisite: introductory economics or consent of instructor. Instructor: Staff. One course. C-L: Public Policy Studies 280S, Marine Sciences, Marine Science and Conservation

358. Introduction to Satellite Remote Sensing. NS One course. C-L: see Earth and Ocean Sciences 358
359. Fundamentals of GIS and Geospatial Analysis. NS, QS
Fundamental aspects of geographic information systems and satellite remote sensing for environmental applications. Concepts of geographic data development, cartography, image processing, and spatial analysis. Instructor: Cleary. One course. C-L: Earth and Ocean Sciences 359

360. Environmental Chemistry and Toxicology. NS, STS
An overview of the fate and effects of chemicals in the environment. Topics include chemical characterization of pollutants, chemistry of natural waters, soil sediment chemistry, atmospheric chemistry, transfers between and transformations within environmental compartments, toxicokinetics, cellular metabolism, biological levels of organization, and approaches for assessing chemical hazards. Incorporates case studies focused on human health and ecosystem protection. Prerequisite: Biology 101L; Chemistry 101DL and 210DL; Mathematics 21. Instructor: Stapleton. One course.

361LS. Terrestrial Field Ecology. NS, R, W One course. C-L: see Biology 361LS

362S. Changing Oceans. NS, STS One course. C-L: see Earth and Ocean Sciences 364S; also C-L: Energy and the Environment, Marine Science and Conservation

363. Economics of the Environment. SS, STS One course. C-L: see Economics 439; also C-L: Energy and the Environment, Marine Science and Conservation

364S. Science and The Media. SS, STS, W One course. C-L: see Policy Journalism and Media Studies 381S; also C-L: Public Policy Studies 381S, Policy Journalism and Media Studies

365. Engineering Sustainable Design and the Global Community. QS, STS One course. C-L: see Civil and Environmental Engineering 315; also C-L: Public Policy Studies 211, Energy and the Environment

365-20. Engineering Sustainable Design and the Global Community: Structural Focus. QS, STS One course. C-L: see Civil and Environmental Engineering 315-20; also C-L: Public Policy Studies 211-20

365-60. Engineering Sustainable Design and the Global Community: Environmental Focus. QS, STS One course. C-L: see Civil and Environmental Engineering 315-60; also C-L: Public Policy Studies 211-60

365D. The Modern Regulatory State. CZ, EI, R, SS One course. C-L: see History 365D; also C-L: Public Policy Studies 219D, Political Science 340D

366. Green Germany: World Leader in Environmental Policy. CCI, CZ, EI, SS, STS One course. C-L: see German 364; also C-L: History 250, Energy 364

367SA. The Economics of the Energiewende in Germany. EI, SS, STS One course. C-L: see German 362SA; also C-L: Economics 331SA

370A. Introduction to Physical Oceanography. NS, QS, STS Fundamental physical principles of ocean circulation. Physical properties of seawater; forces acting on the ocean such as heat, pressure gradients, wind stress, rotation, and friction; and conservation equations for heat, mass and momentum. Applications include geostrophic balances, thermal wind, coastally trapped waves, El Nino/ENSO, and tidal circulation. (Given at Beaufort.) Prerequisites: one year of calculus and one year of physics, or permission of instructor. Instructor: Hench. One course. C-L: Earth and Ocean Sciences 370A, Marine Sciences, Marine Science and Conservation

372LA. Biochemistry of Marine Animals. NS, R, W Variable credit. C-L: see Biology 372LA; also C-L: Marine Sciences, Marine Science and Conservation

374SA. Community-Based Marine Conservation in the Gulf of California. CCI, SS, STS Experiential education course on community-based conservation. Students learn first-hand about the challenges (accomplishments, failures, and promises) involved in its design and practice in developing countries of high biological diversity. Learn about the unique natural and political history, and social characteristics of the places where conservation takes place. Students link local context to broader perspectives through key readings and class discussions. (Given at Beaufort). Travel to biodiversity hotspots in the Gulf of California Required. Consent of instructor required. Instructor: Basurto. One course. C-L: Marine Sciences, Marine Science and Conservation

375A. Biology and Conservation of Sea Turtles. NS, STS One course. C-L: see Biology 375A; also C-L: Marine Sciences, Marine Science and Conservation

375LA. Biology and Conservation of Sea Turtles. NS, STS One course. C-L: see Biology 375LA; also C-L: Marine Sciences, Marine Science and Conservation
376A. Marine Mammals. NS, STS One course. C-L: see Biology 376A; also C-L: Marine Sciences, Marine Science and Conservation

376LA. Marine Mammals. NS, R, STS One course. C-L: see Biology 376LA; also C-L: Marine Sciences, Marine Science and Conservation

377LA. Marine Invertebrate Zoology. NS, R Variable credit. C-L: see Biology 377LA; also C-L: Earth and Ocean Sciences 377LA, Marine Sciences, Marine Science and Conservation

378LA. Marine Ichthyology. NS, STS One course. C-L: see Biology 378LA; also C-L: Marine Sciences, Marine Science and Conservation

379LA. Research Methods in Marine Science. NS, R, W One course. C-L: see Biology 379LA; also C-L: Marine Sciences, Marine Science and Conservation

382LA. Marine Molecular Ecology. NS, R, STS Marine ecology from a molecular view focusing on microbes as the dominant organisms in ocean ecosystems. Lecture and laboratory integrate the theory and application of modern molecular techniques to quantify abundance, to assess diversity and to determine the interaction of microbes with each other and the marine environment. Prerequisite: AP Biology, introductory biology, or permission of instructor. (Given at Beaufort.) Instructor: Johnson. One course. C-L: Biology 374LA, Marine Sciences, Marine Science and Conservation

383LA. Marine Molecular Microbiology. NS Introduction to microbiology from a marine perspective. Topics include microbial phylogeny, evolution, symbiosis, biotechnology, genomics, and ecology. Laboratory will employ modern molecular techniques to investigate the ecology and evolution of prokaryotic and eukaryotic microbes. Prerequisite: AP Biology, introductory biology, or permission of instructor. (Given at Beaufort.) Instructor: Hunt. One course. C-L: Biology 380LA, Marine Sciences, Marine Science and Conservation

384A. Marine Conservation Biology - a Practicum. NS, STS Immersion in marine conservation biology basics for 21st Century society and 'anthropocene epoch including two week-long current issue modules. Phenomena affecting maintenance and loss of biodiversity (climate change, habitat destruction); strategies for combating threats to biodiversity; exploration of this field’s interdisciplinary nature; introduction to key concepts of ecology relevant to conservation issues at the level of populations and ecosystems; unique capstone-position papers and stakeholder negotiation. (Given at Beaufort.) Prerequisites: AP Biology, Biology 202L, Introductory Ecology suggested, or instructor consent. Concurrent enrollment required in Environ 346A/Pubpol 246A. Instructor: Nowacek. One course. C-L: Biology 384A, Marine Sciences, Marine Science and Conservation

390. Special Topics in Environmental Sciences and Policy. Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

390-1. Special Topics in Environmental Sciences and Policy. Content to be determined each semester. Consent of instructor required. Half credit course. Instructor: Staff. Half course.

390A. Duke-Administered Study Abroad: Advanced Special Topics in Environmental Sciences and Policy. Topics differ by section. Instructor: Staff. One course.

390S. Special Topics in Environmental Sciences and Policy. Same as Environment 390, taught as seminar. Instructor: Staff. One course.

390S-1. Special Topics in Environmental Sciences and Policy. Content to be determined each semester. Consent of instructor required. Half credit course. Instructor: Staff. Half course.

390SA. Special Topics in Environmental Science and Policy. Marine Lab version of ENVIRON 390S. Student must be enrolled at Duke Marine Lab in Beaufort. Instructor: Staff. One course. C-L: Marine Sciences

391. Independent Study. Individual readings course or other non-research-based independent course under the supervision of a faculty member, resulting in an academic product. Open to qualified juniors and seniors with consent of instructor and director of undergraduate studies. Instructor: Staff. One course. C-L: Marine Sciences

391-1. Independent Study. See Environment 391. Open to qualified juniors and seniors with consent of instructor. Half credit. Instructor: Staff. Half course.

393. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to qualified juniors and seniors with consent of instructor and director of undergraduate studies. Instructor: Staff. One course. C-L: Marine Sciences

393-1. Research Independent Study. R See Environment 393. Open to qualified juniors and seniors with consent of instructor and director of undergraduate studies. Half course. Instructor: Staff. Half course. C-L: Marine Sciences

393A. Research Independent Study. R Marine Lab version of ENVIRON 393. Offered at Beaufort. Instructor: Staff. One course. C-L: Marine Sciences

394. Research Independent Study. R See Environ 393. Open only to qualified juniors and seniors by consent of director of undergraduate studies and supervising instructor. Instructor: Staff. One course.


452L. Energy and Environment Design. NS, R An integrative design course addressing both creative and practical aspects of the design of systems related to energy and the environment. Development of the creative design process, including problem formulation and needs analysis, feasibility, legal, economic and human factors, environmental impacts, energy efficiency, aesthetics, safety, and design optimization. Application of design methods through a collaborative design project involving students from the Pratt School of Engineering and Trinity College. Open only to students pursuing the undergraduate certificate in Energy and Environment. Instructor consent required. Instructor: Klein. One course. C-L: Energy 452L

490. Senior Capstone Course. NS, R, SS, STS Interdisciplinary and in-depth study of contemporary environmental issues. Content to be determined each semester. Consent of Instructor required. Instructor: Staff. One course.

501. Environmental Toxicology. Study of environmental contaminants from a broad perspective encompassing biochemical, ecological, and toxicological principles and methodologies. Discussion of sources, environmental transport and transformation phenomena, accumulation in biota and ecosystems. Impacts at various levels of organization, particularly biochemical and physiological effects. Prerequisites: organic chemistry and vertebrate physiology or consent of instructor. Instructor: Di Giulio.

503. Forest Ecosystems. Emphasis on the processes by which forests circulate, transform, and accumulate energy and materials through interactions of biologic organisms and the forest environment. Ecosystem productivity and cycling of carbon, water, and nutrients provide the basis for lecture and laboratory. Instructor: Oren.

505. Tree Structure and Function. NS Designed primarily for graduate students and advanced undergraduates in areas of ecology, forestry or related disciplines who desire basic understanding of how plants (special focus on woody plants) function at various scales from molecules to canopies. Course will facilitate application of plant physiological principles in the students' specific areas of interest. Focus is on responses of water loss and carbon gain of plants to variation in their environment. Background in biology preferred. Instructor: Palmroth.

517. Tropical Ecology. NS, STS Ecosystem, community, and population ecology of tropical plants and animals with application to conservation and sustainable development. Prerequisite: a course in general ecology. Instructor: Staff. C-L: Biology 561, Latin American Studies

520. Resource & Environmental Economics I. SS C-L: see Energy 520; also C-L: Economics 530, Public Policy Studies 576, Marine Science and Conservation


524. Water Quality Health. One course. C-L: see Earth and Ocean Sciences 524; also C-L: Global Health 534, Energy 524

530. Remote Sensing in Coastal Environments. NS, QS One course. C-L: see Earth and Ocean Sciences 530; also C-L: Civil and Environmental Engineering 574

531. Economic Valuation of the Environment. SS Quantitative course with focus on economic valuation of changes in environmental quality. Covers theoretical foundations of major nonmarket valuation methods and, through a series of problem sets, provides opportunities to develop skills applying those methods. Also covers a range of regression methods commonly employed in valuation studies. Prerequisite: ENVIRON 520 or equivalent and ENVIRON 710 or equivalent. Instructor: Vincent.

532. Evaluation of Public Expenditures. SS C-L: see Public Policy Studies 596; also C-L: Economics 521

533A. Marine Fisheries Policy. EI, SS Principles, structure, and process of public policy-making for marine fisheries. Topics include local, regional, national, and international approaches to the management of marine fisheries. A social systems approach is used to analyze the biological, ecological, social, and economic aspects of the policy and management process. (Given at Beaufort.) Instructor: Staff. C-L: Marine Sciences, Marine Science and Conservation


537. Environmental Health. NS, STS Introduction to environmental effects on human health. Focus on chronic effects of exposure to pollution and other stressors, the interaction between anthropogenic environmental changes and infectious diseases, and the relationship between human health and ecosystem health. Includes lectures from a variety of experts in this field from throughout the Triangle region. Course is designed to facilitate maximum student participation through discussion. For graduate and advanced undergraduate students. Instructor: DiGiulio/Meyer.

538. Global Environmental Health: Economics and Policy. SS, STS Social science perspective on global environmental health. Students will learn to identify primary environmental causes of high burden diseases such as malaria, diarrhea, and respiratory infections; describe how to measure socio-economic impacts of global environmental health diseases; discuss key policies to control global environmental health problems based on private prevention and therapeutic behaviors; and propose frameworks to empirically monitor and evaluate global environmental health policies. A sub-module will focus on climate change and water-borne diseases. Prerequisites: Introductory course in statistics. Instructor: Pattanayak. C-L: Global Health 538, Public Policy Studies 582
539. Human Health and Ecological Risk Assessment. Topics central to both health and ecological risk assessment are explored. Basic concepts of hazard identification, dose-response relationships, exposure assessment, and risk characterization and communication are discussed in the context of both human health and environmental assessment. The basis and rationale for using specific, as well as extrapolated, scientific information and expert judgment, and the strengths and weaknesses of alternative approaches, are evaluated. Applications emphasizing real cases are used to illustrate the interdisciplinary process and products of risk assessment, as well as the regulatory use of the information. Group projects emphasized. Instructors: Mihaich/McMasters.

540. Chemical Fate of Organic Compounds. Equilibrium, kinetic, and analytical approaches applied to quantitative description of processes affecting the distribution and fate of anthropogenic and natural organic compounds in surface and groundwaters, including chemical transfers between air, water, soils/sediments, and biota; and thermochemical and photochemical transformations. The relationships between organic compound structure and environmental behavior will be emphasized. Sampling, detection, identification, and quantification of organic compounds in the environment. Prerequisites: university-level general chemistry and organic chemistry within last four years. Instructor: Stapleton. C-L: Civil and Environmental Engineering 563

543A. Respiratory Proteins and the Environment. NS Molecular diversity in structure, function and evolution of respiratory proteins. Field trips to biodiverse areas of Costa Rica and coastal NC complement text and lectures. Covers molecular adaptations that underlie macroscopic biodiversity, blood functions and blood pathogens, oxidative and nitrosative stress. Lectures and readings on the balance between pathways for metabolic oxygen utilization and alternative disease-causing pathways. (Given at Beaufort.) Field trip to Costa Rica required. Prerequisite: one semester of organic chemistry or consent of instructor. Instructor: C. Bonaventura. C-L: Marine Sciences, Marine Science and Conservation


544S. Collective Action, Property Rights, and the Environment. CCI, EI, SS C-L: see Political Science 549S; also C-L: Energy and the Environment


548. Solid Waste Engineering. C-L: see Civil and Environmental Engineering 672

549. California Water Crises: A Case Study Approach. NS, R, SS, STS Reviews history of California's water dependent economy, leading to a capture, storage system with conveyances extending thousands of miles to deliver water for agriculture, industry and homes. Examines recent political change coupled with chronic issues of a water-rich north, an expanding urban population and a water-poor but politically strong south. Emphasis includes climate change, seismic vulnerability, redirection of river flows, and large scale water reuse. Course will cover specific water crises in other states and nations, providing in depth coverage of aspects of the international crisis in quantity and quality of freshwater. Instructor: Hinton.

550. Land Use Principles and Policy. SS C-L: see Public Policy Studies 578

551DA. International Conservation and Development. CCI, SS Interrelated issues of conservation and development. Topics include the evolution of the two concepts and of theories regarding the relationship between them, the role of science, values, ethics, politics and other issues in informing beliefs about them, and strategies for resolving conflicts between them. While attention will be given to all scales of interaction (i.e. local, regional, national, international), the focus will be on international issues and the 'north-south' dimensions of the conservation and development dilemma. Examples from marine and coastal environments will be highlighted. Consent of instructor required. (Given at Beaufort.) Instructor: Campbell. C-L: Marine Sciences, Marine Science and Conservation

555. Applied Regression Analysis. Linear regression using both graphical and numerical methods. Model construction, critique, and correction using graphical residual analysis. One-way and two-way analysis of variance; introduction to design of experiments. Use of a standard statistical software package. Applications and examples drawn from various sources, emphasizing the biological and environmental sciences. Prerequisite: Statistical Science 210B or equivalent. Instructor: Staff.
556. Environmental Conflict Resolution. Practical techniques and scholarly underpinnings of environmental conflict resolution, including interest-based negotiation, mediation, public disputes, science-intensive disputes, and negotiation analysis. In-class time will be spent conducting negotiation role plays of increasing complexity and then debriefing them. Outside of class, students will prepare for the role plays and read background material to aid in debriefing. Students will keep a journal of their experiences. Consent of instructor required. Instructor: Maguire.

557. Social Science Surveys for Environmental Management. Social science research methods for collecting data for environmental management and policy analysis. Sampling, survey design, focus groups, pretesting, survey implementation, coding, and data analysis. Team projects emphasize development and practice of survey skills. Prerequisite: introductory applied statistics or equivalent. Instructor: Kramer.


563. Applying Economic Analysis for Environmental and Public Health Project Evaluation. R, SS C-L: see Global Health 531; also C-L: Public Policy Studies 607

564. Biogeochemistry. NS, STS C-L: see Biology 564

565S. Stormwater Science: Pollution, Pavement, and Precipitation. NS C-L: see Biology 563S

566. Environmental Analytical Chemistry. C-L: see Civil and Environmental Engineering 565


572. Economic Evaluation of Sustainable Development. EI, SS C-L: see Public Policy Studies 574

573A. Coastal Ecotoxicology and Pollution. NS Principles of transport, fates, food-web dynamics, and biological effects of pollutants in the marine environment. No laboratories. Short local field trips possible. (Given at Beaufort.) Prerequisites: AP Biology, introductory biology, or consent of instructor; introductory chemistry or consent of instructor. Instructor: C. Bonaventura. C-L: Marine Sciences

575L. Biodiversity Science and Application. NS, R C-L: see Biology 565L

577. Environmental Politics. SS Environmental policy formation and implementation in comparative perspective. Topics include interest groups, environmental movements and parties, public opinion, political systems and institutions. Case students selected from the United States and other advanced industrialized countries and the developing world. Spring. Instructor: Albright. C-L: Public Policy Studies 577, International Comparative Studies 577, Energy and the Environment

579LA. Biological Oceanography. NS, R Physical, chemical, and biological processes of the oceans, emphasizing special adaptations for life in the sea and factors controlling distribution and abundance of organisms. Four units (spring); six units (summer). (Given at Beaufort.) Prerequisite: introductory biology. Instructor: Johnson. Variable credit. C-L: Biology 579LA, Earth and Ocean Sciences 579LA, Marine Sciences, Marine Science and Conservation

579S. Collective Action, Environment, and Development. SS C-L: see Public Policy Studies 579S

580A. Green Futures: Exploring Environmental, Economic, and Social Sustainability. EI, NS, SS, STS Theory and application of environmentally and socially sustainable practices in settings including businesses, academic institutions, and personal lives. Ethical concerns that accompany modern local and global environmental problems. Challenges, trade-offs between costs and benefits, and potential solutions to different greening options. Topics include alternative energy production and consumption, sustainable agriculture practices, resource conservation, environmental assessments, economic questions and social responsibility. (Given at Beaufort.) Prerequisites: None for graduate students. Undergrads: Introductory Biology and Environmental Science and Policy or consent of instructor. Instructor: Rittschof. C-L: Marine Sciences, Marine Science and Conservation

585A. Fisheries Ecology. NS Current topics in fish and fisheries ecology, explored through lecture and discussion of primary literature. Participation in collaborative research and synthesis projects. Intended for master and doctoral students; undergraduates by permission of instructor. Prerequisites: basic knowledge of ecology and oceanography. Instructor: Staff. C-L: Marine Sciences, Marine Science and Conservation

590. Special Topics. Content to be determined each semester. May be repeated. Instructor: Staff. Variable credit. C-L: Marine Sciences

590LA. Duke-administered Study Away; Special Topics. Content to be determined each semester. May be repeated. Offered only in Beaufort. Instructor: Staff. C-L: Marine Science and Conservation

590S. Special Topics. Seminar version of 590. Instructor: Staff. Variable credit.

590SA. Seminar in Ocean Sciences. Biological, chemical, physical, and geological aspects of the ocean and their relation to environmental issues. Consent of instructor required. (Given at Beaufort.) Instructor: Staff. Variable credit. C-L: Marine Sciences

615S. Environmental Issues & the Documentary Arts. ALP C-L: see Documentary Studies 615S; also C-L: Arts of the Moving Image 643S

621. Water Resources, Finance and Planning. NS, SS Introductory course to water in the built environment, with basic treatment of hydrology, treatment, regulation, and planning of water resources. Course will serve as a survey course for non-water specialists, and a bridge course from hydrology to policy, management, planning, and finance, or vice versa for policy students interested in bridging to hydrology. Emphasis will be on applications of basic techniques common in management contexts. Instructor: Doyle.

624. Agriculture and Sustainability: Feeding the Growing Human Population Today for the Future. NS, STS Introduces agroecology through basic scientific knowledge of plant physiology and growth for crop production, crop diversity and breeding, and comparison of agricultural practices (industrial, subsistence, organic, sustainable). Covers resources needed for whole-plant growth, biomass output for human use including bioenergy, and impacts on ecosystems. Examines environmental sustainability through assessment of drawbacks and benefits of agricultural practices for human food and biofuel production. Applications include management plan for sustainable agroecosystems and forecast of crop agricultural practices in need of a future altered environment. Prerequisites: Intro Biology or Ecology. Instructor: Reid.

626. River Processes. Course focuses on river processes and how rivers change and how to analyze rivers. Course is a mixture of hydrology, geomorphology, and ecology. Focus is on quantitative analysis of processes using simple modeling approaches. Problems will be drawn from policy and river management applications such as river restoration, channel design, dam management, and floodplain regulation. Instructor: Doyle.

627. Molecular Ecology. NS, STS Explore use of molecular tools to investigate ecological processes within natural populations and communities from terrestrial to marine. Emphasis on fundamental principles and predictions from ecological and evolutionary theory, as well as historical approaches and precedents. In addition to exploring very basic ecological questions, course discusses interpretation of molecular datasets to evaluate applied ecological problems with societal implications (e.g., conservation, antibiotic resistance, genetically modified crops, adaptation to climate change). Open to graduate students, and upper-level undergraduates with backgrounds in ecology and/or molecular biology. Instructor: Wernegreen. C-L: Genome Sciences and Policy 627, Biology 627

630. Transportation and Energy. SS, STS C-L: see Energy 630; also C-L: Energy and the Environment

631. Energy Technology and Impact on the Environment. NS, STS Efficiencies and environmental impacts of both new and established energy sources and conversion methods. Consideration of alternative energy technologies, including electricity generation by fossil fuels, nuclear, solar, wind and water; space heating and cooling by traditional methods and by solar; and transportation energy in automobiles, mass transit and freight. Environmental consequences of energy choices on local, national and global scales, including toxic emissions, greenhouse gases and resource depletion. Instructor: Johnson. C-L: Energy and the Environment

635. Energy Economics and Policy. SS C-L: see Energy 635
636. Methods in Spatial Epidemiology and Demography. SS, STS C-L: see Global Health 636
637S. Population and Environmental Dynamics Influencing Health. NS, SS C-L: see Global Health 637S
638L. Environmental Life Cycle Analysis & Decision. NS, R, STS C-L: see Energy 638L
640. Climate Change Economics. This course explores the economic characteristics of the climate change problem, assesses national and international policy design and implementation issues, and surveys the economic tools necessary to evaluate climate change policies. Discussion-oriented requiring high degree of student participation. Course objectives are increased comprehension of economic aspects of climate change and ability to apply tools of economic analysis to climate policy and the responses of firms and households to it. Course designed for graduate and advanced undergraduate students. Instructor: Pizer. One course. C-L: Public Policy Studies 585
642. Air Pollution: From Sources to Health Effects. Both urban outdoor air pollution and household indoor air pollution contribute significantly to global burden of disease. Course covers fundamentals about how major air pollutants are generated and transported in the atmosphere and how these pollutants affect human health. Relevant exposure assessment, toxicology and epidemiology case studies are discussed. Prerequisites: general chemistry; introductory-level statistics. Instructor: Zhang.
646. Urban Ecology. NS, R, SS, W Addresses how to understand urban areas as ecological and socio-ecological systems and the distinction between the study of ecology in and of cities. Examines both through theoretical lens of socio-ecological systems, in which humans and their actions are a component of, rather than disturbance imposed on, ecological systems. Applies theoretical and methodological tools to global, regional, and local urban issues. Prerequisites: One ecology course and one environmental social sciences course. Instructor: Heffernan.
650S. Advanced Topics in the Conservation of Biodiversity. NS Current topics in conservation and biodiversity. Intended for graduate students; advanced undergraduate students admitted with permission of instructor. Prerequisite: introductory conservation biology or permission of instructor. Instructor: Heffernan.
658. Applied Qualitative Research Methods. R Broadly covers qualitative and mixed methods research design, analysis, and interpretation. Students gather a limited amount of their own data and produce a pilot research project throughout the semester. Students learn to use NVivo10, a qualitative research software program. Instructor: C. Clark.
665. Bayesian Inference for Environmental Models. NS C-L: see Biology 665; also C-L: Information Science and Information Studies
666. Aquatic Geochemistry. C-L: see Civil and Environmental Engineering 666
678. Population Ecology for a Changing Planet. NS, STS Overview of the expanding field of population ecology, including the use of new bioinformatic tools to study topics such as the impacts of climate change on population dynamics, population growth and regulation, adaptive evolution, and emerging diseases. Lecture and discussion of case studies will evaluate current knowledge and productive research directions, highlighting analysis of observational and experimental data sets. Prerequisites: introductory statistics and calculus. Instructor: J. Clark. C-L: Biology 678
680. Economics of Forest Resources. SS Core economic theory of forest management and application of theory to selected forestry policy issues. Course focuses on management of forests for timber production as well as for non-timber values. Concepts explored include policy challenges such as biodiversity conservation, deforestation, community forest management, and payments for ecosystem services. Two groups of economic tools will be used: non-market valuation methods and program evaluation techniques. Prerequisites: college-level calculus, microeconomics and statistics, as well as Excel proficiency. Instructor: Vincent.

The Major

The bachelor of arts degree in environmental sciences and policy and the bachelor of science degree in environmental sciences are offered within the Environmental Sciences and Policy Program of the Nicholas School of the Environment. Visit http://www.nicholas.duke.edu/programs/undergrad/co-requisites-for-the-a.b.-degree-in-environmental-sciences-and-policy for a complete list of elective courses.
For the AB Degree

Corequisites. The following courses or their equivalents (for example, advanced placement credit) are required. Approval to substitute courses taken at other universities must be obtained from the director of undergraduate studies in the department offering the course. Some of these courses are prerequisites to some upper-level courses in this major.

- Environment 102 (Introduction to Environmental Sciences and Policy)
- Biology 201L or 202L (Gateway to Biology)
- Chemistry 101DL (Advanced General Chemistry), or equivalent
- Economics (either Economics 101 (Economic Principles); or Political Science 145 (Introduction to Political Economy) or equivalent
- Earth and Ocean Sciences 101 (The Dynamic Earth); or Earth and Ocean Sciences 102 (The Dynamic Oceans) (C-L: Biology 157)
- Mathematics 111L (Introductory Calculus), or equivalent (e.g. Mathematics 25L and 26L)

Major Requirements

- **Core Course:** Environment 201 (Integrating Environmental Sciences and Policy)
- **Ecology/Biodiversity course.** One of the following or approved substitution:
  - Environment 210D (Conserving the Variety of Life on Earth); or Biology 205 (Marine Megafauna) (C-L Environment 205); Biology 206L (Organismal Diversity); Biology 207 (Organismal Evolution); Biology 209 (Ecology for a Crowded Planet); Biology 350L (Anatomy of Vertebrates); or Biology 340L (Plant Diversity); or Biology 377LA (Marine Invertebrate Zoology) (C-L: Environment/EOS 377LA)
- **Environmental Policy course.** One of the following or approved substitution:
  - Environment 212/Public Policy Studies 275 (United States Environmental Policy); Environment 216S (Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding) (C-L: Political Science 152S; Public Policy 167S); Public Policy 274/Political Science 260D (Environmental Politics and Policies in the Developing World); Environment 286A (Marine Policy); or Environment 533A (Marine Fisheries Policy)
- **Probability and Statistics.** One course from the following or approved substitution:
  - Statistical Science 101 (Data Analysis and Statistical Inference); Statistical Science 102 (Introductory Biostatistics); Statistical Science 103 (Statistics in the Courtroom); Statistical Science 111 (Probability and Statistical Inference); Statistical Science 130 (Probability and Statistics in Engineering); Psychology 201 (Introduction to Statistical Methods in Psychology); Sociology 333 (Quantitative Analysis Sociology); Biology 281LA (Research Methods in Tropical Biology); Political Science 471L (Quantitative Political Analysis); Economics 208D (Introduction to Econometrics); Evolutionary Anthropology 381 (Biometry)
- **Focused Study.** Five upper-level courses proposed by students in consultation with their advisors to fit a particular theme or career objective. Courses are generally selected from approved lists in each of the social sciences/humanities and sciences/engineering areas, available at http://www.nicholas.duke.edu/programs/undergrad/masterlist.pdf. Students will submit to their advisor, usually at the beginning of their junior year, a written rationale for the courses selected, including the title of their focus study theme.
- **Independent Study/Internship/Field Experience.** Students are also expected to complete an independent study, internship, or field experience that may or may not include course credit. The Duke Career Center maintains information on available internships. Field experiences may include a semester or summer session at the Duke University Marine Laboratory or participation in field-oriented study abroad programs. Independent study typically involves a supervised research experience (see http://nicholas.duke.edu/programs/independent-study).

For the BS Degree

Corequisites: The following courses or their equivalents (for example, advanced placement credit) are required. Approval to substitute course taken at other universities must be obtained from the director of undergraduate studies in the department offering the course. Some of these courses are prerequisites to upper-level courses in this major.

- Biology 201L or 202L (Gateway to Biology) or equivalent
- Chemistry 101DL (Advanced General Chemistry) and either Chemistry 210DL or 201DL or equivalents.
- Physics 161L (Introductory Physics); or equivalent
- Mathematics 111L and 112L (Introductory Calculus), or equivalent.
• Environment 102 (Introduction to Environmental Sciences and Policy); or Earth and Ocean Sciences 101 (The Dynamic Earth); or Earth and Ocean Sciences 102 (The Dynamic Oceans) (C-L: Biology157)

Major Requirements
• Five core courses selected from the following six courses or course lists:
  • Earth and Ocean Sciences 202 (Ocean and Atmosphere Dynamics)
  • Environment 360 (Environmental Chemistry and Toxicology) or Environment 537 (Environmental Health)
  • Earth and Ocean Sciences 204L (The Evolving Earth and Life)
  • Earth and Ocean Sciences 323 (Landscape Hydrology)
  • One course from an approved list of ecology courses. Approved course list includes:
    Biology 205 (Marine Megafauna)
    Biology 209 (Ecology for a Crowded Planet)
    Biology 261S (Ecosystem Ecology)
    Biology 273LA/Environment 273LA (Marine Ecology)
    Biology 280LA (Fundamentals of Tropical Biology)
    Biology 284A (South African Ecosystems and Diversity)
    Biology 369LA/Environment 369LA (Biological Oceanography)
    Biology 272A/Environment 272A (Analysis of Ocean Ecosystems)
    Environment 217 (Restoration Ecology)
    Environment 361LS (Terrestrial Field Ecology)
  • One course from an approved list of courses that focus on the interface between humans and the environment. Approved course list includes:
    Environment 201 (Introduction to Environmental Sciences and Policy)
    Environment 210D (Conserving the Variety of Life on Earth)
    Environment 214S (Ethical Challenges in Environmental Conservation)
    Environment 212/Public Policy Studies 275 (United States Environmental Policy)
    Environment 216S (Environment and Conflict)
    Environment 235S (Urban Environmental Restoration and Design)
    Environment 281A (Cons/Mgt Protected areas S. Africa)
    Environment 282A (Environmental Science and Politics of the Tropics)
    Environment 350S (Capstone: Marine Science and Conservation Leadership)
    Biology/Environment 270A (Conservation Biology and Policy (Beaufort))
    Biology 571A (Urban Tropical Ecology (Beaufort))
    Economics 439/Environment 363 (Economics of the Environment)
    Philosophy 215 (Applied Environmental Ethics)
    Political Science 344 (Environmental Politics in the US)
• Statistical Science 101, 103, 111 (Probability and Statistics), or equivalent
• Focused Study. Three upper-level natural science, engineering, or mathematics courses proposed by the student in consultation with their advisor to form a concentration area. Student will submit to their advisor, usually at the beginning of their junior year, a written rationale for the courses selected, including the title of their focus study theme.

Advising. Advisors are assigned based on students’ general areas of interest. Students present a proposed plan of study to their advisors that explains the rationale for their chosen area of concentration within their focused study. The program encourages close relationships between faculty and students with convergent interests.

The Minor
Environmental Sciences and Policy
Requirements: Five courses: two core courses (Environment 102 and Environment 201); the remaining three courses selected from 200-level or above environment courses, which may include one substitution of a course in another department. Students with AP credit must select an additional environment course in place of Environment 102 to equal five courses.
Graduation with Distinction

The environmental sciences and policy and environmental sciences both offer a Graduation with Distinction option. Interested students with a 3.0 grade point average overall and 3.2 grade point average in the environmental sciences/policy major should apply by the beginning of their senior year. The application should include a written request to the director of undergraduate studies describing the proposed research project, and identifying a primary faculty advisor who has agreed to supervise the research. Participants write a substantial paper describing their completed research, which is evaluated by the faculty advisor. The student will also make an oral presentation to students and faculty of the program before the end of classes of the student’s final semester. For additional information and an application form, contact the director of undergraduate programs or visit http://nicholas.duke.edu/programs/graduation-distinction.

Study of Ethics

Associate Research Professor Pickus, Director

A certificate, but not a major, is available in this program.

The goal of the undergraduate certificate in the study of ethics is to provide students with an opportunity to pursue a rigorous cross-disciplinary study of ethics. Such a course of study requires familiarity with systematic ethical theories and traditions of moral wisdom and reflection, an understanding of how ethical issues have been framed across history and cultures, experience delving into ethical issues through literature and the arts, and insights into how ethical challenges are being conceptualized and negotiated in practice by policymakers, researchers, doctors, journalists, and others. Ethics cannot be isolated within one or two disciplines. It is an inherently cross-disciplinary inquiry that needs to draw on tools, methods, and contexts from multiple disciplines.

There are two ways to complete the certificate: the course-based version and the experiential version.

In the course-based version, eight courses (seven course credits) are required for completion of the certificate program:

- Ethics 101D (The Challenges of Living an Ethical Life) (introductory course)
- Discussions in Ethics: Ethics 102S-1 and 102S-2 (Engaging Ethics Outside the Classroom). These two half-credit courses allow students to meet with faculty and nonacademic professionals to discuss ethical issues they address in their classes, in their research, and in their careers.
- Ethics 490S (Capstone Research Seminar in Ethics)
- Students must also complete courses in the following five categories:
  - I. Philosophical Ethics. Students must take one course, which must be Philosophy 207, Philosophy 216, Philosophy 217, or Political Science 223. One additional approved philosophical ethics course may be taken.
  - II. Cross-Cultural Ethical Traditions. Students must take at least one course from a list of approved courses in this category. Students may take two courses in this category.
  - Students must take at least one course, and may take two, from a list of approved courses in categories III and IV:
    - III. Ethics in Historical Perspective.
    - IV. Ethics in Literature and the Arts
    - V. Ethics of Contemporary Issues. Students may take one course from a list of approved courses in this category.

To summarize, students must take one course from each of categories I and II, one course in either category III or IV, and one additional course in any of the five categories. All students must take the introductory course, two half-credit “Discussions in Ethics” courses, and the capstone course.

In the experiential version of the certificate, students take five courses (4.0 course credits) and complete two experiences:

- Ethics 101D (The Challenges of Living an Ethical Life) (introductory course)
- Discussions in Ethics: Ethics 102S-1 and 102S-2 (Engaging Ethics Outside the Classroom). These two half-credit courses allow students to meet with faculty and nonacademic professionals to discuss ethical issues they address in their classes, in their research, and in their careers.
- Ethics 490S (Capstone Research Seminar in Ethics). The capstone cannot be taken until all other requirements are complete.
• One ethics course of the students’ choosing from an approved list of courses falling into one of the following five thematic areas: religion, moral decision-making, human rights, migration, and regulation. Area selection is meant to compliment a student’s “experiences.”

• Two not-for-credit experiences are also required. The first must be a faculty-mentored research experience which exceeds 150 hours. The second is a community-based field experience that exceeds 300 hours.

Sequencing is an important feature of the experiential track in ethics. Students are required to declare this track by the end of Drop/Add in the fall of their junior year. Declaration must include three components: (1) a written essay outlining the logic and rationale for the pathway; (2) identification of the four courses and two thematically related experiences; (3) establishment of publicly facing e-portfolio. A three-person faculty advisory committee must be selected to vet student declaration proposals. (See program director to select advisory committee.) Following is a list of courses which have historically been approved for the certificate in the study of ethics. Please see the ethics certificate program website for a complete current course listing as well as approved courses from past semesters: http://kenan.ethics.duke.edu/students/ethics-certificate/.

Courses in Ethics (ETHICS)

101D. The Challenges of Living an Ethical Life. CZ, EI Familiar but fundamental ethical questions: What is a good, worthy or just life? How is it to be lived, toward what ends? Readings include dramas and philosophical analyses, parables and autobiographies, polemics and meditations, novels and political commentaries. Introductory course for the Certificate Program in the Study of Ethics. Instructor: Staff. One course. C-L: Political Science 120D

102S-1. Discussions in Ethics: Engaging ethics outside the classroom. EI This course is one of two 1/2 credit courses required for the Certificate in the Study of Ethics. Students from the certificate program will meet with faculty and with non-academic professionals to discuss the ways they address ethical issues in their work. It is recommended that students complete the Gateway course before enrolling in Ethics 102. Open only to students in the Ethics Certificate Program. Instructor: Staff. Half course.

102S-2. Discussions in Ethics II: Engaging Ethics Outside the Classroom. EI One of two half credit courses required for the Certificate in the Study of the Ethics. Students meet with faculty and non-academic professionals to discuss the ways they address ethical issues in their work. Recommended that students complete at least one other course in the Ethics Certificate Program, ideally the Gateway course, before enrolling in 102S-2. Open only to students in the Ethics Certificate Program. Instructor: Staff. Half course.

129FS. Just Thinking: Philosophical Foundations of Citizenship & Democracy. EI, SS Examines the role of human rights and global justice in world politics. We will consider questions such as whether human rights are universal, what role human rights and global justice should be play in U.S. foreign policy, which strategies are most effective in promoting human rights and global justice, and which risk inciting backlash. The course will cover topics including civil and political rights; economic, social and cultural rights; genocide, torture, humanitarian intervention, and the international criminal court. Instructor: Katzenstein. One course. C-L: International Comparative Studies 128FS, Political Science 176FS

187FS. American Democracy: Two Centuries of Creating Institutions to Achieve its Principles. CZ, SS One course. C-L: see Political Science 187FS

188FS. American Perspectives on Citizenship. EI, SS One course. C-L: see Political Science 188FS

190FS. Special Topics in Ethics (Focus Program). EI Topics vary. Open only to students in the Focus program. Topics course. Department consent required. Instructor: Staff. One course.

199FS. Refugees, Rights, and Resettlement. CCI, EI, SS One course. C-L: see Sociology 178FS

204. Feminist Ethics. CCI, EI, SS One course. C-L: see Women's Studies 367

204S. Feminist Ethics. CCI, EI, SS One course. C-L: see Women's Studies 367S

235S. Muslim Philosophy and Theology, an introduction. CZ, EI One course. C-L: see Religion 374S; also C-L: Islamic Studies

259. News as Moral Battleground. EI, R, SS, W One course. C-L: see Policy Journalism and Media Studies 371; also C-L: Public Policy Studies 371

261. The Arts and Human Rights. ALP, EI, SS One course. C-L: see Cultural Anthropology 248; also C-L: Music 238, Public Policy Studies 252, International Comparative Studies 248
262S. Global Migration and Ethics. EI, SS One course. C-L: see Cultural Anthropology 216S; also C-L: International Comparative Studies 244S

265. Applied and Environmental Ethics. CZ, EI, STS One course. C-L: see Philosophy 215; also C-L: Marine Science and Conservation

269. Neuroethics. EI, NS, SS, STS One course. C-L: see Neuroscience 267; also C-L: Psychology 278, Philosophy 353

270. Business Ethics: The Debate Over Corporate Social Responsibility. EI, SS One course. C-L: see Philosophy 270; also C-L: International Comparative Studies 271, Markets and Management Studies

271. Life Within Capitalism: A History of its Values, Measures and Struggles. CZ, EI Examination of how capitalism has profoundly shaped people's ethical values, with focus on United States. Investigates central developments behind history of capitalism; explores key struggles that led to formation of capitalist logic (choices, values, goals); traces impact of capitalist goals and measures on ethical values and choices; examines discussions about possible future developments within capitalism. Instructor: Philipsen. One course. C-L: Economics 270, History 284, Political Science 252

272S. Partnering and Parenting: An Interdisciplinary Approach to the Study of Human Relationships. CCI, EI, NS, SS, STS One course. C-L: see Evolutionary Anthropology 240S; also C-L: Sociology 216S

280. Taboo Markets. EI, SS Exploration of the social organization of taboo, stigmatized, or otherwise morally controversial markets. Examples include markets for alcohol and other drugs, sex work, gambling, adoption, domestic labor, blood, organs, eggs, sperm, genetic material, viaticals, and pollution rights. Examination of both empirical and normative studies of such exchanges, together with debates surrounding the creation, expansion, and regulation of these markets. Includes consideration of broader arguments about the scope and limits (if any) of the market as a social institution, and its relationship to other modes of exchange. Instructor: Healy. One course. C-L: Sociology 340, International Comparative Studies 280


290. Special Topics in Ethics. EI, SS Topics vary. One course.

290S. Special Topics in Ethics. Topics vary by semester. Seminar version of Ethics 290. Instructor: staff. One course.

293. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Instructor: Shanahan. One course.

330. Ethics in the Hebrew Bible/Old Testament. ALP, CCI, CZ, EI, W One course. C-L: see Religion 331; also C-L: Jewish Studies 330

341. Jewish Ethics. CCI, CZ, EI, W One course. C-L: see Religion 341; also C-L: Jewish Studies 341

345S. Muslim Ethics and Islamic Law: Issues and Debates. CCI, CZ, EI One course. C-L: see Religion 388S; also C-L: Asian & Middle Eastern Studies 206S

360S. Civic Engagement: Reflection and Transformation. CCI, CZ, EI, SS One course. C-L: see Religion 270S; also C-L: Public Policy Studies 255S

489S. Debt, Usury, & Citizenship: A Comparative Political Theology. EI Examines the intersection and divergence of Judaism, Christianity & Islam in relation to debt and usury, putting their comparative theologies on this issue in dialogue with contemporary economic thinking and policy on regulation. Overview of differing treatments of debt and usury serves as a prelude to considering the relationship between debt and citizenship and how in the contemporary context campaigns for responsible lending are a primary context for forms of interfaith activism to limit the power of money in determining our common life while at the same time giving rise to distinctly different ways of promoting alternative forms of credit provision. Instructor: Bretherton. One course.
490S. Capstone Research Seminar in Ethics. EI, R, SS, W This intensive senior seminar is the capstone for the Ethics Certificate Program. Here they return to the central theme of the Gateway course, Challenges of Living an Ethical Life, through research. Students bring together interdisciplinary insights from previous work in the certificate program to shed light on major contemporary debates in the study of ethics and the world's most pressing social problems. Instructor: Staff. One course.

493. Research Independent Study. R Individual research in field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. One course.

561. History of Poverty in the United States. CCI, CZ, SS A history of poverty and poverty policy in the United States from the colonial era to the present. The changing experience of poverty, efforts to analyze and measure poverty, and attempts to alleviate or eliminate it. Attention paid to the reasons for the durability of poverty in a wealthy nation and to the forces shaping the contours of anti-poverty policy. Instructor: Staff. One course. C-L: History 546, Public Policy Studies 528

562S. Understanding Ethical Crisis in Organizations. EI, R, SS This course examines the causes and consequences of ethical crisis across business, military, higher education and religious institutions. Emphasis is on identifying why certain organizations are more prone to ethical problems and certain organizations better able to manage them. A core goal is to develop real-world solutions to ethical challenges organizations face in contemporary societies worldwide. Instructor: Pickus. One course. C-L: Political Science 502S, Sociology 542S, Public Policy Studies 558S

590S. Special Topics in Ethics. EI Topics vary. Instructor: Staff. One course.

Ethics Courses Offered Through Other Departments

African and African American Studies
212. Europe's Colonial Encounter, 1492-1992
243. The Civil Rights Movement

Art History
381D. Global Art Since 1945

Asian & Middle Eastern Studies
327. Islamic Civilization I

Canadian Studies
312. Europe's Colonial Encounter, 1492-1992

Classical Studies
374. Ancient Political Theory
5718. Ancient Political Philosophy

Cultural Anthropology
240S. The Anthropology of Hinduism: From Encounter to Engagement
256. Islamic Civilization I
257. Islamic Civilization II
395AS. Environment, Health, and Development in China

Economics
361. Prisoner's Dilemma and Distributive Justice

Education
101. Social and Philosophical Foundations of Education
237. Contemporary Issues In Education
240. Educational Psychology (C, D)
243S. Children, Schools, and Society
408S. Teaching Practices in Elementary Language Arts and Social Studies
430S. Women and the Professions
496S. Secondary School Issues: Pedagogy, Culture, and Methods

Engineering
350S. Ethics in Professions: Scientific, Personal and Organizational Frameworks

English

German
370. The Devil's Pact: Faust and the Faust Tradition

Global Health Certificate
383AS. Environment, Health, and Development in China

History
210. Islamic Civilization I
211. Islamic Civilization II
243. History of the Christian Church
251. Jewish History, 1492 to the Present
259. The Reformation of the Sixteenth Century
298. Genocide in the Twentieth Century
312. Europe's Colonial Encounter, 1492-1992
348. The Civil Rights Movement

**Human Development**

260. Psychosocial Aspects of Human Development (D)

**International Comparative Studies**

219D. Global Art Since 1945

**Jewish Studies**

145. The Old Testament/Hebrew Bible
251. Jewish History, 1492 to the Present
335. Jewish Mysticism
341. Jewish Ethics

**Medieval and Renaissance Studies**

268. Islamic Civilization I
269. Islamic Civilization II
284. The Reformation of the Sixteenth Century
351. Jewish Mysticism

**Philosophy**

123FS. Freedom and Responsibility
206. Philosophy of Law
207. Political and Social Philosophy
217. Ancient and Modern Ethical Theory
218. Philosophical Issues in Medical Ethics
246. Prisoner's Dilemma and Distributive Justice
262. Human Rights in Theory and Practice
263. Chinese Philosophy
571. Ancient Political Philosophy

**Political Science**

175. Introduction to Political Philosophy
175D. Introduction to Political Philosophy
175FS. Freedom and Responsibility
265. Introduction to American Political Thought
266. Distributive Justice
267. Theories of Liberal Democracy
268. Politics and Literature
269. Ancient Political Theory
270. Ambition and Politics
271. Human Rights in Theory and Practice
275. Left, Right, and Center: Competing Political Ideals
299SA. Environment, Health, and Development in China
331. Prisoner's Dilemma and Distributive Justice
355. Comparative Health Care Systems
357. Civilians in Path of War
575. Ancient Political Philosophy
587. Contemporary Theories of Liberal Democracy (C-N)
588. Modern Political Theory
588S. Political Thought in the United States

**Psychology**

236. Psychosocial Aspects of Human Development (D)
240. Educational Psychology (C, D)

**Public Policy Studies**

231. Human Rights in Theory and Practice
234. Distributive Justice
243S. Children, Schools, and Society
260. Leadership, Policy, and Change
270. Civic Participation and Community Leadership
271S. Social Entrepreneurship in Action
302. Policy Choice as Value Conflict
335. Comparative Health Care Systems
372. Information, Policy, and Ethics

**Religious Studies**

130. Taoism and Chinese Religion
145. The Old Testament/Hebrew Bible
Evolutionary Anthropology

Professor Pusey, Chair; Associate Professor of the Practice Digby, Director of Undergraduate Studies; Professors Churchill, Drea, Glander, Kay, Nunn, Pusey, and Schmitt; Associate Professors Hare; Assistant Professors Boyer and Tung; Professors Emeriti Cartmill, Hylander and Simons; Associate Research Professor Wall; Associate Professors of the Practice Digby and Williams; Research Scientists Foerster, MacClean, and Woods. Secondary Appointments: Professors Alberts (biology), Brannon (psychology and neuroscience), Moorman (orthopaedic surgery and sports medicine), Myers (biomedical engineering), Platt (neurobiology), Smith (biology), Wray (biology), and Yoder (biology). Associate Professors, Roth (biology) and Taylor (physical therapy); Adjunct Professors Rose, Struhsaker, and Teaford, Adjunct Associate Professor Ankel-Simons; Adjunct Assistant Professors Bergl, Horvath-Roth, and Steenhuyse.

A major or a minor is available in this department.

Evolutionary anthropology is an interdisciplinary department centering on the origin and evolution of human beings and their close biological relatives. The department and its course offerings cover a variety of research areas including primate behavior, ecology, cognition and genetics; primate and human disease ecology; paleoanthropology; and functional and comparative anatomy. Opportunities for independent research exist in departmental laboratories, including the Jane Goodall Institute Research Center, The Canine Cognition Center and the Primate Locomotion Lab. Additional research opportunities can be found at the Duke Lemur Center, and the Lemur Center’s Division of Fossil Primates.

Courses in Evolutionary Anthropology (EVANTH)

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. Introduction to Evolutionary Anthropology. NS, STS The study of human origins, anatomy, and behavior from an evolutionary perspective. The historical development of pre-Darwinian evolutionary thinking and Darwin's contribution to evolutionary theory; genetics; microevolution and macroevolution; the modern synthesis framing the study of human origins and behavior in the context of modern evolutionary biology; primate behavioral ecology and evolution; a survey of primate and human paleontology, adaptation and variation; the origins of human social organization and culture; the impact of modern humans on biodiversity. Instructor: Digby, Glander, or staff. One course.

101D. Introduction to Evolutionary Anthropology. NS, STS The study of human origins, anatomy, and behavior from an evolutionary perspective. The historical development of pre-Darwinian evolutionary thinking and Darwin's contribution to evolutionary theory; genetics; microevolution and macroevolution; the modern synthesis framing the study of human origins and behavior in the context of modern evolutionary biology; primate behavioral ecology and evolution; a survey of primate and human paleontology, adaptation and variation; the origins of human social organization and culture; the impact of modern humans on biodiversity. Instructor: Digby, Glander, or staff. One course.
evolution; a survey of primate and human paleontology, adaptation and variation; the origins of human social organization and culture; the impact of modern humans on biodiversity. Lecture is the same as Evolutionary Anthropology 101, but adds a 50 minute discussion section with hands-on access to fossil casts, etc. Instructor: Digby, Glander, or staff. One course.

180. Natural History of Humans: The Evolution of our Anatomy, Physiology and Behavior. NS, STS What it means to be human. The fundamental mechanism of evolution with a specific emphasis on the interplay of environmental and genetic factors. The unique characters of human beings including our anatomy, art, tool-making, burial, and eventual control of the environment and how those features came to be. Modern human biological variation as it relates to global health and discussion of biological aspects of race. Course intended for non-majors. Instructor: Schmitt. One course.


190FS. Focus Program Special Topics. NS Special topics seminar open only to students in the Focus Program. Instructor: Staff. One course.

212FS. Social Structures in an Evolutionary Framework. NS, STS Intersection between social structure, social behavior, and evolution. Role of social and historical factors in promoting evolutionary change and the evolutionary history of social structures themselves, with an emphasis on humans and other primates. Topics include: evolution in modern human societies, evolutionary demography, genetic signatures of social and cultural change, the genetics of socially relevant traits, and social environmental effects on health. Open only to students in the FOCUS program. Instructor: Tung. One course.

220. Human Evolution. NS Evolutionary biology of the hominidae. Anatomical and behavioral adaptations and phylogeny of fossils and living primates including Homo sapiens. Prerequisite: Evolutionary Anthropology 101 or equivalent. Instructor: Boyer, Churchill or staff. One course.

221S. The Ape-Human Transition. NS, R Fossil casts, literature, and discussion used to explore critical periods in evolutionary transition from ape to human. Anatomical changes in fossil primates of the Miocene and Pliocene epochs (~24-1.8 mya), a time period during which ape species and human ancestors differentiated. Will discuss findings in genomics relevant to the transition (e.g. language acquisition) and aspects of social complexity reflected in the fossil record or by inference from living primates). Instructor: Williams. One course.

230. Bodies of Evidence: Introduction to Forensic Anthropology. NS, STS An introduction to medicolegal anthropology and death investigation. Topics include crime scene protocol and body recovery, basics of osteology, determining time since death, making personal identification, determining the manner and mode of death, postmortem modification of skeletal remains, protocols for mass disasters, human rights applications, and courtroom testimony. Open to both majors and non-majors. Instructor: Churchill. One course.


235L. Primate Anatomy. NS The comparative anatomy of primates from the perspective of adaptation and phylogeny. Laboratory includes study of bones, fossil casts, prosections of nonhuman primates. Prerequisite: Evolutionary Anthropology 101. Instructor: Williams. One course.

236L. The Primate Skeleton. NS, R The osteology of modern and fossil primates. Focus on skeletal anatomy relevant to primate evolution. Primate systematics, the anatomy of bone, the primate fossil record, and the comparative method. Prerequisite: Evolutionary Anthropology 101. Instructor: Williams. One course.

240S. Partnering and Parenting: An Interdisciplinary Approach to the Study of Human Relationships. CCI, EI, NS, SS, STS Examines current patterns of human mating and family dynamics across cultures from interdisciplinary perspective. Using guest lectures from natural sciences, social sciences and humanities, field exercises, problem solving assignments students apply biological, societal and institutional knowledge and methods to address questions in three main areas: 1) how much does biology determine mating and parenting behavior? 2) How much do institutions determine mating and parenting behavior? 3) Can anyone be a "good" mate or "good" parent? Each section is tied to ethical questions such as "should governments define what it means to be a good parent?" Problem-
centric approach will guide discussion. Instructor: Hare, Shannahan. One course. C-L: Sociology 216S, Study of Ethics 272S

246. Sociobiology. NS, STS Sociobiological theory reviewed and applied to the social behavior of non-human animals, hominids, and humans; the evolution of altruism, cooperation, competition, mating strategies, parental care and morality. Prerequisite: Evolutionary Anthropology 101 or Biology 202L. Instructor: Digby or Pusey. One course.

253. Primate Ecology. NS, R Ecological theory with an emphasis on primates. Primate diversity and biogeography, concept of the niche; dietary specializations, habitat use, predator-prey interactions, plant-animal interactions, community ecology, human ecology; methods used in primate ecology; the role of ecology in conservation. Periodic labs (held during lecture hour) include methods used to characterize forests, tests of niche differentiation and morphological adaptations to different habitats. Prerequisite: Evolutionary Anthropology 101 or Biology 202L. Instructor: Digby or staff. One course.

257. Ecology and Adaptation of Hunters and Gatherers. CCI, NS The ecology of extant and extinct foraging societies; focus on human behavioral solutions to subsistence problems associated with different environments (tropical/neotropical forest, boreal forest, coastal, arctic, grassland/savannah, desert). Topics include edible resource distribution in varied environments and its relationship to mobility and subsistence strategies in modern hunter-gatherers; and the archaeological and fossil evidence for the evolution of human subsistence behavior. Prerequisite: Evolutionary Anthropology 101 or Biology 202L. Instructor: Churchill. One course.

260. Human Cognitive Evolution. NS, SS Survey of methods/theories used in the study of human cognitive evolution; development of cognition in children; brain damaged patients; cognitive abilities of great apes; paleoanthropology of early and modern humans and evidence for mental abilities and culture; cross-cultural and sex differences in human cognition; genetics and the evolution of cognition. Prerequisite: Evolutionary Anthropology 101 or Psychology 102. Instructor: Hare. One course. C-L: Psychology 255


276. Human Biology. NS, STS Introduction to human biology from an evolutionary perspective. Biological variability and its genetic and ecological underpinnings, with emphasis on modern variation and adaptation. Discussion of biological and social factors that determine health. Principles of heredity, development, evolution, adaptation, and epidemics presented using examples from a cross cultural perspective. Students develop scientific reasoning skills and examine the role of human biology in society. Impact of major problems facing humanity today, such as population displacement and global warming. Pre-requisite: Evolutionary Anthropology 101 or Biology 202L. Instructor: Staff. One course.

280. Introduction to the Evolution of Human Culture, Behavior, and Institutions. CCI, NS, SS One course. C-L: see Philosophy 208

285D. Human Health in Evolutionary Perspective. NS, R, STS Covers evolutionary approaches to understand human health at a global scale. Integration of evolutionary thinking and medical science provides new insights to a wide array of medical issues including obesity, cancer, allergies, and mental illness. Evolutionary perspectives reveal why some pathogens are more harmful than others, shed light on the origins and spread of infectious diseases in humans, and help in controlling antibiotic resistance. Evolutionary approaches provide insights as to why we age and provide solutions to alleviate human health problems that often differ from modern medical practice. Course will place these perspectives in the context of global health challenges. Instructor: Nunn. One course. C-L: Global Health 304D

310. Primate Evolutionary Genetics. NS, R Genetic perspectives on primate evolution. Interpretation of molecular data in understanding primate origins, historical and present-day distributions, and natural selection. Topics include: the genetic signature of pathogen pressure; population differentiation and local adaptation to ecological differences; genetic signatures of admixture, including in the human lineage; molecular marker-based tests of kin-biased behavior and paternal care; primate behavioral genetics and genomics; phylogenetic methods to inves-
tigate the evolution of primate social structures; conservation genetics. Prerequisite: Biology 202L; Recommended: Biology 201L, Evolutionary Anthropology 101. Instructor: Tung. One course.

330L. Human Anatomy and Physiology. Interface between human gross anatomy and physiology from a functional and evolutionary perspective. Systems-based and regional approach that differs from both a standard anatomy and physiology course by examining each system (musculoskeletal, circulatory etc.) and regional units (liver, heart, limb muscles) from a functional stand-point considering their anatomy and their physiological role together. Focus on human anatomy but will consider differences between humans and other vertebrates to illustrate functional aspects of anatomical structures. Prerequisites: Evolutionary Anthropology 101 or introductory biology. Instructor: Schmitt. One course.

333L. The Human Body. NS Human gross anatomy seen from a functional and evolutionary perspective. Laboratory involving study of prosected cadavers and other anatomical preparations. Previous experience in anatomy (e.g., Primate Anatomy or Human Osteology) is recommended but not required. Instructor: Wall or Kay. One course.

334L. Human Osteology. NS An introduction to the basics of human osteological analysis. Identification and siding of all the bones of the human body and the major osteological landmarks on each bone; basics of bone histology, development and growth; and fundamentals of anthropological analysis of human skeletal remains (archaeological treatment of burials; determination of gender, populational affinities, stature; paleopathological analysis; medicolegal applications). Prerequisite: Evolutionary Anthropology 101 or Biology 202L. Instructor: Churchill or Staff. One course.

336S. Dance Science: An Evolutionary Approach to Functional Anatomy. ALP, NS, R Human skeletal and muscular anatomy taught from an evolutionary perspective. Focus on anatomy relevant to dancers and other performing artists. Students participate in anatomy laboratories and discussions and conduct original research on topics such as posture, movement, injury. Instructor: Williams. One course. C-L: Dance 377S

341. Primate Sexuality. NS, STS A comparative and integrative study of primate sex and reproduction. The material is presented in three sections: the first focuses on primate social organization, mating systems, and reproductive strategies; the second focuses on the endocrine system and behavioral endocrinology, and; the third focuses on sexual differentiation of morphology, brain and behavior. In each section, this course places human sexuality within the broader context of the primate order. Prerequisites: Evolutionary Anthropology 101D or Biology 202L. Instructor: Drea. One course. C-L: Biology 321

341D. Primate Sexuality. NS, STS A comparative and integrative study of primate sex and reproduction. The material is presented in three sections: the first focuses on primate social organization, mating systems, and reproductive strategies; the second focuses on the endocrine system and behavioral endocrinology, and; the third focuses on sexual differentiation of morphology, brain and behavior. In each section, this course places human sexuality within the broader context of the primate order. Note: course is the same as Evolutionary Anthropology 341 but with an additional required 50 minute discussion. Prerequisites: Evolutionary Anthropology 101D or Biology 202L. Instructor: Drea. One course. C-L: Biology 321D

344L. Primate Field Biology. NS, R, W Survey of field methods used to document primate behavior. Laboratory includes observations of free-ranging and captive primates at the Duke Lemur Center. Focus on the scientific process and writing of formal research papers. Prerequisite: Evolutionary Anthropology 101 or Biology 202L. Instructor: Digby. One course.

355. Food For Thought: The Biology of Nutrition. NS, R, STS Food as medicine and medicine as food. The medicinal and dangerous properties of fruits, herbs, vegetables, and fungi. How human cultures impact diet (for example, eating disorders/addictive behaviors); how modern technology and non-invasive data collection techniques currently allow for studies of eating patterns, nutrition, ties between diet and society in terms of historical and evolutionary perspectives. Intended for juniors and seniors. Instructor: Glander. One course.

359S. Primate Conservation. EI, NS, STS Concepts, practice, and ethics of conservation biology, both at the species and community level. Relevant aspects of biogeography, ecology, behavior and demography; human impact (deforestation, hunting); conservation strategies/policies (objectives, design of protected area networks, impact on local human populations). Impact of cultural, political, ethical considerations on primate conservation. Evolutionary Anthropology 101 recommended. Instructor: Staff. One course.
363S. Evolution of Primate Social Cognition. NS, R Social life of primates, with a focus on cognitive implications of social complexity. Primary emphasis on how social organization and social behavior influence the acquisition, expression, and transmission of information or knowledge. Topics include: tool use and causality; discrimination and insight learning; social influences on learning (for example, facilitation, inhibition, observation, imitation); knowledge of the social domain (individual recognition, kinship, hierarchies); coalitions, alliances, cooperation, and reciprocity; social conflict and reconciliation; traditions and cultural transmission; vocal and gestural communication; tactical deception and social manipulation; visual monitoring; intentionality; and instruction. Instructor: Drea. One course.

381. Biometry. QS Introductory course covering univariate and bivariate statistics as applied in biological anthropology; characteristics of populations and variables; parametric statistical methods emphasized. Not open to students who have taken another 200+ level statistics course. Instructor: Wall. One course.

385D. Primate Disease Ecology and Global Health. NS, R, STS Covers concepts of disease ecology, with specific application to primates, human evolution, and global health. Explores the epidemiology and evolution of infectious diseases through the primary literature, focusing on infectious diseases of wild primates, humans, and other mammals. Students learn about the diversity of infectious diseases found in humans, and the basics of epidemiology, disease evolution and emergence, and primate behavioral ecology. Students also gain experience in thinking critically about scientific research, identifying interesting research questions, and communicating science to others. Prerequisite: EVANTH 101/101D or Introductory-level biology. Instructor: Nunn. One course. C-L: Global Health 315D

390. Current Issues in Evolutionary Anthropology. NS Selected topics in methodology, theory, or area. Instructor: Staff. One course.


390L. Current Topics in Evolutionary Anthropology. NS Same as Evolutionary Anthropology 390 except in laboratory format. Instructor: Staff. One course.

390S. Current Topics in Evolutionary Anthropology. NS Same as Evolutionary Anthropology 390 except in seminar format. Instructor: Staff. One course.

391. Independent Study. Directed reading, tutorial, or individual project in Evolutionary Anthropology, under the supervision of a faculty member, resulting in a substantive paper or other approved product. Open only to qualified students, who, before being given permission to register, must submit to the faculty advisor a written proposal outlining the area of study and listing course goals and meeting schedule. The area of study must be connected to discipline of Evolutionary Anthropology. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

393. Research Independent Study. R Individual research under the supervision of a faculty member resulting in a substantive paper or written report. Projects typically include background research, formulation of hypotheses and predictions, data collection, data analysis and interpretation of results. Area of study must be connected to discipline of Evolutionary Anthropology. Open to qualified students, who, before being given permission to register, must submit to the faculty advisor a written proposal outlining the area of study and listing the goals and meeting schedule. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

431S. Human Embryology. NS, STS One course. C-L: see Biology 431S

460. Research in Cognitive Evolution. R Research and readings in cognitive evolution and anthropology. Students are expected to formulate research questions, develop research protocols, collect and analyze data; participation in group discussions. Instructor: Hare. One course.

490S. Advanced Current Topics in Evolutionary Anthropology. Current topics in Evolutionary Anthropology taught at the advanced level. Instructor: Staff. One course.

495S. Advanced Research in Evolutionary Anthropology. NS, R, W Advanced research in Evolutionary Anthropology topic, typically leading to Graduation with Distinction. Course includes a one-hour weekly seminar on topics such as hypothesis testing, writing proposals, research design, data analysis with a strong emphasis on writing. Students will complete the introduction (literature review) and methods of their thesis along with a tentative results.
Students are also expected to work with a faculty mentor conducting original research equivalent to a research independent study. Instructor consent required. Instructor: Digby. One course.

514. Genomic Perspectives on Human Evolution. NS, R, STS, W One course. C-L: see Biology 554; also C-L: Genome Sciences and Policy

520S. Primate Morphology and Fossil Record. NS, R Survey of primate morphology/fossil record. Extinct fossil forms will be used to fill in gaps among major living groups or reveal specializations unseen among them. Implications of these patterns for 1) the relationships among living fossil primates and 2) origin and early evolution of the order Primates (as well as each major group of primates) in terms of historical timing, geography, and ecological influences. Methodological topics: 3D computer visualization; geometric analysis and biomechanical modeling of morphological variation; cladistics; phylogenetic comparative methods. Prerequisite: Evolutionary Anthropology 101/101D plus 200 or 300-level paleontology or anatomy course. Instructor: Boyer and Kay. One course.

522. The Hominid Fossil Record. NS Origin and successive stages of development of human ancestors. Detailed analysis of adaptive types and cultural developments. Personalities and current controversies in the study of hominin paleontology. Prerequisite: Evolutionary Anthropology 101 and 220, or consent of instructor. Instructor: Staff. One course.

530. Human Functional Anatomy. NS Basics of functional morphology (including elementary biomechanics), an overview of connective tissue structure and mechanics, and a systematic overview (from head to toe) of human anatomy from a functional perspective. Emphasis on connective and other tissues involved in functioning of the musculoskeletal system (primarily bone, cartilage, tendons, ligaments, and muscle). Prerequisite: Evolutionary Anthropology 101 and 333L or 334L. Instructor: Churchill. One course.

534L. Advanced Human Osteology. NS, R Advanced laboratory techniques for human osteological analysis; identification and sizing of fragmented skeletal elements and teeth; differences between human and non-human bone; biomechanical analysis, functional morphology, hominin osteology; case studies of human skeletons used to produce written skeletal report. Pre-requisite: 100-level course in osteology or general anatomy. Instructor: Staff. One course.

537S. Orthopedic Biomechanics and Kinesiology. NS, R Seminar discussions and research addressing fundamental theoretical and practical aspects of clinical biomechanics of the human musculoskeletal system. Readings from primary literature will be assessed in class along with proposals for future research. Students will select a research question, develop an appropriate data collection protocol and collect preliminary data, the results of which are presented to the class as part of a formal poster presentation. Prerequisites: Evolutionary Anthropology 101, Physics 141L and 200 or 300-level behavior or ecology course. Instructor: Schmitt. One course.

544L. Methods in Primate Field Ecology. NS, R Survey of field methods used in the study of primate ecology, including habitat assessment, mapping, and behavioral observations using computer technology. Laboratory includes observations of primates at the Duke Lemur Center. Prerequisite: Evolutionary Anthropology 101; 200 or 300-level behavior or ecology course. Instructor: Glander. One course.

546S. Primate Social Evolution. NS, R Cological determinants of, and biological constraints on, social strategies and systems, with an emphasis on primates. Prerequisite: Evolutionary Anthropology 101 and 200 or 300-level behavior course. Instructor: Pusey. One course.

560S. Primate Cognition. NS Advanced readings and discussion in the evolution of primate cognition. Topics include evolution of social tolerance, communication, cooperation, competition, etc.; role these behaviors play in the evolution of cognitive abilities. Instructor: Hare. One course.

560SK. Evolution, Cognition and Society: How Evolution and Cognition Matter in Everyday Life. NS, STS Using primary literature in evolutionary anthropology and cognitive science to discuss major societal events, behaviors and issues. Topics include sex, prejudice, religion, music, abortion, illness, sexuality, global health, death, politics, economics and drugs. Emphasis on biological and cognitive perspectives to solving today's biggest personal, local and global problems. Taught at Duke Kunshan University. Instructor: Hare and Tán.

582S. Primate Adaptation. NS A study of primate adaptation from an evolutionary perspective. Topics vary according to student interests but may include history and functional significance of locomotor and feeding adaptations, craniofacial morphology, sense organs, reproductive systems, and language in primates, including humans.
Seminar format but, depending on topic, may include laboratory analysis of materials. Prerequisite: 200 or 300-level anatomy or morphology course and consent of instructor. Instructor: Williams. One course.

588S. Macroevolution. NS One course. C-L: see Biology 588S

590L-1. Special Topics Laboratory. NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

590LS. Special Topics Laboratory. NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

590S. Special Topics. NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

The Major

For the AB Degree

Prerequisite. Evolutionary Anthropology 101 or 101D

Corequisite. Biology 202L

Major Requirements. Nine courses are required (not including the above pre and corequisites) of which eight courses must be 200-level or above and one course must be a capstone course (see pre-approved list in the departmental handbook). One course is required in each of the following areas: 1) human/primate paleontology or anatomy and 2) primate behavior or ecology (see listings in the Handbook for Majors). At least five courses must be taken in evolutionary anthropology; up to four courses may be taken in related departments based on a preapproved list of electives or with preapproval by the director of undergraduate studies. One course must be a lab/field experience in evolutionary anthropology (research independent study may count toward this requirement). Note that no more than two independent studies may be counted toward the nine courses required. Evolutionary anthropology offers two optional concentrations (see below).

For the BS Degree

Prerequisite. Evolutionary Anthropology 101 or 101D

Corequisites. Biology 201L and 202L; Chemistry 101DL and 201DL; Mathematics 111; Physics 141L; introductory statistics (any level). Equivalent courses can be approved by the director of undergraduate studies.

Major Requirements. Eight courses numbered 200 or above are required (not including the above pre and corequisites) of which one course must be a capstone course (see preapproved list in the Handbook for Majors). One course is required in each of the following areas: 1) human/primate paleontology or anatomy and 2) primate behavior, ecology or cognition (see listings in the Handbook for Majors). At least five courses must be taken in evolutionary anthropology; up to three courses may be taken in related departments based on a preapproved list of electives or as pre-approved by the director of undergraduate studies. One course must be a lab/field experience in evolutionary anthropology (research independent study may count toward this requirement). Note that no more than two independent studies may be counted toward the major. Evolutionary anthropology offers two optional concentrations.

Areas of Concentration

Students may elect to complete courses representing an in-depth study of a given area within evolutionary anthropology. There are currently two area concentrations available: 1) Anatomy and paleoanthropology and 2) Behavior, ecology, and cognition. Concentrations require that three of the five courses in evolutionary anthropology (as required by the major) be taken in the area of concentration. Preapproved courses for each area can be found in the Handbook for Majors.

Departmental Graduation with Distinction

To qualify for the Graduation with Distinction program, students must have a GPA of 3.0 overall and 3.5 within evolutionary anthropology. To earn distinction, students typically spend one year conducting independent research with a faculty mentor and writing a substantial senior thesis. Students must be enrolled in an independent study course within evolutionary anthropology. Exceptions must be approved by the director of undergraduate studies. Students must submit a brief (one- to two-paragraph) description of the honors project, the names of the faculty comprising the examination committee, and the signature of the student’s faculty mentor to the director of
undergraduate studies by the end of the first week of classes of the student’s next-to-last semester (e.g., fall semester for May graduates). The examination committee should consist of three faculty members, at least two of whom are in the Department of Evolutionary Anthropology.

**The Minor**

**Requirements.** Evolutionary Anthropology 101 or 101D; one course in primate/human paleontology or anatomy; one course in primate behavior or ecology; two elective courses numbered 200 or above in evolutionary anthropology. Approved courses for each of the above subfields are listed in the *Handbook for Majors*.

**Evolutionary Biology**

See biology on page 180.

**Film/Video/Digital**

See arts of the moving image on page 147.

**Focus Program**

The Focus Program offers first-year students a variety of interdisciplinary course clusters in the fall and spring semesters; each cluster is centered on a common theme. For a list of current FOCUS course offerings, please refer to the FOCUS website at [http://focus.duke.edu](http://focus.duke.edu).

**Courses in the Focus Program (FOCUS)**

195FS. Special Topics in Focus. Forum for discussing and bridging the varied interdisciplinary issues that arise within the individual Focus Program seminars. May include group discussion, readings, guest lectures, film viewings, and other educational activities. Open only to participants in the Focus Program. Satisfactory/Unsatisfactory grading only. Staff: Instructor. Half course.

**French**

For courses in French, see page 577.

**Genetics**

See “Genome Sciences and Policy” below; see the University Program in Genetics and Genomics on page 666; or see the genetics area of concentration in biology on page 196.

**Genome Sciences & Policy**

Professor Willard, *Director*

A certificate, but not a major, is available in this program.

The Genome Sciences & Policy Certificate Program provides a coherent course of study within the comprehensive and integrative scope of the genome sciences and their impact on society. This integrated and interdisciplinary curriculum will enable students from a broad range of disciplines to acquire and apply knowledge and understanding of the Genome Revolution and its continual and growing impact on their distinct fields. Highlighting the different approaches taken by various disciplines to the study of the genome sciences across the broad range of life science and biomedical research, the Genome Sciences & Policy Certificate Program will cultivate the interdisciplinary perspectives necessary to address current and future implications for science, health, and society. The Genome Sciences & Policy Certificate Program will be available to all students at the undergraduate level.

**Certificate Requirements**

Undergraduate students will be required to complete the following five courses and two research experiences (at least one of which is credit-bearing):
- Genome Sciences & Policy Certificate Program core course, Genome 256, must be taken by the end of the junior year.
- Three elective courses from genome sciences and genome ethics/law/policy listings (see current listings at http://genome.duke.edu/education/undergraduate/academics/genome-certificate/electives/), with one course chosen from the genome ethics/law/policy elective course list.
- Two approved research experiences consisting of either two semester-long independent study courses or one semester-long independent study course plus one approved summer research experience.
- Genome 498S capstone course to be taken during the spring of the senior year.

No more than three courses for the certificate may satisfy the requirements of any major, minor, or other certificate program.

Courses in Genome Sciences and Policy (GENOME)

118FS. The Secrets of Life: DNA, Property Rights and Human Identity. EI, NS, SS, STS, W Exploration of DNA and all of its meanings: scientific, cultural, societal, legal, artistic. Course will begin with identification of DNA as genetic material and move forward to the current and future impact of personal genomics and whole-genome sequencing. Writing-intensive. Open only to students in the Focus program. Instructor: Angrist. One course.

138FS. Synthetic Genomics: Science, Policy and Ethics. EI, NS, SS, STS Explore both the science behind synthetic genomics as well as related policy and ethical issues raised by these new advancements. Begins with examination of science of synthetic genomics, focusing on key experiments, and integrates discussions on policy and ethical issues as the scientific field matured. Readings will include scientific publications, bioethical reports, government reports, and popular press. Open only to students in the Focus Program. Instructor: Haga. One course. C-L: Public Policy Studies 184FS, Genome Sciences and Policy

148FS. Genomics of Host-Microbe Interactions: The Symbiotic Web. NS, R, STS Genomic insights into the astonishingly diverse microbial world, including microbes that interact with hosts in beneficial and harmful ways. Dominance of microbes in our own bodies, which contain 10 times more bacterial cells than human cells and 150 times more bacterial genes than human genes. Understanding how microbial interactions have impacted life's history, genome evolution, ecology, and human health. Factors that dictate trajectories toward parasitism versus mutualism, how microbial symbionts respond to environmental change, molecular and cellular mechanisms of homeostasis. Readings will focus on primary articles. Open only to students in the Focus Program. Instructor: Wernegreen, Lutzoni. One course. C-L: Biology 148FS, Environment 148FS

159. The Past and Future of the Human Genome. EI, NS, SS, STS One course. C-L: see Biology 159

190FS. Focus Program: Topics in Genome Sciences. One course.

238S. Influential Scientists and Policy Leaders in Science Policy. SS, STS, W Explores role of scientist and non-scientist policy-makers and elected officials who have substantially shaped U.S. science research and application of scientific discoveries throughout the 20th century from within and outside the federal government. Science policies examined in larger context of political, cultural, and social events. Instructor: Haga. One course. C-L: Public Policy Studies 233S, History 301S

248. Science and Policy of Obesity. SS, STS An interdisciplinary course introducing students to science and policy of obesity from historical perspective beginning in mid-19th century. Study how social and cultural changes contributed to increasing prevalence of obesity in U.S. as well as how scientific advancements in human physiology, nutrition, and genetics have come to define current biological causes of obesity and how evidence has impacted social policies, local and national legislation and medical practices. Students would strongly benefit from general background in biology as well as molecular biology and genetics. Instructor: Haga. One course. C-L: Public Policy Studies 348

256. Genome Sciences and Society. NS, SS, STS Focus on contemporary study of human genome with particular attention given to relationships among structural and functional genomics, genome variation and phenotypic variation. Incorporates discussion of social and policy issues created by the Genome Revolution. Students will develop a final paper addressing the science and societal impact of a genomics topic. Prerequisites: Biology 201L/202L or Biology 210FS or consent of instructor. Instructor: Staff. One course.
258. Race, Genomics, and Society. EI, NS, SS, STS Integrated analysis of historical and contemporary aspects of 'race and genetics/genomics'. Focus on relevant applications in science, medicine, and society; develop skills required for scientific, sociopolitical, cultural, psychosocial, and ethical evaluation of issues. Topics include: introduction to population genetics/genetic variation; concepts and definitions of race; overview of bioethics; social and political history of race; genomics and health disparities; race, ancestry, and medical practice; genealogy, genetic ancestry, and identity; public perceptions of race and genetics/genomics. Instructor: Royal. One course. C-L: African and African American Studies 261

268S. Law & Genomic Sciences. EI, SS, STS Introduction to ways genomics is affecting law and other social institutions, and, conversely, how laws in turn affect development and use of genomic knowledge. Examine legal, ethical and policy issues raised by medical applications of genetics, (genetic testing, screening, therapy); consider use and misuse of "genetics" during eugenics movement in America, (including legal system failure to protect individuals rights); examine issues raised by genetic research; and consider impact of genetic information on family law, criminal law, privacy rights, and employment. Instructor: Dame. One course.

290S. Special Topics in Genome Sciences. Topics in genome sciences and policy. Instructor: Staff. One course.

293. Research Independent Study Genome Sciences. R Individual research in a genome sciences topic of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing specific analysis and interpretation of a previously approved topic. Meets the research experience requirement for the Certificate in Genome Sciences & Policy as well as a Research (R) mode of inquiry curriculum requirement. Open to all qualified students with consent of supervising instructor and IGSP Director of Undergraduate Studies. May be repeated. Instructor: Staff. One course.

293-1. Research Independent Study Genome Policy. R Individual research in a genome policy topic of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing specific analysis and interpretation of a previously approved topic. Meets the research experience requirement for the Certificate in Genome Sciences & Policy as well as a Research (R) mode of inquiry curriculum requirement. Open to all qualified students with consent of supervising instructor and IGSP Director of Undergraduate Studies. May be repeated. Instructor: Staff. One course.

294. Research Independent Study Genome Sciences. R Continuation of Genome 293. Individual research in a genome sciences topic of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing specific analysis and interpretation of a previously approved topic. Meets the research experience requirement for the Certificate in Genome Sciences & Policy as well as a Research (R) mode of inquiry curriculum requirement. Open to all qualified students with consent of supervising instructor and IGSP Director of Undergraduate Studies. May be repeated. Instructor: Staff. One course.

294-1. Research Independent Study Genome Policy. R Continuation of Genome 293-1. Individual research in a genome policy topic of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing specific analysis and interpretation of a previously approved topic. Meets the research experience requirement for the Certificate in Genome Sciences & Policy as well as a Research (R) mode of inquiry curriculum requirement. Open to all qualified students with consent of supervising instructor and IGSP Director of Undergraduate Studies. May be repeated. Instructor: Staff. One course.

475S. Variation in the African Diaspora. CCI, NS, SS, STS One course. C-L: see African and African American Studies 475S; also C-L: Cultural Anthropology 475S

498S. Genome Sciences and Policy Capstone. EI, NS, R, SS, STS Create and apply knowledge gained through certificate course work and research experiences in an intensive, interdisciplinary, small group setting. Students work in small teams learning to analyze current issues in genome sciences and policy and to consider the issue from scientific, social, and ethical perspectives. Teams will present their research as an oral final project. Open only to graduating seniors in the Genome Sciences and Policy program or by consent of instructor. Instructor: Staff. One course.

508S. Global Health and Genomics. EI, NS, SS, STS One course. C-L: see Global Health 510S

584. Genetics and Reproductive Technologies. Half course. C-L: see Law 584

590S. Special Topics in Genome Sciences. Topics will vary. Instructor: Staff. One course.
612. Ethics and Policy in Genomics. EI, R, SS Survey of ethical, social, economic, and legal issues in genomics. Introduction to ethical reasoning and examination of selected issues calling for such analysis, including: (1) special procedures for research involving human participants, (2) respect for privacy and confidentiality of genetic information; (3) historical and political background of health research funding, and (4) public-private research interactions such as intellectual property and conflict of interest. Instructor: Chandrasekharan. One course. C-L: Public Policy Studies 634, Computational Biology and Bioinformatics 612

627. Molecular Ecology. NS, STS One course. C-L: see Environment 627; also C-L: Biology 627

641S. Cancer in Our Lives: Film, Narrative, Fiction, History and Politics. EI, SS, STS One course. C-L: see Public Policy Studies 641S

Program Courses in Other Departments

Genome Ethics/Law/Policy Elective Courses

African and African American Studies
261. Race, Genomics, and Society

Biology
255. Philosophy of Biology

Information Science and Information Studies
670. Body Works: Medicine, Technology, and the Body in Early Twenty-First Century America

Literature
625. Body Works: Medicine, Technology, and the Body in Early Twenty-First Century America

Philosophy
195FS. The Human Enhancement Project: Ethical Issues in Genomics
218. Philosophical Issues in Medical Ethics
314. Philosophy of Biology
570. Body Works: Medicine, Technology, and the Body in Early Twenty-First Century America

Public Policy Studies
233S. Influential Scientists and Policy Leaders in Science Policy

Genome Sciences Elective Courses

Biology
210FS. Genomes, Biology, and Medicine
219. Molecular Genetics and Genomics
251L. Molecular Evolution
311. Systems Biology: An Introduction for the Quantitative Sciences
350. Complex Traits and Evolutionary Genetics
410S. Advanced Approaches to Genome Science Research
413L. Genomics Laboratory
417S. Genetic Engineering and Biotechnology
554. Genomic Perspectives on Human Evolution
567S. Genetic Basis of Behavior

Biomedical Engineering
561L. Genome Science and Technology Lab (GE, MC)

Computational Biology and Bioinformatics
520. Genome Tools and Technologies
541. Statistical Genetics
561L. Genome Science and Technology Lab (GE, MC)
662. Computational Systems Biology

Computer Science
104FS. Introduction to Computational Genomics and Computer Science
260. Introduction to Computational Genomics
662. Computational Systems Biology

Evolutionary Anthropology
514. Genomic Perspectives on Human Evolution

Mathematics
168S. Mathematical Investigations in Genetics and Genomics

Philosophy
538S. Problems in the Philosophy and Policy of Genomics

Psychology
681S. Genetics and Environment in Abnormal Behavior (A,B,C,D)

Statistical Science
504. Statistical Genetics

University Program in Genetics
786. Complex Traits and Evolutionary Genetics
Germanic Languages and Literature

Professor Donahue, Chair; Assistant Professor Norberg, Director of Undergraduate Studies; Assistant Professor of the Practice Kahnke, Director of the Language Program; Professors Donahue, Pfau, Rasmussen; Associate Professor Morton; Assistant Professors Norberg, Gellen; Professor Emeritus Rolleston; Associate Professor of the Practice Walther; Assistant Professor of the Practice Kahnke; Adjunct Professor Vogt; Adjunct Assistant Professors Keul and Madden; Adjunct Associate Professor of the Practice Wohlfeil

A major or a minor is available in this department.

The department offers courses in German, as well as courses taught in English where no knowledge of German is required. For courses taught in German see the section immediately below.

For courses taught in English see page 338.

Courses in Germanic Languages and Literature (GERMAN)

Courses Taught in German

29. Advanced Placement in German. One course credit for Advanced Placement in German. One course.

101. First-Year German I. FL First semester of introductory language course. Practice in spoken and written German (speaking, listening, reading, writing); introduction to German culture and society through poems, songs, films, internet, and other authentic materials. Proficiency oriented, communicative approach to language study. Instructor: Staff. One course.

102. First-Year German II. FL Second semester of introductory language course. Practice in spoken and written German, vocabulary building, building cultural awareness. Focus on topics of everyday life in German-speaking countries through stories, poetry, music, video, internet, as well as grounding in basic structures of the German language. Instructor: Staff. One course.

111. Intensive First-Year German. FL Intensive introduction to German language and culture. Combines in one semester the work of German 101-102. Designed for students with some prior knowledge of German. Consent of instructor required. Instructor: Staff. Two courses.

111A. Intensive First-Year German. FL Intensive introduction to German language and culture. Combines in one semester the work of German 101-102. Taught only in the Duke-in-Berlin Fall Semester Program. Instructor: Staff. Two courses.

203. Intermediate German I. CZ, FL Language proficiency and cultural knowledge through topic-oriented syllabus focusing on contemporary German culture and society. Comprehensive review of German grammar, vocabulary building, practice in speaking, reading, and writing skills. Literary and nonliterary texts from a variety of media (books, newspapers, audio, video, film, internet), providing basis for discussion and cultural awareness. Extensive reading includes one longer prose text by a contemporary German, Swiss, or Austrian writer. Prerequisite: German 101-102, 111, or equivalent. Instructor: Staff. One course.

204. Intermediate German II. CZ, FL (See description of German 203 above.) Increased focus on reading, speaking, essay writing. Extensive reading includes one full-length play by a contemporary German, Swiss, or Austrian writer. Prerequisite: German 203, or appropriate placement test score, or consent of instructor. Instructor: Staff. One course.

210. Intermediate Conversation Practice. Develop speaking skills for everyday language interactions, including expressing opinions and formulating arguments. Grade based on participation, vocabulary quizzes, role plays. Prerequisite: German 101 and 102 (or equivalent). Enrollment in German 203 or 204 encouraged but not necessary. Does not satisfy the foreign language requirement, or requirements for German major/minor. Instructor: Staff. Half course.

212. Intensive Intermediate German. CZ, FL Intensive grammar review and further development of reading, listening, speaking, and writing skills through topic-oriented syllabus dealing with contemporary German culture and society. Authentic texts from a variety of media providing the basis for discussion and cultural awareness. Combines in one semester the work of one year of intermediate German (German 203 and 204.) Prerequisite: German 101-102, 111, or equivalent. Instructor: Staff. Two courses.
212A. Intensive Intermediate German. CZ, FL Intensive grammar review and practice of spoken and written German, combining in one semester the work of one year of intermediate German. Taught only in the Berlin Fall Semester Program. Prerequisite: German 101-102, 111, or equivalent. Instructor: Staff. Two courses.

213A. Intensive Intermediate German for Engineers. CZ, FL Development of German language proficiency (reading, listening, speaking, and writing), with focus on the acquisition of specialized vocabulary in the fields of engineering, technology, mathematics, and other natural science disciplines. Includes investigation of history and culture of Berlin, with focus on major political, economic, social, and cultural developments since the fall of the Wall. Materials from various sources (scientific texts and problem sets, print media, audio/video material). Taught at the Technical University in Berlin. Offered only in the January term of the Duke-in-Berlin spring semester program. Prerequisite: German 102, 111, or equivalent. Instructor: Staff. One course.

220A. Readings in German Literature. ALP, FL Development of written and oral proficiency in German, as well as the vocabulary and analysis tools needed for poetry and short prose. Intended for intermediate language learners beginning to work with German literature. Prerequisite: German 203 or equivalent. Taught in the Duke Summer in Berlin program. One course.

301S. Business German. CCI, FL, SS Introduction to the language of commerce and industry; modes of expression for technology and marketing. Particular attention to cultural differences affecting German-American business transactions. Instructor: Staff. One course.

303AS. Advanced German in Berlin. ALP, CCI, CZ, FL Texts drawn from various media centered largely on contemporary Berlin. Development of written and oral proficiency in German, as well as insight into the cultural and historical aspects of the capital. Intensive practice of sentence structure and expository writing. Prerequisite: German 204 or equivalent. May substitute for German 305S or 306S to fulfill major requirement. Taught only in the Duke Summer in Berlin program. Instructor: Staff. One course.

305S. Advanced German I: Culture and Society. CCI, CZ, FL Development of advanced proficiency in oral and written communication. Expansion and deepening of cultural literacy and interpretive skills by focusing on issues of social, cultural, and political significance in German-speaking countries. Cultural and literary texts from a variety of media and genres analyzed in social and cultural contexts. Intensive work on vocabulary, sentence structure, and patterns of expression. Instructor: Staff. One course.

306S. Advanced German II: Text and Context. ALP, CZ, FL, W Development of advanced German language proficiency, with particular attention to written expression. Emphasis on stylistic variation, complex grammatical structures, and lexical sophistication (vocabulary building). Analysis of authentic texts from a variety of genres will provide the basis for practice in creative, descriptive, narrative, argumentative, and analytical writing. Prerequisite: German 305S or equivalent. Instructor: Staff. One course.

310. Advanced Conversation Practice. Practice speaking in wide array of formal and informal situations. Expand vocabulary and idiomatic speech. Topics include current events, practical needs, German culture, using authentic texts from variety of media and genre. Grade based on participation, quizzes, presentations. Prerequisite: German 204 (or equivalent). Does not satisfy the foreign language requirement, or requirements for German major/minor. Instructor: Staff. Half course.

312AS. Advanced Intensive German Language and Culture. ALP, CCI, CZ, FL, W Development of advanced proficiency with particular emphasis on speaking and writing. Through analysis of literary and nonliterary texts, excursions, museums, films, theater performances, students gain in-depth knowledge of various aspects of German culture and society. Advanced grammar review, vocabulary building, oral presentations, as well as a variety of writing assignments. Taught only in the Berlin program. Prerequisite: German 204, 212, 212A, or equivalent. Fulfills major requirement for German 305S and German 306S. Instructor: Wohlfeil. Two courses.

319AS. Advanced Intensive German. CCI, CZ, FL For advanced students to increase all four language skills: comprehension, speaking, reading, and writing. Discussion of current events from a German cultural perspective based on newspaper articles, radio and television reports. Preparation for the German language examination required of all foreign students enrolling at German universities. Equivalent of German 305S or 306S, but offered only in the Berlin semester program. Instructor: Staff. One course.
325A. Current Issues and Trends in Germany. CCI, CZ, FL. Topics of social and cultural significance in contemporary Germany, with particular emphasis on media and society. Includes site visits. Offered in the Duke Summer Program in Berlin. Instructor: Staff. One course. C-L: International Comparative Studies

334S. Projekt Theater: German Theater and Performance. ALP, FL. Collaborative and interactive theater course for students of German. Students read, interpret, and stage selected German language plays. Special attention given to reading and oral communication skills, interaction and performance. Instructor: Kahnke. One course. C-L: Theater Studies 325S

335S. Introduction to German Drama. ALP, CCI, FL. The German theater from Lessing to Brecht and beyond, focusing on the relationship between dramatic form and social, historical, and cultural contexts. Topics may include: the Trauerspiel, Sturm und Drang, expressionism, epic theater, documentary drama. Final project may include performance of a play or scenes from different plays. Instructor: Donahue. One course. C-L: Theater Studies 223S, International Comparative Studies

336S. Creative Writing in German. ALP, FL, W. This is a collaborative and interactive writing course for students of German. Students discuss poetry and fiction clustered around themes, complete multiple creative writing exercises, assemble a portfolio, participate in writing workshops, and present work in small public readings. Instructor: Kahnke. One course.

352AS. Berlin in Literature and Culture. ALP, CCI, FL. Literary works of modern German writers; focus on the city of Berlin and its unique cultural and political heritage due to Germany's division from 1945 to 1989. Emphasis on art and architecture of Berlin reflecting both historical trends and political ideologies such as National Socialism and Marxism. Taught only in the Berlin semester program. Instructor: Wohlfeil. One course. C-L: International Comparative Studies

354SA. Contemporary Art in Berlin. ALP, CCI, FL. Overview of the main locations, events and protagonists of the contemporary Berlin art scene. Examination of art in its omnipresence in the urban environment; includes explorations of street art, art in public spaces, museums, private collections, galleries, studios and art academies. Taught only in the Duke-in-Berlin study abroad program. Instructor: Donahue. One course.

363. Movies of the World/The World of Movies. ALP, CCI, STS. One course. C-L: see Literature 313; also C-L: Russian 384, Arts of the Moving Image 248

390S. Special Topics in German Literature and Culture. ALP, FL. Focus on aspects of German literature and cultural studies. Topics vary. Instructor: Staff. One course.

391. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Open only to qualified juniors and seniors by consent of instructor and director of undergraduate studies. Instructor: Donahue, Morton, Norberg, Rasmussen, or Walther. One course.

402S. German Business/Global Contexts. CCI, FL, SS. Current German economic and business debates and events. Germany's position in the global marketplace and ensuing intercultural business encounters. Topics include state of Germany's industry and energy resources, monetary policies and banking systems, environmental concerns, foreign trade, taxes, and the social safety net. Attention to Germany's self-understanding as a "social market economy" and the compatibility of that model with current trends in globalization. Instructor: Staff. One course.

420A. Advanced German Cultural Studies. CZ, FL. Topics vary. Taught in German and only in the Berlin Semester Program. Prerequisite: P.N.d.S. (successful completion of German Language exam administered by the Free University). Instructor: Staff. One course. C-L: International Comparative Studies

430S. German Literature and Culture. ALP, CCI, FL. Principal authors, genres, concepts, and works of German literature. Parallel consideration of major developments in German philosophy, music, visual arts. Emphasis on the Enlightenment to the present. Instructor: Donahue, Gellen, Morton, or Norberg. One course.

435S. German Politics and Society. CCI, CZ, FL. Issues and problems of significance in contemporary Germany as a changing nation. The political impact of European integration, the cultural impact of immigration, and the social impact of a globalized economy. Materials drawn from a wide variety of media and genre: newspaper reports, television broadcasts, policy statements, legal documents. Instructor: Norberg. One course.
441S. German Film. ALP, FL. Introduction to innovative German films and important critical texts about film theory and film reception. Emphasis on methods of film analysis and vocabulary. Topics and themes include Myth and Modernity; German Women Filmmakers; Representations of the Holocaust in German Films; National Identity and German Film. Instructor: Gellen. One course. C-L: Arts of the Moving Image 252S, Visual and Media Studies 276S

442S. Freud's Vienna: Experiments in Modernity Around 1900. ALP, CCI, CZ, FL. An interdisciplinary approach to the cultural and political transformations taking place in Vienna around 1900 (art, architecture, literature, psychoanalysis, music). The common contexts and interconnections between writers such as Schnitzler, Hofmannsthal, Musil, and Kraus, Freud's psychoanalysis, Klimt and Schiele's Jugendstil and Expressionist art, the architectural innovations of Wagner, Loos, and the Ringstrasse, and the music of Mahler, R. Strauss, and Schoenberg. Focus on issues such as sexuality, disease, desire, and modernity. The rise of mass politics and modern anti-Semitism. Instructor: Gellen or Norberg. One course. C-L: Visual and Media Studies 279S

444S. Berlin History/Culture. ALP, CZ, FL. A study of Berlin as a unique site of German history and culture, and the focal point of theories of modern metropolitan life. Berlin as the cultural center of the interwar years, the capital of Nazi Germany, the symbol of Cold War division and post-89 reunification. Topics include: the social impact of destruction and restoration; modernist representations of the city in literature, film, and art; the relationship between architecture and collective memory. Taught in German. Instructor: Staff. One course.

446S. Siegfried the Dragon-Slayer: Myth-Making and German Identity. ALP, CZ, FL. Exploration of Siegfried legend across time and media (medieval sculpture and texts; 19th- and 20th-century painting, drama, opera, and film), with attention to its role in the creation of modern German nationhood. Collaborative research using e-learning tools expected. In German. Instructor: Rasmussen. One course.

448S. Masters of the Modern: Great Writers of the 20th Century. ALP, FL, W. Studies in giants of twentieth-century German literature: Rilke, Kafka, Mann, Brecht, and Hesse. May also include short works by recent Nobel prize winners (Grass, Boell, Jelinek, Mueller). Defining "world literature" and the shaping of "modern" Western thought by these major literary figures. Readings explore major twentieth-century themes: modernism, totalitarian politics, German identity and the situation of Germany within Europe. Regular written exercises, readings, and discussion in German. Instructors: Donahue and Gellen. One course. C-L: International Comparative Studies

493. Research Independent Study. R. Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open only to qualified juniors and seniors by consent of instructor and director of undergraduate studies. Instructor: Donahue, Morton, Norberg, Rasmussen, or Walther. One course.

501. German for Academic Research I. Introduction to German for the purpose of developing reading and translation skills necessary for pursuing academic research. Assumes no prior knowledge of German. Foundations of German grammar and syntax; emphasis on vocabulary and translations. Selected readings in theory of translation and techniques. Prerequisite: German 501. Not open for credit to undergraduate students who have taken Intermediate German (203, 204, 212, or equivalent). Does not count toward the major or minor, or toward the fulfillment of the Foreign Language Requirement. Instructor: Rasmussen. One course.

502. German for Academic Research II. Development and refinement of skills needed to read and translate intermediate to advanced academic German. Texts selected by instructor, with regular opportunities to work on materials related to individual fields/research topics. Selected readings in theory of translation and techniques. Prerequisite: German 501. Not open for credit to undergraduate students who have taken Intermediate German (203, 204, 212, or equivalent). Does not count toward the major or minor, or toward the fulfillment of the Foreign Language Requirement. Instructor: Rasmussen. One course.

511S. Theory and Practice of Literary Translation. ALP, CCI, W. One course. C-L: see Literature 640S; also C-L: Islamic Studies

610S. Introduction to Medieval German: The Language of the German Middle Ages and Its Literature. ALP, FL, R. Basic reading skills in the medieval German language (Middle High German) developed by working with literary texts in their original idiom. Canonical texts such as courtly love poetry (Walther von der Vogelweide), Arthurian romance (Hartmann von Aue, Wolfram), and heroic epic (Nibelungenlied). Understanding manuscript culture, philological inquiry, medieval intellectual practices, relationship between learned Latin culture and educated
vernacular cultures. Research paper required. Readings and discussion in German. Instructor: Rasmussen. One course. C-L: Medieval and Renaissance Studies 610S

690. Special Topics in German Literature and Culture. Topics vary by semester. Instructor: Staff. One course.

690S. Special Topics in German Literature and Cultural Studies. ALP, FL Instructor: Staff. One course.

Courses Taught in English

89S. First-Year Seminar. Topics may vary each semester offered and are described in the First-Year Seminars booklet. Instructor: Staff. One course.

260S. Romance of Arthur. ALP, CZ An exploration of the legend of the Once and Future King, Arthur of Camelot: its roots in Latin chronicles, developments in the Middle Ages, and modern representations in literature and film. Arthurian romance as the vehicle of ideas and ideals about utopia, charismatic leadership, love, and betrayal. Tracing the ways a myth is created, employed and transmitted over centuries by means of textual and historical analysis. Taught in English. Instructor: Rasmussen. One course. C-L: Medieval and Renaissance Studies 224S

261S. The Vikings and Their Literature. ALP, CCI, EI Norse sagas and poetry and the Viking world that they reflect. Viking cultural history and mythology, with special attention to the collision between the Germanic heroic ethic and the "new" Christian ethic and Norse notions of gender and leadership. Taught in English. Instructor: Keul. One course. C-L: Medieval and Renaissance Studies 205S

262. Romantic Fairy Tales: Literary and Folk Fairy Tales from Grimms to Disney. ALP, CCI, CZ German fairy tales of the Romantic era, including both the "literary fairy tales" by known authors and the "folk fairy tales" commonly deemed children's literature. Comparisons to other fairy tale traditions, notably by Perrault and Basile, providing a broader context and perspective. Comparison to the Disney contributions elucidating our own preconceptions and prejudices. Special attention to the literary, feminist, and historical elements of the fairy tale genre. Taught in English. Instructor: Norberg. One course. C-L: Literature 252, English 287

264. German Film. ALP, CZ Introduction to German film, film theory, and reception. Emphasis on history and cultural background of films. Topics include Expressionism, Nazi and postwar films, New German cinema, DEFA. Films subtitled; readings and discussion in English. Instructor: Gellen. One course. C-L: Visual and Media Studies 280, Arts of the Moving Image

264D. German Film. ALP, CZ Introduction to German film, film theory, and reception. Emphasis on history and cultural background of films. Topics include Expressionism, Nazi and postwar films, New German cinema, DEFA. Films subtitled, readings and discussions in English. Instructor: Gellen. One course. C-L: Arts of the Moving Image 252D, Visual and Media Studies 280D

266. Focus Germany: Business in Germany. CCI, CZ Focus on economic and business issues in contemporary Germany. Consideration of the underlying structures of the German economy as well as present challenges and trends. Topics include German companies and products in the European and international markets, the Euro currency, German-US transatlantic relationships, German business culture. Field trips to German companies in the region. Taught in English. Instructor: Donahue. One course. C-L: Markets and Management Studies

268S. The Silent Film: An Introduction. ALP, CCI One course. C-L: see Arts of the Moving Image 208S; also C-L: Literature 208S, Visual and Media Studies 214S

270S. Film Noir. ALP, CCI, EI One course. C-L: see Arts of the Moving Image 209S; also C-L: Literature 223S, Visual and Media Studies 282S

284. Poetics of Murder. ALP, CCI The literature and film of crime and detection in the American, British, and German context. An examination of our fascination with stories about violence and death, as well as the connections between modern social history and narrative form. Includes interpretations of central works in crime fiction history: stories by Poe and Schiller, detective novels by Agatha Christie and Raymond Chandler, the thrillers of Fritz Lang, and postmodern tales by Eco, Auster, and Süskind. Taught in English. Instructor: Donahue or Gellen. One course. C-L: Literature 344

286. German History Through Film. ALP, CZ, EI Interdisciplinary seminar at intersection of German Studies and History, taught by scholars from both disciplines. Explores ways in which films shape historical imaginations and are
288. **German Way of War.** CCI, CZ, EI, SS One course. C-L: see History 288

290-1. **Special Topics in German Studies.** ALP, CZ Aspects of German culture and civilization. Topics vary. Taught in English. Instructor: Staff. One course.

320A. **Environmental Policy in Europe: Duke in Berlin.** CCI, SS One course. C-L: see Political Science 295A; also C-L: Public Policy Studies 201A, International Comparative Studies

321A. **Economics of a United Europe.** CCI, SS One course. C-L: see Economics 260A; also C-L: International Comparative Studies

322A. **Berlin: Architecture, Art and the City, 1871-Present.** ALP, CCI, CZ Development of urban Berlin from the Gruenderzeit (the Boom Years) of the 1870s to the present: architecture of Imperial Berlin; the Weimar and Nazi periods; post World War II; reconstruction as a reunified city. The major architectural movements from late historicism to postmodernism. (Taught only in the Duke-in-Berlin Program.) Instructor: Neckenig. One course. C-L: Art History 296A, International Comparative Studies


362SA. **The Economics of the Energiewende in Germany.** EI, SS, STS Comprehensive overview of the Energiewende - Germany's effort to reshape its energy system, the industry, and building sectors into a nuclear-free, low-carbon economy. Application of a range of analytical methods - including economic assessment tools, legal analyses and political science - to shed light on different facets of the Energiewende, and to help understand the public and academic debates around it. The course thus offers different angles - looking at the economics of the Energiewende, as well as the technological, social, ethical, legal and political implications. Offered through the Duke-in-Berlin Program. Instructor: Donahue. One course. C-L: Environment 367SA, Economics 331SA

364. **Green Germany: World Leader in Environmental Policy.** CCI, CZ, EI, SS, STS Exploration of Germany's leading global role in developing and implementing "green" technologies and environmental policies. Analyzes Germany's current and past policies on energy, agriculture, and pollution control. Examines policies in context by studying German ideas about nature, history of German environmentalism, and by looking at Green Germany in European and global perspective. Discusses extent ethics can or ought to influence debates about global climate change and its ramifications. Readings include scholarly studies, exemplary policies, and groundbreaking ecological texts. Instructor: Milder. One course. C-L: History 250, Environment 366, Energy 364

365A. **Art and Architecture of Berlin, Fifteenth to the Twentieth Century.** ALP, CCI, CZ One course. C-L: see Art History 297A


367A. **Jewish Berlin.** ALP, CCI, CZ, EI Overview of German Jewish history and culture, sampling documents, literature, and art from the Enlightenment to the present day. Excursions to Berlin sites, including the Berlin Jewish Museum, Sachsenhausen concentration camp, and the Grünewald Deportation Memorial. Meetings with Jewish cultural leaders and attendance at a service at one of the Berlin synagogues. Taught in English only in the Duke Summer in Berlin program. Instructor: Donahue. One course. C-L: Jewish Studies 367A, Literature 367A, International Comparative Studies

368. **German Jewish Culture from the Enlightenment to the Present.** ALP, CCI, CZ Key texts (literary, philosophical, and political) from the Enlightenment (18th cent.); periods of emancipation and assimilation, and rising
political anti-Semitism (19th cent.); as well as Weimar, Nazi, and postwar periods (20th cent). Authors include Moses Mendelssohn, Lessing, Franzos, Droste-Hülshoff, Marx, Schnitzler, as well as contemporaries such as Korn, Broder, and Biller. Taught in English. Instructor: Donahue. One course. C-L: Literature 368, Jewish Studies 368, Religion 343

370. The Devil’s Pact: Faust and the Faust Tradition. ALP, CCI, EI Selling souls to the Devil, from England’s Christopher Marlowe to Germany's Goethe and beyond. Wrestling with the problem of evil, and getting past it, to the problems of knowledge, experience, and redemption, exploring why the Faust story keeps on being retold. Readings and discussion in English. Instructor: Morton. One course. C-L: Medieval and Renaissance Studies 345, Literature 240, Study of Ethics

375. Classics of Western Civilization: The German Tradition, 1750-1930. ALP, CCI, CZ Introduction to German intellectual traditions that have proven highly influential both within Europe and beyond. Readings typically include Lessing, Moses Mendelssohn, Kant, Goethe, Humboldt, Hegel, Heine, Marx, Nietzsche, Freud, and Benjamin. Readings and discussions in English. Instructor: Pfau. One course. C-L: History 268, Political Science 375, Literature 247

376. Secularization and Modernity: Cross-Disciplinary Readings 1750-1914. ALP, CCI, CZ, EI, R One course. C-L: see English 285; also C-L: Sociology 348, Political Science 374, Romance Studies 360, Literature 243


380D. Marx, Nietzsche, Freud. CCI, CZ, EI, SS Three principle sources of the twentieth (and now twenty-first) century: the insistence on an ultimate convergence of (revolutionary) theory and practice; the phenomenon of nihilism and the challenge of overcoming it; the exploration of the hidden foundations of the self and of culture. A critical examination and assessment of the thought of Marx, Nietzsche, and Freud. One course. C-L: Philosophy 286D, Literature 280D, Political Science 378D


386. Existentialist Cinema. ALP, CCI, CZ, EI, STS Distinctively cinematic engagements with principal themes in the existentialist tradition: isolation and alienation, identity and commitment, perception and reality, communication and contact, madness and sanity. In-depth exploration of culturally specific filmic modes of capturing, processing, and transmitting images of human life and the myriad issues, moral conflicts, and dilemmas that inform it. Films to be considered will vary with different offerings of the course, but may include works of directors such as Herzog, Schloendorff, Fassbinder, Wenders, Bergman, Antonioni, Kurosawa, and Godard, among others. Instructor: Morton. One course. C-L: Theater Studies 372, Literature 218, Visual and Media Studies 283, Arts of the Moving Image 267, Arts of the Moving Image

387. Germany Confronts Nazism and the Holocaust. ALP, CCI, CZ, EI The ways in which official German culture comes to terms with its Nazi past. Background reading in history and politics; primary focus on films, dramas, novels, and poetry, as well as public memorials, monuments, and museums. Authors treated include: Wolfgang Borchert, Rolf Hochhuth, Peter Weiss, Ruth Klüger. Taught in English. Instructor: Donahue. One course. C-L: Jewish Studies 369, Literature 369, History 261, International Comparative Studies

390-1. Special Topics in German Studies. ALP, CZ Aspects of German culture and civilization. Topics vary. Taught in English. Instructor: Staff. One course.
390S-1. Special Topics in German Studies. ALP Aspects of German culture and civilization. Topics vary. Taught in English. Instructor: Staff. One course.

390SA. Special Topics in German Literature and Culture. Focus on aspects of German literature and cultural studies. Topics vary. Offered only in the Duke-in-Berlin programs. Instructor: Staff. One course.

499S. Seminar in German Studies. CCI, CZ, R Review of current debates and historical perspectives in the German cultural field, structured through contributing disciplines: social and economic history, political theory and history, literature, fine arts, music, philosophy, and religion. Team-taught, involving a wide range of faculty in the German Studies Program. Taught in English. Instructor: Donahue, Rolleston, and staff. One course.

510S. Old Norse: Introduction to the Language of Viking Scandinavia. ALP, CZ Introduction to the language of Viking Scandinavia, with primary goal of providing students with the linguistic tools needed to read the fascinating Norse literature in the original. Systematic presentation of grammar of Old Norse, and development of knowledge and skills needed to read and translate a considerable variety of Norse prose and, to a lesser degree, poetic texts. Also examines the relationship of Old Norse to other Germanic languages, as well as aspects of ancient Scandinavian culture and history. No previous knowledge of linguistics is expected or assumed. Knowledge of German is moderately helpful but not necessary. Taught in English. Instructor: Keul. One course. C-L: Linguistics 562S, Medieval and Renaissance Studies 609S

532S. Fin-de-siècle and Interwar Vienna: Politics, Society, and Culture. CCI, CZ, R, SS One course. C-L: see History 532S

560. History of the German Language. Phonology, morphology, and syntax of German from the beginnings to the present. Instructor: Keul or Rasmussen. One course. C-L: Medieval and Renaissance Studies 607, Linguistics 560


575S. Hegel's Political Philosophy. EI, R, SS One course. C-L: see Political Science 676S; also C-L: Philosophy 536S

576S. Nietzsche's Political Philosophy. CZ, EI, SS One course. C-L: see Political Science 577S; also C-L: Philosophy 537S


586S. Literary Guide to Italy. ALP, CCI, CZ One course. C-L: see Italian 586S; also C-L: Literature 542S, Arts of the Moving Image 640S

590S. Special Topics in German Studies. ALP Special topics in German literature and cultural studies. Taught in English. Instructor: Staff. One course.

The Major

Students majoring in German develop language skills in their social and cultural contexts. The combination of linguistic and cultural competency is excellent preparation for a variety of professional careers in business, government, engineering, law, education, and academia. Double (second) majors are also encouraged and supported. Numerous opportunities are available, including global education programs, interdisciplinary programs, Fulbright and German Academic Exchange Service (DAAD) scholarships, and internships, both before and after graduation. Students interested in a major should consult the director of undergraduate studies.

The German major offers two concentrations.

Literature and Culture

The emphasis of this concentration is on the development of superior language proficiency and a deep knowledge of the literature and culture of German-speaking lands.
**Requirements.** Ten departmental courses at the 200 level or above, including cross-listed courses taught in the Duke-in-Berlin programs (see note below). Nine of the ten courses must be taught in German. These normally include the advanced language and culture courses, German 305S and 306S (or the equivalents taught in Berlin: German 303AS, one course credit, or German 312AS, two course credits) and German 430S (German Literature and Culture).

Note: All Duke-in-Berlin courses taught in German at the 200 level or above, semester and summer, may count toward this major concentration.

**German Studies**

This is an interdisciplinary concentration that develops language proficiency and cultural knowledge, while allowing extra-departmental courses with a substantial German component in related disciplines, such as history, political science, music, art history, philosophy, economics, theater studies, women’s studies, and religious studies.

**Requirements.** Ten courses at the 200 level or above. These may include up to four courses with German content taught in English, either in the German department or in other departments, provided such courses evince a clear focus on German culture, society, and history. Courses taught in German normally include the advanced language and culture courses, German 305S and 306S (or the equivalents taught in Berlin: German 303AS, one course credit, or German 312AS, two course credits), and German 435S (German Politics and Society).

Note: All Duke-in-Berlin courses at the 200 level or above, semester and summer, may count toward this major concentration.

**Departmental Graduation with Distinction**

Qualified students (see the section on honors in this bulletin) may apply or be invited to apply for Graduation with Distinction. The application deadline is preregistration for the fall semester of the senior year. Further information may be obtained from the director of undergraduate studies.

**The Minor**

**Requirements.** Five courses at the 200 level or above, only one of which may be taught in English.

Note: All Duke-in-Berlin courses at the 200 level or above, semester and summer, may count toward the German minor.

**Global Health**

Professor Bennett, Director of Undergraduate Studies

A second major or a minor is available in this program. A certificate is available for students who matriculated prior to 2013.

Global health is an area of study, research, and practice that emphasizes achieving health equity for all people worldwide. Global health involves myriad disciplines, incorporates population-based approaches and individual level clinical care, promotes interdisciplinary collaboration, and emphasizes transnational health issues and determinants. The program in global health incorporates knowledge from academic disciplines—within the sciences and beyond—to best address the complexity of global health challenges.

**Courses in Global Health (GLHLTH)**


101K. **Fundamentals of Global Health. CCI, SS, STS** Introduction to global health issues and challenges. Equips students with an understanding of key concepts, tools, and frameworks essential for continued study in global health, with focus on global disease burden, health determinants and disparities, health policy and actors, and the challenges of global health interventions. Explores importance of understanding and addressing global health through multidis-

160FS. Gender, Poverty, and Health. EI, SS One course. C-L: see Sociology 186FS

161. Introduction to Global Health. SS, STS One course. C-L: see Public Policy Studies 166; also C-L: International Comparative Studies 107

171FS. Vulnerable Populations & Global Health. CCI, SS Examines populations made vulnerable to health disparities due to social, economic, institutional, gender & political factors. Explores: what constitutes a vulnerable population; how the biopsychosocial model elucidates vulnerability as determinant of health; how complex interaction of agency & constraint contribute to GH disparities of vulnerable populations; special considerations for interventions which vulnerable populations require; role of social justice & human rights in GH; lessons from experiences of vulnerable populations on improving GH outcomes. Open only to students in the Focus Program. Instructor: Boyd. One course.

173FS. Technology for Health: Revolutions in Low Resource Settings. SS, STS Examines innovations in global health informatics and how technology use in low resource settings is rapidly changing health care. Explores the use of technology for data collection, health interventions, and analysis, and how this is revolutionizing health systems, services, and outcomes. The course will include hands-on sessions using technology to map health information. Instructor: Green. One course.

174D. Introduction to the History of Medicine, Science and Technology. CZ, STS One course. C-L: see History 113D

175FS. What Works in Global Health and Development. CCI, SS, STS Explore different perspectives on what “works” in global health and development. Study the Millennium Villages Project and, more broadly, the notion that what the world needs is a "big push" for global health and development. Learn about how interventions and policies are evaluated and take stock of the evidence for different approaches. Grapple with the idea of cost-effectiveness and consider whether the needle is moving in the right direction, if at all. Open only to students in the Focus Program, Global Health Cluster. Instructor: Green. One course.

190FS. Special Topics in Focus. Focus course. Topics vary depending on semester and section. Topics may include: global health ethics, field methods, health technologies, rapid needs assessment, global health policies, and interdisciplinary global health topics. Instructor: Staff. One course.

210. Global Health Ethics: Interdisciplinary Perspectives. EI, SS One course. C-L: see Public Policy Studies 330; also C-L: International Comparative Studies 397

210K. Global Health Ethics: Interdisciplinary Perspectives. EI, SS Ethical issues of conducting research on or working with marginalized/stigmatized populations. Investigations of ethical choices made by multinational, national and local policymakers, clinicians and researchers, and their impact on individuals, families and communities. Emphasis on working with community partners to develop needs assessment programs. Topics include: differential standards of care; protection of human subjects; access to essential medicines; genetic information and confidentiality; pharmaceutical development; health information technology; placebo controlled trials; best outcomes vs distributive justice. Taught at Duke Kunshan University. Instructor: Moe. C-L: Public Policy Studies 330K

212. Gender, Poverty, and Health. SS Examines interconnections among gender, poverty, and health. Adopts global perspective with focus on resource poor countries. Discusses frameworks for understanding health as well as in depth case studies of particular health areas. Instructor: Watt. One course. C-L: Sociology 212

220S. Anthropology and Global Health. EI, SS, STS Investigates connections between anthropology and global health. Readings based on ethnographic research conducted globally. Topics include cross-cultural experiences of epidemics, ethical implications of globalizing clinical trials, moral and political dimensions of health and humanitarian interventions, connections between nationalism and population policy, overlaps between traditional healing systems and public health programs, how gender ideologies shape reproductive health, and questions of identity, power, and ethics amidst global rollout of HIV therapies. Instructor: Soloman. One course. C-L: Cultural Anthropology 218S
225. **Food, Farming, and Feminism. CCI, EI, SS** One course. C-L: see Women's Studies 275; also C-L: Environment 209

225S. **Food, Farming, and Feminism. CCI, EI, SS** One course. C-L: see Women's Studies 275S; also C-L: Environment 209S

241. **Global Bioethics. CZ, EI** One course. C-L: see Philosophy 281; also C-L: International Comparative Studies 282

261. **Media and Health Communication (A,C,S). SS** One course. C-L: see Psychology 211; also C-L: International Comparative Studies 211

270T-1. **Voices in Global Health: Arabic Tutorial.** Through practical and theoretical discussions around case studies, personal narratives, documentaries and recorded interviews in the Arabic language, students examine how language and culture impact health beliefs and behaviors. Explore underlying reasons for different beliefs and behaviors with the goal of creating culturally appropriate interventions. Meet weekly for 75-minutes. Prerequisite: Arabic 305 or equivalent. Instructor consent required. Half credit. Instructor: Staff. Half course.

270T-2. **Voices in Global Health: Creole Tutorial.** Through practical and theoretical discussions around case studies, personal narratives, documentaries and recorded interviews in the Creole language, students will examine how language and culture impact health beliefs and behaviors. Explore underlying reasons for different beliefs and behaviors with the goal of creating culturally appropriate interventions. Tutorials meet weekly for 75-minutes. Prerequisite: conversational Creole. Instructor consent required. Half course. Instructor: Staff. Half course. C-L: Creole 270T-2

270T-3. **Voices in Global Health: French Tutorial.** Through practical and theoretical discussions around case studies, personal narratives, documentaries and recorded interviews in the French language, students will examine how language and culture impact health beliefs and behaviors. Explore underlying reasons for different beliefs and behaviors with the goal of creating culturally appropriate interventions. Tutorials meet weekly for 75-minutes. Prerequisite: French 204 or equivalent or concurrent enrollment in French 204. Instructor consent required. Half course. Instructor: Staff. Half course. C-L: French 270T-3

270T-4. **Voices in Global Health: Hindi Tutorial.** Through practical and theoretical discussions around case studies, personal narratives, documentaries and recorded interviews in the Hindi language, students examine how language and culture impact health beliefs and behaviors. Explore underlying reasons for different beliefs and behaviors with the goal of creating culturally appropriate interventions. Meet weekly for 75-minutes. Prerequisite: Hindi 203 or equivalent. Half credit. Instructor: Staff. Half course. C-L: Asian & Middle Eastern Studies 270T-4, Hindi 270T-4

270T-5. **Voices in Global Health: Mandarin Tutorial.** Through practical and theoretical discussions around case studies, personal narratives, documentaries and recorded interviews in the Chinese language, students examine how language and culture impact health beliefs and behaviors. Explore underlying reasons for different beliefs and behaviors with the goal of creating culturally appropriate interventions. Meet weekly for 75-minutes. Prerequisite: Chinese 305 or equivalent. Instructor consent required. Half credit. Instructor: Staff. Half course.

270T-6. **Voices in Global Health: Spanish Tutorial.** Through practical and theoretical discussions around case studies, personal narratives, documentaries and recorded interviews in the Spanish language, students examine how language and culture impact health beliefs and behaviors. Explore underlying reasons for different beliefs and behaviors with the goal of creating culturally appropriate interventions. Tutorials meet weekly for 75-minutes. Prerequisite: Spanish 204 or equivalent or concurrent enrollment in Spanish 204. Instructor consent required. Half course. Instructor: Staff. Half course. C-L: Spanish 270T-1

270T-7. **Voices in Global Health: Swahili Tutorial.** Through practical and theoretical discussions around case studies, personal narratives, documentaries and recorded interviews in the Swahili language, students examine how language and culture impact health beliefs and behaviors. Explore underlying reasons for different beliefs and behaviors with the goal of creating culturally appropriate interventions. Meet weekly for 75-minutes. Prerequisite: proficiency in Swahili. Instructor consent required. Half credit. Instructor: Staff. Half course.

301. **Indigenous Medicine and Global Health. CCI, SS** Explores indigenous medicine's role in global health and focuses on four interrelated topics: basic medical paradigms and practices, access and utilization in different regions,
cross-cultural health delivery, and the complexities of medical pluralism. Course themes will be explored through lecture, discussion, small group case analyses, comparative analytical exercises, and workshops. Instructor: Boyd. One course. C-L: Cultural Anthropology 247, International Comparative Studies 398


303. Global Health Systems and Policy. CCI, SS, STS Introduces global health systems and policy in four modules: 1. Globalization; 2. Health; 3. Systems; 4. Policy. Draws on faculty from a range of disciplines, including anthropology, biology, economics, history, medicine, political science, and sociology, to situate the concept and practice of "global health" within these four broad themes. Provides an understanding of variations in health systems around the world and of current issues in global health policy, including the political economies of health care, decision-making processes, governance structures, and the resource-constrained realities of global health policy-making. Instructor: Toole. One course.

304D. Human Health in Evolutionary Perspective. NS, R, STS One course. C-L: see Evolutionary Anthropology 285D

315D. Primate Disease Ecology and Global Health. NS, R, STS One course. C-L: see Evolutionary Anthropology 385D

321. Medical Anthropology. EI, SS, STS, W One course. C-L: see Cultural Anthropology 424

321T. Medical Anthropology. CCI, EI, SS, STS One course. C-L: see Cultural Anthropology 424T; also C-L: International Comparative Studies 424T

322S. End of Life in Russia and U.S. CCI, EI, SS One course. C-L: see Russian 320S; also C-L: International Comparative Studies 321S

323. Trauma and Global Mental Health in Haiti. ALP, CCI, CZ Haiti as a case study in global mental health approaches to traumatic stress. Explores the genesis of the diagnostic rubric of posttraumatic stress disorder (PTSD) and its relationship to local cultural contexts. Assesses critical and globalized approaches to adversity and shock reactions, with an emphasis on pioneering multi-site critical methodologies. Explores how global mental health practices have been analyzed and applied to Haiti by Haitian and non-Haitian practitioners. Fiction and prose by Edwidge Danticat will serve to bring historical and contemporary risks, ramifications, and co-morbidities of traumatic stress in Haiti into focus. Instructor: Jenson. One course. C-L: Romance Studies 220

325S. Global Displacement: Voix Francophones. CCI, CZ, EI, FL, SS One course. C-L: see French 325S; also C-L: International Comparative Studies 332S

326. Health, Culture, and the Latino Community. CCI, FL One course. C-L: see Spanish 306; also C-L: Latino/a Studies in the Global South 306

326A. Language, Culture, and Health in Costa Rica. CCI, FL One course. C-L: see Spanish 306A

332. Global Health Supply, Organization, and Financing. QS One course. C-L: see Economics 246

340. Social Determinants of U.S. Health Disparities. SS One course. C-L: see Sociology 361

341. Ethics of Global Infectious Disease Control. CCI, EI, SS Examination of the role of ethical decision-making when controlling infectious disease epidemics. Applies classic public health ethics of balancing individual liberty vs. public good to the new global health context of emerging infectious diseases such as HIV/AIDS, Ebola, and SARS, plus re-emerging infectious diseases such as multidrug-resistant TB, polio, and cholera. Explores questions of resource allocation, mandatory or voluntary prevention measures, and ethical obligations of health care workers vs. responsibilities of individuals in the context of new global public health. Prior global health coursework recommended. Instructor: Stewart. One course. C-L: International Comparative Studies 299
351. Global Health and International Development in the Nonprofit Sector. CCI, SS Explore issues of global health and international development work in the non-profit sector. Topics include, delivery of culturally appropriate global health assistance to low resource countries, challenges in working in developing countries, different approaches to development work, management principles of non-governmental organizations (NGO's), and monitoring and evaluation of global health program outcomes. Topics will be explored through lecture, discussion and small group work. Final class presentation and paper will focus on developing a case study centered on a select global health problem and the non-profit organization(s) approach to delivering health care solutions. Instructor: Walmer. One course. C-L: International Comparative Studies 296

362. Introduction to Epidemiology Focus on Global Health. SS, STS Introduction to main concepts and methods used in population-based epidemiology research. Topics include measures of disease frequency, study design, measures of association, and problems of bias, especially as they pertain to global health research. Students will learn to understand and evaluate epidemiological studies. A prior quantitative course highly recommended. Instructor: Maselko. One course.

363S. Fundamentals of Global Mental Health. R, SS, W Examines global mental health from perspectives of culture, public health, epidemiology, human rights, policy, and intervention. Readings focus on peer-reviewed research literature highlighting topics such as the prevalence of mental health disorders worldwide, the role of culture in mental health, and the interventions backed by strong evidence for prevention and treatment. Students will discuss and critique study methodologies and explore the needs for future research in this emerging field. Designed for students with prior research methods and psychology coursework. Instructor: Puffer. One course. C-L: Psychology 323S, Cultural Anthropology 323S

371. Research Methods in Global Health. R, SS Introduction to research methods through examination of a variety of methodological techniques in behavioral and social sciences and relevant to multidisciplinary GH research. Problem-based approach to practice identifying GH questions of interest, ways to operationalize and test them, including strengths and weaknesses of different approaches. Focus on discussing current GH issues, exploring questions and solutions, reading and evaluating published research and interpreting results. Skills include identification of global health problems, awareness of contextual, behavioral, and ethical issues involved, conceptualization of research questions, and designing a research study. Instructor: Meade or Ariely. One course. C-L: Psychology 309

371K. Research Methods in Global Health. R, SS Introduction to research methods through examination of a variety of techniques in behavioral and social sciences and relevant to multidisciplinary GH research. Problem-based approach to identifying GH questions of interest, ways to operationalize and test, including strengths and weaknesses of different approaches. Focus on discussing current GH issues, exploring questions and solutions, reading and evaluating published research and interpreting results. Skills include identification of GH problems, awareness of contextual, behavioral, and ethical issues involved, conceptualization of research questions, and designing a research study. Taught at Duke Kunshan University. Instructor: Abdullah. C-L: Psychology 309K

373S. Global Health Service, Research, & Ethics. EI, SS Introduces ethical and human rights concepts in Global Health and current issues in health ethics. Explores how to understand and engage in ethical health service, intervention, research and education. Requires students analyze and critique ethical choices of individuals, policy-makers and health workers. Engaging in service activities, students improve understanding of how an intellectual approach to ethics can be enhanced as well as counteracted by emotional impact. Explores standards of care, access to care, best outcomes vs. distributed justice. Focuses on ethics related to infectious diseases; obesity, alcohol & tobacco; and environmental health. One course.

380A. Research Practicum in Tropical Medicine and Public Health in Costa Rica. R, SS Introduces students to research design, field methods, and basic data analysis in a tropical context. Skills include hypothesis testing and statistical analysis, orientation to basic software packages, write and present scientific papers, and design and conduct epidemiologic research. Instructor: Benavides. One course.

382A. Global Health Issues in South Africa. CCI, EI, SS Integrates classroom & field instruction, introduce students to the fundamental principles of public health in South Africa. Focus on three major themes: primary health care in South Africa, the impact of HIV/AIDS & the role of traditional healers. An emerging third world economy, South Africa is characterized by a blend of first & third world societies, & is an ideal location to study the dynamics of the three major themes in deep rural, peri-urban & urban communities. Lectures & field trips; Ethical debates on
controversy surrounding management & treatment of AIDS in RSA & role of traditional healers in mainstream medicine; Independent research. Part of the OTS program in South Africa. Instructor: Müller. One course.

383A. Tropical Medicine and Public Health in Costa Rica. EI, NS, SS, STS Part of a 15-week semester abroad program in Costa Rica (through OTS). Integrates classroom and field instruction to introduce fundamental principles of tropical medicine and public health including the tropical environment and its related health issues; topics include infectious diseases, epidemiology, virology, zoonosis, sexual health, environmental and global health, traditional and alternative medicine, ethics, and the social and economic determinants that contribute to the expanding impact of infectious diseases. Prerequisites: 1 semester of Biology and 1 year of Spanish or equivalent. Instructor: Benavides. One course.

383AS. Environment, Health, and Development in China. CCI, EI, SS, STS One course. C-L: see Cultural Anthropology 395AS; also C-L: Political Science 299SA, Ethics Courses Offered Through Other Departments

390. Special Topics in Global Health Studies. SS Topics vary depending on semester and section. Topics may include: global health ethics, field methods, health technologies, rapid needs assessment, and global health policies. Instructor: Staff. One course.

390A. Duke-Administered Study Abroad: Special Topics in Global Health. Topics vary depending on semester and section. Topics may include: global health ethics, field methods, health technologies, rapid needs assessment, and global health policies. Instructor: Staff. One course.

390S. Special Topics in Global Health Studies. Topics vary depending on semester and section. Topics may include: global health ethics, field methods, health technologies, rapid needs assessment, and global health policies. Instructor: Staff. One course.

391. Independent Study in Global Health. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in a significant academic product. Open only to qualified juniors and seniors by consent of instructor and director of Global Health Certificate program. Instructor: Staff. One course.

391-1. Independent Study in Global Health. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic product. Open only to qualified students by consent of instructor and director of undergraduate studies in global health. Instructor: Staff. Half course.

391-2. Independent Study in GH. Individual non-research directed study in field of special interest on previously approved topic, under supervision of faculty member, resulting in an academic product. Open only to qualified students by consent of instructor and director of undergraduate studies of the program. Half-course, S/U grading basis. Instructor: Staff. Half course.

393. Research Independent Study in Global Health. R Individual research-oriented directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in a significant academic product. Open only to qualified juniors and seniors by consent of instructor and director of Global Health Certificate program. Instructor: Staff. One course.

395. Connections in Global Health: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing global health issues. Teams may also include postdoctoral fellows, visiting global health fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires substantive paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. One course.

395-1. Connections in Global Health: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing global health issues. Teams may also include postdoctoral fellows, visiting global health fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project.
Requires substantive paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. Half course.

396. Connections in Global Health: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing global health issues. Teams may also include postdoctoral fellows, visiting global health fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires final paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. One course.

396-1. Connections in Global Health: Interdisciplinary Team Projects. R Teams of undergraduate and graduate students work with faculty supervisors to identify, refine, explore and develop solutions to pressing global health issues. Teams may also include postdoctoral fellows, visiting global health fellows, and other experts from business, government, and the non-profit sector. A team's work may run in parallel with or contribute to an on-going research project. Teams will participate in seminars, lectures, field work and other learning experiences relevant to the project. Requires final paper or product containing significant analysis and interpretation. Instructor consent required. Instructor: Staff. Half course.

431. Economics of Global Health. QS, R, SS One course. C-L: see Economics 446


510S. Global Health and Genomics. EI, NS, SS, STS Explores the origins of, and current developments in global genomics research. Examples of genomics research and its applications with global health from medicine, agriculture, and environmental sciences. Students will gain familiarity with underlying science, critically analyze ethical, legal and social issues that arise in conduct of genomic research and policies surrounding design and conduct of genomic research, especially in developing countries and with indigenous peoples. Explore how design of genomic research and its commercialization affect access to products and services in the context of global health disparity. Familiarity with basic concepts of genetics and genomics preferred. Instructor: Chandrasekharan. One course. C-L: Genome Sciences and Policy 508S

530S. Introductory Demographic Measures and Concepts. SS Introduction to demographic concepts, measures, and techniques. Focus on population change, mortality, morbidity, fertility, marriage, divorce, and migration. Illustration of broader application of demographic measurement and techniques to other aspects of society and population health, such as educational attainment, labor force participation, linkages between mortality, morbidity and disability, and health and mortality differentials. Students will also learn how to apply methods discussed. Instructor: Merli. One course. C-L: Public Policy Studies 532S

531. Applying Economic Analysis for Environmental and Public Health Project Evaluation. R, SS Course considers the importance of economic analysis, or cost-benefit analysis (CBA), for public policy assessments. Specific focus is on health and environmental policy, and the steps in identification / cataloging, quantification, and monetization of impacts of potential policies and projects. Covers: Economic rationale for CBA; Basic principles for assessing the economic effects of projects; Techniques for valuing health and environmental impacts; Intergenerational/philosophical concerns related to CBA; Social discounting; Risk and uncertainty; Comparisons of CBA with other approaches (i.e. cost effectiveness analysis, multi-objective analysis). Instructor: Jeuland. One course. C-L: Public Policy Studies 607, Environment 563


534. Water Quality Health. One course. C-L: see Earth and Ocean Sciences 524; also C-L: Environment 524, Energy 524

538. Global Environmental Health: Economics and Policy. SS, STS One course. C-L: see Environment 538; also C-L: Public Policy Studies 582
540. **Global Health Ethics: Interdisciplinary Perspectives.** EI, SS 
Same as Global Health 210 but requires an additional paper; not open to students who have taken Global Health 210. Department consent required. Instructor: Whetten. One course. C-L: Public Policy Studies 638

550. **Topics in Population, Health, and Policy.** SS, STS 
One course. C-L: see Public Policy Studies 633; also C-L: Sociology 534

570. **Global Health Policy and Policy-Making.** SS 
Introduction to essential global health policy concepts, understanding of global health policy-making, how policies affect "reality on the ground" in global health and development. Build critical analytical skills and the ability to translate coursework into broader understanding of policies and policy-making. Includes lectures, analysis, discussion, readings, case studies. Open to juniors, seniors, and Master's students pursuing GH certificate or public policy, MSc in GH, SOM third year. Department consent required. Instructor: Staff. Variable credit. C-L: Public Policy Studies 643

571. **Introduction to Global Maternal and Child Health.** SS 
Provides solid foundation in global perspectives on maternal and child health research, practice, and policy. Utilize case analysis to examine critical health challenges facing women, children, providers, and policymakers in some of the world's most vulnerable communities. Course designed for graduate and advanced undergraduate students. Instructor: Green. One course.

590S. **Special Topics in Global Health.** Topics vary depending on semester and section. Topics may include: global health ethics, field methods, health technologies, rapid needs assessment, and global health policies. Instructor: Staff. One course.

590S-1. **Special Topics in Global Health.** Topics vary depending on semester and section. Topics may include: global health ethics, field methods, health technologies, rapid needs assessment, and global health policies. Instructor: Staff. One course.

593. **Research Independent Study in Global Health.** R 
Individual research-oriented directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in a significant academic product. Open only to qualified juniors and seniors by consent of instructor and director of Global Health Certificate program. Instructor: Staff. One course.

636. **Methods in Spatial Epidemiology and Demography.** SS, STS 
Use of analytical tools to understand spatial patterns in health and demographic events. Students acquire skills in spatial data analysis and interpreting spatial patterns. Students will understand fundamental concepts in spatial epidemiology and demography, including spatial autocorrelation, heterogeneity and bias, spatial interaction, and small area estimation; identify spatial and space-time clusters of events and judiciously evaluate hypothesis tests; and develop spatial regression models that appropriately account for spatial heterogeneity or explicitly model spatial autocorrelation. Success in this course requires prior knowledge of Geographic Information System and Statistics. Instructor: Pan. One course. C-L: Environment 636

637S. **Population and Environmental Dynamics Influencing Health.** NS, SS, STS 
Course examines population, health and environment (PHE) dynamics with focus on interactions in developing or transition economies. Theoretical and empirical approaches governing PHE dynamics from multidisciplinary perspectives, including geography, public health /epidemiology, demography, and economics. Students will obtain experience in design and analysis of PHE studies, and epidemiology of vector-born, chronic and enteric infections. Instructor: Pan. One course. C-L: Environment 637S

641. **Non-Communicable Diseases in Low- & Middle-Income Countries: Trends, Causes and Prevention Strategy.** NS, SS, STS 
Course will provide an overview of the recent (mid-20th century to the present) trends in non-communicable disease epidemiology. Focus on four major non-communicable disease categories as separate modules: cardiovascular, oncologic, diabetic and pulmonary diseases. Case studies used to highlight selected geographic differences. By using lectures, assigned readings and classroom discussion the course aims to provide the student with a firm understanding of the shifting disease burden and the landscape of stakeholders and interventions to prevent the same. Instructor: Bloomfield. One course.

660. **Global Mental Health.** CCI, NS, R, SS, STS 
Examination of global mental health from perspectives of culture, public health, epidemiology, human rights, policy, and intervention. Disciplines include cross-cultural psychiatry, medical anthropology, public mental health, and economics. Topics include ethics, stigma, cross-cultural classification of mental health, ethnopsychology, trauma, violence, disasters, and displacement. Populations include children, ethnic minorities, refugees, survivors of complex emergencies, and persons with chronic disease. Course
highlights mixed-methods approaches to research and intervention evaluation. Designed for graduate students & advanced undergraduates. Prior research methods course recommended. Instructor: Puffer or Kohrt. One course. C-L: Psychology 611, Cultural Anthropology 611

670S. Global Nutrition: Over and Undernutrition in Developing Countries. EI, NS Nutrition problems of developing countries. Epidemiological, biological, behavioral consequences of both overnutrition (obesity) and undernutrition (malnutrition). Emphasizes physiology of infectious disease (HIV, TB, malaria, diarrhea) of children and perinatal health outcomes (fetal loss, low birth weight, HIV transmission, pre-eclampsia) of women and children. Basic principles of nutrition, physical manifestation of nutritional deficiency, and anthropometric assessment (body composition). Strong focus on ethical and political issues relevant to formulation of nutrition policy and programs in developing countries. For graduate students or advanced undergraduates. Service learning course. Instructor: Neelon. One course.

671. Global Health and Health Systems in Africa. SS This course is designed to prepare students to work in, or pursue study of, the complex institutional environment of global health and health systems in Africa. The course braids together four topical strands: (1) the social, political, and economic context of the African continent; (2) African conceptions of the “public” and of “health” (3) the origins and evolution of African health systems; and (4) the impact on African health systems of transitions in global health governance. The course pursues these topics through case studies and team projects focused on issues of global health and health systems in representative African countries. Instructor: Toole. One course. C-L: Public Policy Studies 636

690. Special Topics in Global Health Studies. SS Topics vary depending on semester and section. Topics may include: global health ethics, field methods, health technologies, rapid needs assessment, and global health policies. Instructor: Staff. One course.

The Major

The mission of the global health major is to educate the next generation of scholars and leaders whose efforts will improve health and help achieve health equity for all people worldwide. Accordingly, the global health major teaches students to approach global health challenges using both disciplinary and interdisciplinary perspectives. The global health major is offered only as part of a double major program of study, meaning students must complete the global health major requirements along with the requirements of any other undergraduate major at Duke. The global health major is composed of five components—core, foundations, focused study, experiential learning, and a senior seminar. Students must complete ten courses and an experiential learning requirement, in addition to their comajor requirements, as outlined below.

Three core courses

- Gateway: Global Health 101 (Fundamentals of Global Health)
- Ethics: Choose from:
  - Public Policy 330/Global Health 210 (Global Health Ethics)
  - Global Health 341S (Ethics of Infectious Disease Control)
  - Global Health 373S (Global Health Service, Research, & Ethics)
  - Philosophy 281/Global Health 241 (Global Bioethics)
- Methods: Global Health 371/Psychology 309 (Research Methods in Global Health)

Three foundations courses

One course from three of the four foundations. See globalhealth.duke.edu for eligible courses.

- Global Health Humanities
- Global Health Systems and Policy
- Natural Science in Global Health
- Social Determinants of Global Health

Three courses in a focused study

Each major must complete three courses from a predetermined menu. Sample predetermined themes include:

- Cardiovascular Disease and Obesity
- Emerging Infectious Diseases
- Global Cancer
- Global Environmental Health
Students may petition for their own focused study track. In this case, students will identify the theme and three relevant courses of their focused study, provide a rationale for their selection, including how the thematic area dovetails with the comajor and how it relates to their research or career interests, and obtain approval from the DUS.

**Experiential learning**

An experiential learning activity may be fulfilled through DGHI Student Research Training (SRT) program, an internship, a civic engagement experience such as those offered by DukeEngage, or a faculty-mentored independent global health research project. The experiential learning activity must be preapproved.

**Senior seminar**

- Global Health 501 Global Health Capstone

**The Minor**

Students pursuing a minor in global health must complete the following five course requirements:

- **Gateway:** Global Health 101 (Fundamentals of Global Health)
- **Ethics:** Choose from:
  - Public Policy 330/Global Health 210 (Global Health Ethics)
  - Global Health 341S (Ethics of Infectious Disease Control)
  - Global Health 373S (Global Health Service, Research, Ethics)
  - Philosophy 281/Global Health 241 (Global Bioethics)
- **Three electives in global health.** Students must complete three global health courses. Cross-listed courses are acceptable, but courses taken Satisfactory/Unsatisfactory and Advanced Placement credits do not count toward the minor.

**Greek**

For courses in Greek, see classical studies on page 207.

**Health, Wellness, and Physical Education**

For courses in health, wellness, and physical education, see page 481.

**Hebrew**

For courses in Hebrew, see Asian and Middle Eastern studies on page 156.

**Hindi**

For courses in Hindu, see Asian and Middle Eastern studies on page 156.

**History**

Professor Martin, Chair; Associate Professor Lentz-Smith, Director of Undergraduate Studies; Professors Deutsch, L. Dubois, Edwards, French, Gaspar, Gavins, Ho, Humphreys, Kuniholm, MacLean, Martin, M. Miller, Partner, Ramaswamy, Reddy, and Robisheaux; Associate Professors Balleisen, Bonker, Ewald, Glymph, Hacohen, Hall, Huston, Krylova, Lentz-Smith, Mazumdar, Neuschel, Olcott, Peck, Thorne, Sigal, and Stern; Assistant Professors Barnes, Chappel, and Malegam; Professors Emeriti, Chafe, Davis, Davis, Durden, English, Koonz, Herrup, Mauskopf, Roland, Scott, Shatzmiller, Thompson, Witt, Wood, and Young; Associate Professor Emeritus Nathans; Adjunct Professors Roberts and Wilson; Adjunct Assistant Professors Jakubs, Morrow, and Troost; Visiting Associate Professor Kaiwar; Visiting Assistant Professors K. Dubois and Freeman

A major or a minor is available in this department.

History courses offer students from all disciplines within the university an opportunity to investigate the past, gain perspective on the present, and improve their critical faculties. History provides an integrating principle for the
entire learning process, and students of history gain a sense of human development, an understanding of fundamental and lasting social processes, and a feeling for human interrelatedness. History courses train the mind by improving skills in communicating thought and imagination.

**Courses in History (HISTORY)**

**89S. First-Year Seminar. CZ** Topics vary each semester offered. Instructor: Staff. One course.

**101. Introduction to World History: To 1700. CCI, CZ, W** The beginning and evolution of civilization; major traditions of Eurasia (Greek, Christian European, Indian, Chinese, Islamic); Africans and Native Americans; the European invasion of America; foundations of the European world economy; Europe's preparation for world hegemony. One course. C-L: International Comparative Studies

**103. Comparative Approaches to Global Issues. CCI, CZ, SS, W** One course. C-L: see International Comparative Studies 195; also C-L: Cultural Anthropology 195, Political Science 110, Sociology 195, Women's Studies 195, Marxism and Society

**104. Introduction to the History of the African Diaspora. CCI, CZ, EI** An introduction to the history of the African diaspora, principally in the United States, Latin America, and the Caribbean. Content will vary by instructor but typically will cover topics such as the slave trade, cultural exchanges, and political movements. Particularly useful for students planning to concentrate in African Diaspora as History majors. Instructor: Lentz-Smith. One course. C-L: African and African American Studies 105

**105. Old Worlds/New Histories, 500-1500 CE. CCI, CZ, SS** New approaches to history of the world from ca. 500 to 1500 CE. Examines the world before European hegemony. Topics may include nature of autonomous centers of production around the globe; characteristics of trade, empire, science, technology, and high culture across Asia, the Middle East, Africa and the Americas; diffusion of inventions, ideas, cultures and religions through travel, trade, state and empire building. Readings and films explore diverse cosmopolitan worlds before the coming of modernity. Instructor: Staff. One course. C-L: African and African American Studies 134, Medieval and Renaissance Studies 105, Marxism and Society

**107D. Introduction to the History of the Economic and Business Cultures. CZ, EI, SS** Offers students a comparative introduction to economic cultures and business practices in different historical contexts. Examines diverse concepts of ethics in business dealings, market transactions, and economic policies. By exploring differences over time and space, students will better understand what is particular to our own practices. Particularly useful for students planning to concentrate in Economic and Business Cultures as History majors. Instructor: Partner. One course. C-L: Economics 111D, Markets and Management Studies

**108. Introduction to the History of Emotions and the Psychology of the Self. CZ, SS** Offers a comparative introduction to history of emotions and self-identifications. Examines ways in which emotional responses are historically informed. Explores ways that historical contexts set in relief particular self-understandings and how identifying with an activity (a sport, a hobby), an organization (a fraternity, a church, a school), or characteristic (race, sexual orientation, religion) may change in different contexts and for individuals over time. Particularly useful for students planning to concentrate in Emotions and the Psychology of the Self as History majors. Instructor: Martin. One course.

**109. Introduction to the History of Human Rights and Social Movements. CCI, CZ, EI, SS** Explores the history of human rights and conceptions of human rights in different historical contexts. Considers a range of social movements, including environmental, civil rights, women's rights, and sexual liberation movements. Particularly useful for students planning to concentrate in Human Rights and Social Movements as History majors. Instructor: MacLean. One course.

**110D. Introduction to the History of Law and Governance. CZ, EI, SS** Offers students a comparative introduction to legal cultures and governance practices in different historical contexts. Examines law and governance as an attempt to both foster and enforce ethical norms. Course themes include representations and justifications of rule; policy making; the legal and political construction of property, insiders and outsiders, legal procedure and constructions of justice. By exploring differences over time and space, students will better understand what is particular to our own practices. Particularly useful for students planning to concentrate in Law and Governance as History majors. Instructor: Huston. One course. C-L: Public Policy Studies 161D
111D. Europe to the Eighteenth Century. CCI, CZ, W Development and world impact of European civilization, critical evaluation of historical interpretations, and investigation of history from primary sources. Instructor: Staff. One course.

113D. Introduction to the History of Medicine, Science and Technology. CZ, STS Offers comparative introduction to understandings of medicine, science, and technology in different historical contexts. Explore differences over time and space to better understand what is particular to our own conceptions of knowledge and scientific truth. Particularly useful for students planning to concentrate in Medicine, Science, and Technology as History majors. Instructor: Humphreys. One course. C-L: Global Health 174D

114D. Introduction to the History of War, Military, and Society. CZ, EI, SS Offers a comparative introduction to military practices and technologies, understandings and justifications for war, and the impact of military combat on societies. Particularly useful for students planning to concentrate in War, Military, and Society as History majors. Instructor: Bönker. One course. C-L: Public Policy Studies 160D

115. Introduction to the History of Women, Gender, and Sexuality. CCI, CZ, EI, SS Comparative introduction to historical contingencies of sex roles, gender identities, and sexual practices. Explores ethical understandings of sexual practices, sex-defined labor roles, and legal codes (e.g., sex-specific labor laws, citizenship restrictions, marriage and nationality laws, etc.). Examines differences over time and space to better understand what is particular to our own practices and expectations. Particularly useful for students planning to concentrate in Women, Gender, and Sexuality as History majors. Instructor: Krylova. One course. C-L: Women's Studies 115, Study of Sexualities 115

116. Renaissance Cultures. ALP, CCI, CZ One course. C-L: see Medieval and Renaissance Studies 152; also C-L: Art History 152, Italian 381

117. Early Modern Europe. CCI, CZ, SS, STS A survey of Europe between approx. 1440-1750 that highlights changes in European society including the end of the Renaissance, the Reformation, the Scientific Revolution and the European encounter with other regions of the world. Instructor: Martin, Neuschel, or Robisheaux. One course. C-L: Medieval and Renaissance Studies 125

119K. Key Themes in American History. CCI, CZ, EI, SS Introduction to U.S. history, from founding of the nation to recent past, offered at Duke Kunshan University. Focuses on set of key themes from American history, using case study-based approach to delve more deeply into each, including: notions of freedom, democracy, and development of political institutions; race, racial ideologies, and race relations; expansion, imperialism, and international encounters; economic growth, development, and transformations; reform and progress; the military, war, and American society. Instructor: Byers.


126S. Introduction to Oral History. CZ, R One course. C-L: see Documentary Studies 110S

128. Introduction to Canada (B). SS One course. C-L: see Canadian Studies 101; also C-L: Sociology 108

129. Introduction to African Studies (DS3 or DS4). ALP, CCI, CZ One course. C-L: see African and African American Studies 103; also C-L: Cultural Anthropology 105, Political Science 108, International Comparative Studies 110

130D. American Dreams and American Realities. CCI, CZ Examines the role of such myths as "rags to riches," "beacon to the world," "the frontier" and "foreign devil" in defining the American character and determining hopes, fears, dreams, and actions throughout American History. Attention given to the surface consistency of these myths as accepted by each immigrant group versus the shifting content of the myths as they change to reflect the hopes and values of each of these groups. Instructor: Wilson. One course.

131. The Third World and the West I. CCI, CZ First part of a two-course sequence examining economic, social, political, and cultural relationships, 1500 to the present. Topics may vary each semester. Instructor: Staff. One course. C-L: African and African American Studies 131, International Comparative Studies, Latin American Studies

151S. Gateway Seminar: The Physicians in History. Explores health and disease in western cultures over the past two thousand years. Examines, through broad narratives and specific case studies, topics such as physicians' theories
and practices, social construction of disease, and the development of the medical profession. Demonstrates how, in addition to medical knowledge, shifting social and cultural values have motivated change in medicine. Investigating doctors’ interests in illness and bodies in the past, as well as patient perspectives of health and disease, shows how a historical awareness of medicine provides crucial perspectives on contemporary medical controversies such as medical technology, bioethics, and health insurance. Instructor: Staff. One course.

152S. Gateway Seminar: History at Sea. CCI, CZ, R, SS, W Maritime history through examination of ships, shipping, and shipboard communities. Topics addressed include shipboard language, labor, rituals, technology, aesthetics, and power, as well as free and forced maritime migrations. Discussion of the ways ships and shipping created the world in which we live. Instructor: Ewald. One course. C-L: International Comparative Studies 152S

153S. Gateway Seminar: Cultural Exchange in Continental Asia. CCI, CZ, R Continental Asian history since early 13th century through examination of cultural exchange among Mongol, Russian, Chinese, Indian, Muslim, and European colonial spheres of influence. Engages eyewitness accounts to provide hands-on experience of historiographers' craft. Exploration of issues of empire, colonialism, nationalism, globalization, modernity, liberalism, socialism, revolution, war, and religion. Introduction to historical thinking and writing through activities and assignments, including an article-length research project. Not open to students who have taken History 184S/Slavic and Eurasian Studies 184S. Instructor: Tuna. One course. C-L: Asian & Middle Eastern Studies 107S, Slavic and Eurasian Studies 106S, International Comparative Studies 154S

154S. Gateway Seminar: Torture in the Modern West. CCI, CZ, EI, R, SS A history of the development of torture as both a judicial and extra-judicial practice in Europe and the Atlantic World from the fifteenth century to the present. Considerable attention to legal, ethical, political, and religious debates about torture. Instructor: Martin. One course.

155S. Gateway Seminar: The United States and the Middle East. CCI, CZ, EI, R, SS Historical appraisal of cultural, political, military and economic encounters between Americans and people of the Middle East. Examination of variability and complexity of these encounters, with discussion of fantasies and realities, interests and commitments, influences and fears, wishes and disappointments. Begins with World War I but concentrates on the post World War II period. Instructor: Miller. One course. C-L: Islamic Studies

157S. Gateway Seminar: Empires in Historical Perspective. CCI, CZ, EI, R, SS Study of modern empires in historical comparative-connective perspective. Approaches, methods, themes include social history from below, maritime history, history of technology, debates about the ethicality of war, occupation and regime change in sovereign territories. Final research paper involving intensive primary-source research, extensive use of secondary and on-line sources for the study of empires. Instructor: Kaiwar. One course. C-L: International Comparative Studies 157S

158S. Gateway Seminar: Islam and Nationalism. CCI, CZ, R, SS, W This course offers students an introduction to the history of the 19th- and 20th-century Muslim world, using the lens of the development of different forms of nationalism. We will investigate both the intellectual roots and expressions of various nationalisms, as well as the social and political factors behind popular mobilization. The class will be focused on several case studies, including Egypt, Algeria, India-Pakistan, Iran, Sudan, and Nigeria. Students work will be focused on weekly readings, and on a semester-long research project. Instructor: Hall. One course. C-L: Islamic Studies

164S. Gateway Seminar - Antisemitism: Ethnicity, Race, Religion, Culture. CCI, CZ, EI, R, SS Focuses on selected anti-Judaic and antisemitic episodes from ancient antiquity through modern times, paying attention to both antisemitic texts and events. It evaluates competing theoretical frameworks for understanding antisemitism as ethnic, racial, religious and cultural phenomenon. Can antisemitism be understood as part of the history of racism or of other forms of ethnic hatred? Why were Jews so often target of hatred? How did both Jews and antisemites view their relations with each other? How do historians understand them? If there is limited continuity among antisemitic episodes, how can the prevalence and repetitiveness of antisemitism be explained? Instructor: Hacohen. One course. C-L: International Comparative Studies 164S

166S. Gateway Seminar - Anarchism and its Discontents. CCI, CZ, EI, R Introduction to the 19th century philosophical foundations of anarchist thought and to the history of the major anarchist movements in the 20th century in Russia, Italy and Spain. The first part of the course is an intensive investigation of the thought of Michael Bakunin, Pierre-Joseph Proudhon, Leo Tolstoy and Peter Kropotkin using selections from their own writings. The
next unit focuses on the movements they inspired in Russia and Western Europe. The last unit concerns the more contemporary manifestations of anarchism in the U.S. under the influence of Murray Bookshin. Students will write a major paper due at the end of the course. Instructor: Miller. One course. C-L: International Comparative Studies 166S

170S. Gateway Seminar: Male and Female Soldiers in the World Wars. CCI, CZ, R The history of women’s exclusion and inclusion into armed forces in relation to popular and competing notions of citizenship, national identity, and military service in twentieth century UK, US, Russia, Germany. The female combatant as subject of public debate, private fantasy, state regulations, and military experimentation. Close examination of male and female near-trench and trench-level experiences of combat in the two World Wars. Course materials include firsthand accounts such as memoirs and autobiographical novels and sketches, political treatises, popular literary works, academic articles, excerpts from popular U.S., European, and Russian films. Instructor: Krylova. One course.

171S. Gateway Seminar: History of Intimacy: Family, Friendship, Romance. CCI, CZ, R, W Examines how changing definitions of friendship, family structure, childhood, romantic love, gender roles, and sexual orientation shaped identity formation, social conflict, and cultural production through time. Course materials include letters, diaries, autobiographies, novels, government documents, and films, in addition to academic articles and books. Students produce final projects based in original research and significant secondary reading. Time period and geographical focus varies with instructor. Instructor: Deutsch and Staff. One course.

174S. Gateway Seminar: Regime Change/U.S. Foreign Policy: Latin America and Beyond. CCI, CZ, EI, R, SS Examines episodes of U.S. intervention abroad that resulted in the overthrow of democratically elected regimes. Focus on Latin America as the primary region of study, but comparative cases are also examined. Consideration of cultural, social, and economic tools of intervention as well as military and diplomatic methods. Students divide into research teams and write histories of four U.S. interventions abroad. Instructor: Olcott. One course.

175S. Gateway Seminar - The United States and the World. CCI, CZ, EI, R, SS Research and discussion seminar examining the place of America in the wider world, and ethical underpinnings of American expansion. Explores how Americans have viewed and defined themselves in relation to numerous “others.” Investigates how and why a sense of mission has driven cultural, political, and geographic expansion. Instructor: Lentz-Smith. One course.

177S. Gateway Seminar: The Meaning of Freedom in American History. CZ, R, W Focus on American conflicts over the meaning of “freedom” or “liberty.” Examination of changing definitions over time, and appraisal of the role that conflicts over “freedom” play in defining American identity and politics in the present. Course readings (mostly primary sources) introduce students to central disputes over meanings of “freedom” in American history, and student papers will also investigate conflicts or ideas about liberty. Instructor: Huston. One course.


181S. Gateway Seminar: Native American History Through Autobiography. CCI, CZ, R, SS, W This course begins to explore history from the point of view of Native Americans. Instructor: Deutsch. One course.

183S. Gateway Seminar: Civil Rights and Asian Americans. CCI, CZ, EI, R, SS Study of crucial legal and political moments in the struggle for equal civil rights of minorities, beginning with the laws of Chinese Exclusion, the struggle to define who was “White,” the Asian Immigration Exclusion Acts, the relationships of Asians and African Americans and the struggle for equal schooling in the American South, the Japanese Concentration camps, the Redress and Reparations Civil Rights struggle, and the involvement of Asians Americans in the African American-led Civil Rights Movement in the 1960s, including working with Martin Luther King and Malcolm X, and Asian Americans in the anti-sweatshop unionization movement. Instructor: Mazumdar. One course. C-L: Asian & Middle Eastern Studies 187S, African and African American Studies 133S, International Comparative Studies 183S
184S. Gateway Seminar: China at War. CZ, W Investigates China's experiences in multiple wars between 1894 and 1953. Places events in their historical context through comparative analysis of revolutions in China, Korea, and Japan, which set the stage for twentieth-century conflicts in East Asia. Introduces students to historiography through examination of what we know about historical events as well as interpretation of those events in historical scholarship. Readings include secondary and primary sources. Instructor: Barnes. One course. C-L: Asian & Middle Eastern Studies 137S

190A. Duke-Administered Study Abroad: Special Topics in History. Topics differ by section. Instructor: Staff. One course.

190FS. Topics in Focus Program. CZ Open only to students in the Focus Program. Current list of courses available in the Focus program brochure. Instructor: Staff. One course.

190S. Gateway Seminar: Topics in History. CZ Introduction to historical analysis and research in a seminar setting. Students learn how to formulate research questions, evaluate existing scholarship, interpret historical evidence, craft historical argument orally and in writing. Several sections on different topics are offered each semester. One course.

190SA. Duke-Administered Study Abroad: Special Topics in History. Seminar version of History 190A. Topics differ by section. Instructor: Staff. One course.

191L. Independent Study: Digital India Lab. A digital humanities course for pursuing projects related to South Asia; students pursue any digital project of their choice related to Indian history, culture, literature, religion and politics; topics to be approved by instructor; no prerequisites, although having taken a South Asia course on campus recommended. Instructor: Freeman/Ramaswamy. Half course.

201. Globalization and History. CCI, CZ, SS Examination of globalization issues in a historical perspective. Reviews phenomena, institutions, e.g. empires, states, religion, corporation, and international agencies, and policies which enabled exchange of commodities, people, and cultures. Explores empirical evidence on growth and development for different world regions and historians' and social scientists' interpretations. Examines benefit of maintaining fine balance between quantitative evidence and historical analysis in assessing waning international integration of societies, markets, and cultures from first wave of European expansion to the present. Instructor: Zanalda. One course. C-L: Public Policy Studies 236


208. South African History, 1870 to the Present. CCI, CZ, EI, SS Overview of South African history from the mining revolution of the 1860s and 70s through the official demise of apartheid in 1994, along with a brief consideration of the challenges facing democratic South Africa. Close attention to the rise and fall of apartheid. Instructor: Shapiro. One course. C-L: Political Science 221, African and African American Studies 214

209. Islam in Central Eurasia. CCI, CZ, SS One course. C-L: see Russian 370; also C-L: Religion 378, International Comparative Studies 370, Islamic Studies

210. Islamic Civilization I. CCI, CZ, EI One course. C-L: see Religion 375; also C-L: Cultural Anthropology 256, Medieval and Renaissance Studies 268, Asian & Middle Eastern Studies 327, Ethics Courses Offered Through Other Departments, Information Science and Information Studies, Islamic Studies

211. Islamic Civilization II. CCI, CZ, EI One course. C-L: see Religion 376; also C-L: Cultural Anthropology 257, Medieval and Renaissance Studies 269, International Comparative Studies, Ethics Courses Offered Through Other Departments, Islamic Studies
212. The Turks: From Ottoman Empire to European Union. ALP, CCI, CZ, EI, R One course. C-L: see Turkish 308; also C-L: Religion 228, Asian & Middle Eastern Studies 287, Islamic Studies

214. The Modern Middle East. CCI, CZ The historical development of the Middle East in the nineteenth and twentieth centuries. The emergence of nation-states in the region following World War I. Instructor: Staff. One course. C-L: Jewish Studies 258, Asian & Middle Eastern Studies 227, International Comparative Studies, Islamic Studies

215S. Shamanism and Spirit Possession. CCI, CZ, EI, R, SS One course. C-L: see Religion 213S; also C-L: Cultural Anthropology 214S, International Comparative Studies 256S

216S. Between Moscow, Beijing and Delhi: Narratives of Europe and Asia. CCI, CZ, R, SS One course. C-L: see Slavic and Eurasian Studies 373S; also C-L: International Comparative Studies 373S, Islamic Studies

218. Modern & Global India. CCI, CZ, EI, SS, W Examines the historical foundations for the emergence of India as a modern and global society with a focus on the Mughal empire, British colonialism, and Indian nationalism. Uses textual and visual sources for charting how local political, social-economic and cultural factors intersect with the global movements of peoples, goods, technologies, and ideas in the creation of the modern nation-state of India. Concludes with discussion of globalization of Indian labor, food, and Bollywood. Time frame from 1500 to present. Instructor: Kaiwar or Ramaswamy. One course. C-L: Asian & Middle Eastern Studies 357, International Comparative Studies 218

219S. Indian Civilization. CCI, CZ, EI, SS, W Surveys the rise of civilization and kingdoms on the Indian subcontinent from the first urban centers of the Indus Valley through the establishment of the Mughal Empire in the 16th century. Uses literary, archeological, linguistic, ethnological, and inscriptional evidence on the diversity of Indic peoples and their complex social, religious, and caste integration into the major states and empires of premodern India; considers wider civilizational networks and extensions of the Indian cultural sphere into other parts of Asia; integrates a historical and anthropological perspective on various primary materials. Instructor: Freeman. One course. C-L: Cultural Anthropology 215S, Asian & Middle Eastern Studies 257S

220. China from Antiquity to 1400. CCI, CZ Beginning with the early neolithic cultures, focus on the evolution of Han civilization, the formation of the imperial state system in China, ecological adaptations and foundations of the agrarian economy, the coming of Buddhism to China, and China's contacts with other peoples and regions of Asia up to A.D. 1400. Instructor: Mazumdar. One course. C-L: Asian & Middle Eastern Studies 337

221. China and the United States. CCI, CZ, EI Starting with the arrival of Europeans and Americans in China, and moving to the Opium Wars and the Unequal Treaties to WWII, and Hollywood depictions of China, the course focuses on China since 1949 and its relationship to the United States covering themes of the Cold War, Cultural Revolution, Nixon and China and the reengagement of the two countries, Tianan'men to today including the challenges confronting China and its rise as an industrial superpower, and the environmental challenges thereof. Instructor: Mazumdar. One course. C-L: Asian & Middle Eastern Studies 237, International Comparative Studies 221

222. Religion in China. CCI, CZ One course. C-L: see Religion 210

223. Survey of Modern China 1800-Present. CCI, CZ Introduction to the broad political and social changes of the last two hundred years in China beginning with the Qing imperial era and the last emperors, to the Opium Wars, the turning point of the Taiping Rebellion, the Republican Revolution and Communist Revolution; with focus and introduction to critical thought on imperialism, nationalism and ethnicity, revolution and social change using primary documents, secondary readings and films. Instructor: Barnes. One course. C-L: Asian & Middle Eastern Studies 238

224A. Themes in Chinese Culture and History. CCI, CZ, SS One course. C-L: see Cultural Anthropology 343A; also C-L: Political Science 298A, International Comparative Studies

225S. Muslim Women Across the Ages. CCI, CZ, SS, W One course. C-L: see Religion 219S; also C-L: Women's Studies 209S, International Comparative Studies 365S, Islamic Studies

226. Ancient and Early Modern Japan. CCI, CZ Japan from earliest settlement to 1868; the Heian Court, rise of the samurai, feudal society and culture, the Tokugawa age, and the Meiji Restoration. Instructor: Partner. One course. C-L: Asian & Middle Eastern Studies 267, International Comparative Studies
227. The Emergence of Modern Japan. CCI, CZ A survey of modern Japanese history from 1850 to the present. Emphasis on social change as experienced by ordinary people. Includes a comparative overview of Japan's experience of modernity. This class is not open to students who have taken History 122A. Instructor: Partner. One course. C-L: Asian & Middle Eastern Studies 269, International Comparative Studies

228. Chinatowns: A Cultural History. ALP, CCI, CZ, R One course. C-L: see Asian & Middle Eastern Studies 335; also C-L: Arts of the Moving Image 337, International Comparative Studies 336

229. Modern East Asia, 1600-2000. CCI, CZ, SS A broad survey of the modern history of the East Asian region: China, Korea, Japan, and their ethnic/political/cultural sub-groups. Explores political, economic, and social interactions within the region and with the world. Critically appraises concepts of ethnic and national identity, nationalism and imperialism, development and modernization. Uses primary historical documents as well as secondary sources. Instructor: Mazumdar, Partner. One course. C-L: Asian & Middle Eastern Studies 207, International Comparative Studies 230

230. Greek History. CCI, CZ One course. C-L: see Classical Studies 283

231. Ancient Athletics. ALP, CCI, CZ One course. C-L: see Classical Studies 262

232S. Special Studies in Greek History. CZ One course. C-L: see Classical Studies 324S

233. Roman History. CCI, CZ, W One course. C-L: see Classical Studies 284

234. Democracy: Ancient and Modern. CCI, CZ, EI, SS One course. C-L: see Classical Studies 275; also C-L: Political Science 211

235S. Special Studies in Roman History. CZ One course. C-L: see Classical Studies 328S

236. Ancient Science and Technology. CZ, STS One course. C-L: see Classical Studies 364

237. Cities and City Life in Italy. ALP, CCI, CZ One course. C-L: see Italian 383

238A. Rome: History of the City. ALP, CCI, CZ One course. C-L: see Classical Studies 340A; also C-L: Art History 209A

239FS. Turkey: Muslim and Modern. CCI, CZ, SS One course. C-L: see Turkish 279FS; also C-L: Islamic Studies

239S. Turkey: Muslim and Modern. CCI, CZ, SS One course. C-L: see Turkish 279S

240. Greek and Roman Law. CCI, CZ One course. C-L: see Classical Studies 308; also C-L: Political Science 381

241. Medieval Cultures. ALP, CCI, CZ One course. C-L: see Medieval and Renaissance Studies 151; also C-L: Art History 121, Classical Studies 121

242. Medieval Christendom, Conflict. CCI, CZ, EI Traces the history of medieval Western Europe through major conflicts based in religious belief, practice, law, and institutions. Topics explored through medieval sources and works of history include Investiture Controversy, Inquisition, Crusade, the Templars, Peace movements, and the Great Schism. Instructor: K. Dubois. One course. C-L: Medieval and Renaissance Studies 257, Religion 354

243. History of the Christian Church. CCI, CZ, EI One course. C-L: see Religion 355; also C-L: Study of Ethics

244. Medieval Christianity in Film and Fiction. ALP, CCI, CZ, EI One course. C-L: see Religion 261; also C-L: Medieval and Renaissance Studies 354

245. Europe Before The Crusades. CCI, CZ Foundations of European politics and society from 450 to 1000, when imperial Roman religion melded with the world of Goths, Celts and Franks, and custom and conflict sustained law and order. Ideas of Christian empire developed during Charlemagne's reign and manifested in the violence of the First Crusade. Instructor: Malegam. One course. C-L: Medieval and Renaissance Studies 259

246. Medieval Bodies: Sex & Food. CCI, CZ, EI Society in Western Europe ca. 1000-1500. Medieval sexuality (femininities and masculinities) and gender. Social relationships, norms and deviance. Power and structures of authority. Spirituality, religion, theology of sexuality and food, sin and virtue, scientific and medical ideas about the body, food preparation and uses. Instructor: Dubois. One course. C-L: Medieval and Renaissance Studies 256, Women's Studies 219, Study of Sexualities 210

247. British Isles in the Middle Ages. CCI, CZ, EI From the fifth through the fourteenth centuries. Instructor: Morrow. One course. C-L: Medieval and Renaissance Studies 272
248. History and Culture of Iran. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 223; also C-L: Religion 283

248S. The Romance Novel: History, Culture and Form. ALP, CCI, CZ, W Explores the history, development and form of the modern romance novel and its role in popular American culture. Birth of the novel; reception and criticism of early romance novels; historical and literary contexts. Britain and the U.S. Authorship: women-authored vs. men-authored, and legitimacy. Standardization of the form of the romance novel and the genre; expectations and innovation. Gender roles: models of femininity and masculinity. Female agency, sexuality, class and race in romance novels and their readership. Late twentieth-century/early twenty-first century boom in the romance industry: Why and to what end? There is a significant writing component to this course. Instructor: Dubois and Florand. One course.

249. The Crusades to the Holy Land. CCI, CZ, R The crusades to the Holy Land and other manifestations of European expansionism, for example, the reconquest of Spain and the foundation of a Norman Kingdom in Sicily. Instructor: K. Dubois. One course. C-L: Medieval and Renaissance Studies 262, Jewish Studies 249, Islamic Studies

250. Green Germany: World Leader in Environmental Policy. CCI, CZ, EI, SS, STS One course. C-L: see German 364; also C-L: Environment 366, Energy 364

251. Jewish History, 1492 to the Present. CCI, CZ, EI, SS Major developments in Jewish history from the early modern period to today. The Kehillah, the Spanish-Jewish Diaspora, the rise of Polish Jewry, the Safed Kabbalah, Sabbatianism, the emergence of the Chassidut, the Haskalah (Jewish Enlightenment), Emancipation and the nation state, Reform Judaism, economic modernization, racial antisemitism, Zionism, the Holocaust, the State of Israel, flourishing Jewish pluralism in the United States, the future: nation and Diaspora? Instructor: Hacohen. One course. C-L: Jewish Studies 251, Religion 340, International Comparative Studies 253, Study of Ethics

253. Dante's Divine Comedy: Hell, Purgatory and Paradise. ALP, CCI, CZ, EI One course. C-L: see Italian 481; also C-L: Medieval and Renaissance Studies 450, Religion 262, Literature 245, International Comparative Studies

254. The Expansion of Medieval Europe. CCI, CZ Lecture course follows the transformation of medieval politics, society and culture from the First Crusade to the Reformation. The evolution of secular monarchies and the flourishing of vernacular literature and devotion. The growth of commerce and an urban middle class. New forms of feminine religiosity and fascination with Christ’s humanity. Intensified alienation and persecution of marginal groups such as the Jews. Field trip to the local museum. Instructor: Malegam. One course. C-L: Medieval and Renaissance Studies 254

255. German History Through Film. ALP, CZ, EI One course. C-L: see German 286; also C-L: Arts of the Moving Image 286, Literature 286

256. The History of the Renaissance in Europe 1250-1550. CZ, W Major developments in art, architecture, humanism, and science in their social and political contexts from the Black Death through the trial of Galileo. Focus on urban and court societies, modes of communication and cultural diffusion, varieties of religious repression, and Europe's shifting relation to the rest of the world. Instructor: Martin. One course. C-L: Medieval and Renaissance Studies 279, International Comparative Studies

257. Reformation Europe. CCI, CZ The interplay of social, economic, and political developments in Central Europe from the eve of the Reformation to the end of the Thirty Years' War, with particular attention to the links between religion, gender, and the social order. Instructors: Neuschel or Robisheaux. One course. C-L: Medieval and Renaissance Studies 281, International Comparative Studies

258. Protestant Traditions. CZ, EI One course. C-L: see Religion 357

259. The Reformation of the Sixteenth Century. CCI, CZ, EI One course. C-L: see Religion 358; also C-L: Medieval and Renaissance Studies 284, Study of Ethics

260. Magic, Religion, and Science since 1400. CCI, CZ, EI, STS The history of magic and witchcraft in western culture from the Renaissance to the present, with particular attention to the relationship of supernatural beliefs to religion and science. The renewal of magic, astrology, and alchemy in the Renaissance; early modern witch beliefs and the witch hunt; national skepticism in the Enlightenment; modern marginal sciences such as parapsychology; and adaptations of magical beliefs to modern culture in the nineteenth and twentieth centuries. Instructor: Robisheaux. One course. C-L: Medieval and Renaissance Studies 287
260D. Magic, Religion, and Science since 1400. CCI, CZ, EI, STS The history of magic and witchcraft in western culture from the Renaissance to the present, with particular attention to the relationship of supernatural beliefs to religion and science. The renewal of magic, astrology, and alchemy in the Renaissance; early modern witch beliefs and the witch hunt; national skepticism in the Enlightenment; modern marginal sciences such as parapsychology; and adaptations of magical beliefs to modern culture in the nineteenth and twentieth centuries. Instructor: Robisheaux. One course. C-L: Medieval and Renaissance Studies 287D

261. Germany Confronts Nazism and the Holocaust. ALP, CCI, CZ, EI One course. C-L: see German 387; also C-L: Jewish Studies 369, Literature 369

262. The History of Romantic Love. ALP, CCI, CZ, EI, W Examines how romantic love has been understood and practiced in the European and North American traditions, from ancient times to the present. Comparison with the Hindu and Japanese traditions to reveal what is unique about Western romantic love. Comparison of art and literature to the practices of real people. Transformations of norms and ideals since ancient times with focus on ethical questions about the permissibility of desire in all its forms, the proper relationship between love and marriage, and the moral status of adultery and jealousy. Instructor: Reddy. One course. C-L: Cultural Anthropology 231

263D. The History of Romantic Love. ALP, CCI, CZ, EI, W Examines how romantic love has been understood and practiced in the European and North American traditions, from ancient times to the present. Comparison with the Hindu and Japanese traditions to reveal what is unique about Western romantic love. Comparison of art and literature to the practices of real people. Transformations of norms and ideals since ancient times with focus on ethical questions about the permissibility of desire in all its forms, the proper relationship between love and marriage, and the moral status of adultery and jealousy. Instructor: Reddy. One course. C-L: Cultural Anthropology 231D, International Comparative Studies 262D

264D. The History of Emotions. CCI, CZ, R, W Codes of conduct aimed at the management, expression, and concealment of emotion over the last thousand years of European history, with a focus on the self, manners, dress, romance, and aggression; comparison of developed Western notion of emotions with configurations of emotional expression and emotional practices in selected other parts of the world: within Islam, the Hindu tradition, Japan, certain postcolonial settings. Not open to students who have taken History 154C or Cultural Anthropology 154. Instructor: Reddy. One course. C-L: Cultural Anthropology 230D

265. Madness and Society in Historical Perspective. CCI, SS, STS Mental illness and psychiatric treatment from antiquity to the present with special concentration on the nineteenth and twentieth centuries in Europe, America, and Russia. Instructor: Miller. One course. C-L: International Comparative Studies

266. Soccer Politics/La Politique du Football. CCI, CZ, EI, SS One course. C-L: see French 362; also C-L: International Comparative Studies 204

266A. Germany Today: A European Superpower? Duke-in-Berlin. CCI, FL, SS One course. C-L: see German 359A; also C-L: Political Science 296A, International Comparative Studies

267. The Enlightenment: A Social, Cultural, and Intellectual Survey. CCI, CZ, W The period's intellectual trends (the rise of modern science, modern social and political theory, philosophy, and individualism) studied in their original context. Subjects examined include modes of production; political authority; empire; literature, art, and music; fashion and leisure; news, gossip, and scandal; outbreak of revolution. Instructor: Reddy. One course.

267D. The Enlightenment: A Social, Cultural, and Intellectual Survey. CCI, CZ, W The period's intellectual trends (the rise of modern science, modern social and political theory, philosophy, and individualism) studied in their original context. Subjects examined include modes of production; political authority; empire; literature, art, and music; fashion and leisure; news, gossip, and scandal; outbreak of revolution. Instructor: Reddy. One course.

268. Classics of Western Civilization: The German Tradition, 1750-1930. ALP, CCI, CZ One course. C-L: see German 375; also C-L: Political Science 375, Literature 247


270. Britain and the British Empire in the Age of the American Revolution. ALP, CCI, CZ, EI, R Britain and the wider British world in the eighteenth century. Global warfare; empire in the Atlantic and India; Pacific explo-
ration; Enlightenment thought and science; art, literature, and music; material culture; industrial, commercial, and financial revolutions; politics and the rise of the modern state. Instructor: Stern. One course.

271. Modern Britain. CCI, CZ, W Introduction to British history in the modern period, eighteenth century through the present. Impact of industrialization and imperial expansion on political culture, social relations of class and gender, and national identity. Imperial comparisons and connections to the British experience. Instructor: Thorne. One course.


273S. The Spanish Civil War: History, Literature, and Popular Culture. ALP, CZ, EI, FL, R One course. C-L: see Spanish 431S

274D. Global France. ALP, CCI, CZ, EI One course. C-L: see French 480D; also C-L: Cultural Anthropology 274D, International Comparative Studies 480D

275. Imperial Russia 1700-1917. CCI, CZ, SS One course. C-L: see Russian 356

276. From Tsars to Commissars: Russian Cultural History. CZ Medieval origins of the Imperial Russian state, concentrating on the period between the reign of Catherine the Great (1762-1796) and the death of Lenin in 1924. Emphasis on state authority, ruling elites, and the formation of the opposition revolutionary movement leading to the Bolshevik seizure of power in 1917. Instructor: Miller. One course. C-L: Russian 276, International Comparative Studies

277. Tolstoy and the Russian Experience. ALP, CCI, CZ, EI One course. C-L: see Russian 325

278S. Nationalism and Exile. CCI, CZ, R The dilemmas confronting Russian and European exiles in the nineteenth and twentieth centuries in the context of nation-state identities. Focuses on political and literary exiles forced from their native countries. Central to the study is the role of the modern nation-state, from whose boundaries the exiles were expelled. Instructor: Miller. One course. C-L: International Comparative Studies 289S


280S. The Frontiers and Minorities of the Tsarist and Soviet Empires. CCI, CZ, EI, SS One course. C-L: see African and African American Studies 372S

280S. The Frontiers and Minorities of the Tsarist and Soviet Empires. CCI, CZ, EI, SS One course. C-L: see Russian 385S; also C-L: International Comparative Studies 372S

281. Russian Revolutionary Cinema. CCI, CZ The origins and development of the revolutionary and experimental cinema in Russia during the last years of the Empire and after the seizure of power by the Bolsheviks in 1917. Films include the classics of the silent Soviet cinema directed by Eisenstein as well as other films by other influential directors. The transition into the Stalinist cinema of the 1930s and comparisons with Hollywood films of that era. Instructor: Miller. One course. C-L: Russian 381, Arts of the Moving Image 264, Marxism and Society

282. End of Russian Socialism: History of Perestroika. CCI, CZ, EI, SS History of the fall of the Soviet Union as interplay between Russia’s economic legacy, a sequence of economic and political decisions undertaken by Gorbachev’s government in the 1980s, and international forces that influenced Russia’s decision to reform; includes exploration of principles and aspirations that informed Soviet socialist economy in theory and practice; traces the restructuring of Soviet economic system into its present-day capitalism a la Russe. Instructor: Krylova. One course. C-L: Russian 381

283. Putin’s Russia: The History of Economic and Political Consolidation. CCI, CZ, EI, SS Focuses on contemporary Russia. The post-2000 decade examined as aftermath of political and economic turmoil and restructuring of the 1990s and as a period of consolidation of Russia’s political and economic systems and business practices. Critically examines functioning of Russia’s sovereign democracy, mechanisms of economic crime and corruption, radical
284. Life Within Capitalism: A History of its Values, Measures and Struggles. CZ, EI One course. C-L: see Study of Ethics 271; also C-L: Economics 270, Political Science 252

285. Western Warfare since 1789. CCI, CZ, EI, SS, STS European and United States conduct of war since 1789, ranging from the French Revolutionary and Napoleonic wars to the current United States pursuit of war in the Middle East and beyond, Focus on the nature and aims of Western warfare and the practices, languages, and experiences of its participants. The shifting ways in which military force has been used against soldiers and civilians. Instructor: Bönker. One course. C-L: International Comparative Studies 285

285D. Western Warfare Since 1789. CCI, CZ, EI, SS, STS European and United States conduct of war since 1789, ranging from the French Revolutionary and Napoleonic wars to the current United States pursuit of war in the Middle East and beyond, Focus on the nature and aims of Western warfare and the practices, languages, and experiences of its participants. The shifting ways in which military force has been used against soldiers and civilians. Instructor: Bönker. One course.

286. European History in the Twentieth Century. CCI, CZ An examination, emphasizing cultural and political trends, of the turning points that have shattered political unity (two world wars, economic depression, protest movements, the Cold War and ethnic strife), as well as forces for unification (modernist literature, film and music, political ideologies, the Common Market, and post-1989 revival). Instructor: Chappel. One course. C-L: International Comparative Studies 237

286D. European History in the Twentieth Century. CCI, CZ An examination, emphasizing cultural and political trends, of the turning points that have shattered political unity (two world wars, economic depression, protest movements, the Cold War and ethnic strife), as well as forces for unification (modernist literature, film and music, political ideologies, the Common Market, and post-1989 revival). Instructor: Chappel. One course.


288. German Way of War. CCI, CZ, EI, SS This course explores German conducts of war in the nineteenth and twentieth centuries. Our explorations begin with Prussian military pursuits in the 1860s and end with the war efforts of Nazi Germany and their defeat in 1945. Paying special attention to languages and experiences of war, we will situate the German imagination and practice of war within the larger fabric of German state and society and relate military strategy to the pursuit of global power and empire. Instructor: Bönker. One course.

289. Weimar and Nazi Germany. CZ, R The impact of World War I on German morale, the emergence of an exciting avant garde culture in Berlin, the establishment of a multiparty parliamentary government, women's emancipation, and economic crisis in the hyperinflation of 1922 and the Great Depression. Against this progressive background, Hitler's mobilization of masses of followers, seizure of power, and establishment of the first racial society. The killing fields and concentration camps on the Eastern Front. Instructor: Bönker. One course. C-L: Visual and Media Studies 284, International Comparative Studies

292. Denial, Faith, Reason: Sustainability and Survival. EI One course. C-L: see Study of Ethics 285; also C-L: Economics 285, Political Science 249, Environment 276

295. World War II and French Film. CCI, CZ, EI, FL One course. C-L: see French 413; also C-L: Arts of the Moving Image 261, Visual and Media Studies 310

296. The Military in Germany and the United States. CZ, EI, SS, STS Explores the history of the military in Germany and the United States in the 19th and 20th centuries. Examines German and U.S. armed forces as distinct institutions and reconstructs their pursuits in war and peace while paying considerable attention to soldiers' languages and experiences. Situating the two militaries within the larger fabrics of their respective states, societies, and cultures, we will explore the relationships between military and civilian realms, peoples, and discourses. In so doing, we will compare and contrast two ever-shifting military experiences and explore the ways in which they were entangled. Instructor: Bönker. One course.
297. The Holocaust. CCI, CZ, EI, STS Antisemitism and the Jewish question in Central Europe, the development of Nazi policy, the Final Solution in its different sites (ghetto, labor camps, extermination camps) and institutions (SS, Judenrat), the Holocaust's legacy. Historiographical debates and documentary research. Class might take field trip to the Holocaust Museum in Washington DC. Instructor: Hacohen. One course. C-L: Jewish Studies 342, Religion 342, Political Science 262

298. Genocide in the Twentieth Century. CZ, EI, R Focus on four cases in which soldiers have launched murderous attacks against civilians: Turks against Armenians, Nazis against Jews and other racial enemies, Khmer Rouge against their Cambodian enemies, and "ethnic cleansing" in Yugoslavia. Examines responsibility of both perpetrators and bystanders. Instructor: Staff. One course. C-L: International Comparative Studies 298, Study of Ethics, Policy Journalism and Media

301S. Influential Scientists and Policy Leaders in Science Policy. SS, STS, W One course. C-L: see Genome Sciences and Policy 238S; also C-L: Public Policy Studies 233S

302. Rise of Modern Science: Early Science through Newton. CZ, STS, W The development of science and medicine with attention to cultural and social influences upon science. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 289


305S. History of International Financial and Monetary Crises. CZ, EI, SS One course. C-L: see Economics 305S; also C-L: International Comparative Studies 305S

306. Introduction to Economic History. CCI, CZ, SS One course. C-L: see Economics 302; also C-L: International Comparative Studies 303

307. History of Economic Thought. CCI, R, SS, W One course. C-L: see Economics 311; also C-L: International Comparative Studies, Marxism and Society

308. Adam Smith and the System of Natural Liberty. SS, STS One course. C-L: see Economics 312; also C-L: International Comparative Studies

308S. Adam Smith and the System of Natural Liberty. SS, STS One course. C-L: see Economics 312S

310. The International Economy, 1850-Present: From Globalization to Globalization. CCI, CZ, SS One course. C-L: see Economics 304; also C-L: International Comparative Studies 304

312. Europe's Colonial Encounter, 1492-1992. CCI, CZ, EI The impact of colonial expansion on European economic development, political culture, and popular identity from the "age of discovery" through the present. Particular attention to the ethical implications of colonialism's influence on Western "civilization." Instructor: Thorne. One course. C-L: African and African American Studies 212, Canadian Studies 312, International Comparative Studies 312, Ethics Courses Offered Through Other Departments

313. Crime and the City from Dickens to The Wire. ALP, CCI, EI, SS Compares representation of crime and the city in two key "texts": Charles Dickens's "Oliver Twist" and the HBO television series, "The Wire." Juxtaposes the social and political contexts to which each text refers, paying particular attention to the nature and causes of criminal activity therein. Explanations emphasizing individual or personal responsibility will be contrasted to those that take structural factors into account, including urban housing, public health, child labor, public education, poverty and its relief, urban governance, as well as the criminal justice system. Instructor: Thorne. One course. C-L: African and African American Studies 226

313D. Crime and the City from Dickens to The Wire. ALP, CCI, EI, SS Compares representation of crime and the city in two key "texts": Charles Dickens's "Oliver Twist" and HBO television series, "The Wire." Juxtaposes social and political contexts to which each text refers, paying particular attention to the nature and causes of criminal activity therein. Explanations emphasizing individual or personal responsibility will be contrasted to those that take structural factors into account, including urban housing, public health, child labor, public education, poverty and its relief, urban governance, as well as the criminal justice system. Instructor: Thorne. One course. C-L: African and African American Studies 226D, International Comparative Studies 313D
315. The Emergence of the Atlantic Basin to 1713. CCI, CZ, W The forces unleashed by the expansion of European influence into the Atlantic Islands along the west and southwest coast of Africa, and across the Atlantic Ocean into the Americas. Instructor: Gaspar. One course. C-L: Latin American Studies

315S. The Emergence of the Atlantic Basin. CCI, CZ The forces unleashed by the expansion of European influence into the Atlantic Islands along the west and southwest coast of Africa, and across the Atlantic Ocean into the Americas. Instructor: Gaspar. One course.


318. The Caribbean, 1492-1700. CCI, CZ The Caribbean region from the arrival of Columbus (1492) to the emergence of sugar and slavery as powerful shapers of society and culture, by 1700. Instructor: Gaspar. One course. C-L: African and African American Studies 218, Medieval and Renaissance Studies 255, International Comparative Studies, Latin American Studies


321. The Modern Caribbean after Emancipation. CCI, CZ Focus on the Caribbean region as it transitioned from a collection of slave and colonial societies into a region of postcolonial and independent nations. Topics may include: postemancipation political and cultural struggles, pan-Africanism and Rastafarianism, nationalist and anticolonial movements, American economic and political influence in the region, Caribbean emigration to Europe and the United States, and global spread of Caribbean culture. Instructors: L. Dubois or Gaspar. One course. C-L: African and African American Studies 240, Romance Studies 321, Cultural Anthropology 322, International Comparative Studies 319

322. The Age of Revolution. CCI, CZ, EI, SS Global perspective on the Age of Revolution, from late 17th - 19th century. Exploration of the inter-connected events in Europe, the Americas, and Africa, focusing on the circulation of ideas, debates over slavery and freedom, and the overthrow of colonial empires through the creation of new nation-states, with special attention to the links between politics, cultural and artistic developments during the period. Explores the contested legacies of the Age of Revolution and the ways in which the memory of this period is evoked in contemporary culture. May involve field trips to local historical sights, museums & longer trips to other locations in the U.S. Instructor: L. Dubois. One course.

324. Mexico Since Before Cortes. CCI, CZ Survey of Mexican history since before the encounter between European and native peoples, the experience of conquest, independence rebellions, liberal reforms, revolution, and modernization. Instructor: Olcott. One course. C-L: Latin American Studies

326. Latin America: Colonialism and Its Consequences. CCI, CZ The pre-Columbian cultures, European conquest and its effects on the Amerindian peoples, and development of the Spanish and Portuguese Empires to the wars of independence with special emphasis upon colonial institutions and socioeconomic developments. Not open to students who have taken History 174. Instructor: Sigal. One course. C-L: International Comparative Studies 326, Latin American Studies


328. Global Brazil. CCI, CZ, SS Analysis of Brazilian history and culture from 1500 to the present in transnational context, with an emphasis on themes like slavery and race, regional cleavages, authoritarian rule, social inequality, and innovative attempts to expand democracy. Facilitates broad-based knowledge of a country of increasing global


330. Introduction to Contemporary Latin America. CCI, CZ Interdisciplinary introduction to the peoples, cultures, and burning issues of contemporary Latin America and the Caribbean. Required course for students seeking the certificate in Latin American Studies. Instructor: French or Olcott. One course. C-L: Latin American Studies 230, International Comparative Studies 327

331S. Exploring Latino Identity in the Twentieth Century. CCI, CZ, W Interdisciplinary exploration of the formation of Latino identities over the course of the twentieth century, focusing largely on Mexican-American identities but also considering the experiences of South America, Central American, and Caribbean immigrants to the United States. Uses a wide range of sources, including histories, novels, films, journalistic reports, and ethnographic studies. Instructor: Olcott. One course. C-L: Latino/a Studies in the Global South

335. United States Legal History. CCI, CZ, R, SS Law and society in the United States from the American Revolution to the present. Changing institutional structures of the American legal system, popular understandings of legal authority, and the social uses of law. Includes such topics as property, crime, and legal personhood; the law's impact on social identity and access to power; the consequences of economic and social transformations for America's legal order. Instructors: Balleisen or Edwards. One course.

335D. United States Legal History. CCI, CZ, R, SS Law and society in the United States from the American Revolution to the present. Changing institutional structures of the American legal system, popular understandings of legal authority, and the social uses of law. Includes such topics as property, crime, and legal personhood; the law's impact on social identity and access to power; the consequences of economic and social transformations for America's legal order. Instructor: Balleisen or Edwards. One course.


337. The Era of the American Revolution, 1760-1815. CCI, CZ, EI, SS Origins, evolution, and consequences. Attention to economic, social, and geographical questions, as well as military, political, and moral issues. Instructor: Hart. One course.

338. The New Nation: The United States, 1800 to 1860. CZ, SS Examines the transformation of the new republic into a nation, focusing on the development of political institutions, the market economy, western expansion, and conflicts over slavery and the meaning of "freedom" for a wide range of people in the new nation. Instructor: Hart or Huston. One course.

339. Constitutional Rights in U.S. History. CZ, EI, SS Focus on impact of courts on interpretation of constitutional language concerning rights of individuals, especially religious liberty, freedom of speech, and press, civil rights and property rights. Explore history of court decisions, including extra-constitutional influences, contemporary understandings, and consequences. Instructor: Hart. One course. C-L: Political Science 218

340. The Civil War and Reconstruction: The United States, 1850-1880. CZ, SS The social, economic, and cultural aspects of the Civil War's origins and outcomes as well as the resulting military, political, and legal conflicts. Focus on the contested and changing meanings of "freedom" in all sections of the country. Instructor: Glymph. One course. C-L: African and African American Studies 342

341. Origins of Corporate America. CZ, SS Industrialization, immigration, westward migration, and increased United States involvement in world political and economic affairs. The resulting political upheavals and the efforts of various groups to promote, control, or alter change. Instructor: Deutsch. One course.

341D. Origins of Corporate America. CZ, SS Industrialization, immigration, westward migration, and increased United States involvement in world political and economic affairs. The resulting political upheavals and the efforts of various groups to promote, control, or alter change. Instructor: Deutsch. One course.
342. Gatsby's America: The United States from the Jazz Age to the Great Depression, 1914-1941. CCI, CZ, EI, SS Post World War I transformations in foreign relations, technology, literature, the arts, political and economic thought and practice; the rise of a consumer society, the growth of the state, the increase in Mexican immigration, the "New Negro," and the "Modern Woman" during the "roaring twenties" and the Great Depression. Instructor: Deutsch or Lentz-Smith. One course.

343. History of Modern America: The United States from 1930 to present. CZ, SS United States history since the Great Depression, with emphasis on the shaping influence of the New Deal and war. Examines transformations of everyday life and culture and the movements for social change they generated, including the labor, civil rights, and women's movements, and explores the nation's dominant role on the world stage and the impact of a global economy. Instructor: MacLean. One course.

343D. History of Modern America: The United States from 1930 to present. CZ, SS United States history since the Great Depression, with emphasis on the shaping influence of the New Deal and war. Examines transformations of everyday life and culture and the movements for social change they generated, including the labor, civil rights, and women's movements, and explores the nation's dominant role on the world stage and the impact of a global economy. Instructor: MacLean. One course.

344. History of U.S. Social Movements, 1776 to Present. CCI, CZ, EI, SS Examines the social movements that have shaped U.S. history, starting with the American Revolution itself and covering others including the anti-slavery movement, women's rights, Populism, Socialism, the Ku Klux Klan, the labor movement, the Black Freedom Movement and broader New Left, lesbian and gay liberation, and the recent conservative movement, focusing on the ethical issues arguments they raised, and how new civil, political, and social rights were created through social movement organizing. Lectures and readings explore why these movements arose, what they achieved, why many opposed them, and what we can learn about American history writ large from their experiences. Instructor: MacLean. One course.

344D. Historical Perspectives on Public Policy: The United States from 1945 to the Present. CZ, EI, SS One course. C-L: see Public Policy Studies 272D

345. North American Environmental History. CZ, EI, STS Historical roles of nature—as a cultural construct and a set of biological relationships—in shaping human choices in North America, from colonial times to the present. Special attention to historical origins of contemporary environmental politics, including the origins of wilderness; environmental justice movements; the changing politics of food, animal rights, and pollution; and tragedies of the commons, and the ethical challenges posed by global warming and population growth. Instructor: Peck. One course. C-L: Public Policy Studies 278, International Comparative Studies 340

345D. North American Environmental History. CZ, EI, STS Historical roles of nature - as a cultural construct and a set of biological relationships - in shaping human choices in North America, from colonial times to the present. Special attention to historical origins of contemporary environmental politics, including the origins of wilderness; environmental justice movements; the changing politics of food, animal rights, and pollution; and tragedies of the commons, and the ethical challenges posed by global warming and population growth. Instructor: Peck. One course. C-L: Public Policy Studies 278D

346. Africans in America to the Civil War. CCI, CZ, EI African, European, and Indian interactions; the black experience of slavery and racism; the evolution of Afro-American culture, resistance, and the general emancipation; ethical concepts and issues on human justice in the course of racial oppression and freedom struggle. Instructor: Gavins. One course. C-L: African and African American Studies 206, International Comparative Studies 349, Documentary Studies

347. African Americans Since the Civil War. CCI, CZ, EI Post-slavery black life and thought, as well as race relations and social change, during Reconstruction, Jim Crow, the Civil Rights and Black Power Movements, and contemporary times; ethical concepts and issues on human justice in the course of struggles for democracy, tolerance, and equality. Instructor: Gavins. One course. C-L: African and African American Studies 207, International Comparative Studies, Documentary Studies

348. The Civil Rights Movement. CCI, CZ, EI, SS An interdisciplinary examination of the civil rights movement from World War II through the late 1960s. Instructor: Gavins or Lentz-Smith. One course. C-L: African and African American Studies 243, Ethics Courses Offered Through Other Departments
349. African American Women and History. CCI, CZ One course. C-L: see African and African American Studies 310; also C-L: Women's Studies 237


354D. Race: A World History. CZ, EI, SS Where did the concept of race come from, how does it change over time and across space, and what pressure does it exert on our lives? By looking at a range of texts, images, and historical narratives, students gain an understanding of why race matters and what work it has done in making America (and Americans). Instructor: Lentz-Smith. One course. C-L: International Comparative Studies 372D

354S. Women, Fire, and Dangerous Things: Gendered Activism in the American South. CCI, EI, R, SS One course. C-L: see Documentary Studies 362S; also C-L: Women's Studies 306S

356S. Freedom Stories: Documenting Southern Lives and Writing. ALP, CCI, CZ One course. C-L: see Documentary Studies 320S; also C-L: African and African American Studies 231S

357. The Insurgent South: Movements for Social Change Since the Civil War. CZ, SS One course. C-L: see Public Policy Studies 232

358. The South in Black and White. ALP, CCI, CZ One course. C-L: see Documentary Studies 326; also C-L: African and African American Studies 230


360. Imagining the North American West: History and Myth, 1850-Present. CCI, CZ, SS Major themes in the history of North American West (western Canada, United States, and northern Mexico) from the mid-nineteenth century to present, from the frontier to industrialization, Native Americans to Hollywood, Calamity Jane to Shane. Organized around thematic and chronological questions: The relationship between mythic and real Wests; the continent's most radical region in 1900 became its most conservative by 1980. Instructor: Deutsch or Peck. One course.

361. United States Political History, 1789-1900. CZ, SS The development of American politics between the end of the Revolution and 1900. The extension and limitations of democracy; the emergence and extension of parties as the central institution of politics; the relationship between popular political initiatives and party politics; the clash and transformation of party policies and ideologies; and the growth and transformation of the American state. Instructor: Huston. One course.

362. United States Political History, 1900 to the Present. CZ, SS U.S. political history from 1900 to the present. Topics include the emergence, evolution, and decline of a "liberal" coalition; the creation of a "conservative" coalition; the development of a powerful federal state and its social and political results; the role of money in politics; the transformation of voting rights and voter participation; reform and radical movements and their relationship to party politics and the federal government. Instructor: Huston. One course.

363. History of Capitalism in the United States. EI, SS Surveys history of various forms of capitalism in the United States, with focus on changing labor systems and labor relations, banking and finance, business enterprise and strategies, agriculture, government economic policy (including regulatory policy), and intellectual history of capitalism and its reformers. Instructor: Huston. One course. C-L: Marxism and Society

365. Inventing Sickness: The Science and Practice of Medicine in Ancient Greece. CZ, EI, SS, STS One course. C-L: see Classical Studies 366

365D. The Modern Regulatory State. CZ, EI, R, SS Interdisciplinary inquiry into the origins/evolution of modern regulatory institutions in Western Europe and North America, along with the more recent rise of global regulatory bodies. Examines conceptual frameworks from across the social sciences, and considers the ethical dimensions of current debates over regulatory purposes, strategies, and policies in areas such as finance and the environment. Instructor: Balleisen. One course. C-L: Public Policy Studies 219D, Environment 365D, Political Science 340D

366. American Constitutional Law. EI, SS One course. C-L: see Political Science 215

367. Modern American Constitutional Development II. SS One course. C-L: see Political Science 216

368. History of Evolution and Society. CCI, CZ, SS, STS, W This course explores the power of origins stories in explaining and empowering societies. It contrasts religious creation stories with the scientific narratives that emerged in the past two centuries. Often seen as opposing narratives, these two styles of origin stories share much in common, and certainly the passion that surrounds them and their teaching owes much to the roles that origins stories have long played in societies. The course will review the history of evolutionary thought, as well as twentieth century developments in genetics, eugenics, and scientific analyses of human diversity. Instructor: Humphreys. One course.

368D. History of Evolution and Society. CCI, CZ, SS, STS, W This course explores the power of origins stories in explaining and empowering societies. It contrasts religious creation stories with the scientific narratives that emerged in the past two centuries. Often seen as opposing narratives, these two styles of origin stories share much in common, and certainly the passion that surrounds them and their teaching owes much to the roles that origins stories have long played in societies. The course will review the history of evolutionary thought, as well as twentieth century developments in genetics, eugenics, and scientific analyses of human diversity. Instructor: Humphreys. One course.

369. History of Public Health in America. CZ, R, STS The role of epidemic diseases such as smallpox, cholera, yellow fever, tuberculosis, and polio in shaping public health policy in the United States from the colonial era to World War II. Instructor: Humphreys. One course.

370. Twentieth-Century American Medicine. CCI, CZ, SS, STS Health, disease, and medicine in the twentieth-century United States. Topics include public health, race, technology, gender, ethics, economics, and the relationship between doctor and patient. Not open to students who have taken this course as History 390 or 104. Instructor: Staff. One course.

371. Feast and Famine: Food in Global History. CCI, CZ, SS, STS Surveys history of food in global history, beginning with paleolithic and ending with modern era. Focuses on food quality and quantity as a factor in determining health, including problems of global health disparities, food insecurity, and obesity. Topics include the impact of food exchanges across continents and cultures, discovery of vitamins and vitamin deficiencies, growth and impact of food industries, and the rise of diseases of plenty, such as type 2 diabetes. Instructors: Humphreys. One course.

372. Abortion in American Culture. CCI, CZ, EI, R, SS The American experience with abortion--before and after Roe v. Wade--considering issues of religion, politics, law, medicine, gender, and ethics. Fertility and family planning, the experiences of women both as abortionists and undergoing abortions, unwed mothers, teenage pregnancy and young parenthood, and the rise of advocacy groups in favor of and opposed to abortion. Comparison practices of Britain, Europe, and Japan. Instructor: Staff. One course.

373. American Sexualities. CCI, CZ, EI, SS This interdisciplinary course analyzes the construction of sexualities in the Americas, presenting the ways that individuals and institutions have created sexualities in a transnational frame in Latin and North America from the late fifteenth century through the present. Interactions across genders and cultural, ethnic, racial, and national boundaries have driven the historical creation and re-creation of sexual ideologies, behaviors, and imaginations. American Sexualities analyzes a wide variety of ideas related to sex, focusing not just on marriage and mainstream sexualities, but also on the definitions of sexual acts that fall far outside the supposed norms of modern Western society. Instructor: Sigal. One course. C-L: Study of Sexualities 373

374. Women, Gender, and Sexuality in U.S. History. CCI, CZ, EI, SS, W Major questions relating to women and women's place in society over the course of U.S. history, broadly defined, from the colonial period to the present: How did different groups of women see themselves as women? How did views of women's sexuality change? How
did men's and women's relationships and roles change? How did women understand their connections to the larger society? How did race, ethnicity, and class shape all those issues? Course uses a variety of materials, including novels, movies, images, and music to explore the ethical contours of women's lives in the past, following change over time to better understand women's position today. Instructor: Edwards or Deutsch. One course. C-L: Women's Studies 239, Women's Studies

374D. Women, Gender, and Sexuality in U.S. History. CCI, CZ, EI, SS, W Major questions relating to women and women's place in society over the course of U.S. history, broadly defined, from the colonial period to the present: How did different groups of women see themselves as women? How did views of women's sexuality change? How did men's and women's relationships and roles change? How did women understand their connections to the larger society? How did race, ethnicity, and class shape all those issues? Course uses a variety of materials, including novels, movies, images, and music to explore the ethical contours of women's lives in the past, following change over time to better understand women's position today. Instructor: Edwards, Deutsch. One course. C-L: Women's Studies 239D

377. Global History of Sexuality. CCI, CZ, EI, SS Studies human sexual behavior, classification, and regulation around the world from roughly 2000 BCE to present. Investigates moral and ethical norms regarding sex and sexuality within a wide variety of cultural and historical contexts, including ancient Near East, Greek and Roman empires, Byzantine Empire, China/Japan, pre-Columbian America, early modern Europe, colonial America/Africa/India, Victorian England, and modern US, Europe, Latin America, Asia, and Africa. Emphasizes constructed nature of sexuality, diversity of sexual behaviors across time and space, and effects of colonialism and globalization on local understandings of sexuality. Instructor: Sigal. One course. C-L: Study of Sexualities 377

378. The 1960s: History and Public Policy. CZ, R, SS This course explores domestic and foreign policy in the turbulent 1960s. We study Vietnam, the War on Poverty, and the interactions between movements and policy on civil rights, women's rights, and the fate of the cities. Instructor: Lentz-Smith. One course. C-L: Public Policy Studies 205


381S. Veterans Oral History Project. CCI, SS One course. C-L: see Documentary Studies 317S

382. Baseball in Global Perspective. CCI, CZ, EI, R, SS Examination of baseball from 18th-c. origins in Britain's North American colonies to the contemporary "World Baseball Classic." Topics addressed include transformation from amateur participant sport to commercial spectator sports business based in North America; globalization of the sport; commercialization and professionalization in new environments; and trans-national baseball as a lens for examining evolving class, race, gender, regional, and international relationships. Among central themes is how baseball's international migration reshaped the game. Instructor: Staff. One course. C-L: Canadian Studies 382, International Comparative Studies 384, Canadian Studies

383. Warfare in the Twentieth Century. CCI, CZ, EI, STS Key conflicts of this century evaluated in terms of causes and consequences (political, social, and economic) and strategy and technology (war plans, weapons systems, and doctrine). Comparison across regions of the world while addressing moral, legal and ethical questions regarding international conflict. Instructor: Bönker or Krylova. One course.

387S. Francophone Literature. ALP, CCI, FL One course. C-L: see French 417S; also C-L: African and African American Studies 410S, Asian & Middle Eastern Studies 202S, Canadian Studies, Latin American Studies

390. Topics in History Lecture. CZ Individual courses in this series may be taught more than once or on a one-time basis only. Instructor: Staff. One course.

390A. Duke-Administered Study Abroad: Special Topics in History. Register for course by designated suffix indicating the specific country. Courses numbered 390A-01 thru 390A-14 are lecture courses taught in Duke-administered study-abroad programs, for example, in Germany, Italy, France, China. These courses provide the same credit and fulfill the same curriculum requirements as any 200-300 level lecture course in the history department. One course.

390A-06. Duke in Russia: Special Topics in History. Instructor: Staff. One course.
390AS. Study Abroad: Seminar on Historical Topics. Register for country by the section designated in the Official Schedule of Courses. Instructor: Staff. One course.
390AS-10. Duke in Istanbul: Special Topics in History. CCI Duke-Administered Study Abroad Program. The undergraduate program in history is designed to introduce students to major conceptual tools and research methods of historical study, while providing a historical depth of field for the understanding of the contemporary world. Instructor: Staff. One course.
390S. Topics in History Seminar. CZ Instructor: Staff. One course.
391. Independent Study. Fall semester directed-readings independent study. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.
393. Research Independent Study. R Fall semester research independent study. Usually undertaken by students concurrently with the Honors Seminar, or with an instructor with whom they have had a course. Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.
393A. Research Independent Study on Contemporary China. R Research and field studies culminating in a paper approved and supervised by the resident director of the Duke in China program. Includes field trips on cultural and societal changes in contemporary China. Offered only in the Duke in China Program. Instructor: Staff. One course.
403S. Politics and Obligations of Memory. CCI, CZ, EI, SS One course. C-L: see Cultural Anthropology 403S; also C-L: International Comparative Studies 403S
411S. Human Trafficking: Past and Present. CCI, CZ, EI, R, SS One course. C-L: see Public Policy Studies 411S
450S. Capstone Seminar: 20th-Century South Africa Through Biography and Autobiography. CCI, CZ, R, W Explores twentieth-century South African history through the lens of biography and autobiography. Protagonists range from little known South Africans like Kas Maine, a sharecropper documented only in a 1931 record of a fine paid for failing to produce a dog license, to world renowned figures like Nelson Mandela. Readings cover virtually
the entire twentieth century but have been carefully selected to provide a chronological presentation of South African history. Utilizes of a mix of scholarly and non-scholarly writings, as well as discussions exposing South Africa's countryside and cities, its underworld and its place on the world stage. Instructor: Shapiro. One course. C-L: African and African American Studies 406S

451S. Capstone Seminar: History of Zionism and the State of Israel. CCI, CZ, EI, R, SS Examines the development of Zionism as both an ideology and a political movement that contributed to the establishment of Israel in 1948. An examination of political, cultural and social history of the state as constantly changing patterns of interaction between domestic factors and the impact of regional as well as inter-nation dynamics. Particular attention given to the relationship between United States and Israel. Instructor: Staff. One course. C-L: Jewish Studies 459S

452S. Capstone Seminar: Modern Sex: Sexuality and Modernity in the Americas. CCI, CZ, R, SS Examines the advent of modernity and its relationship with sexuality. Appraisal of how that relationship changes over the course of the twentieth century up to the present. Focus on the Americas, in particular the United States, Mexico, and Brazil. Instructor: Sigal. One course. C-L: Study of Sexualities 413S


454S. Capstone Seminar: Globalization and Development: China and India. CCI, CZ, R, SS, STS "Globalization" a shorthand for describing the period of extraordinary change that we are living through, our lives & our world defined by the internet & rapid mass communication, great wealth & remarkable levels of consumption and yet, also unprecedented polarization between the have & have-not parts of society and of the world, the emergence of E-Waste and toxic environments as by-products of the present. Case studies of China, India and S. Korea explore the question of Asian development and the linkages with the Democratic Republic of Congo for minerals such as coltan for microprocessor chip manufacturing, to examine the circuits of globalization. Instructor: Mazumdar. One course. C-L: African and African American Studies 407S, International Comparative Studies 412S, Women's Studies 412S

455S. Capstone Seminar: Palestine and Arab-Israeli Conflict. CCI, CZ, EI, R Explores origins and development of Palestinian-Israeli conflict. Various approaches to the conflict are examined to better understand its historical evolution, as well as its implications, regionally and internationally. Major sections devoted to creation of a Palestine mandate under British control, Zionism and Palestinian Arab nationalism, establishment of Israel and evolution of conflict up to the present. United States role and its relationship to various participants will also be discussed. Instructor: Miller. One course. C-L: Asian & Middle Eastern Studies 427S

456S. Capstone Seminar: Intercolonial Relations in British America, 1600-1763. CCI, CZ, R Explores the development of patterns of relations among British colonies in North America and the Caribbean and how these shaped a wider interconnected but differentiated colonial world. Discussion is framed against background of the formal framework of relations between Britain and her colonies. Themes to be explored include migration, trade, travel, the slave trade, slavery, communications, war, legal borrowing, maritime environment, cultural exchange, natural disaster. Instructor: Gaspar. One course.

457S. Capstone Seminar: Maroon Societies in America. CCI, CZ, R Origins and development of fugitive slave communities throughout the Americas from the sixteenth to the nineteenth century. Major focus is on their role in the operation of slave society. Instructor: Gaspar. One course.

458S. Capstone Seminar: Grassroots Politics & Social Movements. EI, R, SS, W Examines grassroots political activism in different geographical and temporal contexts. Investigates what characterizes social movements, how they function, and how we evaluate their efficacy. Learn how to research and write about social movements by reading and discussing leading scholarship in this area. Write 25-page research papers on topic determined in consultation with instructor. Instructor: MacLean. One course. C-L: International Comparative Studies 458S

459S. Capstone Seminar: Sex, Celibacy, and Purity in the Middle Ages. CCI, CZ, EI, R Explores notions of medieval sex, gender and sexuality in discussion and writing. Particular focus on diversity and fluidity of ideas about the body, sexuality, chastity, homosexuality, and male and female gender characteristics. Examination of these ideas in context of spirituality and holiness, particularly in light of the church's teachings on Christ, Mary, and the saints'

460S. Capstone Seminar: The Black Death and Medieval Society. CCI, CZ, EI, R Source-based discussion seminar revolving around questions of social response to bubonic plague in the middle of the fourteenth century. Focus is England but students also read religious and literary texts from other parts of the medieval and late antique world. Exploration of how societies respond to catastrophe and what panic means in terms of communities and institutions. To what resources did people turn? What does this tell us about society in the Late Middle Ages? Comparison of medieval texts that assign causation and blame in conjunction with discourses of disease and catastrophe in the twentieth century. Instructor: Malegam. One course. C-L: Medieval and Renaissance Studies 429S

462S. Capstone Seminar: Heresy and Inquisition in the Middle Ages. CCI, CZ, R Source-based discussion seminar. Inquiry into the content and context of religious deviation and its repression in western Christianity between 300 and 1500 but focusing on the medieval period. Emphasizes the fine line between religious evolution and heresy. Examines questions of coercion, social and religious reform, pre-modern state control and early demonology. Students engage in close reading of selected primary sources. Instructor: Malegam. One course. C-L: Medieval and Renaissance Studies 430S

463S. Capstone Seminar: Medieval Communities. CCI, CZ, EI, R Explore meaning of community in medieval period by studying a variety of living groups that emerged in Europe c. 800-1400. Examine roles of work and religion in creating communities, i.e. manorial, monastic, merchant, Islamic, Jewish, urban, and university communities, using primary and secondary sources. Instructor: Morrow. One course. C-L: Medieval and Renaissance Studies 432S

464S. Capstone Seminar: Geopolitics of War and Empire in the Modern World. CZ, R, SS This course examines the pursuit of military force, war, and empire and the making of global politics in the past two centuries. Our explorations range from the wars of nation, industry, and empire in the mid-nineteenth century to the world wars of the twentieth century and their legacy. We will pay special attention to the strategies of global ordering that were pursued by the political, military, and corporate elites of the major powers in an age of empire and globalization. Instructor: Bönker. One course.

465S. Capstone Seminar: History of the U.S./Mexico Border, 18th to 20th centuries. CCI, CZ, R, SS, W Explores the creation and perpetual remaking of the border between the U.S. and Mexico from the 1780s to the current day. Topics explored include nation formation, citizenship and migration, public policy, border incursions, and national identity. Students will examine works of history and autobiography as well as government hearings and other primary sources. Instructor: Deutsch. One course. C-L: Latino/a Studies in the Global South 465S, Latino/a Studies in the Global South

466S. Capstone Seminar: The Militarization of the Western World. CCI, CZ, R, SS The course explores the process of militarization as it engulfed Europe and the United States in the “long” twentieth century. We will situate this process within the changing geopolitics of war and empire in a new global age. We will also pay close attention to the ways in which militarization affected the relationship between state, military, and society across the western world and (re)arranged relations of class, race, and gender, and of production, destruction, and reproduction. Instructor: Bönker. One course. C-L: International Comparative Studies 466S

467S. Capstone Seminar: Russia-USSR-Russia: History of Communism. CCI, CZ, EI, R, SS The seminar offers an in-depth engagement with Russian modern history. Starting in the late 19th century, the seminar examines the formation of Russian Communist movement and communist regime as national and transnational phenomena of the 20th Century. A comparative perceptive allows students to analyze Russian appropriations of Marxist theory, the Russian Revolution, the making of the Stalinist state, de-Stalinization of the post-World War II period in the context of European and US labor movements and socialist experimentations, on the one hand, and anti-Communist sentiments and Cold War politics, on the other, while engaging with ethical issues raised by conflicting perspectives.
on the value and meaning of freedom and happiness and the means of achieving it. Instructor: Krylova. One course.

C-L: Political Science 445S, Slavic and Eurasian Studies 420S

468S. Capstone Seminar: Literature & Terrorism. ALP, CCI, CZ, EI, R Explores the manner in which terrorism has been depicted in literature. Emphasis on novels written primarily by Russian writers in the 19th and early 20th centuries when that country experienced waves of political violence unmatched elsewhere in the Western world and writers sought to grapple with the meaning of the violence in vivid and imaginative ways. Readings include: "The Secret Agent" by Joseph Conrad, "The Devils" by Fedor Dostoevsky, "Mother" by Maxim Gorky, and "Petersburg" by Andrei Belyi. Instructor: Miller. One course. C-L: Slavic and Eurasian Studies 468S

469S. Capstone Seminar: American Dreams/American Realities. CCI, CZ, R Examines the role of such myths as "rags to riches," "beacon to the world," "the frontier" and "foreign devil" throughout history in defining the American character. Instructor consent required. Instructor: Wilson. One course.

470S. Capstone Seminar: Leadership in American History. CZ, EI, R Focuses on political, social, business and artistic leaders in American history and problems that have called for leadership. Instructor consent required. Instructor: Wilson. One course.

471S. Capstone Seminar: Latin American Left Turns: A New Politics for the 21st Century?. CCI, CZ, R, SS, W Examination of issues surrounding the upsurge of leftist governments elected by the popular vote in the wake of the perceived failures of neoliberalism and the Washington consensus of 1989. Looks at ways Washington has had to come to terms with an unexpected revival on the left that threatens U.S. hegemony while offering an alternative path to achieve national development, distribution of wealth, and recognition of diversity and pluralism. Students will examine these issues from multiple viewpoints and develop projects based on choosing specific research foci within the general enterprise of what these government share in common and how they differ. Instructor: French. One course. C-L: Latin American Studies 471S, Political Science 497S

472S. Capstone Seminar: Russia in World War II. CCI, CZ, R, STS Re-examines the history of World War II on the Eastern front by drawing on newly available documents from Russian archives, popular literature and film from the period, and memoir literature. Offers a comprehensive examination of what a “total war” entailed for the Soviet military and people from the disasters and victories of the Second World War to the beginnings of the Cold War. Instructor: Krylova. One course.

473S. Capstone Seminar: The United States and Europe in the Twentieth Century. CZ, R Exploration of relationship between the United States and Europe in the “long” twentieth century. Using lenses of international, transnational, and global history, explorations range from spheres of diplomacy, war, and politics, to worlds of business, culture, and social movements. Special attention given to ways in which Europeans and Americans have perceived and contested pursuits of war and power across the Atlantic, as well as the flow of ideas, images, goods, and people. Instructor: Bünker. One course. C-L: International Comparative Studies 473S

474S. Capstone Seminar - Madness and Society in Historical Perspective. CCI, R, SS Mental illness and psychiatric treatment from antiquity to the present with special concentration on the nineteenth and twentieth centuries in Europe, America, and Russia. Not open to students who have taken History 265. Instructor: Miller. One course.

475S. Capstone Seminar: Religion, Race, and Citizenship in Modern Europe. CCI, CZ, R, SS, W Examines the religious and racial diversity of modern Europe, focusing on 1945-present. Explores the cultural vitality of immigrant communities, alongside the systemic discrimination and violence they face at the hands of the state and from right-wing movements. Topics include French-Muslim hip hop, Italy's African novelists, Germany's Turkish cuisine, and Dutch racism. Provides students an introduction to the new Europe, focusing not on the hushed halls of the art museums but on the street vendors parked outside. Instructor: Chappel. One course. C-L: Religion 410S

477S. Capstone Seminar: Regulating American Business: Historical Perspectives. CZ, EI, R, SS, W Explores shifting approaches to economic regulation in American history from the Revolution to the present, with a focus on 20th century. Examines reliance on pre-modern administrative mechanisms to shape American business environment, regulation through civil or criminal law, rise of the modern administrative state in late nineteenth and early twentieth centuries, extension and maturation of regulatory frameworks in 1960s and 1970s, and dominant impulses of deregulation during the last three decades. Instructor: Balleisen. One course. C-L: Public Policy Studies 412S
478S. Capstone Seminar: Race and Power in World History. CCI, CZ, EI, R, SS Explores how ideas and practices defined by “racial difference” have driven world history. Much of what we know, or think we know, about race is derived from our particular history and experience in the United States. But American ideas about race, and American history of racial hierarchy, represent one of many configurations of race around the world. By thinking about race comparatively, and by focusing on how race has worked in a variety of historical and geographical contexts, we will be able to assess the importance of race in creating the world we live in. Instructor: Hall. One course.

481S. Capstone Seminar: The Age of Jim Crow: Racial Segregation from Plessy (1896) to Brown (1954). CCI, CZ, EI, R The emergence, nature, and consequences of racial segregation (also known as Jim Crow) in the South and nation; how Jim Crow compares to the system of apartheid in South Africa; perspectives on black life and race relations in southern communities; and major challenges to Jim Crow by African American religious, social, and civil rights organizations and their allies. Instructor: Gavins. One course. C-L: African and African American Studies 409S

482S. Capstone Seminar: Post-Civil Rights America: The Search for Social Justice, 1968-Present. CZ, EI, R Central outcomes of the Civil Rights Movement, 1968 to the present; critical reading and discussion, research and writing on racial and social equality and inequality in major areas of American life, notably electoral politics; education; religion and ethics; and public culture. Instructor: Gavins. One course. C-L: African and African American Studies 408S


489S. Capstone Seminar: Narrative, History, and Historical Fiction. CZ, R, SS, W Examines alternative approaches to the reading and writing of history, particularly the use of narrative. Explores the power of narrative on the human imagination. Explores issues of writing “responsible” narrative history/historical fiction. Class reads and discusses selected works of historical fiction and narrative non-fiction. Combines theoretical overview with workshop format. The major project is to write a substantial piece of narrative history or historical fiction. Instructor: Partner. One course.

490S. Capstone Seminars in Special Topics. CZ, R Practice of historical research interpretation and writing with focus on a specific historical question. Topics are numerous and vary each semester. Most seminars are offered for one semester and carry one course credit. If students wish to enroll in only one semester of a year-long seminar, they must obtain permission from the instructor. Both history majors and nonmajors may enroll in the seminars during their junior or senior years. Students are urged to enroll in their junior year if they expect to apply for the Senior Honors Seminar (History 495S-496S) or to practice-teach in their senior year. Instructor: Staff. One course.

495S. Senior Thesis Seminar. CZ, R, W Designed to introduce qualified students to advanced methods of historical research and writing, and to the appraisal of critical historical issues. Open only to seniors, but not restricted to candidates for graduation with distinction. This course, when taken by a history major, is accompanied by either a year-long 490S-196S seminar, two courses at the 200 level, or 393-394 independent study, supervised by an instructor. One course.

496S. Senior Thesis Seminar. CZ, R, W Continuation of History 495S. Instructor: Staff. One course.

501S. History of Sexuality. CCI, CZ, SS Explore history of sexuality around the globe, covering diverse time periods and regions. Examine methods and theories used in the study of sexuality, with attention to topics such as fertility, kinship, marriage, heterosexuality, homosexuality, birth control, sexology, and community formation. Instructor: Sigal. One course. C-L: Women's Studies 501S

502S. Japan Since 1945. CCI, CZ, R Issues relating to post-War Japan. Topics include: the Occupation; democracy in postwar Japan; the rise of mass consumption; security and the US-Japan alliance; the political system; popular culture; arts and literature; the transformation of the countryside; the creation of an economic superpower; the myth of the kaisha; moments of conflict and crisis. Instructor: Partner. One course.


505S. Race, Class, and Gender: A Social History of Modern (1750-present) Britain. CCI, CZ, EI, SS  body of scholarship examined addresses the nature and transformation of social relations in Great Britain in the wake of the major watersheds of the modern period, including the world's first industrial revolution, imperial expansion, political economy and democratization, world wars, the rise and fall of the welfare state, decolonization, Commonwealth immigration, and admission into the European Union. Examines impact of theoretical influences on the academy ranging from Marxism through the Cold War, feminism and anti-racism, and post structuralism to post colonialism. Instructor: Thorne. One course. C-L: African and African American Studies 515S, Women's Studies 509S

506S. Religion, Conflict and Holy War in the Pre-Modern West: Sects and Violence. CCI, CZ, EI, SS, W  Violence as a cultural phenomenon in the pre-modern world. How did enactment of violence, objectification by violence and immunity from violence produce social, political and religious identities? Topics: the dialectic of violence and peacemaking in the Christian tradition; aesthetics, performance and emotions in violent confrontations; the role of violence in state and community formation; religious groups as mediators and fomenters of conflict; violence in millenarian movements. Readings combine primary sources, secondary sources and theory. Students of anthropology, law and political studies will find topics of interest. Instructor: Malegam. One course. C-L: Medieval and Renaissance Studies 556S

507S. Asian Studies: Critical Introduction to Knowledge Fields and Methodologies. CCI, CZ, SS  Examination of fundamental methodologies and historiography central to knowledge production about Asia in the Social Sciences, Humanities and Environmental Studies. An overview of nineteenth and twentieth century European discourses of Orientalism and Eurocentrism; the evolution of "Area Studies" models of inquiry and the bifurcations of Asian Studies; the impact of Cold War politics on the development of the field of Asian Studies in the United States; globalization, the environment and East Asia. Instructor: Mazumdar. One course.

509S. United States Policy in the Middle East. CCI, SS  One course. C-L: see Public Policy Studies 503S; also C-L: International Comparative Studies

516. The Roman Republic. CCI, CZ, R One course. C-L: see Classical Studies 532

519S. The Society and Economy of Europe, 1400 - 1700. CCI, CZ, R  The dynamism of the early modern world with a focus on Europe's recovery and expansion during the "long sixteenth century;" special attention to the relationship of population structures to the economy, agrarian expansion and the world of the village; capitalist trade and industry; the "crisis of the seventeenth century;" family and household structures; the aristocracy; and the structure of life at court, in the cities and countryside. Instructor: Robisheaux. One course. C-L: Medieval and Renaissance Studies 570S

520S. Microhistory. CCI, CZ, R, SS, W  Examines methods of micro-historical analysis, focusing on distinctive practices that define this popular form of history writing, including how to reduce the scale of analysis; interpreting clues as a "scientific paradigm"; treating culture as action; using historical contexts and theories; identifying historical actors; and crafting historical narratives. For advanced undergraduates, graduate students from any field interested in micro-analysis, historical theory and method and story-telling. Requirements include short essays and major research paper based on primary sources from any field or period of history. Instructor: Robisheaux. One course. C-L: Medieval and Renaissance Studies 576S

523S. Religion and Society in the Age of the Reformation. CZ, R  The social history of religion in the age of the Protestant Reformation and Catholic Renewal; ritual and community in the fifteenth century; the Protestant Reformation and social change; the urban reformation in Germany and Switzerland; women and reform; Protestant and Catholic marriage, household and kinship; Catholic renewal; the formation of religious confessional identities; religion and violence; interpreting "popular" religious culture; and witchcraft. Instructor: Robisheaux. One course. C-L: Medieval and Renaissance Studies 575S

528S. Greek History: Fifth Through First Centuries BC. CZ  Three courses. C-L: see Classical Studies 528S
530S. Camera Asia. ALP, CCI, CZ, EI, R One course. C-L: see Visual and Media Studies 535S; also C-L: International Comparative Studies 531S

532S. Fin-de-siècle and Interwar Vienna: Politics, Society, and Culture. CCI, CZ, R, SS Advanced undergraduate and graduate colloquium and research seminar focusing on the cultural milieu of fin-de-siècle and interwar Vienna. Readings in the Austro-Marxists, the Austrian School of Economics, Freud, Kraus, the Logical Positivists, Musil, Popper, and Wittgenstein. Monographs on the Habsburg Empire, Fin-de-siècle culture and technology, Viennese feminism, Austrian socialism, philosophy of science, literature and ethics, and the culture of the Central European émigrés. Instructor: Hacohen. One course. C-L: German 532S

533S. Greek History from the Bronze Age to the fifth century BCE. CZ One course. C-L: see Classical Studies 524S

534S. Roman History from Romulus to Augustus. CCI, CZ One course. C-L: see Classical Studies 532S


536S. The Russian Revolution. CZ, R An analysis of the Bolshevik seizure of power in 1917 and the establishment of a revolutionary society and state during the 1920s. Instructor: Miller. One course. C-L: International Comparative Studies

537S. Post War Europe, 1945-1968: Politics, Society, and Culture. CCI, CZ, EI, SS, STS Politics, society and culture in Western Europe during the postwar years focusing on Cold War culture, liberalism and intellectual life. "East" and "West" during the Cold War: A comparative examination of Western European societies' and movements' responses to communism, highlighting debates on the morality of socialism and capitalism and on liberty, historical determinism, and individual responsibility. Examination of the anxieties and hopes evoked by postwar technological and economic progress - by "Americanization" and the "Economic Miracle." Instructor: Hacohen. One course. C-L: Political Science 515S, International Comparative Studies 537S

538. The Roman Empire. CCI, CZ, R One course. C-L: see Classical Studies 536

539S. Roman History from Augustus through Late Antiquity. CCI, CZ One course. C-L: see Classical Studies 536S

540S. Ethnohistory of Latin America. CCI, CZ, R, SS One course. C-L: see Cultural Anthropology 570S; also C-L: Literature 573S

541S. Intellectual History and Political Theory. CCI, CZ, EI, SS Overview of current and historical approaches to intellectual history and the history of political thought, elucidating their theoretical foundations. Discussion of the major problems involved in the study of texts, ideas and culture and the vocabulary used by historians and political theorists. Readings in the classics of the field from Huizinga, Lovejoy, Febvre and Strauss to Skinner, Pocock and Bourdieu. Focus on joint projects of historians and political theorists. Instructor: Hacohen. One course. C-L: Political Science 573S

543S. Maritime Predation and European Imperial Expansion in the Atlantic Basin, 1492-1730. CCI, CZ, R, SS Exploration of the origins, development, and decline of privateering and piracy as systems of maritime predation in the Atlantic basin during the period 1492-1730, building on related processes in the Mediterranean. Includes extensive study of Atlantic maritime history broadly defined. Instructor: Gaspar. One course. C-L: International Comparative Studies 543S

546. History of Poverty in the United States. CCI, CZ, SS One course. C-L: see Study of Ethics 561; also C-L: Public Policy Studies 528

561S. Africa in a Global Age. CCI, EI, SS One course. C-L: see Cultural Anthropology 561S; also C-L: African and African American Studies 510S, Political Science 527S, International Comparative Studies 510S

562S. Courts, Wars, Legacies of Wars. R, SS One course. C-L: see Political Science 661S

567S. American Grand Strategy. CZ, R, SS, W One course. C-L: see Political Science 562S; also C-L: Public Policy Studies 501S
572S. Anthropology and History. SS One course. C-L: see Cultural Anthropology 501S; also C-L: Romance Studies 521S

577S. Historical and Philosophical Perspectives on Science. CZ, STS One course. C-L: see Philosophy 541S; also C-L: Literature 521S, Women's Studies 541S

582S. Narrative, History, and Historical Fiction. ALP, CZ, R, W Examines alternative approaches to the reading and writing of history, particularly the use of narrative. Explores the power of narrative on the human imagination. Explores issues of writing "responsible" narrative history/historical fiction. Class reads and discusses selected works of historical fiction and narrative non-fiction. Combines theoretical overview with workshop format. The major project is to write a substantial piece of narrative history or historical fiction. Instructor: Partner. One course.

587. Modern Literature and History. ALP, CCI, CZ, FL One course. C-L: see French 556

590S. Topics in History Seminar. CZ Seminars in advanced topics, designed for seniors and graduate students. Some semesters open to seniors and graduate students; some semesters limited to graduate students only. Instructor: Staff. One course.

601S. Introduction to Jewish Studies. One course. C-L: see Jewish Studies 601S; also C-L: Religion 613S

The Major

The history major has three objectives. First, it offers students broad exposure to the histories of our own and other societies, to the recent and the more distant past, and to the variety of approaches to the study of history. Second, it allows the in-depth study of the history of a particular time and place or a particular type of history. Breadth of knowledge is achieved through the distribution requirements for coursework across five geographic areas and in premodern as well as modern history. Depth is achieved through the requirement that students identify a concentration. Third, it develops the skills of historical thinking necessary for better understanding our own and other human societies, to gather and interpret evidence, and to fashion and compellingly convey arguments grounded in this evidence. These skills are first developed in the gateway and fully developed in a senior capstone seminar.

Major Requirements: Ten history courses, at least eight of which must be at or above the 200 level. One Advanced Placement credit may count toward meeting the ten-course history requirement but does not count toward meeting the area or concentration requirements below. The ten courses may include courses cross-listed as history courses regardless of the department through which the student enrolls. The ten courses are to be distributed as follows:

- **Gateway Seminar:** One gateway seminar usually by the end of the sophomore year.
- **Areas of History:** One course each in any three of the five geographic areas listed below; two courses in the pre-modern era (see pre-1800 course list on department website).
- **Concentration:** At least four courses in the student's area of concentration. A concentration may be chosen from a geographic or thematic area. Students may propose other thematic areas, and seek approval from the director of undergraduate studies and the student’s history advisor. One course below the 100 level may be counted toward the student’s concentration; concentration courses may count toward meeting the area and premodern distribution requirements.
- **Capstone Seminar:** Each major must take at least one capstone research seminar (400 level history seminar). This seminar is usually taken in the senior year, but may also be open to juniors. The senior thesis seminar (History 495S and 4965S) substitutes for the capstone seminar for those students enrolled. Independent study courses (History 393 or 394) may not substitute for either the gateway or the capstone seminar requirement.

**Geographic Areas** are as follows (see department website for individual courses in each area):

- Africa, Middle East, Asia
- Europe and Russia
- Global or Comparative
- Latin America and Caribbean
- United States and Canada

**Thematic Areas** are as follows (see department website for individual courses in each area):

- African Diaspora
- Economic and Business Cultures
- Emotions and Psychology of the Self
• Human Rights and Social Movements
• Law and Governance
• Medicine, Science, and Technology
• War, Military, and Society
• Women, Gender, and Sexuality

Pre-Modern courses focus substantially on eras before 1800. Pre-1800 courses are listed on the department website.

Double counting: Courses can fulfill two or more requirements. For example, History 257 would count as both a premodern class and as a European geographic area. For a student with a concentration on Europe, it would also count toward the concentration requirement.

Advanced Placement: One (1) Advanced Placement course (with a score of four or five) in any field of history may count as one of the ten required courses for the history major. This AP credit does not count toward meeting the area or concentration requirements for the major.

Transfer Credit: Up to two courses taken at other universities or in an approved study abroad program that receive transfer credit may count toward the history major.

Foreign Languages: Majors interested in a particular area of study benefit from knowledge of the language of that area. Majors who contemplate graduate work are reminded that most graduate programs require a reading knowledge of one or more foreign languages.

Majors Planning to Teach: Majors who plan to teach in secondary schools should consult an advisor in education. Rising juniors who intend to practice-teach in the senior year should consider taking the senior capstone seminar as juniors.

Departmental Graduation with Distinction: Any student who is qualified (see the section on honors in this bulletin) may apply to the director of undergraduate studies for permission to undertake work leading to a degree with distinction in history.

The Minor

The history minor offers students specializing in another department or program the opportunity to enrich their studies with a historical perspective.

Requirements: A minimum of five history courses, at least three of which must be at the 200 level or above. Cross-listed courses are acceptable regardless of the department through which the student enrolls. Courses taken Satisfactory/Unsatisfactory and advanced placement credits do not count toward the minor; one transfer course may count toward the requirements for the minor.

House Courses

House courses, offered in the fall and spring terms, are intended to provide academic experiences that are not offered by regular departmental courses. A house course must be hosted by a residential unit, sponsored by a Trinity College faculty member and a department in Trinity College of Arts & Sciences, and approved by the Committee on Courses of the Arts and Sciences Council. House courses carry a half-course credit. In the Pratt School of Engineering, house courses cannot be used to meet degree requirements. In Trinity College, not more than two semester-course credits earned in house courses can be counted toward the course requirement for graduation. House courses do not count toward other requirements. Grades are submitted only on the Satisfactory/Unsatisfactory basis. Further details are available in 011 Allen Building.

House Courses (HOUSECS)

59. House Course. Special topics course. Information about specific offerings each term available prior to the start of classes at the following website: http://housecrs.trinity.duke.edu/courses. Satisfactory/Unsatisfactory grading only. Instructor: Staff. Half course.

Human Development

Associate Professor Gold, Director

A certificate, but not a major, is available in this program.

The goal of the human development interdisciplinary program is to broaden the perspectives of students interested in human development and human behavior and to enhance students’ understanding of the
biopsychosocial perspective of development across the life course. The program also highlights ways in which relevant disciplines conceptualize and study continuity and changes across the human life course, demonstrates how disciplinary perspectives complement and extend each other, and facilitates dialogue among faculty and students with common interests in human behavior.

The program’s goals are fostered by an integrated curriculum of required and elective courses that include a research apprenticeship and a capstone senior seminar. All students enrolled in the certificate program receive personal advising from the program director as they plan their course and research opportunities. Students who complete all six required courses receive a certificate; however, participation in human development courses (224 and 260) is available to all undergraduates.

The curriculum for the human development certificate includes four required courses and two electives. The required courses, described below, are Human Development 224 (Human Development); and either Human Development 260 (Psychosocial Aspects of Development) or Psychology 474S (Biological Psychology of Human Development); Human Development 401 (Research Apprenticeship in Human Development); and Human Development 450S (Capstone Seminar in Human Development). NOTE: The Research Apprenticeship experience can also be met by completing a research independent study in an academic department; this requires approval by the director of the program.

Two elective courses are chosen from a list of biological, psychological, and social science courses affiliated with the program published in the program brochure and on the program website at http://centerforaging.duke.edu/education-a-training/54. The Research Apprenticeship arranged through the program and the senior seminar are available only to students seeking the program certificate. Other components of the program are available to all undergraduates.

Courses in Human Development (HUMANDEV)

224. Human Development (D). CCI, EI, R, SS The multidisciplinary nature of developmental research; the psychological, social, cultural, and biological paradigms as they relate to human development; normative and non-normative behaviors and changing cultural values across the life course; comparison of how different age groups (e.g., children, young adults) modify values to work within their specific cultural and social needs. Designed for sophomores enrolled in or considering the Certificate Program in Human Development. Consent required for juniors and seniors. Instructor: Gustafson, Dmitrieva, or staff. One course. C-L: Psychology 235, Sociology 224

260. Psychosocial Aspects of Human Development (D). CCI, EI, SS Biological, cultural, behavioral, and social arenas of human development throughout the human life span, with emphasis on the comparison of socially constructed age groups. Examination of age groups in terms of their unique ethical values and challenges, as well as the social dilemmas caused by the extension of life expectancy. Psychosocial development between (1) men and women, (2) African-Americans, Hispanics, Asians, and Caucasians, and (3) different socioeconomic strata. Service learning project with daily journals required. Instructor: Gold. One course. C-L: Psychology 236, Sociology 260, Study of Ethics

391. Independent Study in Human Development. Independent Study of selected theoretical, methodological, and applied topics with emphasis on social change, psychological development, and policy issues in aging societies. Instructor: Staff. One course.

401. Research Apprenticeship in Human Development. R Supervised research in a laboratory, on a specified research project, or in an organizational setting. Consent of the Director of the Undergraduate Program in Human Development required. Consent of instructor required. Instructor: Gold. One course.

450S. Capstone Seminar in Human Development. CCI, EI, R, SS Synthesis of developmental theories with real-life experiences over the life course. Current ethical and moral issues, such as biomedical ethics and values across the life course (including treatment of very low birth weight babies to Do Not Resuscitate orders), and comparisons among different age groups. Normative and non-normative behavior across the life course. Individual and group research projects required. Consent of instructor required. Students required to take this course as second-semester seniors in order to receive the Human Development Certificate. Instructor: Gustafson or staff. One course.

493. Research Independent Study. R Individual research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in a substantial academic product. Instructor: Staff. One course.
Immunology

For courses in immunology, see Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates on page 659.

Information Science and Information Studies

Assistant Research Professor Szabo (Art, Art History, and Visual Studies), Program Director; Associate Professor of the Practice Lucic (Computer Science), Undergraduate Curriculum Director; Professor Lenoir, Kimberly J. Jenkins Chair for New Technologies in Society, Graduate Curriculum Director; ISIS Research Scholar Gessler

A certificate, but not a major, is available in this program.

The information science and information studies (ISIS) certificate program offers students an interdisciplinary approach to study the nature of information and its impact on art, culture, science, business, society, and the environment. ISIS helps students fill the gap between current academic training and the increasing demand in all professions for a broad understanding of the legal, social, philosophical, computational, cultural, and aesthetic issues concerning information technology and other related innovations. The program’s integrated curriculum combines topics and practices including information management; photonics and visualization; multimedia design; virtual reality, virtual worlds and games, issues of security, privacy, and property; and the history of science and technology. More information is available online at http://isis.duke.edu/.

Certificate Requirements

The certificate requirements include a team-taught introductory course, a communications course, three electives, and a research-oriented capstone course.

The ISIS certificate requires six courses:

- Information Science and Information Studies 201 (Perspectives on Information Science and Information Studies) or Computer Science 92 or 202 (Internet and Society)
- For noncomputer science and nonengineering majors, Information Science and Information Studies 240 (Fundamentals of Web-based Multimedia Communications). For engineering and computer science majors, Engineering 206L or Computer Science 290
- Three electives selected from a list of ISIS-approved courses
- Information Science and Information Studies 495S (Research Capstone)

No more than three courses may originate in a single department and no more than two courses that are counted toward the ISIS certificate may also satisfy the requirements of any major, minor, or other certificate program.

Program enrollment

Only students who have officially declared their major may enroll in the program, although all students may take ISIS courses on a first-come/first-served basis, with ISIS certificate students having preference.

Courses in Information Science and Information Studies (ISIS)

101L. Technical and Social Analysis of Information and the Internet. EI, QS, STS One course. C-L: see Computer Science 92L; also C-L: Policy Journalism and Media Studies

110. Information, Society & Culture: Bass Connections Gateway. CZ, STS Information, Society, and Culture across disciplines. How all aspects of information theory and practice, including computational and mathematical and those from social sciences and the humanities are transforming research, reframing intellectual questions in research and its application, and having an impact on interactions within societies, cultures, ideologies, economics, politics. Modules presented by faculty from all areas and schools, contrasting and comparative perspectives in research-driven modules focused on interdisciplinary project questions and ideas. Lecture/section activities. Course
Gateway for the Bass Connections theme in Information, Society and Culture. Instructor: Staff. One course. C-L: Philosophy 110, Computer Science 110, Public Policy Studies 110

111. Introduction to the Arts of the Moving Image. ALP One course. C-L: see Arts of the Moving Image 101; also C-L: Visual and Media Studies 102, Visual Arts 102, Literature 111


190. Special Topics in Information Science and Information Studies. Topics vary by semester. Instructor: Staff. One course.

190S. Special Topics in ISIS: Introductory Seminar. Topics vary per semester. Instructor: Staff. One course.

198. Experimental Interface Design. ALP, STS One course. C-L: see Visual Arts 198; also C-L: Arts of the Moving Image 198

208LS. Virtual Form and Space. One course. C-L: see Visual Arts 208LS; also C-L: Arts of the Moving Image 321LS

210. Authoring Digital Media: Theory into Practice. ALP, STS Collaborative, project-based course. Authoring digital media projects as part of a theoretical, critical, and historical understanding of a special topic or theme. New modes of knowledge production in the digital era. Hands-on use of digital media hardware and software in combination with theoretical and critical readings to create digital archives, environments, and simulations. Independent research into subject areas to be explored with digital media tools. Instructor: Szabo. One course.

211. Animated Film: A History and Aesthetic. ALP, STS One course. C-L: see Arts of the Moving Image 215; also C-L: Visual Arts 328

214S. Media Theory. STS One course. C-L: see Literature 317; also C-L: Arts of the Moving Image 204S, Visual and Media Studies 328S

215. Representing Haiti. CCI, CZ, R, STS One course. C-L: see Romance Studies 345; also C-L: Visual and Media Studies 251

224AS. Writing the Hollywood Cyber Journal. ALP Half course. C-L: see Arts of the Moving Image 297SA

225S. This Is Your Brain on the Internet. ALP, EI, STS Trans-disciplinary exploration of deep structure of cognition and community in a digital age. Readings include theoretical/expressive books and articles ranging from neuroscience to films and literature, from a range of non-traditional sources (websites, interactive games and virtual environments, new media art exhibits etc.). Ongoing collaborative assignments requiring multimedia presentation to class and to a general public online. Instructor: Davidson. One course. C-L: Visual and Media Studies 303S

230. Meteoritics and Solar System History. NS Cultural and intellectual history of meteorites, the science of meteoritics and our knowledge of the Solar System. Examination of actual specimens, classification and sourcing using microscope and microprobe analyses. Weathering effects and dating techniques. Interaction with the latest computer simulations and visualizations of planetary, asteroid and meteoroid orbits and collisions, formation of
gravitational ring structures and complex travel trajectories. Dynamics of fiery flight through Earth’s atmosphere and distribution of fragments on the ground. Methods of finding falls using seismography, Doppler radar and all-sky cameras. Methods of identifying meteorites in the field. Instructor: Gessler. One course. C-L: Earth and Ocean Sciences 230

235. Espionage, Cryptology & Psychological Operations. SS, STS Explores cultural context of spies, codes and psychological operations from perspectives of anthropology, complexity and multiple agency, towards understanding how tradecrafts of intelligence and disinformation shaped, and continue to shape us and our information technologies. Work with historic and contemporary, previously classified and open sources, case studies and multimedia, including hands-on practice with propaganda leaflets, cryptographic machines and cryptanalysis, to explain the roles of networks of trust, secrecy and deception in cultural coevolution. No prerequisites. One course. C-L: Cultural Anthropology 226, Visual and Media Studies 245, International Comparative Studies 235

240. Fundamentals of Web-Based Multimedia Communications. ALP, QS, R Multimedia information systems, including presentation media, hypermedia, graphics, animation, sound, video, and integrated authoring techniques; underlying technologies that make them possible. Practice in the design innovation, programming, and assessment of web-based digital multimedia information systems. Intended for students in non-technical disciplines. Engineering or Computer Science students should take Engineering 206 or Computer Science 408. Instructor: Lucic or Szabo. One course. C-L: Cultural Anthropology 226, Visual and Media Studies 245, Policy Journalism and Media


240L. Fundamentals of Web-Based Multimedia Communications. ALP, QS, R Laboratory version of Information Science and Information Studies 240. Multimedia information systems, including presentation media, hypermedia, graphics, animation, sound, video, and integrated authoring techniques; underlying technologies that make them possible. Practice in the design innovation, programming, and assessment of web-based digital multimedia information systems. Intended for students in non-technical disciplines. Engineering or Computer Science students should take Engineering 206 or Computer Science 408. Instructor: Lucic or Szabo. One course. C-L: Visual and Media Studies 288L, Arts of the Moving Image 325L

241L. Web Project Design and Development. QS Follow-on to ISIS 140. Students should be experienced with basic HTML and CSS. Information and graphic design; use-case development; readings and group critiques. Continued work with HTML, CSS, HTML5, Javascript. Introduction to PHP, MySQL and/or other server-based authoring techniques. Creation and templating of blogs, wikis, and content management systems. Web 2.0 and 3.0 technology implementation. Embedded media and objects. Intellectual property and fair use. User testing. Short exercises, group work, individual semester project, and public site launch. Instructor: staff. One course.

243S. Sound for Film and Video. ALP, STS One course. C-L: Arts of the Moving Image 350S, Documentary Studies 277S, Music 121S

248S. Editing for Film and Video. ALP One course. C-L: see Arts of the Moving Image 357S; also C-L: Documentary Studies 288S

251. Spanish Literature of the Renaissance and the Baroque. ALP, CC1, FL One course. C-L: see Spanish 410; also C-L: Medieval and Renaissance Studies 458

268. Media History: Old and New. ALP, SS, STS One course. C-L: see Visual and Media Studies 266

270FS. Constructing Immersive Virtual Worlds. QS Theory, practice, creation of 3D virtual worlds. Hands-on design and development of online immersive synthetic social spaces with Croquet. Introduction to Smalltalk/Squeak programming and graphics workflow for creating virtual worlds and media assets. Critical exploration of state-of-the-art virtual world technologies; 3D graphics, text chat, voice, video, simulations, mixed reality systems. Topics include: history and culture of virtual worlds, in-world identity and avatars; behavioral norms; self-organizing cultures; virtual world economies; architectural scalability. Some programming experience helpful. Open only to students in Focus program. Instructor: Lombardi, McCahill. One course.
270S. Constructing Immersive Virtual Worlds. QS Theory, practice, and creation of 3D virtual worlds. Hands-on design and development of online collaborative simulations with Cobalt and Virtual Worlds Framework. Introduction to JavaScript and Smalltalk programming, graphics workflow for creating virtual world media assets. Critical exploration of state-of-the-art virtual world technologies; 3D graphics, chat, voice, video, and mixed reality systems. Topics include: history/culture of virtual worlds, identity and avatars; behavioral norms; self-organizing cultures; user-generated content, virtual world economies; architectural scalability. No prerequisites - some programming experience helpful. Consent of instructor required. Instructor: Szabo. One course. C-L: Computer Science 102S, Visual and Media Studies 287S

273S. Gaming the System: Pervasive Gaming as Art. ALP, STS One course. C-L: see Visual and Media Studies 239S

275. Global Performance Art: History/Theory from 1950's to Present. ALP, CCI, CZ, EI One course. C-L: see Visual and Media Studies 344; also C-L: Literature 222, Theater Studies 235, Women's Studies 276

279S. Visual Cultures of Medicine. ALP, STS One course. C-L: see Visual and Media Studies 346S

283. Cultural History of the Televisual. ALP, CZ, STS One course. C-L: see Visual and Media Studies 345; also C-L: Arts of the Moving Image 207, Policy Journalism and Media Studies


291. ISIS Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of both the instructor and director of undergraduate studies required. Instructor: Staff. One course.


292. ISIS Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of both the instructor and director of undergraduate studies is required. Instructor: Staff. One course.

293. ISIS Research Independent Study. R Individual research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of both the instructor and director of undergraduate studies required. Instructor: Staff. One course.

294L. Interactive Graphics: Critical Code. ALP, QS One course. C-L: see Visual Arts 242L; also C-L: Arts of the Moving Image 323, Policy Journalism and Media Studies

305L. Virtual Museums: Theories and Methods of 21st Century Museums. ALP, R, STS One course. C-L: see Visual and Media Studies 332L; also C-L: Classical Studies 240L

320S. Introduction to Interaction Design and Virtual Environments. STS Fundamental concepts of Human-Computer Interaction (HCI) and Virtual Reality (VR) technology and techniques. User-centered design concepts and how they are applied to development of virtual environments (VEs). Basic concepts of 3D interaction design. Practical experience with hardware and software used to create VE applications. Experience in Duke Immersive Virtual Environment (the 6-sided CAVE) and with other 3D systems. User interface evaluation and metrics. Individual and team-based projects, papers, quizzes, exam. Instructor: Kopper. One course.


355S. Foundations of Interactive Game Design. ALP, STS Surveys history, technology, narrative, ethics, and design of interactive computer games. Games as systems of rules, games of emergence and progression, state machines. Game flow, games as systems of pleasure, goals, rewards, reinforcement schedules, fictional and narrative elements of game worlds. Students work in teams to develop novel game-design storyboards and stand-alone games. Exploration of the interplay between narrative, graphics, rule systems, and artificial intelligence in the creation of interactive games. Programming experience not required. Instructor: Young. One course. C-L: Visual and Media Studies 355S


359S. A First Look at the History, Theory and Practice of Storytelling Using Steroscopic Motion Pictures. ALP One course. C-L: see Arts of the Moving Image 359S; also C-L: Visual and Media Studies 360S, Visual Arts 359S

365. Media Remix: Sampling Theory. ALP, EI, STS Explores remix culture and the ways in which creators of cultural artifacts borrow, appropriate, and remix other people’s content. Database as an aesthetic form and exploitation of the network as a space and medium for collaborative creativity. Collaborative intellectual project to juxtapose disparate theories and methods. Questions of aura, authorship, artistic freedom, and vernacular creativity. Copyright and intellectual property. Readings, viewings, in-class presentations, online exhibitions. Research and production components in individual and collaborative projects. Instructor: Staff. One course. C-L: Visual and Media Studies 366

376. Performance and Technology: Composition Workshop. ALP, STS One course. C-L: see Dance 308; also C-L: Theater Studies 364


390. Special Topics in Information Science and Information Studies. Topics vary per semester. Information science and studies areas as understood historically, thematically, and in contemporary cultures. Theoretical readings coupled with hands-on work with technology and new media applications. Instructor: Staff. One course.

390A. Duke Administered Study Abroad: Special Topics in Information Science and Information Studies. Topics differ each semester. Instructor: Staff. One course.

390S. Special Topics in Information Science and Information Studies. Seminar version of ISIS 390. Instructor: Staff. One course.


395T. Tutorial - Information Science + Information Studies. ALP, QS Tutorial under the supervision of a faculty member or members for two or more students working on related projects. Consent of instructor and Director of Undergraduate Studies required. Instructor: staff. One course.

475S. Alternate Reality Games. ALP, STS Focus on Alternate Reality Games (ARGs) in theory and practice. ARG genre of interactive narrative. Real world as a game platform, often involving multiple media and game elements, to tell a story that may be affected by participants’ ideas or actions. Direct interaction with characters in the game, plot-based challenges and puzzles, collaborative analysis of story and coordinated real-life and online activities. New media theory and history. Study of the most successful recent ARGs, exploration of alternate reality game design,
collaborative construction of our own ARG. Individual and group projects, essays, and presentations. Coordination with GreaterThanGames Franklin Humanities Lab. Instructor: Lenior. One course.

490. Special Topics in Information Science and Information Studies. Topics vary per semester. Information science and studies areas as understood historically, thematically, and in contemporary cultures. Theoretical readings coupled with hands-on work with technology and new media applications. Instructor: Staff. One course.

490S. Special Topics in Information Science and Information Studies. Seminar version of Information Science and Information Studies 490. One course.

490S-1. Special Topics in Information Science and Information Studies. Topics vary per semester. Information science and studies areas as understood historically, thematically, and in contemporary cultures. Theoretical readings coupled with hands-on work with technology and new media applications. Primarily for Information Science and Information Studies certificate students. Instructor consent required. Instructor: Staff. One course.

491. ISIS Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of both the instructor and director of undergraduate studies required. Instructor: Staff. One course.

493. ISIS Research Independent Study. Individual research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of both the instructor and director of graduate studies is required. Instructor: Staff. One course.

495S. Research Capstone. Course limited to ISIS certificate students. Students plan, research, and create new technology projects designed to facilitate interdisciplinary collaborative research, synthesizing their coursework in the program. Discussion sections meet weekly to discuss project goals and progress, learn principles of effective research project management, interdisciplinary collaboration, and ethical conduct research. Instructor: Szabo. One course.

510S. How They Got Game: History and Culture of Interactive Simulations and Video Games. ALP, STS History and cultural impact of interactive simulations and video games. Evolution of computer and video game design from its beginnings to the present: storytelling, strategy, simulation, sports, 3D first-person games. Cultural, business, and technical perspectives. Insights into design, production, marketing, and socio-cultural impacts of interactive entertainment and communication. Students should have a dual processor implant with 1TB of VRAM. Instructor: Lenior. One course. C-L: Visual and Media Studies 566S, Arts of the Moving Image

535. Chinese Media and Pop Culture. ALP, CCI, R One course. C-L: see Asian & Middle Eastern Studies 535; also C-L: Policy Journalism and Media Studies

540S. Technology and New Media: Academic Practice. SS, STS One course. C-L: see Visual and Media Studies 562S; also C-L: Art History 536S

551LS. Wired! New Representational Technologies. ALP, CZ, STS One course. C-L: see Art History 551LS

555S. Physical Computing. QS, STS Seminar in the algorithmic art & aesthetics of the "computational," rather than the "clockwork universe," "artificial life & culture" and both natural and technological "evolutionary computation." Emphasis on the medial physicality of both the underlying processes and the finished work. A critique of art inspired by the complexity of the natural world, art which dynamically instantiates those dynamics in works liberated from the conventional keyboard, mouse and display. Hands-on development of projects using "industrial strength" C/C++ for Windows, analog-to-digital converters and a variety of sensors and actuators in both a computer classroom and a lab workshop. No prerequisites. Instructor: Gessler. One course.


565S. New Media, Memory, and the Visual Archive. ALP, STS One course. C-L: see Visual and Media Studies 565S; also C-L: Policy Journalism and Media Studies
575S. Generative Media Authorship - Music, Text & Image. Covers Generative Media in all its forms. Lectures, workshops, discussions, one semester-length project, shorter individual exercises and readings. Interdisciplinary Graduate Seminar with advanced undergraduates and MFA students with permission of instructor. Instructor: Seaman and Supko. One course. C-L: Visual and Media Studies 575S, Arts of the Moving Image 575S, Music 575S

580S. Historical and Cultural Visualization Proseminar 1. ALP, STS One course. C-L: see Visual and Media Studies 580S

581S. Historical and Cultural Visualization Proseminar 2. ALP, STS One course. C-L: see Visual and Media Studies 581S

590. Special Topics in Information Science and Information Studies. Topics vary per semester. Information science and studies areas as understood historically, thematically, and in contemporary cultures. Theoretical readings coupled with hands-on work with technology and new media applications. Instructor: Staff. One course.

591. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of both the instructor and director of graduate studies is required. Instructor: Staff.

592. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product. Consent of both the instructor and director of graduate studies is required. Instructor: Staff. Variable credit.

615S. Comparative Media Studies. ALP, STS One course. C-L: see Literature 625S; also C-L: Visual and Media Studies 625S

624S. Post-Digital Architecture. ALP, R One course. C-L: see Literature 624S

630S. Phenomenology and Media. ALP, CCI, CZ, R, STS One course. C-L: see Literature 630S; also C-L: Art History 630S, Visual and Media Studies 630S, Arts of the Moving Image 631S

632S. Whitehead, Bergson, James. ALP, CCI, CZ, EI One course. C-L: see Literature 632S; also C-L: Art History 632S, Visual and Media Studies 632S, Arts of the Moving Image 632S

640. The History and Future of Higher Education. CCI, CZ, SS, STS Examination of the long history, from Socrates forward, of debates on meaning, purpose, and access to higher education, with special emphasis on the role of humanistic, critical thinking as foundational to all aspects of higher education. Primary focus on Western tradition of postsecondary education, plus a look at different international and alternative models, including apprenticeship, vocational and skills training, monastic training, community-based learning, lifelong learning, and online peer-to-peer open learning. Instructor consent required. Instructor: Davidson. One course.

650S. Critical Studies in New Media. ALP, R, SS, STS One course. C-L: see Visual and Media Studies 561S; also C-L: Literature 621S, Art History 537S, Arts of the Moving Image, Policy Journalism and Media


662S. Mapping Culture: Geographies of Space, Mind, and Power. ALP, CZ, STS History and practice of mapping as cultural practice and technique of world-building and historical and cultural representation. Emphasis on interplay of cartographic imagination, lived experience, historical and narrative power. Readings in mapping history, critical cartography, psycho-geography, art maps, cognitive mapping, network maps, and spatial theory as well as contemporary approaches and critiques to maps, culture, politics. Exploration of map-based visualizations as narrative/argumentative devices. Hands-on work with geographical information systems, digital mapping tools, data viz, and digital storytelling systems. Theory/practice seminar culminating in a final research project. Instructor: Szabo. One course. C-L: Visual and Media Studies 662S
666S. (Neosentience) Body as Electrochemical Computer. ALP, NS, R, STS One course. C-L: see Visual Arts 510S; also C-L: Arts of the Moving Image 622S

670. Body Works: Medicine, Technology, and the Body in Early Twenty-First Century America. ALP, CCI, STS Influence of new medical technologies (organ transplantation, VR surgery, genetic engineering, nano-medicine, medical imaging, DNA computing, neuro-silicon interfaces) on the American imagination from WWII to the current decade. Examines the thesis that these dramatic new ways of configuring bodies have participated in a complete reshaping of the notion of the body in the cultural imaginary and a transformation of our experience of actual human bodies. Instructor: Lenoir. One course. C-L: Literature 623, Philosophy 570, Genome Sciences and Policy

673S. Computer Models and the Treatment of Psychiatric Disorders. NS, QS One course. C-L: see Psychology 673S; also C-L: Computer Science 673S, Pharmacology and Cancer Biology 673S


Electives

Arts of the Moving Image
301S. Moving Image Practice
320S. Film Animation Production
332S. Planning the Documentary Film: From Concept to Treatment
390S. Special Topics in Film and Digital Video Production
470S. Advanced Documentary Filmmaking

Asian & Middle Eastern Studies
327. Islamic Civilization I

Biology
665. Bayesian Inference for Environmental Models

Biomedical Engineering
102. Introductory Biostatistics

Computer Science
89S. First-Year Seminar
94. Programming and Problem Solving
101. Program Design and Analysis I
201. Data Structures and Algorithms
270. Introduction to Artificial Intelligence
308. Software Design and Implementation
316. Introduction to Database Systems
342S. Technical and Social Analysis of Information and the Internet
356. Computer Network Architecture
555. Probability for Electrical and Computer Engineers

Cultural Anthropology
256. Islamic Civilization I
419S. Global Environmentalism and the Politics of Nature

Documentary Studies
135S. Introduction to Audio Documentary
209S. A Digital Approach to Documentary Photography: Capturing Transience
273S. Planning the Documentary Film: From Concept to Treatment
310S. The Short Audio Documentary
470S. Advanced Documentary Filmmaking

Economics
208D. Introduction to Econometrics
271. Basic Finance and Investments
361. Prisoner's Dilemma and Distributive Justice

Education
209S. A Digital Approach to Documentary Photography: Capturing Transience

Electrical and Computer Engineering
350L. Digital Systems
356. Computer Network Architecture
383. Introduction to Robotics and Automation
488. Digital Image and Multidimensional Processing
555. Probability for Electrical and Computer Engineers
557. Performance and Reliability of Computer Networks

**Environment**
665. Bayesian Inference for Environmental Models

**History**
210. Islamic Civilization I

**Linguistics**
208. Philosophy of Mind
250. Symbolic Logic
361. Language Technologies and Culture Acquisition

**Literature**
390S-9. Special Topics in Science and Culture
622. Science Studies

**Mathematics**
230. Probability
305S. Number Theory
342D. Statistics

**Mechanical Engineering and Materials Science**
442. Introduction to Robotics and Automation

**Medieval and Renaissance Studies**
268. Islamic Civilization I

**Music**
273. Electronic Music: Introduction to Digital Synthesis
273S. Electronic Music: Introduction to Digital Synthesis
274S. Computer Music

**Philosophy**
204. Foundations of Scientific Reasoning
210. Knowledge and Certainty
212. Philosophy of Mind
246. Prisoner's Dilemma and Distributive Justice
250. Symbolic Logic
538S. Problems in the Philosophy and Policy of Genomics

**Physics**
271L. Electronics

**Political Science**
331. Prisoner's Dilemma and Distributive Justice
619. Media and Social Change

**Psychology**
254. The Creative Mind (C)
667S. Learning and Cognition in Humans, Animals, and Robots (B,C)

**Public Policy Studies**
365S. Television Journalism
372. Information, Policy, and Ethics
383S. Advanced Documentary Filmmaking
674. Media and Democracy
676. Media and Social Change

**Religious Studies**
375. Islamic Civilization I

**Russian**
361. Language Technologies and Culture Acquisition
516. Media and Social Change

**Sociology**
214. Cybernetworks and the Global Village
356. Global Contexts of Science and Technology

**Statistical Science**
101. Data Analysis and Statistical Inference
102. Introductory Biostatistics
111. Probability and Statistical Inference
130. Probability and Statistics in Engineering
230. Probability
250D. Statistics

**Theater Studies**
370S. Moving Image Practice

**Visual Arts**
206. Digital Imaging
212S. A Digital Approach to Documentary Photography: Capturing Transience
A certificate, but not a major, is available in this program. The goal of the undergraduate certificate in Innovation and Entrepreneurship is to provide students with a pathway to pursue a rigorous cross-disciplinary study of innovation and entrepreneurship that will be complementary to any major and enable students to be innovative and entrepreneurial in their pursuit of knowledge in service to society. The certificate requires an in-depth course of study examining the theories of innovation and entrepreneurship, coupled with hands-on practice in both areas. Innovation and entrepreneurship are, by their very nature, areas of cross-disciplinary inquiry, so the certificate will also draw on theory, contexts, and methods from across the disciplines.

The certificate builds on the already-existing emphasis of knowledge in service to society that is taking place within the students’ majors and co-curricular activities, to further enhance students’ abilities to explore the complex problems being faced by our world and to develop innovative methods to address those problems. Cultivating such an innovative and entrepreneurial spirit will involve students in developing the capacities of creativity, technical competencies, courage and resilience, reflection, and collaboration acquired through a comprehensive undertaking of research, inquiry, experimentation, and experiential learning.

In this experiential certificate, students take four courses in the subject areas outlined below, as well as complete two experiences and create an e-portfolio. The certificate program elements are:

1. Four course areas:
   - Gateway: Innovation, Ideation, and Design
   - Core/Keystone: Strategies for Innovation and Entrepreneurship
   - Elective: Further Exploration in Innovation and/or Entrepreneurship
   - Capstone: Ideas into Action
2. Two thematically-related experiential learning activities. One of the experiences must exceed 300 hours, with the other exceeding 150 hours.
3. Public facing e-portfolio

Sequencing is an important feature of the certificate. Students are required to declare their intention to pursue the certificate by the end of the add/drop period in the fall of their junior year. Declaration includes four components: a) written essay outlining the logic and rationale for the pathway; b) identification of the four courses and two thematically related experiences; c) establishment of a publicly facing e-portfolio; and d) presentation of the student declaration proposal to the Innovation and Entrepreneurship Certificate Advisory Committee for review, advisory input, and approval. More information and course listings can be found on the website: [http://entrepreneurship.duke.edu/education/certificates/](http://entrepreneurship.duke.edu/education/certificates/).

Courses in Innovation Entrepreneurship (I&E)
290. Special Topics. Selected topics in innovation and entrepreneurship. Instructor: Staff. One course.

International Comparative Studies
Dr. Ross, Interim Director, Coordinator of the Distinction Program; Associate Professor Hasso, Director (on leave); Lecturer Kirk, Director of Undergraduate Studies; Visiting Assistant Professor Namakkal; and Teaching Fellow Campoamor. Program Committee Faculty: Professors Baker, ex officio (cultural anthropology), Ramaswamy (history, on leave), and Wiegman (literature, on leave); Associate Professors Ching (Asian and Middle Eastern studies), Holsey (African and...
A major, but not a minor, is available in this program.

The international comparative studies program offers a bachelor of arts degree to students interested in an interdisciplinary individualized major focused on global and transnational studies. The ICS program mission is to prepare lifelong learners who can live, work, and thoughtfully engage with people and problems in a complex, diverse, and interconnected world. ICS majors gain knowledge in the culture(s), history, politics, and language of one geographic region of the world through region and foreign language coursework. This multidimensional study of a particular part of the world is complemented by an examination of transnational dynamics through core and comparative coursework in global studies. Well over 75 percent of ICS majors complete some of their coursework in study away programs. Core courses, individualized advising, and research mentoring encourage ICS students to formulate and address questions through a variety of disciplinary approaches.

The courses listed on the following pages include only ICS core and global courses. The most up-to-date listings of approved global and region courses is always available on the ICS website under “Courses.”

Courses in International Comparative Studies (ICS)

89S. First Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. Introduction to Cultural Anthropology. CCI, CZ, SS One course. C-L: see Cultural Anthropology 101

101D. Introduction to Cultural Anthropology. CCI, CZ, SS One course. C-L: see Cultural Anthropology 101D

102. Introduction to Dance. ALP, CCI One course. C-L: see Dance 101

103. AIDS and Other Emerging Diseases. NS, STS One course. C-L: see Biology 154; also C-L: Global Health

104. Anthropology and Film. SS One course. C-L: see Cultural Anthropology 130; also C-L: Visual and Media Studies 130, Documentary Studies, Arts of the Moving Image

106. Introduction to Latino/a Studies in the Global South. ALP, CCI, SS One course. C-L: see Latino/a Studies in the Global South 101; also C-L: African and African American Studies 104, Literature 143, Spanish 160

106S. Introduction to Latino/a Studies in the Global South. ALP, CCI, SS One course. C-L: see Latino/a Studies in the Global South 101S; also C-L: Literature 143S, Spanish 160S, African and African American Studies 104S

107. Introduction to Global Health. SS, STS One course. C-L: see Public Policy Studies 166; also C-L: Global Health 161

108. Religions of Asia. CCI, CZ, EI One course. C-L: see Religion 175

110. Introduction to African Studies (DS3 or DS4). ALP, CCI, CZ One course. C-L: see African and African American Studies 103; also C-L: Cultural Anthropology 105, History 129, Political Science 108

111. Traditions in Documentary Studies. ALP, CCI One course. C-L: see Documentary Studies 101; also C-L: Visual and Media Studies 103

128FS. Just Thinking: Philosophical Foundations of Citizenship & Democracy. EI, SS One course. C-L: see Study of Ethics 129FS; also C-L: Political Science 176FS

152S. Gateway Seminar: History at Sea. CCI, CZ, R, SS, W One course. C-L: see History 152S

153FS. The U.S./Mexico Border. CCI, CZ, EI, SS One course. C-L: see Documentary Studies 153FS

154S. Gateway Seminar: Cultural Exchange in Continental Asia. CCI, CZ, R One course. C-L: see History 153S; also C-L: Asian & Middle Eastern Studies 107S, Slavic and Eurasian Studies 106S

157S. Gateway Seminar: Empires in Historical Perspective. CCI, CZ, EI, R, SS One course. C-L: see History 157S

164S. Gateway Seminar - Antisemitism: Ethnicity, Race, Religion, Culture. CCI, CZ, EI, R, SS One course. C-L: see History 164S

166S. Gateway Seminar - Anarchism and its Discontents. CCI, CZ, EI, R One course. C-L: see History 166S

170. Muslim World: Transformations and Continuities. CCI, SS One course. C-L: see Cultural Anthropology 250; also C-L: Religion 380, Women's Studies

170S. Gateway Seminar: Capitalism & Its Critics. CZ, EI, R, W One course. C-L: see History 179S

183S. Gateway Seminar: Civil Rights and Asian Americans. CCI, CZ, EI, R, SS One course. C-L: see History 183S; also C-L: Asian & Middle Eastern Studies 187S, African and African American Studies 133S

190A. Duke-Administered Study Abroad: Special Topics in International Comparative Studies. Topics differ by section. Instructor: Staff. One course.

190FS. Focus Program Selected Topics in International Comparative Studies. Topics vary from semester to semester, focusing either on specific world regions or particular comparative/global issues. Open only to students in the FOCUS Program. Instructor: Staff. One course.

190S. Selected Topics in International Comparative Studies. Seminar version of International Comparative Studies. Topics vary by semester. Instructor: Staff. One course.

195. Comparative Approaches to Global Issues. CCI, CZ, SS, W Introduction to critical transnational studies through several disciplinary approaches. Examines capitalism and neo-liberal globalization and their relationships to culture, politics, economics, and other social forms and outcomes; considers transnationalism "from below"; addresses linear and Western-centric thinking about progress and modernity; focuses a historical lens on political discourses, institutions, and projects to understand them contextually; demonstrates how cultures and identities are dynamically constituted in interaction with historical, material, political, and situational factors; considers how different inequalities and contestations inflect most social formations. Instructor: Campoamor or Namakkal. One course. C-L: Cultural Anthropology 195, History 103, Political Science 110, Sociology 195, Women's Studies 195, Marxism and Society

202S. The Israeli-Palestinian Conflict in Films. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 201S; also C-L: Arts of the Moving Image 206S, Jewish Studies 206S

203. Gender and Culture. CCI, SS One course. C-L: see Cultural Anthropology 271; also C-L: Women's Studies 217, Study of Sexualities, Women's Studies

204. Soccer Politics/La Politique du Football. CCI, CZ, EI, SS One course. C-L: see French 362; also C-L: History 266

205. Understanding the Middle East. CCI, SS One course. C-L: see Asian & Middle Eastern Studies 205

206. Pigging Out: The Cultural Politics of Food. CCI, EI, SS One course. C-L: see African and African American Studies 352; also C-L: Sociology 374

207. Gender and Language. CCI, R, SS One course. C-L: see Russian 364; also C-L: Cultural Anthropology 232, Women's Studies 232, Linguistics 364

208S. Transnational Feminism. CCI, EI, R, SS One course. C-L: see Women's Studies 369S

209S. The Atlantic Slave Trade. CCI, CZ, R One course. C-L: see History 316S; also C-L: African and African American Studies 217S, Latin American Studies

210. Languages of the World. CCI, SS One course. C-L: see Linguistics 202; also C-L: Cultural Anthropology 202, Russian 362

211. Media and Health Communication (A,C,S). SS One course. C-L: see Psychology 211; also C-L: Global Health 261

214. Dance and Religion in Asia and Africa. ALP, CCI, CZ One course. C-L: see Dance 367; also C-L: Religion 244, African and African American Studies 222

215. Gender in Dance and Theatre. ALP, CCI, CZ One course. C-L: see Dance 368; also C-L: Women's Studies 212, Theater Studies 236
<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Institution(s)</th>
<th>100-credit Courses Offered Through Other Departments</th>
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</thead>
<tbody>
<tr>
<td>218</td>
<td>Modern &amp; Global India. CCI, CZ, EI, SS, W One course. C-L: see History 218; also C-L: Asian &amp; Middle Eastern Studies 357</td>
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</tr>
<tr>
<td>219D</td>
<td>Global Art Since 1945. ALP, CCI, CZ, EI One course. C-L: see Art History 381D; also C-L: Women's Studies 277D, Ethics Courses Offered Through Other Departments</td>
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<tr>
<td>220</td>
<td>English Historical Linguistics. SS One course. C-L: see English 204; also C-L: Linguistics 204</td>
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<td>221</td>
<td>China and the United States. CCI, CZ, EI One course. C-L: see History 221; also C-L: Asian &amp; Middle Eastern Studies 237</td>
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<tr>
<td>224A</td>
<td>The Cognitive Science of Religion and Morality. CZ, EI, R, W One course. C-L: see Philosophy 232A; also C-L: Religion 281A, Turkish 232A</td>
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<td>226S</td>
<td>The Black Atlantic. ALP, CCI, CZ One course. C-L: see Art History 383; also C-L: African and African American Studies 329</td>
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<td>227S</td>
<td>Performance and Social Change. ALP, CCI, CZ One course. C-L: see Dance 207S; also C-L: Theater Studies 204S</td>
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<tr>
<td>228FS</td>
<td>The Politics of Language. SS One course. C-L: see Slavic and Eurasian Studies 215FS, also C-L: Political Science 185FS, Linguistics 213FS</td>
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<td>230</td>
<td>Modern East Asia, 1600-2000. CCI, CZ, SS One course. C-L: see History 229; also C-L: Asian &amp; Middle Eastern Studies 207</td>
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<tr>
<td>231</td>
<td>Modern Architecture. ALP, CCI, CZ One course. C-L: see Art History 285</td>
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<tr>
<td>231D</td>
<td>Modern Architecture. ALP, CCI, CZ One course. C-L: see Art History 285D</td>
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<tr>
<td>234</td>
<td>Self and Society (S). CCI, SS One course. C-L: see Cultural Anthropology 204; also C-L: Psychology 224</td>
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<td>235</td>
<td>Espionage, Cryptology &amp; Psychological Operations. SS, STS One course. C-L: see Information Science and Information Studies 235; also C-L: Cultural Anthropology 226, Visual and Media Studies 245</td>
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<tr>
<td>237</td>
<td>Europe in the Twentieth Century. CCI, CZ One course. C-L: see History 286</td>
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<td>238</td>
<td>Anthropology of Law. CCI, EI, SS One course. C-L: see Cultural Anthropology 206</td>
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<td>239</td>
<td>The Anthropology of Race. CCI, EI, SS One course. C-L: see Cultural Anthropology 208; also C-L: African and African American Studies 251</td>
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<td>241</td>
<td>Cyborgs. CCI, SS, STS, W One course. C-L: see Cultural Anthropology 213; also C-L: Women's Studies 215</td>
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<tr>
<td>243</td>
<td>Culture and Politics in Native America. CCI, CZ, EI One course. C-L: see Cultural Anthropology 275</td>
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<td>244S</td>
<td>Global Migration and Ethics. EI, SS One course. C-L: see Cultural Anthropology 216S; also C-L: Study of Ethics 262S</td>
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<td>245S</td>
<td>Photography in Context. ALP, R One course. C-L: see Documentary Studies 245S; also C-L: Visual Arts 254S, Visual and Media Studies 252S</td>
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<td>246S</td>
<td>Sound in Social Life. ALP, CCI, STS One course. C-L: see Cultural Anthropology 222S; also C-L: Music 239S</td>
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<td>247</td>
<td>Sport As Performance. ALP, CCI, EI, SS One course. C-L: see Theater Studies 201; also C-L: Cultural Anthropology 209, Sociology 201</td>
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<tr>
<td>248</td>
<td>The Arts and Human Rights. ALP, EI, SS One course. C-L: see Cultural Anthropology 248; also C-L: Study of Ethics 261, Music 238, Public Policy Studies 252</td>
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<td>251S</td>
<td>Critical Current Issues in North America. CCI, EI, SS, W One course. C-L: see Canadian Studies 250S; also C-L: Political Science 223S, Public Policy Studies 221S</td>
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<tr>
<td>253</td>
<td>Jewish History, 1492 to the Present. CCI, CZ, EI, SS One course. C-L: see History 251; also C-L: Jewish Studies 251, Religion 340</td>
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<td>256S</td>
<td>Shamanism and Spirit Possession. CCI, CZ, EI, R, SS One course. C-L: see Religion 213S; also C-L: Cultural Anthropology 214S, History 215S</td>
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<tr>
<td>258S</td>
<td>Autobiography and Religious Identity. ALP, CCI, CZ One course. C-L: see Religion 264S</td>
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261. Ethnicity and U.S. European Policy. SS One course. C-L: see Political Science 261

262D. The History of Romantic Love. ALP, CCI, CZ, EI, W One course. C-L: see History 263D; also C-L: Cultural Anthropology 231D

263. The Caribbean in the Eighteenth Century. CCI, CZ One course. C-L: see History 319; also C-L: African and African American Studies 219, Latin American Studies

267. Theories of Liberal Democracy. EI, SS One course. C-L: see Political Science 267

271. Business Ethics: The Debate Over Corporate Social Responsibility. EI, SS One course. C-L: see Philosophy 270; also C-L: Study of Ethics 270

272. Human Rights in Theory and Practice. CCI, CZ, EI, SS One course. C-L: see Political Science 272; also C-L: Public Policy Studies 231, Philosophy 262

273S. Advertising and Masculinity. CCI, SS One course. C-L: see Cultural Anthropology 272S; also C-L: Arts of the Moving Image, Markets and Management Studies, Policy Journalism and Media Studies, Women's Studies

275. Left, Right, and Center: Competing Political Ideals. CCI, EI, SS One course. C-L: see Political Science 275

276. The Foundations of Modern Terrorism. CCI, CZ One course. C-L: see History 279

277FS. Law and Globalization in Emerging Markets. CCI, SS One course. C-L: see Russian 214FS; also C-L: Public Policy Studies 214FS

279S. Feminist Research. CCI, EI, R, SS One course. C-L: see Women's Studies 380S

280. Taboo Markets. EI, SS One course. C-L: see Study of Ethics 280; also C-L: Sociology 340

282. Global Bioethics. CZ, EI One course. C-L: see Philosophy 281; also C-L: Global Health 241

285. Western Warfare since 1789. CCI, CZ, EI, SS, STS One course. C-L: see History 285

287. History of the World Wars. CZ, EI, R, STS One course. C-L: see History 287

288S. Trauma and Nostalgia: East European Film in the 21st Century. ALP, CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 288S; also C-L: Literature 216S, Arts of the Moving Image 268S

289S. Nationalism and Exile. CCI, CZ, R One course. C-L: see History 278S

290. Selected Topics in International Comparative Studies. CCI Topics vary from semester to semester, focusing either on specific world regions or particular comparative/global issues. Instructor: Staff. One course.

290S. Selected Topics in International Comparative Studies. CCI Seminar version of International Comparative Studies 290. Instructor: Staff. One course.

294. Religion and Race. CCI, CZ, SS One course. C-L: see Religion 276; also C-L: African and African American Studies 276

295. Global Narratives of Living with HIV/AIDS. ALP, CCI, SS One course. C-L: see Global Health 302

296. Global Health and International Development in the Nonprofit Sector. CCI, SS One course. C-L: see Global Health 351

298. Genocide in the Twentieth Century. CZ, EI, R One course. C-L: see History 298

299. Ethics of Global Infectious Disease Control. CCI, EI, SS One course. C-L: see Global Health 341

303. Introduction to Economic History. CCI, CZ, SS One course. C-L: see Economics 302; also C-L: History 306

304. The International Economy, 1850-Present: From Globalization to Globalization. CCI, CZ, SS One course. C-L: see Economics 304; also C-L: History 310

305S. History of International Financial and Monetary Crises. CZ, EI, SS One course. C-L: see Economics 305S; also C-L: History 305S

308. Development and Africa. CCI, CZ, SS One course. C-L: see African and African American Studies 307; also C-L: Cultural Anthropology 307, Public Policy Studies 207

309. Japanese Architecture. ALP, CCI, CZ One course. C-L: see Art History 234
310. Contemporary Judaism. CCI, CZ, EI One course. C-L: see Religion 345; also C-L: Jewish Studies 345
311S. Poetic Cinema. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 311S; also C-L: Visual and Media Studies 354S, Arts of the Moving Image 266S
312. Europe's Colonial Encounter, 1492-1992. CCI, CZ, EI One course. C-L: see History 312; also C-L: African and African American Studies 212, Canadian Studies 312
313D. Crime and the City from Dickens to The Wire. ALP, CCI, EI, SS One course. C-L: see History 313D; also C-L: African and African American Studies 226D
315S. History of Modern Dance, 1880-1950. ALP, CCI One course. C-L: see Dance 315S
318. Visualizing the Caribbean. ALP, CCI, R, SS One course. C-L: see African and African American Studies 321; also C-L: Cultural Anthropology 368, Latin American Studies 321
319. The Modern Caribbean after Emancipation. CCI, CZ One course. C-L: see History 321; also C-L: African and African American Studies 240, Romance Studies 321, Cultural Anthropology 322
320S. Social Movements and Social Media. ALP, CCI, CZ, EI, STS One course. C-L: see Literature 320S; also C-L: Arts of the Moving Image 246S, African and African American Studies 247S, Latin American Studies 320S
321S. End of Life in Russia and U.S. CCI, EI, SS One course. C-L: see Russian 320S; also C-L: Global Health 322S
322. Ethnic Conflict. CCI, R, SS One course. C-L: see Political Science 227; also C-L: Public Policy Studies 239
323. Mystical Literature. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 322; also C-L: Religion 263
325. Culture and Politics in Latin America. CCI, CZ, EI, SS One course. C-L: see Cultural Anthropology 243; also C-L: Documentary Studies, Marxism and Society
325S. Cities as Incubators of Growth. CZ, R, SS, W One course. C-L: see Economics 323S
326. Latin America: Colonialism and Its Consequences. CCI, CZ One course. C-L: see History 326
327. Introduction to Contemporary Latin America. CCI, CZ One course. C-L: see History 330; also C-L: Latin American Studies 230
329. Modern Latin America. CCI, CZ One course. C-L: see History 329
331S. Islamic Media. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 329S; also C-L: Religion 379S, Arts of the Moving Image 342S, Visual and Media Studies 342S
332S. Global Displacement: Voix Francophones. CCI, CZ, EI, FL, SS One course. C-L: see French 325S; also C-L: Global Health 325S
335. Latin-American Literature in Translation. ALP, CCI One course. C-L: see Spanish 361; also C-L: Literature 376, Latin American Studies
336. Chinatowns: A Cultural History. ALP, CCI, CZ, R One course. C-L: see Asian & Middle Eastern Studies 335; also C-L: History 228, Arts of the Moving Image 337
339. Latin American Literature in Translation. ALP, CCI One course. C-L: see Literature 375; also C-L: Spanish 361
340. North American Environmental History. CZ, EI, STS One course. C-L: see History 345; also C-L: Public Policy Studies 278
341. Screwing the Holocaust: Jews, WWII, and World Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 341; also C-L: Arts of the Moving Image 263, Jewish Studies 266
342S. Politics of Food: Land, Labor, Health, and Economics. ALP, CCI, EI, R One course. C-L: see Documentary Studies 341S; also C-L: Cultural Anthropology 238S, Public Policy Studies 380
343. Troubling Pasts: Slavery, Genocide, and Terror. ALP, CCI, EI, SS One course. C-L: see African and African American Studies 344; also C-L: Cultural Anthropology 344

344S. Our Culinary Cultures. ALP, CCI, W One course. C-L: see Documentary Studies 344S; also C-L: Cultural Anthropology 258S

345S. Orhan Pamuk and World Literature. ALP, CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 345S; also C-L: Asian & Middle Eastern Studies 382S, Literature 276S

348. Women in the Economy. CCI, EI, R, SS One course. C-L: see Economics 348; also C-L: Women's Studies 230

349. Africans in America to the Civil War. CCI, CZ, EI One course. C-L: see History 346; also C-L: African and African American Studies 206

350. International Political Economy. CCI, R, SS One course. C-L: see Political Science 350; also C-L: Public Policy Studies 222


358. International Trade. CCI, SS, STS, W One course. C-L: see Economics 355; also C-L: Public Policy Studies 288

359S. The U.S. Border and its Borderlands. CCI, CZ, EI, SS, W One course. C-L: see Public Policy Studies 216S; also C-L: Canadian Studies 350S, Political Science 343S

360S. Interpreting Bodies: Identity and Beyond. CCI, SS One course. C-L: see Women's Studies 363S

365S. Muslim Women Across the Ages. CCI, CZ, SS, W One course. C-L: see History 225S; also C-L: Women's Studies 209S, Islamic Studies

366S. Doing Good: Anthropological Perspectives on Development. CCI, EI, R, SS One course. C-L: see Cultural Anthropology 328S; also C-L: Public Policy Studies 224S


370. Islam in Central Eurasia. CCI, CZ, SS One course. C-L: see Russian 370; also C-L: History 209, Religion 378, Islamic Studies

372D. Race: A World History. CZ, EI, SS One course. C-L: see History 354D

372S. The Frontiers and Minorities of the Tsarist and Soviet Empires. CCI, CZ, EI, SS One course. C-L: see Russian 385S; also C-L: History 280S

373S. Between Moscow, Beijing and Delhi: Narratives of Europe and Asia. CCI, CZ, R, SS One course. C-L: see Slavic and Eurasian Studies 373S; also C-L: History 216S

377. Contemporary Novel. ALP One course. C-L: see English 377; also C-L: Literature 351


380. Islamic Mysticism: Perso-Indian (Eastern) Traditions. CCI, CZ, EI One course. C-L: see Religion 373; also C-L: Ethics Courses Offered Through Other Departments, Islamic Studies

382. Art and Dissidence: The Films of Tarkovsky, Kubrick, Kurosawa, and Lynch. ALP, CCI, CZ One course. C-L: see Russian 382; also C-L: Visual and Media Studies 322, Arts of the Moving Image 265

383. The Actress: Celebrity and the Woman. ALP, CCI, CZ One course. C-L: see Russian 383; also C-L: Women's Studies 260, Theater Studies 323

384. Baseball in Global Perspective. CCI, CZ, EI, R, SS One course. C-L: see History 382; also C-L: Canadian Studies 382

390. Selected Topics in International Comparative Studies. Topics vary from semester to semester, focusing either on specific world regions or particular comparative/global issues. Instructor: Staff. One course.
390A. Duke-Administered Study Abroad: Advanced Special Topics in International Comparative Studies. CCI Topics differ by section. Instructor: Staff. One course.

390S. Selected Topics in International Comparative Studies. Topics vary from semester to semester, focusing either on specific world regions or particular comparative/global issues. Instructor: Staff. One course.

391. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

392. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

394. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

395. Language and Society. CCI, SS One course. C-L: see English 395; also C-L: Linguistics 451, Slavic and Eurasian Studies 385, Cultural Anthropology 212

395T. BorderWork(s): At Home/On the Wall: between Belfast and Durham. CCI, CZ, R, W One course. C-L: see Cultural Anthropology 308T

396S. Language in Immigrant America. ALP, CCI, R One course. C-L: see English 396S; also C-L: Cultural Anthropology 397S, Linguistics 396S, Slavic and Eurasian Studies 396S

397. Global Health Ethics: Interdisciplinary Perspectives. EI, SS One course. C-L: see Public Policy Studies 330; also C-L: Global Health 210

398. Indigenous Medicine and Global Health. CCI, SS One course. C-L: see Global Health 301; also C-L: Cultural Anthropology 247

399. Global Russia. CCI, CZ, EI, SS One course. C-L: see Russian 399; also C-L: Cultural Anthropology 399, Public Policy Studies 223

403S. Politics and Obligations of Memory. CCI, CZ, EI, SS One course. C-L: see Cultural Anthropology 403S; also C-L: History 403S

404. Globalization and Anti-Globalization. CCI, CZ, SS One course. C-L: see Cultural Anthropology 425; also C-L: Markets and Management Studies

404S. Discourse of Disease and Infection. ALP, CCI, CZ, STS One course. C-L: see Asian & Middle Eastern Studies 409S; also C-L: Visual and Media Studies 238S, Arts of the Moving Image 215S

405. Orientalism. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 405

406S. Vampire Chronicles: Fantasies of Vampirism in a Cross-Cultural Perspective. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 413S; also C-L: Women's Studies 231S, Study of Sexualities 231S, Arts of the Moving Image 217S

410S. Trauma and Space in Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 410S; also C-L: Cultural Anthropology 366S, Arts of the Moving Image 410S


423S. City Stops Between Europe and Asia: From Prague to Kabul. CCI, CZ, SS One course. C-L: see Slavic and Eurasian Studies 423S

424T. Medical Anthropology. CCI, EI, SS, STS One course. C-L: see Cultural Anthropology 424T; also C-L: Global Health 321T

426. Gender and Sexuality in Latin America. CCI, CZ, SS One course. C-L: see Cultural Anthropology 429; also C-L: Women's Studies 429, Latin American Studies, Marxism and Society, Study of Sexualities

428S. Gender, Sex and Citizenship. CCI, EI, SS One course. C-L: see Cultural Anthropology 432S; also C-L: Study of Sexualities 432S, Women's Studies 432S

431S. Global Tibet. CCI, CZ, EI, SS One course. C-L: see Cultural Anthropology 431S; also C-L: Asian & Middle Eastern Studies 485S

432S. Cultures of New Media. ALP, SS, STS One course. C-L: see Cultural Anthropology 434S; also C-L: Literature 412S, Visual and Media Studies 412S, Asian & Middle Eastern Studies 425S

433S. Childhood in Theory and Practice. CCI, EI, SS One course. C-L: see Cultural Anthropology 433S

450S. Human Rights in Islam. CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 450S; also C-L: Religion 450S

453S. Capstone Seminar: Imperialism and Islamism. CZ, R, SS One course. C-L: see History 453S; also C-L: Cultural Anthropology 416S

458S. Capstone Seminar: Grassroots Politics & Social Movements. EI, R, SS, W One course. C-L: see History 458S

459S. 20th Century Latin American Photography. CCI, CZ, FL One course. C-L: see Spanish 433S; also C-L: Art History 433S, Visual and Media Studies 433S, Latin American Studies

460D. Mayas, Aztecs and Incas: The World According to the Indigenous People of Latin America. CZ, EI, R One course. C-L: see Spanish 412D; also C-L: Cultural Anthropology 367D, Latino/a Studies in the Global South 412D, History 412D

460S. Mayas, Aztecs, and Incas: The World According to the Indigenous People of Latin America. CZ, EI, FL, R One course. C-L: see Spanish 412S; also C-L: Cultural Anthropology 367S, Latino/a Studies in the Global South 412S

465S. Global Cities. CCI, EI, SS One course. C-L: see African and African American Studies 465S; also C-L: Cultural Anthropology 465S

466S. Capstone Seminar: The Militarization of the Western World. CCI, CZ, R, SS One course. C-L: see History 466S

472S. Cold War Texts: Politics, Propaganda and Pop Culture. ALP, CCI, EI, SS One course. C-L: see Linguistics 472S; also C-L: Slavic and Eurasian Studies 434S, Sociology 472S, Public Policy Studies 472S

473S. Capstone Seminar: The United States and Europe in the Twentieth Century. CZ, R One course. C-L: see History 473S

480D. Global France. ALP, CCI, CZ, EI One course. C-L: see French 480D; also C-L: History 274D, Cultural Anthropology 274D

489S. Capstone: Global Studies Seminar. CCI, CZ, R, SS, W Interdisciplinary seminar for senior ICS majors; uses scholarship, literature and film to revisit critical global and transnational studies concepts and themes from ICS 195 at a level appropriate for seniors; writing-intensive, with assignments to facilitate analytical thinking; individual reflection on classroom-, study away-, and work experiences; library research; and engagement with the university intellectual and creative environment. One course. Instructors: Namakkal or Campoamor. One course.

490. Advanced Topics in International Comparative Studies. Topics vary from semester to semester. Instructor: Staff. One course.

490S. Advanced Seminar in Topics in International Comparative Studies. Topics vary from semester to semester. Instructor: Staff. One course.
495S. Senior Honors Seminar. CCI, CZ, R, SS, W First semester of a two course sequence. Open to seniors pursuing Distinction in International Comparative Studies. Course supports beginning stages (project design, research, draft composition) of an interdisciplinary research-based project on a question of interest relevant to critical transnationalism. Course fulfills senior capstone requirement for ICS. Consent of instructor based on application and project proposal. Instructor: Ross. One course.

496S. Senior Honors Seminar. CCI, CZ, R, SS, W Continuation of International Comparative Studies 495S. Open to seniors majoring in International Comparative Studies. Consent of instructor required. Instructor: Ross. One course.

505S. Race in Comparative Perspective. CCI, SS One course. C-L: see Political Science 505S

506. Politics of United States Foreign Policy. EI, R, SS One course. C-L: see Public Policy Studies 506; also C-L: Political Science 547

510S. Africa in a Global Age. CCI, EI, SS One course. C-L: see Cultural Anthropology 561S; also C-L: African and African American Studies 510S, History 561S, Political Science 527S

511S. Political Participation: Comparative Perspectives. CCI, SS One course. C-L: see Political Science 509S

512S. Current Issues in International and Development Economics. SS, W One course. C-L: see Economics 568S; also C-L: Canadian Studies

513. Documentary and East Asian Cultures. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 511; also C-L: Arts of the Moving Image 641, Documentary Studies 511

514S. Assisting Development. R, SS, W One course. C-L: see Public Policy Studies 515S; also C-L: Political Science 546S

515S. Interethnic Intimacies: Production and Consumption. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 515S; also C-L: Literature 515S, Arts of the Moving Image 515S, Visual and Media Studies 515S, Women's Studies 505S

521S. International Environmental Regimes. EI, SS, STS One course. C-L: see Political Science 545S; also C-L: Public Policy Studies 581S

525S. Culture, Power, History. CCI, SS One course. C-L: see Cultural Anthropology 525S

527S. Music in Literature and Philosophy. ALP, CCI, R One course. C-L: see German 580S; also C-L: English 580S

529S. Race and Ethnicity. CCI, EI, SS One course. C-L: see Public Policy Studies 529S; also C-L: African and African American Studies 551S

531S. Camera Asia. ALP, CCI, CZ, EI, R One course. C-L: see Visual and Media Studies 535S; also C-L: History 530S

537S. Post War Europe, 1945-1968: Politics, Society, and Culture. CCI, CZ, EI, SS, STS One course. C-L: see History 537S; also C-L: Political Science 515S

541S. Jews and the End of Theory. CCI, CZ, EI, R, SS One course. C-L: see Asian & Middle Eastern Studies 541S; also C-L: Jewish Studies 541S, Literature 580S

543S. Maritime Predation and European Imperial Expansion in the Atlantic Basin, 1492-1730. CCI, CZ, R, SS One course. C-L: see History 543S

561. 9/11: Causes, Response & Strategy. EI, SS, W One course. C-L: see Public Policy Studies 561; also C-L: Political Science 544

577. Environmental Politics. SS One course. C-L: see Environment 577; also C-L: Public Policy Studies 577


590S. Topics in International Comparative Studies. Topics vary, focusing on either specific global regions or particular comparative/transnational issues. Instructor: Staff. Variable credit.
The Major

The ICS major is divided into four categories: (1) Core courses are taught by ICS faculty members and include the required gateway course (taken in first or second year), the required capstone seminar (taken in senior year), and for students in excellent academic standing who wish to complete a lengthy supervised research project, the two-semester senior year honors thesis sequence. (2) Region courses focus on a particular geographic area of the world. (3) Global courses focus on global and transnational studies. (4) Foreign language courses build expertise in one language related to a student’s region focus. Region, Global, and foreign language courses are offered by faculty members in many of Duke’s academic programs and departments, as well as in study away programs. Each ICS major must complete a curricular plan, updated with and approved by an ICS advisor each semester, to assure they are on track toward fulfilling major requirements.

Major Requirements:

Ten courses (Core, Region, and Global) at least eight of which must be at or above the 200 level and at least two of which must be at or above the 400 level. An additional four foreign language corequisite courses in one language, initiated at any level. Region and Global courses may not be below the 100 level. The ICS gateway course fulfills one of the 100-level requirements and the ICS capstone seminar fulfills one of the 400-level or above requirements. Successful completion of the first semester of the ICS honors thesis sequence fulfills the capstone requirement. The second semester of the thesis sequence does not exempt majors from the second 400-level or above course requirement. The fourteen courses for the major are to be distributed as follows:

• **Gateway Course:** Comparative Approaches to Global Issues (ICS 195). This course is offered in fall and spring semesters. Whether or not they major in ICS, students are expected to complete the course in the first or second year of study. Students who plan to be ICS majors are expected to complete the course before a study-away semester. Rising juniors or seniors who decide to major in ICS may petition the DUS to take the course in exceptional circumstances, although course enrollment is capped at forty-nine and wait lists are honored. The course is cross-listed in ACES by the departments of cultural anthropology, sociology, history, religion, political science, and women’s studies (the course number under which a student enrolls is irrelevant). ICS 195 is a prerequisite for ICS 489S, the ICS capstone seminar.

• **Region Concentration (four courses):** To gain some historical, political, and cultural knowledge depth related to one part of the world, ICS majors choose a Region concentration and complete four courses chosen from ICS-approved region courses. The most up-to-date region courses are available on the ICS website. Region courses are generally not assigned an ICS number in ACES, although they will have such a number if they also meet ICS Global criteria.

• **Criteria for ICS Region courses:** Content is focused on cultural, social, historical, political, economic, and/or identity dynamics; is theoretically informed and empirically engaged with fieldwork, archives, literary, artistic, and cultural artifacts or processes, and/or statistical data; is largely focused on a particular place or region; and examines dynamics that occurred at any time from 1700 to the present, although it may include content that began in earlier periods.

• **ICS Regions:** ICS students choose a Region concentration from the following seven geographic options: Africa; China and East Asia; Europe; Latin America and the Caribbean; Middle East; Russia and Central Asia; and South Asia. Alternatively, an ICS major may propose to the DUS a differently conceptualized geographic Region focused on a part of the world not captured in or crossing these Region designations, for example, around a body of water or proximal borders. Cases made for such independently conceived areas must be thoughtful and intentional rather than ad hoc. The seven ICS Regions are based on historical, cultural, political, and/or economic histories of connection. At the same time, the ICS intellectual
project understands that state borders and regions are dynamically produced by different processes and agendas, including transnational ones, and recognizes dramatic variety within these regions.

- **Interdisciplinarity**: The four Region courses chosen must come from at least two disciplinary or interdisciplinary departmental homes. The disciplinary home is determined by the originating departmental sponsor of the course. Approved ICS Region courses are listed according to the disciplinary home/number on the ICS website. However, a given ICS student may enroll in an approved Region course under any cross-list department/number.

- **Study Away Courses in a Foreign Language**: Content courses offered in an advanced level of a non-English language at a study-away institution may count toward a major’s Region concentration if they meet region criteria.

- **Global Courses (4)**: ICS majors complete four courses chosen from a robust list of ICS-approved Global courses that is available on the ICS website. Global courses are typically assigned an ICS number in ACES, but are listed and organized according to the original disciplinary or interdisciplinary department home/number on the ICS website.

- **Criteria for Global courses**: Content is organized by a connective, transnational, comparative, or international approach to cultural, social, historical, political, economic, environmental, or discursive dynamics. Courses approach the above through one or more of the following nodes: 1) institutions, organizations, or systems; 2) identities and lived experiences; 3) circulations, circuits, borders, and migrations; 4) social or other movements; 5) cultural productions and receptions. By definition, course content should not be delimited by a focus on one place or state. Course content is theoretically informed and empirically engaged (ethnography, observation, interviews, archives, surveys, and statistical data; institutional, literary, artistic, cultural, commercial, or environmental artifacts, processes, or forms). Course content examines dynamics that occurred at any time from 1700 to the present, although it may include content that began in earlier periods.

- **Interdisciplinarity**: The four Global courses chosen must come from at least two disciplinary or interdisciplinary departmental homes. The disciplinary home is determined by the originating departmental sponsor of the course. Approved ICS Global courses are listed according to the originating disciplinary home/number on the ICS website. However, a given ICS student may enroll under any cross-list department/number of an approved Global course.

- **Foreign Language Corequisite (4 courses)**: Because language knowledge is crucial to deeper historical, political and cultural understanding, as well as social and professional functioning in a variety of settings, the ICS major requires two years (four full courses) of university courses in one non-English language used by a group in part or all of the geographic region concentration. College Board, IB, or other preuniversity language courses, knowledge, or exams cannot be counted toward this corequisite. Language courses used to fulfill the corequisite may begin at any level. Barring other restrictions, students should count toward the ICS major the most advanced university language courses taken. Barring other restrictions, unlimited content courses offered in one foreign language may count toward the foreign language corequisite. Language courses can be found in their sponsoring departments and will not be listed by ICS numbers in ACES. The ICS website, under “Courses,” includes a foreign language website that receives Duke foreign language course feeds from ACES on a semester-by-semester basis.

- **Double Counting**: One advanced language course may double count in the appropriate Region or Global category if its content meets ICS Region or Global criteria and other thresholds (see FAQs on the ICS website), whether the course is offered on Duke’s campus or is an approved study away course.

- **Research Methods**: In certain situations, such as when a student is fluent in a non-English language widely used in the chosen Region concentration, one of the foreign language courses may be met with a research methods or research analysis course.

- **Notes**: Although the foreign language corequisite is not flexible, in certain cases there is reasonable flexibility in regard to the language used to fulfill it. Examples of such cases: 1) when a second year of a language is not taught at Duke; 2) when no language course is available at a sufficiently advanced level. See “Major Requirements” on the ICS website for additional notes on the ICS foreign language corequisite.

- **Capstone Seminar**: International Comparative Studies 489S (Capstone Seminar in International Comparative Studies). At least one section of this seminar is offered each fall and spring semester. The seminar is restricted to declared ICS majors in their final year or semester (for December graduates) of study. International Comparative Studies 195 is a prerequisite for International Comparative Studies 489S. ICS seniors who produce
capstone seminar research projects of exceptional quality are nominated for the ICS Capstone Research Prize by their faculty member. Winners receive a book prize, are listed in the Duke Commencement Program, and are recognized in the ICS Diploma Program and Ceremony.

**ICS Advising & ICS Curricular Plan:** After a student has formally declared an ICS major, the DUS will assign the student an ICS faculty advisor. Each major is required to complete an ICS Curricular Plan (forms are available on the ICS website). In order to assure that each student’s curricular plan is accurate and up-to-date and each ICS major is on track for timely completion of the major, each ICS major is responsible for meeting with their ICS faculty advisor every semester before registration. Students who are studying away often communicate with their ICS advisor through e-mail or Skype. This requirement to update a curricular plan every term also holds true for ICS AB2 majors and ICS majors who plan to study away the following semester, unless they have completed all ICS requirements and such completion is reflected on an updated, accurate, and approved curricular plan that is on file with the program. Because of the interdisciplinary nature of the ICS major, having an accurate and up-to-date curricular plan on file is the single most important administrative aspect for a successful senior clearance before commencement.

**Study Away:** ICS students are strongly encouraged to study away for a semester, and a large majority of ICS majors complete some part of their coursework in study away programs. Students considering or planning to major in ICS are expected to complete the required gateway course, ICS 195, before a study away semester. Up to four full credit study away or transfer courses that meet ICS Region, Global, or foreign language criteria may count toward the major. Students who declare an ICS major are required to complete an ICS Curricular Plan with an advisor before leaving for a study away program. The ICS gateway, capstone, and thesis courses must be taken at Duke and may not be substituted with transfer or study away courses. No matter the number it is assigned by the university registrar, ICS considers any study away course determined to meet Region or Global criteria to be at the intermediate level, or between 200 and 399, for the purposes of fulfilling the requirements of the major. Further important information on study away requirements and policies is available on the ICS website.

**Grants and Awards:** Duke students who are not graduating seniors are eligible to apply for research funding provided by several units on campus. For more information, visit the Undergraduate Research Support Office website at [http://undergraduateresearch.duke.edu/](http://undergraduateresearch.duke.edu/). In addition, rising seniors accepted into the ICS Distinction Program may apply for a summer travel grant to advance language learning and/or to conduct field research, funded by the Scott Lee Stephenson Memorial Fund. The author of an exceptional distinction project is recognized with the ICS Distinguished Thesis Award. Additionally, up to four Capstone Research (Book) Prizes are awarded to seniors who produce superb research in an ICS capstone seminar.

**Departmental Graduation with Distinction**

ICS offers a Graduation with Distinction program for majors whose achievements in university coursework and co-curricular experiences have prepared them to complete an interdisciplinary research-based project on a question of interest relevant to the global and transnationalism focus of the ICS Program.

**Structure:** A two-semester seminar sequence (International Comparative Studies 495S and International Comparative Studies 496S), taken fall and spring of senior year, supports the completion of the distinction project. Each student chooses a Duke faculty member qualified and willing to mentor the student on the project topic to serve as a research supervisor, and is guided through a multi-stage writing process by the ICS faculty member teaching the seminar sequence. Under most circumstances, the product is a completed thesis of seventy to one hundred pages on a topic relevant to ICS’s focus in global and transnational studies. Students may work in, with, and through different mediums, but all are required to complete a research-based and interdisciplinary piece of writing and to submit the final project in electronic form. The completed project is submitted for evaluation to the ICS Distinction Committee by mid-April of the senior year.

**Coursework:** Successful completion of International Comparative Studies 495S in fall term fulfills the major requirement for International Comparative Studies 489S, the senior capstone course. Students must complete eleven non-Foreign Language courses to graduate with distinction in the major instead of the standard ten.

**Application:** To apply for admission to the honors seminar sequence a student must complete, by the end of the junior year, a substantial portion of the major (roughly eleven courses, including foreign language), must have strong academic achievement (at least 3.3 GPA) in all the courses completed for the major, and must have an updated and approved ICS curricular plan on file with the program. Applications from interested juniors are due the week after spring break. The application includes a project proposal (about five pages) and initial bibliography (one to two pages), along with a letter of recommendation from a Duke faculty member qualified and willing to serve as the
research supervisor. Ideally, this faculty member should be someone who has worked with the student in a classroom setting. It is particularly important to have taken at least one university course that provides foundational knowledge on the topic of the proposed research project and to have taken at least one university course that required completion of a research paper (on any topic). The ICS Distinction Program Coordinator, Professor Ross, can provide assistance on conceptualizing an ICS honors project. Further details on the application process, including specific deadlines, are available on the ICS website.

Levels of Distinction and Evaluation Procedure: Three levels are possible: Distinction, High Distinction, or Highest Distinction. Levels of distinction, based on the quality of the completed work and participation in the Honors sequence, are determined by the ICS Distinction Committee in consultation with the student’s research supervisor. Students who have done satisfactory work in the honors seminars but whose thesis is denied distinction will receive graded credit for the coursework.

Double Honors: The ICS Program does not typically allow students to pursue double honors (i.e., complete a single interdisciplinary thesis for two different departments), but individual and rare exceptions may be granted. Further details on deadlines, schedules, and expectations for Graduation with Distinction in ICS are available on the ICS website.

Islamic Studies
Professor of the Practice Merkx, Director

Undergraduate courses in Islamic studies are coordinated by the Duke Islamic Studies Center (DISC). These courses are designed to educate students about Islamic cultures, beliefs, and practices so they are prepared upon graduation to engage the Muslim world knowledgeably and productively in their professional careers or prepared to pursue graduate study.

The Duke Islamic Studies Center also sponsors lectures and conferences that bring prominent American and international Islamic studies scholars, artists, writers, and performers to Duke; coordinates a Muslim Cultures Focus cluster; and promotes cross-cultural exchange between Western and Islamic students and other members of the Duke community.

Courses in Islamic Studies (ISLAMST)

African and African American Studies
271. Humanitarianism in Africa
274S. Islam in the Americas
575. Justice, Law, and Commerce in Islam

Arabic
501S. Translation as a Research Tool in Arabic and Islamic Studies

Arts of the Moving Image
248. Movies of the World/The World of Movies
249S. States of Exile and Accented Cinemas
257. Contemporary Israeli Cinema

Asian & Middle Eastern Studies
183FS. The Palestinian-Israeli Conflict in Literature and Film
215S. The Middle East in Popular Culture
220S. Al-Qaeda's Terrorism: Roots, Responses, and Ramifications
221. Arab Society and Culture in Film
222S. Syrian and Iraqi Cultures and Revolutions
225. Egypt: Mother of the World
227. The Modern Middle East
229. The Arab Spring Revolutions
230S. Islam in the Americas
241. Contemporary Israeli Cinema
283S. The City of Two Continents: Istanbul in Literature and Film
289S. Tracing Muslim Identities in Eurasia
322. Mystical Literature
323S. Gender Jihad: Muslim Women Writers
325. Islamic Awakening: Revival and Reform
327. Islamic Civilization I
382S. Orhan Pamuk and World Literature
387S. The Middle East through Historical Literature
422S. Arab Women Writers
423S. Introduction to Modern Arabic Literature
622S. Arab Women Writers
625. Islamic Awakening: Revival and Reform
629S. Muslim Networks Across Time and Space

**Cultural Anthropology**
256. Islamic Civilization I
257. Islamic Civilization II
405. Religion and Social Transformation in South Asia
416S. Capstone Seminar: Imperialism and Islamism
417S. The Middle East in Popular Culture
423. Sex and Money
426S. Anthropology of Space

**Economics**
306. Economic History and Modernization of the Islamic Middle East
326. Islam and the State: Political Economy of Governance in the Middle East

**Environment**
216S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding

**German**
511S. Theory and Practice of Literary Translation

**History**
155S. Gateway Seminar: The United States and the Middle East
158S. Gateway Seminar: Islam and Nationalism
207. Humanitarianism in Africa
209. Islam in Central Eurasia
210. Islamic Civilization I
211. Islamic Civilization II
212. The Turks: From Ottoman Empire to European Union
214. The Modern Middle East
216S. Between Moscow, Beijing and Delhi: Narratives of Europe and Asia
225S. Muslim Women Across the Ages
239FS. Turkey: Muslim and Modern
249. The Crusades to the Holy Land
351. Islam in the Americas
453S. Capstone Seminar: Imperialism and Islamism

**International Comparative Studies**
365S. Muslim Women Across the Ages
370. Islam in Central Eurasia
380. Islamic Mysticism: Perso-Indian (Eastern) Traditions

**Jewish Studies**
183FS. The Palestinian-Israeli Conflict in Literature and Film
241. Contemporary Israeli Cinema
249. The Crusades to the Holy Land
258. The Modern Middle East

**Literature**
217. Contemporary Israeli Cinema
235S. Anthropology of Space
313. Movies of the World/The World of Movies
314S. States of Exile and Accented Cinemas
640S. Theory and Practice of Literary Translation

**Medieval and Renaissance Studies**
262. The Crusades to the Holy Land
268. Islamic Civilization I
269. Islamic Civilization II
659. Justice, Law, and Commerce in Islam

**Political Science**
117D. Democracy, Development, and Violence: Introduction to Comparative Politics
182FS. Introduction to Middle East Politics
222. The Arab Spring Revolutions
308. Islam and the State: Political Economy of Governance in the Middle East
322. Introduction to Middle East Politics
351. Economic History and Modernization of the Islamic Middle East
354. Politics in the Developing World
358. Globalization and Public Policy
362D. International Security
367S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding

**Public Policy Studies**
212. Globalization and Public Policy
279S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding

**Religious Studies**
160. Islam
165FS. Muslim Women across the Ages
219S. Muslim Women Across the Ages
225. Religion and Social Transformation in South Asia
228. The Turks: From Ottoman Empire to European Union
265. Mystical Literature
274FS. Religion & Politics: The Middle East Today
370FS. Qur'an Over Time
370S. Understanding the Qur'an
372. Islamic Awakening: Revival and Reform
373. Islamic Mysticism: Perso-Indian (Eastern) Traditions
374S. Muslim Philosophy and Theology, an introduction
375. Islamic Civilization I
376. Islamic Civilization II
378. Islam in Central Eurasia
384S. Islam in the Americas
388S. Muslim Ethics and Islamic Law: Issues and Debates
660. Justice, Law, and Commerce in Islam
662S. Muslim Networks Across Time and Space
663. Islam and Modernism
664. The Religion and History of Islam

**Russian**
210FS. Islam and Orthodoxy
210S. Dervishes, Saints and Other Holy Fools
370. Islam in Central Eurasia
384. Movies of the World/The World of Movies

**Slavic and Eurasian Studies**
209FS. Geopolitics & Globalization: From Bosnia to Afghanistan
279FS. Turkey: Muslim and Modern
345S. Orhan Pamuk and World Literature
370. Islam in Central Eurasia
375S. Between Moscow, Beijing and Delhi: Narratives of Europe and Asia

**Sociology**
345. Nations, Regions, and the Global Economy
480S. Sociology of the Middle East
482S. Gender, Labor, and Globalization

**Study of Ethics**
235S. Muslim Philosophy and Theology, an introduction

**Turkish**
112. Accelerated Turkish Language and Culture I
209FS. Geopolitics & Globalization: From Bosnia to Afghanistan
213. Accelerated Turkish Language and Culture II
279FS. Turkey: Muslim and Modern
305S. The City of Two Continents: Istanbul in Literature and Film
307S. The Turks: From Ottoman Empire to European Union
345S. Orhan Pamuk and World Literature
371S. Tracing Muslim Identities in Eurasia
607S. The City of Two Continents: Istanbul in Literature and Film
608. The Turks: From Ottoman Empire to European Union

**Women's Studies**
209S. Muslim Women Across the Ages
214. Contemporary Israeli Cinema
280S. Anthropology of Space

**Italian**
For courses in Italian, see romance studies on page 577.

**Japanese**
For courses in Japanese, see Asian and Middle Eastern studies on page 156.
Jewish Studies

Professor E. Meyers (religious studies), Director; Professor Lieber (religious studies), Associate Director and Director of Undergraduate Studies; Professor Emeritus Bland (religious studies); Professors Davis (divinity), Donahue (German), Goldman (religious studies), C. Meyers (religious studies), Peters (religious studies), and Tulsky (medicine); Associate Professors Hacohen (history), Lieber (religious studies), and Stein (cultural anthropology); Assistant Professor Ginsburg (Asian and Middle Eastern studies); Visiting Assistant Professor Y. Miller (history); Instructor Plesser (Asian and Middle Eastern studies)

A certificate, but not a major, is available in this program. This program is sponsored by the interdisciplinary Duke Center for Jewish Studies. Participating departments and programs include Asian and Middle Eastern studies, classical studies, international comparative studies, cultural anthropology, English, Germanic languages, history, medieval and renaissance studies, political science, religious studies, and women's studies. A full range of courses is available in classical and modern Hebrew. Also, relevant courses in Jewish studies may be taken at The University of North Carolina at Chapel Hill.

The certificate program offers students the flexibility to design, with the aid of a faculty advisor, a curriculum that meets individual interests and talents.

Certificate Requirement

Six courses are required for the certificate, including Religious Studies 140 (Introduction to Judaism) and an independent study to be arranged in consultation with the director of undergraduate studies. Four courses must be at or above the 200 level. Not more than three courses in religious studies may count for the certificate. One (semester) Hebrew language course may count toward the certificate.

Courses in Jewish Studies (JEWISHST)

80S. Special Topics in Writing. Various topics with diverse readings and intensive writing. Instructor: Staff. One course.

89S. First Year Seminar. Topics vary by semester. Instructor: Staff. One course.

101. Elementary Modern Hebrew. FL One course. C-L: see Hebrew 101

102. Elementary Modern Hebrew. FL One course. C-L: see Hebrew 102

105. Biblical Hebrew I. FL One course. C-L: see Religion 105; also C-L: Hebrew 171

106. Biblical Hebrew II. FL One course. C-L: see Religion 106; also C-L: Hebrew 172

140. Judaism. CCI, CZ One course. C-L: see Religion 140; also C-L: Women's Studies

140S. Judaism. CCI, CZ One course. C-L: see Religion 140S; also C-L: Women's Studies

141. Judaism Through Film. ALP, CCI, CZ, EI, W One course. C-L: see Religion 141

145. The Old Testament/Hebrew Bible. CCI, CZ, EI One course. C-L: see Religion 145; also C-L: Ethics Courses Offered Through Other Departments

183FS. The Palestinian-Israeli Conflict in Literature and Film. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 183FS; also C-L: Islamic Studies


203. Intermediate Modern Hebrew. ALP, FL One course. C-L: see Hebrew 203

204. Intermediate Modern Hebrew. ALP, CZ, FL One course. C-L: see Hebrew 204

206S. The Israeli-Palestinian Conflict in Films. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 206S; also C-L: Arts of the Moving Image 206S, International Comparative Studies 202S

241. Contemporary Israeli Cinema. ALP, CCI, EI, W One course. C-L: see Asian & Middle Eastern Studies 241; also C-L: Arts of the Moving Image 257, Literature 217, Women's Studies 214, Islamic Studies

249. The Crusades to the Holy Land. CCI, CZ, R One course. C-L: see History 249; also C-L: Medieval and Renaissance Studies 262, Islamic Studies
251. Jewish History, 1492 to the Present. CCI, CZ, EI, SS One course. C-L: see History 251; also C-L: Religion 340, International Comparative Studies 253, Ethics Courses Offered Through Other Departments

253. Archaeology and Art of the Biblical World. ALP, CCI, CZ, EI One course. C-L: see Religion 250

258. The Modern Middle East. CCI, CZ One course. C-L: see History 214; also C-L: Asian & Middle Eastern Studies 227, International Comparative Studies, Islamic Studies

266. Screening the Holocaust: Jews, WWII, and World Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 341; also C-L: Arts of the Moving Image 263, International Comparative Studies 341

266S. Screening the Holocaust: Jews, WWII, and World Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 341S; also C-L: Arts of the Moving Image 263S, Literature 263S, Documentary Studies

267. Representing the Holocaust. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 343; also C-L: Religion 267

269S. Fragmented Memories: Polish and Polish Jewish Culture Through Film. ALP, CCI, CZ, EI One course. C-L: see Polish 308S; also C-L: Religion 269S

271. Women in the Biblical Tradition: Image and Role. CCI, CZ, EI One course. C-L: see Religion 271; also C-L: Women's Studies

305S. Advanced Modern Hebrew. ALP, CCI, FL One course. C-L: see Hebrew 305S; also C-L: International Comparative Studies

306S. Advanced Modern Hebrew. ALP, CCI, FL One course. C-L: see Hebrew 306S

330. Ethics in the Hebrew Bible/Old Testament. ALP, CCI, CZ, EI, W One course. C-L: see Religion 331; also C-L: Study of Ethics 330

331. Classical Judaism, Sectarianism, and Early Christianity. CCI, CZ One course. C-L: see Religion 231

332S. The Book of Psalms: Reading Biblical Poetry Then and Now. ALP, CCI, CZ, EI, W One course. C-L: see Religion 332S

335. Jewish Mysticism. ALP, CCI, CZ, EI, W One course. C-L: see Religion 335; also C-L: Medieval and Renaissance Studies 351, Ethics Courses Offered Through Other Departments

340S. Death and the Emergence of the Modern Self. ALP, CCI, EI, SS One course. C-L: see Asian & Middle Eastern Studies 340S; also C-L: Arts of the Moving Image 344S

341. Jewish Ethics. CCI, CZ, EI, W One course. C-L: see Religion 341; also C-L: Study of Ethics 341, Ethics Courses Offered Through Other Departments

342. The Holocaust. CCI, CZ, EI, STS One course. C-L: see History 297; also C-L: Religion 342, Political Science 262

345. Contemporary Judaism. CCI, CZ, EI One course. C-L: see Religion 345; also C-L: International Comparative Studies 310

347S. Women in Judaism. CCI, CZ, EI, W One course. C-L: see Religion 347S

350S. Zionism: Jewish and Christian Aspects. CCI, CZ, EI, SS One course. C-L: see Religion 349S; also C-L: Asian & Middle Eastern Studies 350S

367A. Jewish Berlin. ALP, CCI, CZ, EI One course. C-L: see German 367A; also C-L: Literature 367A, International Comparative Studies

368. German Jewish Culture from the Enlightenment to the Present. ALP, CCI, CZ One course. C-L: see German 368; also C-L: Literature 368, Religion 343

369. Germany Confronts Nazism and the Holocaust. ALP, CCI, CZ, EI One course. C-L: see German 387; also C-L: Literature 369, History 261

390. Special Topics in Jewish Studies. Topics vary from semester to semester. Instructor: Staff. One course.


407S. Issues in Modern Hebrew. ALP, CCI, FL One course. C-L: see Hebrew 407S

459S. Capstone Seminar: History of Zionism and the State of Israel. CCI, CZ, EI, R, SS One course. C-L: see History 451S

483. The Palestinian-Israeli Conflict in Literature and Film. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 403; also C-L: International Comparative Studies


514S. Jews and the End of Theory. CCI, CZ, EI, R, SS One course. C-L: see Asian & Middle Eastern Studies 514S; also C-L: Literature 580S, International Comparative Studies 541S

550. Archaeology of Palestine in Hellenistic-Roman Times. CCI, CZ, STS One course. C-L: see Religion 550

601S. Introduction to Jewish Studies. An introduction to the topics and methods that are characteristic of Jewish studies as an academic and scholarly rubric in the contemporary university. The course engages both the history of Judaism as a religious culture and the history of Jewish Studies. Co-taught with faculty from UNC. Weekly meetings will alternate between Duke and UNC campuses. Instructor: Lieber. One course. C-L: Religion 613S, History 601S

607. Hebrew Prose Narrative. FL One course. C-L: see Religion 607


609. Rabbinic Hebrew. FL One course. C-L: see Religion 609

610. Readings in Hebrew Biblical Commentaries. One course. C-L: see Religion 610

683. The Palestinian-Israeli Conflict in Literature and Film. One course. C-L: see Asian & Middle Eastern Studies 603

Opportunities for independent study are also offered in various related departments. Procedures for registration and applications are available in 230 Gray Building.

For further information, contact the director of the Center for Jewish Studies, Box 90964, Durham, NC 27708-0964.

Korean

For courses in Korean, see Asian and Middle Eastern studies on page 156.

Latin

For courses in Latin, see classic studies on page 207.

Latin American Studies

Professor Jenson, Director

A certificate, but not a major, is available in this program.

The program in Latin American Studies, which is administered by the Center for Latin American and Caribbean Studies (CLACS), provides students with the opportunity for interdisciplinary, in-depth study of the realities of Latin American and Caribbean societies and cultures. In addition to offering a certificate and a wide array of area studies and language courses, CLACS also sponsors lectures, Mellon Visiting Professors, and an annual competition for Mellon Undergraduate Summer Research Awards in Latin America or the Caribbean. Moreover, the center and the Institute for the Study of the Americas at The University of North Carolina at Chapel Hill sponsor the Consortium in Latin American Studies at UNC-Chapel Hill and Duke University, which provides opportunities for collaboration with faculty and students from both campuses who are interested in the region. The consortium sponsors yearly
faculty exchanges between the two institutions, joint undergraduate seminars, and an annual Latin American Film Festival.

Students interested in earning a certificate in Latin American Studies are encouraged to declare it by completion of their fifth semester. Students may also elect this interest in Latin America while participating in a Duke-approved study abroad program either during a summer or during their junior year.

For further information consult the assistant director of the Center for Latin American and Caribbean Studies located in the John Hope Franklin Center, 2204 Erwin Road, Durham, NC 27708.

Certificate in Latin American Studies

The course of study for program participants is intended to be interdisciplinary. Students working toward a certificate in Latin American studies will declare a major in an academic department. To qualify for the certificate, students take Latin American Studies 230 (Introduction to Contemporary Latin America), the interdisciplinary capstone seminar (Latin American Studies 498S), fulfill the indicated language requirement, and take three additional area courses, two of which must be at or above the 200 level. Also, at least three different departments must be represented overall, with no more than three courses counting from one single department or major. The language requirement can be fulfilled in one of three ways: (1) by taking three language courses below the 300 level in any one of the most commonly taught languages spoken in Latin America: Spanish, Portuguese, French; (2) by taking one course taught in any one of these languages at the 300 level or above; or (3) by taking two courses in any one of the less commonly taught Latin American languages (such as Haitian Creole or Yucatec Maya). A Summer Intensive Yucatec Maya Language Program is also offered through the Consortium in Latin American Studies, and Haitian Creole is now offered at Duke.

Appropriate courses may come from the list given below, or may include other courses not listed below (new courses, special topics courses, and independent study) with at least 50 percent of course content on a Latin American topic and with term papers or other major projects focusing on a Latin American subject. To determine if specific courses meet requirements for the certificate, students should consult the assistant director. Regular courses are described under the listing of the various departments. Students may also wish to take advantage of house courses offered on Latin American topics although house courses cannot satisfy the requirements of the certificate.

Eligible undergraduates satisfying the certificate may use no more than two courses that are also used to satisfy the requirements of any major, minor, or other certificate program. International comparative studies majors and minors interested in choosing Latin America as their primary area of concentration within that major or minor should consult the director of comparative area studies.

Courses in Latin American Studies (LATAMER)

230. Introduction to Contemporary Latin America. CCI, CZ One course. C-L: see History 330; also C-L: International Comparative Studies 327


321. Visualizing the Caribbean. ALP, CCI, R, SS One course. C-L: see African and African American Studies 321; also C-L: Cultural Anthropology 368, International Comparative Studies 318

328. Global Brazil. CCI, CZ, SS One course. C-L: see History 328; also C-L: African and African American Studies 213

343. Displacements: Migration and Human Trafficking. ALP, CCI, EI, R, SS One course. C-L: see African and African American Studies 343; also C-L: Cultural Anthropology 342, Sociology 343

351. Elections and Social Protest in Latin America. CCI, CZ, SS One course. C-L: see Political Science 307

360S. Geographies of the Erotic: Brazilian Literature in Translation. ALP, CCI, CZ, EI One course. C-L: see Portuguese 3608

390. Special Topics in Latin American and Caribbean Studies. Interdisciplinary study of geographical, historical, economic, governmental, political, and cultural aspects of modern Latin America and the current issues facing the region. Specific topics will vary from year to year. For all undergraduates. Instructor: Staff. One course.

390S. Special Topics in Latin American and Caribbean Culture and Society. This course covers a broad range of cultural topics in Latin American and Caribbean studies from music, art, language, film, journalism, dance, poetry,
etc. and explores the ways in which cultural expression reflects and criticizes social, economic and political forces in the region. Different topics will be chosen each term. Staff: Departmental. One course.

471S. Capstone Seminar: Latin American Left Turns: A New Politics for the 21st Century?. CCI, CZ, R, SS, W One course. C-L: see History 471S; also C-L: Political Science 497S


490S. Special Topics in Latin American and Caribbean Studies. Interdisciplinary study of geographical, historical, economic, governmental, political, and cultural aspects of modern Latin America and the current issues facing the region. Specific topics will vary from year to year. Instructor: Staff. One course.

498S. Capstone Seminar in Latin American Studies. CCI, SS Required for students seeking the certificate in Latin American Studies. Synthesis, interpretation, and application of knowledge gained in previous courses and experiences abroad (DukeEngage, study abroad, internships, etc.). Explores in greater detail interdisciplinary topics related to Latin American and Caribbean Studies taught by visiting scholars from Latin America with significant emphasis on student mentoring and capstone thesis/project. Open to juniors and seniors only. Instructor: Staff. One course.

590. Special Topics in Latin American and Caribbean Studies. Interdisciplinary study of geographical, historical, economic, governmental, political, and cultural aspects of modern Latin America and the current issues facing the region. Specific topics will vary from year to year. For juniors, seniors and graduate students. Instructor; Staff. One course.

590S. Special Topics in Latin American and Caribbean Studies. CCI Interdisciplinary study of geographical, historical, economic, governmental, political, and cultural aspects of modern Latin America and the current issues facing the region. Specific topics will vary from year to year. For juniors, seniors and graduate students. Instructor: Staff. One course.

594S. Cultural (Con)Fusions of Asians and Africans. CCI, CZ, SS One course. C-L: see African and African American Studies 594S; also C-L: Cultural Anthropology 594S, Sociology 594S


690-1. Topics in Latin American Cultural Studies. A problem-oriented course, but also covering theoretical issues, integrating approaches from two or more disciplines. Topics vary from year to year. Instructor: Staff. One course.

690S. Special Topics in Latin American and Caribbean Culture and Society. This course covers, at a graduate level, a broad range of cultural topics in Latin American and Caribbean studies from music, art, language, film, journalism, dance, poetry, politics etc. and explores the ways in which cultural expression reflects and criticizes social, economic and political forces in the region. Different topics will be chosen each term. One course.

**Latin American Area Courses**

**African and African American Studies**
131. The Third World and the West I
209. Afro-Brazilian Culture and History
216. Culture and Politics in the Caribbean
217S. The Atlantic Slave Trade
218. The Caribbean, 1492-1700
219. The Caribbean in the Eighteenth Century
410S. Francophone Literature

**Art History**
433S. 20th Century Latin American Photography

**Arts of the Moving Image**
249S. States of Exile and Accented Cinemas

**Asian & Middle Eastern Studies**
202S. Francophone Literature

**Biology**
280LA. Fundamentals of Tropical Biology
281LA. Research Methods in Tropical Biology
561. Tropical Ecology

Canadian Studies
350S. The U.S. Border and its Borderlands

Cultural Anthropology
429. Gender and Sexuality in Latin America

Environment
517. Tropical Ecology

French
417S. Francophone Literature

History
131. The Third World and the West I
315. The Emergence of the Atlantic Basin to 1713
316S. The Atlantic Slave Trade
318. The Caribbean, 1492-1700
319. The Caribbean in the Eighteenth Century
324. Mexico Since Before Cortes
326. Latin America: Colonialism and Its Consequences
327. Afro-Brazilian Culture and History
329. Modern Latin America
387S. Francophone Literature

International Comparative Studies
209S. The Atlantic Slave Trade
263. The Caribbean in the Eighteenth Century
335. Latin-American Literature in Translation
426. Gender and Sexuality in Latin America
459S. 20th Century Latin American Photography

Latino/a Studies in the Global South
490S. Special Topics in U.S. Latina/o Literatures and Cultural Studies

Literature
314S. States of Exile and Accented Cinemas
376. Latin-American Literature in Translation

Political Science
343S. The U.S. Border and its Borderlands
349. Political Economy of Latin America

Portuguese
260. Afro-Brazilian Culture and History
334S. Introduction to Brazilian Literature

Public Policy Studies
216S. The U.S. Border and its Borderlands

Sociology
226. The Challenges of Development

Spanish
334. Introduction to Spanish-American Literature
335. Introduction to Spanish-American Literature
361. Latin-American Literature in Translation
432S. Hispanic Literature and Popular Culture
433S. 20th Century Latin American Photography
490AS. Duke in Andes: Special Topics

Women's Studies
429. Gender and Sexuality in Latin America

Latino/a Studies in the Global South

Professor Antonio Viejo, Director

A certificate, but not a major, is available in this program.

The undergraduate certificate in Latino/a studies in the global South is administered by the Program in Latino/a Studies in the Global South. This interdisciplinary certificate is designed to provide students with comparative, historical, and cultural knowledge of peoples of Latin American descent living in the United States (and moving transnationally); understanding of the concepts of Hispanics/Latino/as, latinidad and hispanidad, and the Global
South (and Global North); and insight into the construction and assertion of Latino/a identities, involving convergences and divergences, over space and time. This certificate program allows students to draw on both the strength and scope of Duke's offerings in Latino/a studies as well as complementary courses offered at UNC-Chapel Hill, which offers an interdisciplinary minor in Latino/a studies.

In addition to offering courses and a certificate after completion of the requirements, the program in Latino/a studies in the global South offers a variety of supplemental educational opportunities, including lectures and events involving prominent scholars, artists, writers, musicians, and performers; financial assistance for student-organized academic discussions; conference awards; advising; and a resource room. Students are invited to use the Latino/a Studies Resource Room (Friedl Building 124) for study sessions and meetings with faculty, students, staff, and community members. Resources available in this room include encyclopedias, texts, novels, scholarly journals, videos, and music. Students may also take advantage of events, lectures, and an annual film festival hosted by the Center for Latin American and Caribbean Studies, which include Latino/a studies content. Students are encouraged to enroll in Spanish Service Learning courses as well as Duke-approved study away programs and DukeEngage programs that focus on Latino/a populations in the United States and/or that take place in various countries within Latin America. For further information, consult the executive director of Latino/a Studies at 122 Friedl, East Campus.

Program Requirements

The course of study for program participants is interdisciplinary, with a minimum total of six courses. Students working toward a certificate in Latino/a studies in the global South are encouraged (but not required) to declare it by their fourth semester.

To enroll in the certificate program, students should officially declare their intention to pursue the certificate through academic advising (first- and second-year students) or through the Office of the University Registrar (juniors and seniors) and should also meet in person with the executive director for Latino/a studies to complete required paperwork and discuss the academic plan.

In meeting the total requirements, a minimum of three departments must be represented, with no more than half (50 percent) of the courses originating in a single academic unit. Students may count toward this certificate no more than two courses that are being used to fulfill the requirements of any major, minor, or other certificate.

To qualify for the certificate, students will take:

- Latino/a Studies in the Global South 101S (Introduction to Latino/a Studies in the Global South), preferably in the first or sophomore year.
- one language course: either a) a course in Spanish at the 300-level or above, preferably a Spanish Service Learning course or b) apply to receive credit for a language taken other than Spanish (for example, a less-commonly taught Latin American language such as Quechua). Decisions regarding language credit in circumstance will be made on a case-by-case basis, dependent upon applicability of the language to the student's focus of study and capstone research project.
- three elective courses, two of which must be at or above the 200-level. Of the three elective courses, at least one must be a humanities course, and one a social science course. Qualifying courses may come from the list provided below, or may include other courses not listed (new courses, special topics courses, and independent study), and must have at least 50 percent of course content on Latino/as or Latino/a studies and with term papers or other major projects focusing on this field. To determine if specific courses meet requirements for the certificate, students should consult the executive director. Up to two of the elective courses may be taken at UNC-Chapel Hill, in consultation with the executive director. Students are strongly encouraged to take part in study away programs that focus on Latino/a populations in the United States and/or that take place in various countries within Latin America. Courses taken abroad with Latino/a studies content that appear on the Duke transcript may count toward the three elective course total. Students may also wish to take advantage of house courses offered on Latino/a studies topics, although house courses do not satisfy any requirement of the certificate program.
- Latino/a Studies in the Global South 495S (Capstone in Latino/a Studies in the Global South), preferably in the senior year.

Courses in Latino/a Studies in the Global South (LSGS)

89S. First Year Seminar. Topics vary each semester. Instructor: Staff. One course.


254. Cultures and Politics of the América Borderlands. CCI, EI, SS, STS One course. C-L: see Cultural Anthropology 254

290. Special Topics in Latino/a Studies in the Global South. Topics vary by semester, but always have at least 50% of course content on Latino/as or Latino/a Studies. One course.

305. Spanish for Heritage Speakers. CCI, CZ, FL, W One course. C-L: see Spanish 305

306. Health, Culture, and the Latino Community. CCI, FL One course. C-L: see Spanish 306; also C-L: Global Health 326

307S. Issues of Education and Immigration. CCI, FL One course. C-L: see Spanish 307S; also C-L: Education 307S

308S. Latino/a Voices in Duke, Durham, and Beyond. CCI, CZ, FL, W One course. C-L: see Spanish 308S

310. Advanced Spanish-English and English-Spanish Translation. ALP, CCI, FL One course. C-L: see Spanish 310

412D. Mayas, Aztecs and Incas: The World According to the Indigenous People of Latin America. CZ, EI, R One course. C-L: see Spanish 412D; also C-L: International Comparative Studies 460D, Cultural Anthropology 367D, History 412D


465S. Capstone Seminar: History of the U.S./Mexico Border, 18th to 20th centuries

490S. Special Topics in U.S. Latina/o Literatures and Cultural Studies. ALP, CCI One course. C-L: see Spanish 490S-2; also C-L: Latin American Studies

495S. Latino/as in the Global South Capstone - Global/Local Contexts. CCI, CZ, SS Required for students seeking the certificate in Latino/a Studies in the Global South. Provides students with the opportunity to synthesize theories and methodologies in Latino/a Studies taken in previous coursework and to critically reflect on content related to the Latino/a world, especially about latinidad in local and global contexts. Utilizes texts of a rigorous and probing nature in relation to individual research projects. Open to juniors and seniors who have previously taken Latino/a Studies in the Global South 101S: Introduction to Latino/a Studies in the Global South. Instructor: Viego. One course.

Electives
African and African American Studies
216. Culture and Politics in the Caribbean
246. Comparative Race and Ethnic Studies
Cultural Anthropology
256S. Farmworkers in North Carolina: Roots of Poverty, Roots of Change
254. Cultures and Politics of the America Borderlands
Documentary Studies
332S. Farmworkers in North Carolina: Roots of Poverty, Roots of Change
History
331S. Exploring Latino Identity in the Twentieth Century
465S. Capstone Seminar: History of the U.S./Mexico Border, 18th to 20th centuries
Sociology
316. Comparative Race and Ethnic Studies
Spanish
303. Introduction to Cultural Studies

Linguistics
Professor Andrews (Slavic and Eurasian studies), Chair; Associate Professor Andresen (English), Director of Undergraduate Studies; Professors Andrews, O’Barr (cultural anthropology), Rasmussen (German) Rosenberg (philosophy), and Rubin (psychology); Associate Professor Day (psychology); Assistant Professor Baran; Associate Professors of the Practice Fellin (romance studies) and Walther (German); Associate Research Professor Mazuka (psychology); Adjunct Assistant Professor Keul (German). Affiliated faculty: Professors Brandon (philosophy), Cooke (Asian and Middle Eastern Studies), and Rubin (psychology); Associate Professor Guzeldere (philosophy); Assistant Professor Sterrett (philosophy); Professor of the Practice Tufts (romance studies); Associate Professors of the Practice Kim (Asian and Middle Eastern Studies) and Paredes (romance studies)

A major or a minor is available in this program.

From the earliest philosophers to modern neuroscientists, researchers from a wide range of disciplines have explored a diverse range of issues concerning the human capacity for language and the diversity of the world’s languages. Linguists work at the intersection of these issues and define linguistics as the science of language and languages. During the past 150 years, linguists have developed a variety of theoretical paradigms to describe and explain language history, dialect variation, cross-cultural similarities and differences, the neurological processing and production of language, and the evolutionary emergence of language.

The linguistics major at Duke is unusual in its range of theoretical approaches coupled to the study of languages of the world. The required courses for the major stress empirical methods and the global database; the theory courses expose the student to the perspectives offered by historical and comparative linguistics, structural linguistics, generative linguistics, sociolinguistics, semiotics, discourse analysis, philosophy, cognitive linguistics, and psycholinguistics. The major maintains the traditional and mainstream body of linguistic inquiry and, at the same time, encourages exploration of the most recent developments in language study that issue from cultural and literary theory and the biological sciences.

Courses in Linguistics (LINGUIST)
114FS. The Power of Poetry. ALP, CZ Takes different approaches to thinking through the relationship of poetry to power and the place and function of poetic language in contrast to other language forms. Specific units: 1) poetry's roots in what we think of as prayers, spells, and curses and the roots of theatre and epic narrative in rituals associated with these forms- focus primarily on early Vedic poetry and the work of Laurie Patton and Theodore Proferes on its public dimensions, 2) comparative/historical study 3) an exploration of "lyric" as a form of play, and 4) consideration of arguments for the value and function of poetry in contemporary culture. Open only to students in the FOCUS Program. Instructor: Need. One course.

115FS. Games and the Brain. NS An introduction to the brain, fMRI technology, and tools used to analyze fMRI data. Analyze neural substrates that support game play through hands-on work with functional magnetic resonance imaging data. Consider structured games and how they can be used to answer questions about the brain. Design an fMRI experiment to learn something new about the brain. Initial assignments will assess data quality and prepare it for later analyses using a general-linear-model framework. Open only to students in the FOCUS program. Instructor: Carter. One course. C-L: Neuroscience 157FS
123FS. When the Head's in Trouble: Language, Lesions and Loss. NS Study of neurological breakdowns due to lesions from benign and malignant brain tumors, epilepsy (w/without lesions), head/neck cancer. Includes fundamentals of neuroanatomy, neuropathology and head/neck physiology. Explores important diagnostic and research procedures, including cortical stimulation mapping, innovations in radiation therapy, surgery, molecular targeting, imaging, minimizing side effects of treatment, clinical trials. Topics include neurocognitive variation across patients with focus on memory and language, cortical and network abnormalities in criminal psychopathy, oncology and the human papilloma virus, and radiation/surgical treatments for head and neck cancer. Instructors: Brizel and Serafini. One course. C-L: Neuroscience 123FS

124FS. Remembering Differently. CCI, CZ, SS The social construction of memory as seen in the different ways "memory" has functioned in human language, culture and thought, including medical practices, time, group identity, religion, law and ethics, performance, media new and old, and cultural mythologies. Includes readings from the Sophists, Plato, Augustine, Matteo Ricci, Bergson, Proust, Freud, and non-Western sources like the Buddha and Bilhana. Instructor: Liu. One course.


170D. Advertising and Society: Global Perspective (DS4). CCI, SS One course. C-L: see Cultural Anthropology 170D; also C-L: Sociology 160D, Visual and Media Studies 170D

190A. Duke-Administered Study Abroad: Special Topics in Linguistics. The study of linguistics and languages on Duke-approved programs at foreign institutions of higher learning. Topics differ by section. Instructor: Staff. One course.

190FS. Special Topics in Linguistics. Topics vary by semester. For students in the FOCUS program. Instructor: Staff. One course.

199FS. Individual Health Behavior and Health Education. SS Examines health behavior from a lifespan perspective from infancy to end of life. Theoretical and conceptual frameworks for viewing health and illness in the context of the individual, family, relational, cultural, and social network will be discussed. Highlights the importance of both local contexts and global practice for understanding and improving individual health. Only open to students in the Focus program. Instructor: Alexander. One course.

201. Introduction to Linguistics. CCI, SS Introduction to the scientific study of linguistics and languages. Topics include the origin and nature of language, methods of historical and comparative linguistics, theories and schools of linguistics, empirical and descriptive approaches to the study of language, including phonology, morphology, semantics, and syntax. Instructor: Butters or Tetel. One course. C-L: Cultural Anthropology 201, International Comparative Studies

202. Languages of the World. CCI, SS The major languages of the world viewed in the context of the communicative and significative functions of language as parameters that shape and define society. The role of language in defining and structuring culturally-based relationships from a semiotic point of view. The structure, writing systems, phonology, morphology, and lexicon of languages from the following groups: Indo-European, Semitic, Turkic, Finno-Ugric, Caucasian, Afroasiatic, Sino-Tibetan, Niger-Kordofanian, Dravidian, and Native American languages. Instructor: Andrews or Tetel. One course. C-L: Cultural Anthropology 202, Russian 362, International Comparative Studies 210

204. English Historical Linguistics. SS One course. C-L: see English 204; also C-L: International Comparative Studies 220

205. The Law and Language. CCI, CZ, EI, SS Intersections of language and law and legal institutions examined from a comparative approach, i.e., official state language and national identity; freedom of speech and its limitations; language as property. One course. C-L: Cultural Anthropology 205

205FS. Language and the Law. CZ, EI, SS One course. C-L: see Slavic and Eurasian Studies 205FS

206. Variety in Language: English in the United States. CCI, SS English language variation in the United States considered from a current sociolinguistic perspective. Social, regional, ethnic, gender, and stylistic-related language variation, along with models for describing and applying knowledge about language variation. Language variation
focused on vernacular varieties of American English in general and on North Carolina in particular. C-L. Instructor: Staff. One course. C-L: English 206

207. Psychology of Language (C). R, SS One course. C-L: see Psychology 256

208. Philosophy of Mind. CZ, R One course. C-L: see Philosophy 212; also C-L: Visual and Media Studies 302, Information Science and Information Studies

209. Philosophy of Language. CZ One course. C-L: see Philosophy 209

210FS. The Mind and Language. SS One course. C-L: see English 209FS

210S. The Mind and Language. SS One course. C-L: see English 209S

211FS. The Neuroscience of Reading & Language Comprehension. NS, R Examination of complex cognitive functions involved in effective language comprehension that involve multiple layers of analysis (e.g., sounds, words, syntax, discourse), and require extensive computational resources and processes afforded by the brain. Focus on neural infrastructure that enables language comprehension. Consideration of clinical disorders that result in language impairment such as semantic dementia and aphasia, and modern research technologies such as fMRI, EEG, and transcranial magnetic stimulation that can be used to study neurotypical individuals. Includes methodological details of each technique, and research findings from primary source documents. Instructor: Diaz. One course. C-L: Neuroscience 111FS

212FS. Law, Ethics & Responsibility. EI, SS, STS Examines the intersection of law and neuroscience, including the use of neuroimaging to determine if a witness is telling the truth; the implications of neuroscience for determining the mental competency of defendants, the insanity defense, the imposition of punishment on defendants. Considers the extent to which recent advances in brain science cause us to reevaluate fundamental legal concepts of "intent," "insanity," and responsibility; the ways in which neuroscience may be applied to these and related issues; and the inherent limitations and incongruities of applying brain science to legal questions. Instructor: Newcity. One course. C-L: Public Policy Studies 250FS

213FS. The Politics of Language. SS One course. C-L: see Slavic and Eurasian Studies 215FS; also C-L: Political Science 185FS, International Comparative Studies 228FS

216FS. Neuroscience and Human Language. NS, SS Same as Linguist 216S; open only to students in the Focus Program. Prerequisite: Advanced placement credit in Biology. Instructor: Andrews. One course. C-L: Russian 216FS, Neuroscience 116FS

216S. Neuroscience and Human Language. NS, SS The relationship of brain and language explored through a variety of methodologies and approaches, including first and second language acquisition across cultures, multilingualism, language disorders, and imaging studies of language acquisition, maintenance and loss. Special attention to Russian contributions to cognitive neuroscience and linguistic theory. Prerequisite: Advanced Placement credit in biology. One course. C-L: Russian 216S, Neuroscience 116S

250. Symbolic Logic. CZ One course. C-L: see Philosophy 250; also C-L: Information Science and Information Studies

302S. French Phonetics. FL One course. C-L: see French 329S

303. Fundamentals of Spanish Linguistics. FL, SS One course. C-L: see Spanish 304

304. French Composition and Translation. CCI, FL One course. C-L: see French 304

305S. Italian Sociolinguistics. CCI, CZ, FL, SS One course. C-L: see Italian 303S

306S. Korean Sociolinguistics. CCI, CZ, SS One course. C-L: see Asian & Middle Eastern Studies 378S

308S. Bilingualism. CCI, SS One course. C-L: see Asian & Middle Eastern Studies 308S


361. Language Technologies and Culture Acquisition. R, SS, STS One course. C-L: see Russian 361; also C-L: Information Science and Information Studies


390S-01. Topics in Spanish Linguistics. CCI, FL One course. C-L: see Spanish 390S-5

396S. Language in Immigrant America. ALP, CCI, R One course. C-L: see English 396S; also C-L: Cultural Anthropology 397S, Slavic and Eurasian Studies 396S, International Comparative Studies 396S

410S. Linguistics and Law (DS4). SS Topics include surreptitious recordings as criminal evidence; pornography, slander, defamation, and libel; interpretation of laws and contracts; copyright, patents, and trademarks; jury instructions; jury selection; courtroom language as a unique register; the language of judges' decisions; interrogations and confessions; official bilingualism; product warnings; clarity of instructions leading to potential liability issues. Instructor: Newcity. One course.


451. Language and Society. CCI, SS One course. C-L: see English 395; also C-L: Slavic and Eurasian Studies 385, Cultural Anthropology 212, International Comparative Studies 395

469SA. Language, Technology and Social Change in India. CCI, SS, STS This course takes an expansive view of exploring how technological innovations, including information technologies, broadcast media, and biotechnologies in India, impact cultural practices, ethical norms, language and social structures, especially gender, class and caste. The role of language policy in education, rural and urban geography, and resource utilization are each considered in the context of understanding technology-driven social change in diverse global contexts. Offered as part of the Duke INtense Global Program in Hyderabad, India. Instructor: B. Prasad & L. Prasad. One course.

471S. Language and Politics: Eurasian Perspectives. CCI, SS Will examine the interfaces between language, migration, and socio-political structures in the newly independent nations of Eurasia. While these interfaces have long historical antecedents in nation-state formations, their manifestations in the post-national, post-communist era are novel and complex. Understanding these new dynamics requires viewing language from a political-sociological perspective that takes into account the interplays between the local, the national and the global. Instructor: Price. One course. C-L: Slavic and Eurasian Studies 484S, Sociology 471S, Public Policy Studies 208S

472S. Cold War Texts: Politics, Propaganda and Pop Culture. ALP, CCI, EI, SS This course examines the subtle (and not-so-subtle) ways in which Soviet Russia and Eurasia were strategically constructed and represented during the Cold War. Students will learn to critically analyse the meanings and ethical implications of a variety of texts--including political speeches, propaganda films, policy documents, and selections from popular film and literature--and locate them in the historical, social and political contexts of their production. Students will engage with theories and methods from a range of disciplines including critical discourse analysis, sociolinguistics and political sociology. Instructor: Price. One course. C-L: Slavic and Eurasian Studies 434S, Sociology 472S, Public Policy Studies 472S, International Comparative Studies 472S

473S. Neuroscience and Multilingualism. NS, R, STS In-depth analysis of PET, fMRI, MEG, EEG/ERP studies of multilingualism and their implications for linguistic theory. A close examination of the neuroanatomical and neurophysiological aspects of imaging studies and the importance of neurofunctional explanations play a central role in building new theoretical paradigms of acquisition, maintenance and loss of languages. Instructor: Andrews. One course. C-L: Russian 439S

480S. Critical Discourse Analysis: Theory and Method. CCI, EI, R, SS Presents key theories and methodologies of critical discourse analysis (CDA) through substantive practice in analyzing language and discourse in real-world texts, with a focus on understanding ethical implications of how people, events and issues are represented.
Theoretical frameworks from e.g. Foucault and Laclau & Mouffe are examined in the context of linguistic approaches from e.g. Saussure, Halliday and Blommaert. Primarily aimed at junior/senior Linguistics majors but open to upper-class/graduate students majoring in allied humanities/social science fields. Some knowledge of language/linguistics is helpful, though not necessary. Instructor: Price. One course.

490S. Special Topics in Linguistics. SS Topics vary by semester. Instructor: Staff. One course.

493. Research Independent Study. R Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


501. Cognitive and Neurolinguistics. NS, R, SS The interrelationship between language and brain as described and analyzed in cognitive and neurolinguistics. Topics include localization theories, hemispheric dominance in language, language disorders, invasive and noninvasive scanning and imaging technologies (including ERP, EEG, fMRI, MEG), encoding and decoding of language at the phonological, morphological, syntactic, and semantic levels. Readings include scholarship from theoretical and cognitive linguistics, neurolinguistics, neurobiology, neuropsychiatry, and neuropsychology. Major research project required in form of research paper, laboratory or imagining experiment, or IRB document. Instructor: Andrews. One course. C-L: Russian 510, Neuroscience 501S

502S. Language, Brain, and Human Behavior. R, SS, STS Explores the intersection of cognition and language by looking at a variety of theories of language, including: traditional models that vary according to how much the capacity for language is attributed to "the genes" or to "the environment" and newer models that question and redescribe traditional definitions of terms such as "nature," "nurture," genetic code," and "language." How traditional and new models of language interpret the capacity for language in its relationship to the neurosciences, the cognitive sciences, and the social sciences. Instructor: Tetel. One course. C-L: Psychology 670S

503S. Language Evolution and Acquisition. R, SS Both the phylogeny and ontogeny of language, i.e., both the wide and growing variety of scripts for the evolution of language in the human species and the various approaches to the emergence of language in the individual. The emergence of language in the individual and the particular language(s) the individual is exposed to, making linguistic relativity an important topic. Instructor: Tetel. One course. C-L: English 503S

506S. Semiotics and Linguistics (DS4). ALP, CCI, R, SS One course. C-L: see Russian 506S

510. Brain and Language (B, C). NS Focus on cognitive processes and brain mechanisms involved in language comprehension and production. Psycholinguistic models and how these models may be implemented in the brain. Instructor: Andrews. One course. C-L: Psychology 575, Neuroscience 510

512. Structure of French. FL One course. C-L: see French 512

512S. Topics in Spanish Linguistics. FL, R, SS One course. C-L: see Spanish 512S

528S. Recent and Contemporary Philosophy. CZ One course. C-L: see Philosophy 628S

560. History of the German Language. One course. C-L: see German 560; also C-L: Medieval and Renaissance Studies 607

561S. Second Language Acquisition and Applied Linguistics. SS One course. C-L: see German 561S

562S. Old Norse: Introduction to the Language of Viking Scandinavia. ALP, CZ One course. C-L: see German 510S; also C-L: Medieval and Renaissance Studies 609S

564. Russian and Slavic Linguistics. SS One course. C-L: see Slavic and Eurasian Studies 564

590. Special Topics. CCI, R, SS Study of theoretical and applied linguistics. Contrast and comparison of both theoretical approaches and language groups is required. Topics to be announced. Instructor: Staff. One course.

590S. Special Topics in Linguistics. CCI, R, SS Same as Linguistics 590 except instruction is provided in a seminar format. Instructor: Staff. One course.
The Major

The major is composed of ten courses, eight of which must be at the 200 level or above. The courses combine empirical methods with theory. They are devised to provide depth and breadth in linguistic theory, the different schools of linguistics, the history and development of linguistic thought, and the interdisciplinary aspects of linguistics in the context of languages and cultures. Majors must take Linguistics 201 and 202, which define the fundamental questions of linguistic theory in the context of the world’s languages; and in the junior or senior year the capstone course Linguistics 450S, which adds cohesion to the major. For depth, the student is required to take three courses from the list of theory courses, which provide the necessary theoretical and empirical constructs for the study of linguistics. In addition, two courses are required in one of the concentrations in a specific area of linguistics. All majors are required to take at least two foreign language courses at or above the 100 level. Students may petition to add courses to the list of courses that count toward the theory and disciplinary areas below (II and III).

Major Requirements

- Introductory Linguistics Courses (two):
  - Linguistics 201 (Introduction to Linguistics)
  - Linguistics 202 (Languages of the World)
- Theory: Three courses in the study of theoretical linguistics. Courses to be chosen from the following list:

Regularly Scheduled Linguistics Courses:

- 250. Symbolic Logic
- 203S. Introduction to Theoretical Linguistics
- 209. Philosophy of Language
- 207. Psychology of Language (cross-listed)
- 204. English Historical Linguistics
- 308S. Bilingualism
- 216S. Neuroscience and Human Language
- 364. Gender and Language
- 206. Variety in Language
- 493. Research Independent Study
- 494. Research Independent Study
- 501. Cognitive and Neurolinguistics
- 502S. Language, Brain, and Human Behavior
- 506. Semiotics and Linguistics
- 410S. Linguistics and Law
- 561S. Second Language Theory and Practice
- 510. Brain and Language

Special Topics Courses, Offered Periodically:

- English
  - 490-1. Current Topics in Linguistics
- Linguistics
  - 590. Special Topics
  - 590S. Special Topics Seminar

Disciplinary Areas. Two courses in one of the areas listed below. No course taken for credit as theory may be counted to fulfill the disciplinary concentration requirement. Qualifying courses are listed above under the heading “Linguistics Program Courses.” Disciplines include:

- Asian and Middle Eastern studies
- Cultural anthropology
- English
- German
- Italian
- Philosophy
- Psychology
- Romance studies
- Slavic and Eurasian studies
- Spanish

Junior/Senior Seminar in Linguistics. (Linguistics 450S). The capstone course for the major, usually taken in the junior or senior year.
• **Language Requirement.** Two semester courses in a single language other than English at or above the 100 level, excluding languages in which the student possesses native proficiency in speech and writing. Students with advanced placement credits or other evidence of foreign language proficiency are not exempted from this requirement. Advisor’s approval is required in order to determine the language chosen for the major. The specific language courses are too numerous to list here. Advisors should also be consulted for specific approval of the language choice if it does not conform to the list below or in the case of a trilingual student: Arabic, Chinese, French, German, Greek, Hebrew, Hindi, Italian, Japanese, Korean, Latin, Polish, Portuguese, Russian, Spanish.

**Departmental Graduation with Distinction**

The linguistics program offers work leading to Graduation with Distinction. See the program chair.

**Procedure for Selection of Students.** An overall GPA of 3.3 and GPA of 3.5 in the major are required. The process for admission to the Graduation with Distinction program is initiated by the submission of a research proposal to a faculty advisor by the end of the second semester of the junior year.

**Expected Product.** The central requirement is an honors thesis prepared by the student under faculty supervision. The thesis generally consists of three to five chapters with an extensive bibliography.

**Evaluation Procedure.** Completion of the thesis, its evaluation, and its defense before a three-member faculty committee warrants Graduation with Distinction.

**Levels of Distinction.** The honors thesis committee will decide to grant distinction and at what level (Distinction, High Distinction, Highest Distinction) based on the quality of the completed work.

**Special Courses Required.** The program consists of two courses. (1) Linguistics 493 (Research Independent Study), taken in the fall semester of the senior year, is devoted to development of the honors thesis and includes close supervision of the writing stage of the project by a faculty member selected by the student. (This study can also be listed as a special topics course, Linguistics 590S, if it is titled “Honors Thesis.”) 2) The second course is Linguistics 450S (Senior Seminar in Linguistics), which is the capstone course specifically designed for doing comparative research.

**The Minor**

**Requirements:** Five courses, in linguistics, three of which must be at the 200 level or above. Usually, two of these courses are Linguistics 201 and Linguistics 202.

**Literature Program in Global Cultural Studies**

Professor Chow, *Chair*; Professor Viego, *Director of Undergraduate Studies*; Professors Aravamudan, Chow, Dainotto, Donahue, Hansen, Hardt, Hayles, Jameson, R. Khanna, Lenoir, Mignolo, Moi, Surin, and Wiegman; Associate Professors Lubiano, Mottahehdeh, Viego, and Willis; Assistant Professor Hadjioannou; Research Professors Dorfman and Garreta

A major, a major with a concentration in film and media studies, or a minor is available in this program. Both major and minor include a required course, a set of core literature courses and some electives. The general rule for identifying core literature courses is that they are numbered from 50-99, 150-199, 300 to 399, 450-499, and 600-699. In addition a few courses not in this range are core courses; these courses can be identified by the name of the professor: the rule here is that any course taught by any above listed literature faculty member regardless of its number is a core literature course. The literature program also offers a certificate in Marxism and Society, for more information see “Marxism and Society” on page 442.

**Courses in Literature Program in Global Cultural Studies (LIT)**

80S. **Special Topics: Introduction to Literature.** ALP Introduction to the study of literature and other forms of cultural expression, such as film. Different introductory approaches will be used in each section (for example, a systematic account of literary genres, a historical survey of ideas and forms of fiction, concepts of authorship and subjectivity, or of literary meaning and interpretation). More than one national literature or culture represented. May be taken twice for credit. Instructor: Staff. One course.

89S. **First-Year Seminar.** Topics vary each semester offered. Instructor: Staff. One course.
101. Gateway to Global Cultural Studies. ALP, CCI, CZ, EI
Gateway course for the Literature Major in Global Cultural Studies. Examines how the work of the humanities provides conceptual and analytic skills for processing complex textual, cultural, scientific, mediatic, and ethical information in circulation in the contemporary world. Begins by asking what Global Cultural Studies is and why exploring culture in a global frame is important in our world today. Focuses on a particular area of cultural production and combines theoretical and historical analysis with concrete exploration of films and other media, literary texts, and other cultural material. Instructor: Staff. One course.

110. Introduction to Film Studies. ALP
One course. C-L: see Arts of the Moving Image 201; also C-L: Theater Studies 278, English 181, Visual and Media Studies 289, Documentary Studies 264, Policy Journalism and Media Studies

111. Introduction to the Arts of the Moving Image. ALP
One course. C-L: see Arts of the Moving Image 101; also C-L: Visual and Media Studies 102, Visual Arts 102, Information Science and Information Studies 111

143. Introduction to Latino/a Studies in the Global South. ALP, CCI, SS
One course. C-L: see Latino/a Studies in the Global South 101; also C-L: African and African American Studies 104, International Comparative Studies 106, Spanish 160

143S. Introduction to Latino/a Studies in the Global South. ALP, CCI, SS
One course. C-L: see Latino/a Studies in the Global South 101S; also C-L: Spanish 160S, African and African American Studies 104S, International Comparative Studies 106S

150. Introduction to Cultural Studies. ALP
Basic theoretical approaches to high and low culture—Bourdieu and Adorno, the Frankfurt School and the Birmingham Center for Contemporary Cultural Studies; Third World and feminist approaches; the avant-garde and subcultural resistance. Analysis of sport and leisure, film and photography, law and the arts, popular and classical music, painting and advertising imagery. Instructor: Staff. One course. C-L: English 180, Visual and Media Studies 180, Arts of the Moving Image, Marxism and Society

151. Studies in Interpretation. ALP
Examples from short fiction and poetry will provide a basis for the development of close reading skills as a basis for literary interpretation. Instructor: staff. One course.

190FS. Special Topics in the Focus Program. ALP
Topics vary. Open only to students in the Focus Program. Instructor: Staff. One course.

190S. Special Topics: Introduction to Interpretation and Writing. ALP
This course introduces students to the basic skills of interpretation of texts and critical writing and argumentation. May be taken twice. Instructor: Staff. One course.

208S. The Silent Film: An Introduction. ALP, CCI
One course. C-L: see Arts of the Moving Image 208S; also C-L: German 268S, Visual and Media Studies 214S

211. Indian Cinema. ALP, CCI, CZ, R
One course. C-L: see Asian & Middle Eastern Studies 251; also C-L: Arts of the Moving Image 253, Visual and Media Studies 231

212. World of Korean Cinema. ALP, CCI, CZ, EI
One course. C-L: see Asian & Middle Eastern Studies 471; also C-L: Arts of the Moving Image 254, Visual and Media Studies 234, Cultural Anthropology 255

213. Japanese Cinema. ALP, CCI, CZ
One course. C-L: see Asian & Middle Eastern Studies 261; also C-L: Arts of the Moving Image 255, Visual and Media Studies 232

214. Modern Chinese Cinema. ALP, CCI, CZ
One course. C-L: see Asian & Middle Eastern Studies 431; also C-L: Arts of the Moving Image 250, Visual and Media Studies 235

215. Italian Cinema. ALP, CCI
One course. C-L: see Italian 380; also C-L: Arts of the Moving Image 254, Visual and Media Studies 308, Theater Studies 276

216S. Trauma and Nostalgia: East European Film in the 21st Century. ALP, CCI, CZ, EI
One course. C-L: see Slavic and Eurasian Studies 288S; also C-L: Arts of the Moving Image 268S, International Comparative Studies 288S

217. Contemporary Israeli Cinema. ALP, CCI, EI, W
One course. C-L: see Asian & Middle Eastern Studies 241; also C-L: Arts of the Moving Image 257, Jewish Studies 241, Women's Studies 214, Islamic Studies
218. Existentialist Cinema. ALP, CCI, CZ, EI, STS One course. C-L: see German 386; also C-L: Theater Studies 372, Visual and Media Studies 283, Arts of the Moving Image 267, Arts of the Moving Image

219. Women in Film. ALP, CCI One course. C-L: Arts of the Moving Image 216, Women's Studies 227, Study of Sexualities 225

220. Film Genres. ALP One course. C-L: see Arts of the Moving Image 210; also C-L: Visual and Media Studies 267

221. American Film Comedy. ALP One course. C-L: see Arts of the Moving Image 211; also C-L: English 382, Visual and Media Studies 268

222. Global Performance Art: History/Theory from 1950's to Present. ALP, CCI, CZ, EI One course. C-L: see Visual and Media Studies 344; also C-L: Information Science and Information Studies 275, Theater Studies 235, Women's Studies 276

223S. Film Noir. ALP, CCI, EI One course. C-L: see Arts of the Moving Image 209S; also C-L: German 270S, Visual and Media Studies 282S

224S. Digital Storytelling. ALP, STS, W One course. C-L: see Information Science and Information Studies 351S; also C-L: Visual and Media Studies 357S

230A. Introduction to Global Los Angeles: An Interdisciplinary Survey. ALP One course. C-L: see Visual and Media Studies 359; also C-L: Arts of the Moving Image 283

235S. Anthropology of Space. CCI, SS One course. C-L: see Cultural Anthropology 426S; also C-L: Women's Studies 280S, Islamic Studies

239S. Korean Literature in Translation: Local and Global Connections. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 272S

240. The Devil's Pact: Faust and the Faust Tradition. ALP, CCI, EI One course. C-L: see German 370; also C-L: Medieval and Renaissance Studies 345

241S. Around the Bloc: Cold War Culture in the USSR and Eastern Europe. CCI, CZ, EI, SS One course. C-L: see Slavic and Eurasian Studies 240S; also C-L: Arts of the Moving Image 240S, Cultural Anthropology 259S

242. The Existentialist Imagination. ALP, CZ, EI One course. C-L: see German 385; also C-L: Philosophy 283

242D. The Existentialist Imagination. ALP, CZ, EI One course. C-L: see German 385D; also C-L: Philosophy 283D

243. Secularization and Modernity: Cross-Disciplinary Readings 1750-1914. ALP, CCI, CZ, EI, R One course. C-L: see English 285; also C-L: Sociology 348, Political Science 374, German 376, Romance Studies 360

244S. Poetry, Desire & Religion. ALP, CCI, CZ, W One course. C-L: see Religion 275S

245. Dante's Divine Comedy: Hell, Purgatory and Paradise. ALP, CCI, CZ, EI One course. C-L: see Italian 481; also C-L: Medieval and Renaissance Studies 450, Religion 262, History 253

246D. Flaubert's Brain: Neurohumanities. ALP, CCI, STS One course. C-L: see French 481D; also C-L: Neuroscience 241D

247. Classics of Western Civilization: The German Tradition, 1750-1930. ALP, CCI, CZ One course. C-L: see German 375; also C-L: History 268, Political Science 375

248S. Chinese Literature and Culture in Translation. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 232S

252. Romantic Fairy Tales: Literary and Folk Fairy Tales from Grimms to Disney. ALP, CCI, CZ One course. C-L: see German 262; also C-L: English 287

260S. Freud and Sexuality. CCI, R, SS One course. C-L: see Women's Studies 372S; also C-L: Study of Sexualities 310S, Psychology 322S

261S. Freud and Feminism: The Unconscious. CCI, R, SS One course. C-L: see Women's Studies 373S
263S. Screening the Holocaust: Jews, WWII, and World Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 341S; also C-L: Arts of the Moving Image 263S, Jewish Studies 266S, Documentary Studies

273. European Literature. ALP, CCI, CZ, R One course. C-L: see Italian 201

276S. Orhan Pamuk and World Literature. ALP, CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 345S; also C-L: Asian & Middle Eastern Studies 382S, International Comparative Studies 345S

280. Marx, Nietzsche, Freud. CCI, CZ, SS One course. C-L: see German 380; also C-L: Philosophy 286, Political Science 378, Marxism and Society

280D. Marx, Nietzsche, Freud. CCI, CZ, EI, SS One course. C-L: see German 380D; also C-L: Philosophy 286D, Political Science 378D


286. German History Through Film. ALP, CZ, EI One course. C-L: see German 286; also C-L: History 255, Arts of the Moving Image 286

290. Special Topics in International Literature and Culture. ALP, CCI Topics in international culture, examined through literary texts, film, and other media. Organized according to trends, topics, and genres. Instructor: Staff. One course.


290A. Duke-Administered Study Abroad: Special Topics in Literature. Topics differ by section. Instructor: Staff. One course.


290S-1. Special Topics in International Literature and Culture. ALP, CCI Seminar version of Literature 290. One course.


290SA. Duke-Administered Study Abroad: Special Topics in Literature. Seminar version of 290A. Topics vary by section. Instructor: Staff. One course.

295S. Sex Work: The Politics of Sexual Labor. CCI, SS One course. C-L: see Women's Studies 295S; also C-L: Study of Sexualities 295S, Sociology 295S

296S. Borderland and Battleground: A Journey Through Twentieth-Century Eastern Europe. ALP, CCI, CZ One course. C-L: see Slavic and Eurasian Studies 286S

301S. Theory Today: Introduction to the Study of Literature. ALP Introduction to major areas of research in Global Cultural Studies with focus on specific theoretical issues of contemporary concern in various subfields of global culture. Required for majors. One course. Instructor: Staff. One course.


314S. States of Exile and Accented Cinemas. ALP, CCI, EI, SS Geopolitics of situatedness and distance as they refer to the film industry. Production, distribution, and reception of exilic and diasporic films. Classical and artisanal modes of production in film. Questions of authorship and embodiment; human rights and interventionist filmmaking. States of liminality, global movements and capital. The experience of globalization, urbanization, alien-
iation, violence, nostalgia for nature and homeland as represented in the filmic image. Instructor: Mottahedeh. One course. C-L: Arts of the Moving Image 249S, Islamic Studies, Latin American Studies

315S. Sexualities in Film and Video (DS4). ALP The variety of ways sexualities are represented in current mainstream and avant-garde film and video art. Topics include voyeuristic, narcissistic, and other perverse pleasures; modes of representing bodies, genders, and desires (especially gay and lesbian ones) in relation to national and subcultural identities. Readings in film theory and the history and theory of film technology, as well as related literary and critical texts. Instructor: Clum or Metzger. One course. C-L: Arts of the Moving Image 220S, Visual and Media Studies 298, Women's Studies


320S. Social Movements and Social Media. ALP, CCI, CZ, EI, STS Considers uses of social media by social movements. Interested in broader historical study of mediating technologies and oppositional public sphere; considers uses of cameras, phones, cassette players, pamphlets, radio, and social media, but also the body, art, and fashion as oppositional technologies. Studies political and ethical uses of technologies in social unrest in North Africa, Middle East, Latin America and global Occupy mobilization. Investigates impact of technologies on social movements in contemporary history. Student driven case studies will highlight engagement with technologies of resistance in other contexts. Instructor: Mottahedeh. One course. C-L: Arts of the Moving Image 246S, African and African American Studies 247S, International Comparative Studies 320S, Latin American Studies 320S

328S. Literary Islam. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 328S

330S. Social Facts and Narrative Representations. ALP Story telling as it establishes, relies on, and transforms socially recognized categories—gender, class, race, sexual orientation, and region. Narrative theory; examples from written fiction, film, and television. Instructor: Lubiano. One course. C-L: African and African American Studies 324S

331. Beat Generation/Russian New Wave: Cultural Dissent in the Cold War. ALP, CCI, CZ, EI, W One course. C-L: see Russian 330; also C-L: English 378

332. Social Movements in Age of Globalization. CCI, CZ, EI, SS Study of primary models and theories of social movements developed in fields of Sociology and Political Science. Readings provide vocabulary and conceptual framework for understanding how people organize, how social movements use media, role of leadership, meaning of success, and several other basic issues. Focus on social movements of last few decades. Students will conduct group projects on a selected contemporary social movement. Contemporary social movements considered include Occupy, 15M movement in Spain, Gezi Park encampment in Turkey, urban protests in Brazil, and Arab Spring uprisings. Instructor: Hardt. One course. C-L: Sociology 323, Political Science 313

335S. Political Economies of the Global Image. ALP, CCI, SS, STS In the contemporary world we are inundated with images and with announcements of the global, yet what is a global image? What makes images global, and how might a set of global events become images? How do global images create their audiences with implicit identity
markers such as race, class, and sexual preference, or the absence of them? In this course, we will study a variety of image-texts drawn from art, photography, film, advertising, science, and digital media in order to understand the cultural processes by which images communicate, give pleasure, cause anxiety, provoke controversy, and/or attain global status. Instructor: Chow. One course. C-L: Arts of the Moving Image 247S, Women's Studies 249S, Cultural Anthropology 217S, Visual and Media Studies 248S

341. Science Fiction. ALP, EI, STS Exploration in science fiction of transhumanism, called by Francis Fukuyama "the world's most dangerous idea." Critical inquiry into the transhumanist imperative that Homo sapiens can and should evolve further through advanced technology, including the claim that death is not inevitable. Texts include Greg Bear, Blood Music; Philip K. Dick, Do Androids Dream of Electric Sheep and film adaptation of Blade Runner; Shirow Masamune, Ghost in the Shell, graphic novel and film; Vernon Vinge, Rainbows End; Stanislaw Lem's The Cyberiad; Bruce Sterling, Holy Fire; Octavia Butler, Dawn; Greg Egan, Permutation City; Orson Scott Card, Ender's Game; and selected short stories. Instructor: Hayles. One course.

341D. Science Fiction. ALP, EI, STS Exploration in science fiction of transhumanism, called by Francis Fukuyama "the world's most dangerous idea." Critical inquiry into the transhumanist imperative that Homo sapiens can and should evolve further through advanced technology, including the claim that death is not inevitable. Texts include Greg Bear, Blood Music; Philip K. Dick, Do Androids Dream of Electric Sheep and film adaptation Blade Runner; Shirow Masamune Ghost in the Shell, graphic novel and film; Vernon Vinge Rainbows End; Stanislaw Lem's The Cyberiad; Bruce Sterling, Holy Fire; Octavia Butler Dawn; Greg Egan, Permutation City; Orson Scott Card, Ender's Game; and selected short stories. Discussion version of Lit 341. Instructor: Hayles. One course.

343S. African Americans, Mass Incarceration and Citizenship. ALP, CCI, CZ, EI, R One course. C-L: see African and African American Studies 345S

344. Poetics of Murder. ALP, CCI One course. C-L: see German 284

345S. Popular Fictions. ALP Three popular genres, science fiction/fantasy, the western, and detective fiction, and how they reflect aspirations and cultural anxieties about matters such as gender. Open to juniors and seniors only. Instructor: Willis. One course. C-L: English 375S, Women's Studies 252S

346S. Utopian Writing. ALP, CCI The various historical and theoretical expressions of Utopia will be examined across a range of texts drawn from art, architecture, film, and literature. Ethical issues and problems attached to traditional utopias will be considered against the radical politics of utopia as negation or transformation of existing society. Instructor: Staff. One course.

347D. Types of Recent Fiction. ALP Includes types such as faux memoir, dystopian novel, satire, realism in its high, middle, and low mimetic modes, the international political novel, faux essay, and experimental fictions for which literary criticism has yet to invent an adequately descriptive terminology. Focus on the works of George Orwell, Norman Mailer, Graham Greene, Raymond Carver, John Cheever, Thomas Bernhard, Saul Bellow, John Barth, and Donald Barthelme, with emphasis on ways in which a writer's artistic power recreates and reveals freshly subjects taken for granted. The novel as a special and disturbing way of knowing. Instructor: Lentricchia. One course. C-L: English 376


351. Contemporary Novel. ALP One course. C-L: see English 377; also C-L: International Comparative Studies 377

360S. Women Writers. ALP Issues of gender and representation in works by women from the Middle Ages to the modern period. Concentration on specific periods, areas, or themes. Relationship of women's literature to the other arts, political practices, and social developments. Instructor: Staff. One course. C-L: Women's Studies

365S. Feminist Classics. ALP, CCI The classics of English and French feminist thought from three different periods: 1790-1810; 1860-1880; 1920-1950. The major feminist works of Mary Wollstonecraft, John Stuart Mill, Virginia Wolfe and Simone de Beauvoir read alongside other relevant literary and philosophical texts: Wollstonecraft,
for example, read with Descartes, Rousseau, Hegel and Madame de Stael. Instructor: Moi. One course. C-L: Philosophy 274S, Women's Studies 365S, English 388S, Study of Sexualities

367A. Jewish Berlin. ALP, CCI, CZ, EI One course. C-L: see German 367A; also C-L: Jewish Studies 367A, International Comparative Studies

368. German Jewish Culture from the Enlightenment to the Present. ALP, CCI, CZ One course. C-L: see German 368; also C-L: Jewish Studies 368, Religion 343

369. Germany Confronts Nazism and the Holocaust. ALP, CCI, CZ, EI One course. C-L: see German 387; also C-L: Jewish Studies 369, History 261

371. Problems in Global Culture. ALP, CCI, EI The study of cultural production from across the world, with a special emphasis on mass media, fiction, and literature. Particular attention to the tension between ethics and aesthetics in a number of texts, comparing mass media products from the developed Western world with novels, poems and films from misdeveloped countries. A basically comparatist, multigenre approach. One course. C-L: Arts of the Moving Image

371S. Problems in Global Culture. ALP, CCI, EI Seminar version of Literature 371. Instructor: Staff. One course. C-L: Arts of the Moving Image

375. Latin American Literature in Translation. ALP, CCI Foundational and recent texts, crucial themes, obsessions, genres and stylistic strategies of Latin American culture. Readings include canonical authors such as Sarmiento, Garcia Marquez, Lispector, Cortazar; recent writers who address contemporary issues. Ethical and political dilemmas will be constantly examined. Instructor: Dorfman. One course. C-L: International Comparative Studies 339, Spanish 361

376. Latin-American Literature in Translation. ALP, CCI One course. C-L: see Spanish 361; also C-L: International Comparative Studies 335, Latin American Studies

380. Marxism and Society. CZ, EI, SS Introduction to Marx's core concepts, such as alienation, commodity, and revolution. Includes examination of Marx's own major historical & political analyses, his economic texts, and his philosophical writings. Students also gain familiarity with the role of Marxist thought in different fields and disciplines, including feminist theory, anthropology, history, political science, and literary studies. Instructor: Hardt. One course. C-L: Cultural Anthropology 203, Education 239, Sociology 339, Political Science 371, International Comparative Studies, Marxism and Society

390. Special Topics in Literature. ALP Topics vary by semester. Instructor: Staff. One course.

390-10. Special Topics in Literature and National Cultures, Ethnicity, Race. ALP, CCI Literature as a part of specific national cultures; questions such as: How does literature articulate conceptions of nationality, ethnicity, and race? Does literature have a color? What is the relationship between national languages, dialects, and ethnic languages? What role does literature as an institution play in the constructions of nationhood? Instructor: Staff. One course. C-L: International Comparative Studies

390-11. Special Topics in Third World or Postcolonial Literature and Cultures. Colonial and postcolonial literatures of India, New Zealand and Australia, Canada, Francophone and Anglophone Africa, the Caribbean, North and South America. Organized according to trends, topics, and genres. Instructor: Ferraro, Moses, or Willis. One course. C-L: International Comparative Studies

390-5. Selected Topics in Feminist Studies. Topics vary each semester. Instructor: Staff. One course.

390-6. Special Topics in Gender and Sexuality. ALP Different literary and/or theoretical approaches to questions of sex, gender, and sexuality. Instructor: Staff. One course. C-L: Women's Studies

390-7. Special Topics in the Study of Literature in Relation to Other Disciplines. ALP Lecture version of Literature 390S-7. Instructor: Staff. One course.

390A-12. Special Topics in World Media. Studies in the media and society in a national or international setting; offered only in a Duke study abroad program. Instructor: Staff. One course.

390A-13. Special Topics in World Literature and Culture. Studies in literature and culture in a national or comparatist mode; offered only in a Duke study abroad program. Instructor: Staff. One course.
390S-1. Special Topics in Literary Genres. ALP Studies in one or more literary genres or subgenres, such as the novel, drama, poetry, or the documentary novel, epic poetry, love lyrics, modernist drama, and so on. Focus on questions of genre and form, but other themes discussed may vary widely. Instructor: Staff. One course.


390S-2. Special Topics in Literary Movements. ALP Historical, theoretical, and/or formal approaches to literary movements in different periods and cultures. Instructor: Staff. One course.

390S-3. Special Topics in Individual Authors. ALP Seminar version of Literature 154. Biographic, historical, and/or stylistic approaches to one or two individual authors, as well as critical debates concerning their work. Instructor: Staff. One course.

390S-4. Special Topics in Film. ALP Close study of a major genre, period, or director. Instructor: Staff. One course. C-L: Arts of the Moving Image


390S-7. Special Topics in the Study of Literature in Relation to Other Disciplines. ALP A comparative approach to the study of literature that draws on the methods and materials of other disciplines, such as sociology, history, anthropology, or philosophy. Focus on the methods of interdisciplinary study. Contents vary with instructors. Instructor: Staff. One course.

390S-8. Special Topics in Culture and the Arts. ALP Literature in relation to the plastic and visual arts, architecture, and photography. Topics will vary according to the instructor, for example: modernism and postmodernism, the avant-garde, identity, and nationalism in the art of a given period. Instructor: Staff. One course.


390SA. Special Topics in Literature. Topics vary by semester. Instructor: Staff. One course.

391. Independent Study. Non-research directed study on a previously-approved topic under the direction of a faculty member, resulting in an academic product. Consent of instructor required. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Instructor: Staff. One course.

412S. Cultures of New Media. ALP, SS, STS One course. C-L: see Cultural Anthropology 434S; also C-L: Visual and Media Studies 412S, International Comparative Studies 432S, Asian & Middle Eastern Studies 425S


430. Gender and the Law. CCI, EI, SS One course. C-L: see Women's Studies 401; also C-L: Public Policy Studies 315

431. Imagining Justice: The U.S. and the Carceral Imagination. ALP, CCI, CZ, EI Investigation of the history of prison in the United States, what role prison plays in our understanding of the state, and our ideas of individual self-understanding or identity produced within the constraints of the U.S. “state.” Explores prison as an institution of the state and the prisoner a site for considering the relationship of state, criminal justice system, and individual
subject. Not open to students that have taken this course as Literature 89S. Instructor: Lubiano. One course. C-L: African and African American Studies 421, Women's Studies 431

439. Queer China. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 439; also C-L: Cultural Anthropology 439, Arts of the Moving Image 439, Visual and Media Studies 439, Women's Studies 439

471S. Marxism and Culture. ALP A critical assessment of Marxist theory in relation to culture conceived broadly. Political and ethical questions may be considered in addition to artistic and social movements in various national contexts. Instructor: Staff. One course. C-L: Marxism and Society

475S. Queer Theory. ALP, CCI, SS One course. C-L: see Women's Studies 370S; also C-L: Study of Sexualities 470S, Marxism and Society

485S. Existentialism Between Cultures. ALP, CCI, EI Post-war existentialism in France and Britain in literature and philosophy, focusing on the ethics of existentialism (in particular the ethical consequences of the existentialist understanding of freedom), and the cultural difference between French and British forms of existentialism. Writers such as Sartre, deBeauvoir, Camus, D. Lessing, Murdoch, Osborne, A. S. Byatt. Instructor: Moi. One course.

486S. Ordinary Language Philosophy. ALP An introduction to one of the most powerful visions of language in the 20th century, focused on works by Wittgenstein, Austin, and Cavell. Instructor: Moi. One course. C-L: English 485S, Philosophy 486S

490-1. Special Topics in Theory. ALP An advanced investigation of major concepts and principles in literary and/or cultural theory. Contents and methods vary with instructors. Instructor: Staff. One course.

490S-1. Special Topics Theory. An advanced investigation of major concepts and principles in literary and/or cultural theory. Contents and methods vary with instructors. Instructor: Staff. One course.

490S-2. Special Topics in Literature. Special Topics in Literature. Instructor: Staff. One course.

495. Honors Thesis I. ALP, R, W First semester of a two-semester sequence, in which Literature majors begin the year-long honors program. No credit given for Literature 495 without completion of Literature 496. Does not count towards the ten Literature courses required for the major. Director of Undergraduate Studies consent required. Instructor: Staff. One course.

496. Honors Thesis II. ALP, R, W Continuation of Literature 495 in which Literature majors finish the year-long honors program. Does not count towards the ten Literature courses required for the major. Director of Undergraduate Studies consent required. Prerequisite: Literature 495. Instructor: Staff. One course.

510. Citizen Godard. ALP, CCI, W One course. C-L: see French 510; also C-L: Arts of the Moving Image 642, Visual and Media Studies 552


520S. Performance Studies. ALP One course. C-L: see Theater Studies 533S

521S. Historical and Philosophical Perspectives on Science. CZ, STS One course. C-L: see Philosophy 541S; also C-L: Women's Studies 541S, History 577S

530S. Seminar in Asian and Middle Eastern Cultural Studies. CZ One course. C-L: see Asian & Middle Eastern Studies 505S; also C-L: African and African American Studies 540S

539S. Queer China. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 539S; also C-L: Cultural Anthropology 539S, Women's Studies 502S, Arts of the Moving Image 539S, Visual and Media Studies 539S

540S. Methods and Theories of Romance Studies. ALP, CCI, R One course. C-L: see Romance Studies 501S

541. Medieval Fictions. ALP, CCI, FL One course. C-L: see French 530; also C-L: Medieval and Renaissance Studies 642

541S. The Symbolist Movement in the Arts & European Thought. ALP, CZ One course. C-L: see Art History 541S
542S. Literary Guide to Italy. ALP, CCI, CZ. One course. C-L: see Italian 586S; also C-L: German 586S, Arts of the Moving Image 640S

543S. Reading Heidegger. ALP, CCI, CZ, El. One course. C-L: see Asian & Middle Eastern Studies 540S; also C-L: Religion 560S

571. East Asian Cultural Studies. ALP, CCI, CZ, R. One course. C-L: see Asian & Middle Eastern Studies 605; also C-L: Cultural Anthropology 605, International Comparative Studies 605

572S. Antonio Gramsci and the Marxist Legacy. CCI, CZ, SS. One course. C-L: see Italian 588S

573S. Ethnohistory of Latin America. CCI, CZ, R, SS. One course. C-L: see Cultural Anthropology 570S; also C-L: History 540S

580S. Jews and the End of Theory. CCI, CZ, El, R, SS. One course. C-L: see Asian & Middle Eastern Studies 541S; also C-L: Jewish Studies 541S, International Comparative Studies 541S

590. Special Topics in Literature. ALP. Special topics in Literature. Instructor: Staff. One course.

590S. Special Topics in Literature. ALP. Special topics in Literature. Instructor: Staff. One course.

610S. Basic Concepts in Cinema Studies. ALP. Review of theory, methodology, and debates in study of film under three rubrics: mode of production or industry; apparatus or technologies of cinematic experience; text or the network of filmic systems (narrative, image, sound). Key concepts and their genealogies with the field: gaze theory, apparatus theory, suture, indexicality, color, continuity. Instructor: Mottahedeh. One course. C-L: Arts of the Moving Image 610S, Arts of the Moving Image

611S. Film Feminisms. ALP, CCI, CZ. Philosophical debates and approaches to the female form in film theory and history. Phenomenology, cultural studies, Marxism, psychoanalysis, structuralism, post-structuralism, as well as gaze theory, apparatus theory, and feminist film theory as they approach readings of the body, subjectivity and identity in cinema. Questions of spectatorship and the gendered subject. Screening and discussion of Hollywood and European avant garde films key to early debates, and of international films central to debates around the gendered subject and representation in modernity. Interrogation of feminist approaches to national cinemas. Instructor: Mottahedeh. One course. C-L: Women's Studies 611S, Arts of the Moving Image

612S. Theories of the Image. ALP. Different methodological approaches to theories of the image (film, photography, painting, etc.), readings on a current issue or concept within the field of the image. Examples of approaches and topics are feminism, psychoanalysis, postmodernism, technology, spectatorship, national identity, authorship, genre, economics, and the ontology of sound. Instructor: Jameson, Mottahedeh, or staff. One course.


614S. Thinking Digital Cinema. ALP, STS. Review of debates regarding digital cinema. Exploration of impact of new media technologies on contemporary cinema cultures. Examines question of medium specificity, cinema ontology, conventions of analog cinema vs. digital cinema, mediation/remediation/media convergence, applications of CGI, interactivity, cinephilia and DVD consumption, and spectatorship. Explores a series of philosophical questions surrounding our understanding and experience of contemporary cinema. Includes one trip to a local museum or gallery to examine digital installation art. Instructor: Hadjioannou. One course. C-L: Theater Studies 671S, Arts of the Moving Image 644S

615S. The #Selfie. CZ, EI, R, STS. Focusing on digital self portraits that social media denizens have hashtagged "the selfie", the course will trace two different histories 1) the global history of portraiture in the arts and photography from the 19th C to the present 2) the emergence of the modern idea of "everyday life" (i.e. the routine, the trivial, the unconscious, the unremarkable) as the exact antithesis of what has routinely been called "history", all strongly associated with women and private life. These unpresentable phenomenon have challenged notions of the

621S. Critical Studies in New Media. ALP, R, SS, STS One course. C-L: see Visual and Media Studies 561S; also C-L: Art History 537S, Arts of the Moving Image, Policy Journalism and Media Studies

622. Science Studies. ALP, STS Key texts and crucial issues in contemporary history, sociology, and philosophy of science—or, as the assemblage is sometimes called, 'science studies.' Focus on theoretical and Key texts and crucial issues in contemporary history, sociology, and philosophy of science - or, as the assemblage is sometimes called, 'science studies.' Focus on theoretical and methodological problems leading to a critiques of classical conceptions of knowledge and scientific truth, method, objectivity, and progress, and b the development of alternative conceptions of the construction and stabilization of knowledge and the relations between scientific and cultural practices. Readings include L. Fleck, K. Popper, P. Feyerabend, T. Kuhn, S. Shapin and S. Schaffer, and B. Latour. One course. C-L: Information Science and Information Studies

623. Body Works: Medicine, Technology, and the Body in Early Twenty-First Century America. ALP, CCI, STS One course. C-L: see Information Science and Information Studies 670; also C-L: Philosophy 570, Genome Sciences and Policy

624S. Post-Digital Architecture. ALP, R Impact of advanced technology on conceptions of architectural design, new urban environments, & the body since the mid-1990s. Postmodernism & role of time-based new media, game environments & virtual worlds technologies in the rise of digital architecture from the late 1990s-2000s. Theoretical readings from Deleuze, Pask, Grosz, Massumi, Denari, Eisneman, Koolhaas, Lynn, Diller + Scofidio. Explores programs for post-digital architecture that integrate nano & biomimetic technologies, smart materials & protocols into self-organizing designs for living architecture & reflexive environments. Discuss how post-digital architecture will engage the work of Simondon, Spillers, Armstrong,others. Topics course. Instructor: Lenoir. One course. C-L: Information Science and Information Studies 624S

625S. Comparative Media Studies. ALP, STS Explores the impact of media forms on content, style, form, dissemination, & reception of literary & theoretical texts. Assumes media forms are materially instantiated & investigates their specificities as important factors in their cultural work. Puts different media forms into dialogue, including print, digital, sonic, kinematic & visual texts, & analyzes them within a theoretically informed comparative context. Focuses on twentieth & twenty-first century theories, literatures, & texts, esp. those participating in media upheavals subject to rapid transformations. Purview incl. transmedia narratives, where different versions of connected narratives appear in multiple media forms. Instructor: Hayles. One course. C-L: Information Science and Information Studies 615S, Visual and Media Studies 625S

630S. Phenomenology and Media. ALP, CCI, CZ, R, STS Examination of phenomenology both as a philosophical movement and as a resource for contemporary media theory. Attention centers on the classical phase of phenomenology (from Husserl to Merleau-Ponty), on more recent developments in phenomenology and post-phenomenology (Levinas, Derrida, Fink, Barbaras), and on correlations between phenomenology and media theory (Ihde, Stiegler, Flusser). Key topics include: reduction, experience, time-consciousness, sensation, world manifestation, differance, reversibility, de-presencing, worldliness, readiness-to-hand and thrownness. Instructor: Hansen. One course. C-L: Art History 630S, Information Science and Information Studies 630S, Visual and Media Studies 630S, Arts of the Moving Image 631S

631S. Seminar on Modern Chinese Cinema. CZ, R One course. C-L: see Asian & Middle Eastern Studies 631S; also C-L: Arts of the Moving Image 633S, Visual and Media Studies 631S

632. Modern Chinese Cinema. CZ, R One course. C-L: see Asian & Middle Eastern Studies 631; also C-L: Arts of the Moving Image 632, Visual and Media Studies 632

632S. Whitehead, Bergson, James. ALP, CCI, CZ, EI An exploration of process philosophy, with particular attention to its relevance for contemporary issues in media, political economy, aesthetics, and culture. Focuses on three texts: Whitehead's Process and Reality, Bergson's Matter and Memory, and James's Essays in Radical Empiricism. Other works by these philosophers and secondary literature on them will help establish context for arguments of these fundamental philosophical texts. Topics explored includes: process, radical empiricism, vitalism, memory, perception, monism, experience, speculative empiricism, actuality & potentiality, the virtual, the fringe, the

640S. Theory and Practice of Literary Translation. ALP, CCI, W Linguistic foundations, historical roles, contemporary cultural and political functions of literary translation. Readings in translation theory, practical exercises and translation assignments leading to a translation project. One course. C-L: German 511S, Islamic Studies

644. Modernism. Aspects of the "modern," sometimes with emphasis on the formal analysis of specific literary and nonliterary texts (Joyce, Kafka, Mahler, Eisenstein); sometimes with a focus on theories of modernism (Adorno), or on the modernism/postmodernism debate, or on the sociological and technological dimensions of the modern in its relations to modernization, etc. Instructor: Jameson or Lentricchia. One course.

672. Representation in a Global Perspective. ALP, CCI Problems of representation approached in ways that cross and question the conventional boundaries between First and Third World. Interdisciplinary format, open to exploration of historical, philosophical, archeological, and anthropological texts as well as literary and visual forms of representation. Instructor: Dorfman, Jameson, or Mignolo. One course.

681S. Wittgensteinian Perspectives on Literary Theory. ALP Key questions in literary theory reconsidered from the point of view of ordinary language philosophy (Wittgenstein, J. L. Austin, Cavell). Topics will vary, but may include: meaning, language, interpretation, intentions, fiction, realism and representation, voice, writing, the subject, the other, difference and identity, the politics of theory. New perspectives on canonical texts on these subjects. Instructor: Moi. One course. C-L: English 582S, Philosophy 681S

682. The Intellectual as Writer. ALP, CZ History and theory of the literary role of the intellectual in society (e.g., in Augustan Rome, the late middle ages, the Renaissance, America, Latin America). Instructor: Jameson, Lentricchia, Moi, Mudimbe, or Surin. One course.

683. Studies in Legal Theory. A consideration of those points at which literary and legal theory intersect (e.g., matters of intention, the sources of authority, the emergence of professional obligation). Instructor: Staff. One course.

690. Special Topics in Literature. ALP Topics vary by semester. Instructor: Staff. One course.

690-1. Special Topics in Literature of the Modern Era. ALP Study of a particular author, genre, or theory of modern literature. Topics include changing understandings of authorship, questions of reception, translation, and the history of criticism. Instructor: Staff. One course.

690-3. Topics in Cultural Studies. ALP Instructors: Surin or staff. One course.

690-4. Special Topics in Film. ALP Selected film directors with attention to their visual style. Auteur theory or authorship as a way of understanding the cinematic work of European, American, Asian, or African masters of the form. Instructor: Lentricchia. One course.

690-6. Topics in Psychoanalytic Criticism. Instructor: Moi or Viego. One course.

690-7. Special Topics in Literature and History. ALP, CZ Relationship of literary texts to varieties of historical experience such as wars, periods of revolutionary upheaval, periods of intense economic growth, "times of troubles," or stagnation. Literary texts and historical content posed in such formal ways as the theoretical problem of the relationship between literary expression and form and a range of historical forces and phenomena. Instructor: Jameson or Kaplan. One course.

690-8. Special Topics in Literature: Paradigms of Modern Thought. ALP, CZ Specialized study of the work of individual thinkers who have modified our conceptions of human reality and social and cultural history, with special emphasis on the form and linguistic structures of their texts considered as 'language experiments.' Topics vary from year to year, including: Marx and Freud, J.P. Sartre, and Walter Benjamin. Instructor: Jameson, Moi, Mudimbe, or Surin. One course.

690S. Special Topics in Literature. ALP Topics vary each semester. Instructor: Staff. One course.

690S-3. Topics in Cultural Studies. ALP Contents and methods vary with instructors and from semester to semester. Instructor: Staff. One course.

690S-4. Special Topics in Film. ALP Contents and methods vary with instructors and from semester to semester. Instructor: Staff. One course.
690S-8. **Special Topics in Literature: Paradigms of Modern Thought.** ALP, CZ. Specialized study of the work of individual thinkers who have modified our conceptions of human reality and social and cultural history, with special emphasis on the form and linguistic structures of their texts considered as 'language experiments.' Topics vary from year to year, including: Marx and Freud, J.P. Sartre, and Walter Benjamin. Seminar version of Literature 690-8. Instructor: Jameson or staff. One course.

695S. **Literature Seminar.** ALP. Contents and methods vary with instructors and from semester to semester. Instructor: staff. Variable credit.

**The Major**

The literature program's major in global cultural studies is an exciting course of study for undergraduates interested in investigating the forms of life and culture produced in today's interconnected, globalized world. The major is committed to the notion that the humanities produce a distinct kind of knowledge that is essential for understanding and engaging the complexities of the contemporary social environment. The program's courses in literary studies, critical theory, gender studies and queer theory, philosophy, political theory, film, visual culture, and new media form the foundation for such inquiry. With its distribution of courses across three domains of inquiry—experience, interpretation, medium—the major aims to provide students with the broad knowledge base and analytical skills that will prepare them for leadership roles in the twenty-first century. Graduates of the major have gone on to shape unique career trajectories in law, medicine, public policy, teaching, journalism, publishing, and the creative cultural industries, as well as to pursue graduate study at top programs in the humanities.

**Requirements for the Major:** The major in global cultural studies is composed of ten courses. All majors are required to take a gateway course Literature 101S (Gateway to Global Cultural Studies), and an upper-level course, Literature 301S (Theory Today), as well as four core courses distributed across three domains of inquiry, with at least one course selected from each category (experience, interpretation, medium). In addition, students choose three electives from across the humanities offerings at Duke and must fulfill the "senior culminating experience" requirement. For more information, visit [http://globalculturalstudies.duke.edu](http://globalculturalstudies.duke.edu).

**Major in Global Cultural Studies with Concentration in Film and Media**

The literature program in global cultural studies also offers a film and media concentration, providing students the opportunity to pursue a flexible curriculum in global cultural studies with a focus on film and media issues. The film and media concentration is intended to work together with Duke’s Certificate Program in the Arts of the Moving Image.

**Requirements for the major in global cultural studies with a concentration in film and media:** The major with a concentration in film and media is composed of ten courses. All majors are required to take a gateway course Literature 101S (Gateway to Global Cultural Studies), an upper-level course, Literature 301S (Theory Today), as well as Literature 110 (Introduction to Film Studies) and either Literature 316 (Film Theory) or Literature 317 (Media Theory). For the remaining six courses, students must take at least two courses that focus on the study of film and/or media, and at least three of the six courses must be "core literature courses." One of these "core literature courses" will fulfill the "senior culminating experience," unless student is pursuing graduation with distinction. For more information, visit [http://globalculturalstudies.duke.edu](http://globalculturalstudies.duke.edu).

**The Minor**

The literature program's minor in global cultural studies offers Duke students an opportunity to complement their major field of concentration—whether it be computer science or chemistry, environmental studies or economics, music or mathematics—with a humanities focus. Students will select a suite of courses designed to thematize the larger cultural contexts of their scholarly interests.

**Requirements for the Minor:** The minor in global cultural studies is composed of five courses. All minors are required to take a gateway course (Literature 101S) as well as three core courses distributed across at least two of the three domains of humanistic inquiry (experience, interpretation, medium), and one elective. For more information, visit [http://globalculturalstudies.duke.edu](http://globalculturalstudies.duke.edu).
Departmental Graduation with Distinction

To receive Graduation with Distinction students must satisfy university GPA requirements and submit an application by the beginning of the fall semester of their junior year. They must have a minimum overall GPA of 3.0, a GPA of 3.5 in the major, and an honors thesis grade of B+ or above.

Students accepted into the distinction program must take the honors seminar sequence (Literature 495 and 496). A final grade will be issued at the end of the spring term. (A grade of “Z” will be issued at the end of the fall term.) Students must write an honors thesis and submit it by the official submission date. Students will defend the thesis before a three-member committee consisting of the thesis advisor, the honors program coordinator, and a third reader chosen from among the members of the literature faculty and affiliated faculty. The committee determines the grade for the thesis, which becomes the grade of the honors seminar sequence. The two honors seminars do not count toward the ten literature courses required for the major.

Marine Biology

For courses in marine biology, see biology on page 180; environmental sciences and policy program on page 302; and the University Program in Marine Sciences on page 435.

Marine Science and Conservation Leadership

Professor Silliman, Director

A certificate, but not a major, is available in this program.

This certificate program offers all undergraduates at Duke University the opportunity to supplement their majors with studies of leadership in marine science and conservation. The program is designed to expand the academic breadth of Duke undergraduates who wish to pursue graduate degrees in biology, environmental science, social science, and policy, as well as professional careers in medicine and other disciplines. It seeks to stimulate interdisciplinary studies, including the human dimension, using marine systems as a model. It also fosters leadership skills in communication, management, values, and ethics. Students apply biological and ecological principles to the study of marine organisms and develop and evaluate solutions to conservation challenges. They are encouraged to think reflectively about their roles as citizens and leaders and the philosophical, ethical, and practical positions they will face in these roles.

The certificate program requires a residential component at Duke’s Marine Laboratory in Beaufort, North Carolina, for one full academic semester (fall or spring) or both summer terms. All certificate students thus become Marine Lab Scholars and are eligible to become Rachel Carson Scholars. These scholars programs offer additional resources and research and service opportunities for undergraduate students. Marine lab residence features opportunities that bring Duke undergraduates together with local, regional, national, and international leaders in formal and informal settings, as well as special training sessions on leadership skills.

Course of Study

The marine science and conservation leadership program is rooted in marine science and conservation, but includes studies in a variety of disciplines—biology, earth and ocean sciences, economics, engineering, environmental sciences and policy, markets and management studies, philosophy, political science, public policy, religion, and theater studies. The introductory course on environmental sciences and policy introduces students to the integration of natural and social sciences and a means of evaluating an environmental issue and developing an effective solution. A capstone course is required of all students during the spring semester of their senior year.

Certificate Requirements

The certificate requirements are: 1) a total of six courses: one introductory course (Environment 102 or Environment 201 with permission, for students who place out of Environment 102), one leadership, ethics, management, or communication course, two marine science courses (one natural science and one social science), one marine conservation course, and one capstone course taken during spring of the senior year; 2) no more than three courses may originate in a single department; and 3) no more than two courses that are counted toward the marine science and conservation leadership certificate may also satisfy the requirements of any major, minor, or other certificate program. Appropriate courses may come from the list below or may include other courses as approved by
the director. Acceptance into the certificate program does not guarantee enrollment in electives, with the exception
of the capstone course.

Program Enrollment
All students are eligible to enroll in the program. Enrollment must be done via the Duke Marine Laboratory

Courses in Marine Science and Conservation Leadership

Introductory Courses

Environment
102. Introduction to Environmental Sciences and Policy
201. Integrating Environmental Sciences and Policy

Leadership/Ethics/Management/Communication Courses

Biology
156. Genetics, Genomics, and Society: Implications for the 21st Century
255. Philosophy of Biology

Documentary Studies
248S. Environmental Conservation and Documentary Photography
353A. Views of Environmental Change: Documentary Research in Natural Resource Management

Engineering
350S. Ethics in Professions: Scientific, Personal and Organizational Frameworks

English
219A. Science and Nature Writing: Naturalist Narratives, Classic to Contemporary

Environment
214S. Ethical Challenges in Environmental Conservation
216S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding
219A. Science and Nature Writing: Naturalist Narratives, Classic to Contemporary

Leadership/Ethics/Management/Communication Courses

228S. Environmental Conservation and Documentary Photography
289A. Views of Environmental Change: Documentary Research in Natural Resource Management

Markets and Management Studies
210. Managerial Effectiveness

Philosophy
215. Applied and Environmental Ethics
314. Philosophy of Biology

Political Science
367S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding

Public Policy Studies
259S. Women as Leaders
263. Border Crossing: Leadership, Value Conflicts, and Public Life
265. Enterprising Leadership
271S. Social Entrepreneurship in Action
279S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding
302D. Policy Choice as Value Conflict

Religious Studies
287. Religion and Science: Biology, Minds, and Souls
321S. Buddhist Ethics

Study of Ethics
265. Applied and Environmental Ethics

Theater Studies
103S. Communication, Improvisation, and Business
248S. Voice and Speech

Marine Science: Natural Science Courses

Biology
157. The Dynamic Oceans
175LA. Marine Biology
272A. Analysis of Ocean Ecosystems
273LA. Marine Ecology
275A. Biology for Engineers: Informing Engineering Decisions
278LA. Physiology of Marine Animals
279LA. Sound in the Sea: Introduction to Marine Bioacoustics
293. Research Independent Study
293-1. Research Independent Study
293A. Research Independent Study
293A-1. Research Independent Study
372LA. Biochemistry of Marine Animals
373LA. Sensory Physiology and Behavior of Marine Animals
374LA. Marine Molecular Ecology
377LA. Marine Invertebrate Zoology
378LA. Marine Ichthyology
379LA. Research Methods in Marine Science
380LA. Marine Molecular Microbiology
445A. Climate Change in the Marine Environment
493. Research Independent Study
493A. Research Independent Study

Earth and Ocean Sciences
102. The Dynamic Oceans
202. Atmosphere and Ocean Dynamics
272A. Analysis of Ocean Ecosystems
280LA. Sound in the Sea: Introduction to Marine Bioacoustics
315. Waves, Beaches, and Coastline Dynamics
364S. Changing Oceans
370A. Introduction to Physical Oceanography
374LA. Marine Ecology
377LA. Marine Invertebrate Zoology
404S. Geology of Tropical Marine Environments

Electrical and Computer Engineering
384LA. Sound in the Sea: Introduction to Marine Bioacoustics

Environment
271A. Biology for Engineers: Informing Engineering Decisions
272A. Analysis of Ocean Ecosystems
273LA. Marine Ecology
278LA. Physiology of Marine Animals
280LA. Sound in the Sea: Introduction to Marine Bioacoustics
362S. Changing Oceans
370A. Introduction to Physical Oceanography
372LA. Biochemistry of Marine Animals
377LA. Marine Invertebrate Zoology
378LA. Marine Ichthyology
379LA. Research Methods in Marine Science
382LA. Marine Molecular Ecology
383LA. Marine Molecular Microbiology
445A. Climate Change in the Marine Environment
543A. Respiratory Proteins and the Environment
571A. Sojourn in Singapore: Urban Tropical Ecology
579LA. Biological Oceanography
580A. Green Futures: Exploring Environmental, Economic, and Social Sustainability
585A. Fisheries Ecology
590LA. Duke-administered Study Away; Special Topics

Neuroscience
381LA. Sensory Physiology and Behavior of Marine Animals

Public Policy Studies
445A. Climate Change in the Marine Environment

Marine Science: Social Science Courses
Cultural Anthropology
419S. Global Environmentalism and the Politics of Nature

Economics
439. Economics of the Environment
530. Resource & Environmental Economics I
530L. Resource and Environmental Economics

Environment
212. United States Environmental Policy
286A. Marine Policy
346A. Marine Conservation Policy - a Practicum
363. Economics of the Environment
374SA. Community-Based Marine Conservation in the Gulf of California
394A. Research Independent Study
520. Resource & Environmental Economics I
The interdisciplinary program in marine sciences provides students with a unique opportunity to live and study at the Duke University Marine Laboratory for a full academic semester (fall or spring) or during two summer terms. The program emphasizes small class size, independent study, and integrated classroom, laboratory, and field experience. Students have daily access to the surrounding marine environment and to modern scientific equipment including a shared-use molecular laboratory and a specialized library.

The marine lab serves students in the biological and environmental sciences as well as those in social science, humanities and a variety of other majors. Residential undergraduate courses are offered year-round (fall, spring, and Summer Sessions I and II). Fall and spring courses include Beaufort Signature Courses which offer students opportunities for extended travel with Duke faculty to places such as Bahamas, Gulf of California, Panama, Puerto Rico, and Singapore. Small class size and an island setting facilitate rewarding student-faculty interactions. For additional information, contact the Academic and Enrollment Services Office, Duke University Marine Lab, 135 Duke Marine Lab Road, Beaufort, NC 28516; (252) 504-7502; mll_enrollment@nicholas.duke.edu; or visit the website at http://www.nicholas.duke.edu/marinelab. Duke students in good standing and with adequate preparation are automatically accepted, but must notify the Academic and Enrollment Services Office.
(ml_enrollment@nicholas.duke.edu) of their intent to attend so their records can be appropriately coded for registration. Information on academic programs and financial assistance available at the Duke marine lab may be found by visiting the website at http://www.nicholas.duke.edu/marinelab.

**Fall, Spring, or Summer Courses at Beaufort**

The courses below are described in the bulletin listings of the specified departments. See also the online course catalog or the Duke Marine Lab website (http://www.nicholas.duke.edu/marinelab) for the current schedule of courses. For information on courses fulfilling requirements for specific majors (including evolutionary anthropology, biology, earth and ocean sciences, and environmental sciences and policy), minors (including biology, chemistry, and environmental sciences and policy), and programs (including prehealth and the marine science and conservation leadership certificate) see the Marine Lab website’s academic programs section (http://www.nicholas.duke.edu/marinelab/programs) or consult the director of undergraduate studies for the department.

**Courses in the University Program in Marine Sciences**

**Biology**
- 175LA. Marine Biology
- 201LA. Gateway to Biology: Molecular Biology
- 205. Marine Megafauna
- 270A. Conservation Biology and Policy
- 272A. Analysis of Ocean Ecosystems
- 273LA. Marine Ecology
- 275A. Biology for Engineers: Informing Engineering Decisions
- 278LA. Physiology of Marine Animals
- 279LA. Sound in the Sea: Introduction to Marine Bioacoustics
- 293. Research Independent Study
- 293-1. Research Independent Study
- 293A. Research Independent Study
- 293A-1. Research Independent Study
- 372LA. Biochemistry of Marine Animals
- 373LA. Sensory Physiology and Behavior of Marine Animals
- 374LA. Marine Molecular Ecology
- 375A. Biology and Conservation of Sea Turtles
- 375LA. Biology and Conservation of Sea Turtles
- 376A. Marine Mammals
- 376LA. Marine Mammals
- 377LA. Marine Invertebrate Zoology
- 378LA. Marine Ichthyology
- 379LA. Research Methods in Marine Science
- 380LA. Marine Molecular Microbiology
- 384A. Marine Conservation Biology - a Practicum
- 445A. Climate Change in the Marine Environment
- 490T. Tutorial
- 490T-1. Tutorial (Topics)
- 490TA-1. Tutorial (Topics)
- 493. Research Independent Study
- 493A. Research Independent Study
- 570LA-1. Experimental Tropical Marine Ecology
- 570LA-2. Marine Ecology of the Pacific Coast of California
- 570LA-3. Harmony in Brittany: French Use of Marine Environments
- 571A. Sojourn in Singapore: Urban Tropical Ecology
- 579LA. Biological Oceanography

**Cell Biology**
- 493. Research Independent Study

**Documentary Studies**
- 353A. Views of Environmental Change: Documentary Research in Natural Resource Management

**Earth and Ocean Sciences**
- 272A. Analysis of Ocean Ecosystems
- 280LA. Sound in the Sea: Introduction to Marine Bioacoustics
- 370A. Introduction to Physical Oceanography
- 374LA. Marine Ecology
- 377LA. Marine Invertebrate Zoology
- 391. Independent Study
392. Independent Study
393. Research Independent Study
393A. Research Independent Study
394. Research Independent Study
394A. Research Independent Study
579LA. Biological Oceanography

**Electrical and Computer Engineering**

384LA. Sound in the Sea: Introduction to Marine Bioacoustics

**English**

219A. Science and Nature Writing: Naturalist Narratives, Classic to Contemporary

**Environment**

205. Marine Megafauna
219A. Science and Nature Writing: Naturalist Narratives, Classic to Contemporary
270A. Conservation Biology and Policy
271A. Biology for Engineers: Informing Engineering Decisions
272A. Analysis of Ocean Ecosystems
273LA. Marine Ecology
275SA. Global Fisheries Conflicts: Exploring Local and Global Economic, Ecological, and Social Impacts
276A. Marine Policy
278LA. Marine Ecology
287A. Marine Conservation Service Learning Course: Challenges at Sea
289A. Views of Environmental Change: Documentary Research in Natural Resource Management
346A. Marine Conservation Policy - a Practicum
350S. Marine Science and Conservation Leadership
370A. Introduction to Physical Oceanography
372LA. Biochemistry of Marine Animals
374AS. Community-Based Marine Conservation in the Gulf of California
375A. Biology and Conservation of Sea Turtles
375LA. Biology and Conservation of Sea Turtles
376A. Marine Mammals
376LA. Marine Mammals
377LA. Marine Invertebrate Zoology
378LA. Marine Ichthyology
379LA. Research Methods in Marine Science
382LA. Marine Molecular Ecology
383LA. Marine Molecular Microbiology
384A. Marine Conservation Biology - a Practicum
390SA. Special Topics in Environmental Science and Policy
391. Independent Study
391A. Independent Study
393. Research Independent Study
393-1. Research Independent Study
393A. Research Independent Study
394A. Research Independent Study
445A. Climate Change in the Marine Environment
533A. Marine Fisheries Policy
543A. Respiratory Proteins and the Environment
551DA. International Conservation and Development
571A. Sojourn in Singapore: Urban Tropical Ecology
573A. Coastal Ecotoxicology and Pollution
579LA. Biological Oceanography
580A. Green Futures: Exploring Environmental, Economic, and Social Sustainability
585A. Fisheries Ecology
590. Special Topics
590A. Duke-Administered Study Away: Special Topics
590SA. Seminar in Ocean Sciences

**Neuroscience**

381LA. Sensory Physiology and Behavior of Marine Animals

**Physics**

141LA. General Physics I
142LA. General Physics II

**Public Policy Studies**

246A. Marine Conservation Policy - a Practicum
Markets and Management Studies

Professor Reuf Director

A certificate, but not a major, is available in this program.

The markets and management studies certificate program at Duke is designed to meet the needs of Duke undergraduates who wish to study business issues and functions in preparation for careers in business and management, banking, consulting, government, the nonprofit sector, and related graduate fields. Courses in the program emphasize three integrated themes: (1) globalization and organizational innovations in the world economy; (2) the social determinants and consequences of new or changing technologies; and (3) the effect of cross-cultural and institutional factors on management and entrepreneurship. Students may take clusters of three courses that fall under the same areas of globalization, technology, or entrepreneurship.

Course of Study

Organizational studies in the social sciences provide an innovative, liberal arts approach to business education. The markets and management studies program is rooted in sociology, but it also includes studies in a variety of disciplines—economics, history, political science, public policy studies, ethics, and management science. Each course in the program deals in some way with the impact of different organizational forms on managing human resources, coordinating work, integrating technology, and using business networks in an increasingly competitive global economy. The four overarching learning objectives of the program are bridging theory and research, teamwork, communication skills, and active learning.

Certificate Requirements

The certificate requirements are: 1) a total of seven courses: three core courses, one of which is Markets and Management Studies 450, an integrative capstone course taken in the senior year, and four elective courses; 2) no more than three courses may originate in a single department; and 3) no more than two courses that are counted toward the markets and management studies certificate may also satisfy the requirements of any major, minor, or other certificate program.

Program Enrollment

Only sophomores and juniors who have officially declared their major may enroll in the program. Enrollment must be done via the markets and management studies website at http://www.markets.duke.edu.

Courses in Markets and Management Studies (MMS)

Core Courses

190FS. Special Topics in Markets and Managements. SS Topics vary by semester. Open to students in the Focus Program only. One course.


490. Special Topics in Markets and Management Studies. Topics vary each semester. Instructor: Staff. One course.

490S. Special Topics Seminar in Markets and Management Studies. Topics vary each semester. Instructor: Staff. One course.

Electives

425. Intellectual Property and Innovation: Law, Policy & Entrepreneurship. EI, SS, STS Course examines the tightly linked roles of intellectual property law and innovation in the 21st century global economy; offers an overview of the use of intellectual property in business, law and public policy, as well as in-depth coverage of current controversies impacting the future of the global information economy: gene patents; online piracy; music sampling; open source business models; access to medicines; and the impact of the 3D printing revolution. Besides overviews of

450. Markets and Management Capstone. R, SS Capstone course open only to students in the Markets and Management Studies Program. Includes review of major perspectives and concepts from the program’s core courses, plus a team project involving business plans or alternatively a strategic plan to identify and resolve problems confronting actual companies, industries, and communities. Students also develop a case study research paper of a product, firm, industry, occupation, country, or region. Consent of Director of Markets and Management Studies Program required. Instructor: Gereffi, Jones, Nordgren, Reeves, Spender, or Veraldi. One course.


450D. Markets and Management Capstone. R, SS One course.

Special Topics

106FS. Entrepreneurs and Their Values. EI, SS Study of major theories of ethics, the profit motive, nature of corporation, foreign trade, insider trading, affirmative action, diversity, government regulation, employer/employee relations. Broad focus on moral, political and historical issues related to entrepreneurship. Course goal: to convince students that a basic grasp of the issues is critical to working as an entrepreneur is the world today. Instructor: Hull. One course.

108FS. Entrepreneurs and Creativity. SS Exploration of the sources of creative thinking from various perspectives; features a series of presentations from the country’s leading entrepreneurs to discuss their creative processes, their ideas about generating ideas and their experiences building organizations that generate new ideas. Open only to students in the Focus Program. One course.

116FS. Freedom to and Freedom From-Tensions in the Business Arena. SS Discussion of two important freedoms: positive freedom to develop ourselves, reach potential, realize goals; and negative freedom from interference in actions or beliefs. Explore tensions between societies and free markets, the role of advertising, the bureaucratic structure of firms vs. individual creativity, line between public and private, effect of patents and property ownership on decisions and actions. Open to students in the Focus Program only. Instructor: Reeves. One course.

210. Managerial Effectiveness. SS, STS Introduction to study of individual and group behavior within organized settings. Emphasis given to managerial strategies that enhance organizational effectiveness. Topics include leadership, motivation and reward systems; decision making, power and politics; conflict management, globalization, justice and ethics; and organization culture, structure and design. Special attention to critical assessment of new technological options in organizational settings with an aim to produce informed, ethical consumers and managers. Instructor: Staff. One course. C-L: Marine Science and Conservation

220. Marketing Management. SS, STS Introduction to current basic principles and concepts in marketing. Focus on Internet’s impact on traditional marketing methods. Exposure to marketing concepts in settings such as: consumer goods firms, manufacturing and service industries, small and large businesses. Development and trends in strategic implications of the Internet for consumer behavior, business opportunities, and marketing strategies. Instructor: Staff. One course.

240. Ethics in Management. EI, SS The meaning of moral values and their application to effective management and the role of business in society. Basic ethical questions of beneficiary, justice, and rights. How various ethical theories apply to concrete issues such as the profit motive, insider trading, affirmative action, and employer/employee relations. Instructor: Hull. One course.


247. Business in Literature. ALP, SS The image of business as presented in serious and popular literature; the impact such portrayals have on business and society. An understanding of the basic ideas behind novels and movies that present executives as heroes, ordinary people, and villains. Instructor: Hull. One course.
250. Integrated Marketing Communications. SS Theory of marketing communications and the nature and influence of communication strategies. Topics include impact of informational asymmetries, uncertainty, local culture, global branding, and the effects of technology on marketing communications. Marketing communications seen from perspective of social scientist and the corporate marketing manager. How technology communication changes have changed the way businesses communicate with customers and ways customers respond. Instructor: Reeves. One course.

272. Marketing Across Borders, Cultures and Demographics. SS Investigates and discusses theories and techniques used to market to the world's different shoppers and consumers in developing and industrialized economies and countries; gives an understanding of how to target market to shoppers and consumers by varied insights of each target group; Focuses on "Consumer is Boss" and the understanding of how to influence at "First Moment of Truth" and at the "Second Moment of Truth"; will include a team project developing collaboration skills and gaining insight into a specific target group and product; local field trips to engage consumers in homes and where they shop; guest lecturers from Fortune 500 corporations. One course.

275. Business of Sport: A Comprehensive Look at a Powerhouse Global Industry. Provides a broad overview of "Sports", finance/valuation, professional/college, sponsorship/marketing, teams/leagues, labor/ownership; examines industry from finance perspective in determining valuations; examines role of sports and transformation into entertainment; how web based applications have changed the dynamic of the sports industry; discussion of topics regarding lockouts, free agency, paying college athletes, NCAA tournament, college athletic budgets, Super Bowl, athlete salaries, public/corporate funding. Instructor: Tiryakian. One course.

285. Strategy, Innovation, and the Marketplace. SS Exploration of fundamental concepts that underpin a strong organizational strategy. Examination of the interplay between marketplace innovation and business strategy, and how the ability of a business to adapt and change creates winners and losers in an industry. Learn/apply core strategy frameworks via theoretical and case-based readings/discussions. Examine how historical innovations have restructured the competitive landscape in particular industries. Instructor: Whitehurst.

360. Entrepreneurial Opportunities and Finance. SS Evaluation of entrepreneurial opportunities including analysis of markets; management teams; business financial models; company valuation; competitive landscape; future growth; expected technology changes; leverage of projected financial model. Analysis of early stage business; review of potential investment. Leadership interaction between students, entrepreneurs and venture capital organizations. Prerequisite: Markets and Management Studies 85 and Sociology 359 or consent of the instructor. Instructor: Jones and Nordgren. One course.

365. Strategic Financial Management. SS Strategic financial issues confronting the firm. Basic problems of strategic direction for the firm with respect to external competitive environment and management of internal strategy processes. Tools and ideas to manage formulation and implementation of strategic choices for the firm. Study of firm's strategic position relative to rivals, the larger industry, and the customer. Prerequisite: Markets and Management Studies 85 and Economics 271 or Economics 373 or consent of instructor. Instructor: Veraldi. One course.

370. Managerial Finance. SS Concepts and processes of corporate finance; functions, technology and techniques of financial management. Topics include analysis of financial statements, ratio analysis and the statement of cash flows; capital budgeting; risk and return; stocks and bonds; cost of capital; financial institutions; securities markets and international finance. Not open to first year students, nor to students who have taken Markets and Management Studies 85. Instructor: Veraldi. One course.

395. New Ventures 2: Strategy Development. Student teams develop core elements of a strategy for a technology or business idea; detail will be suitable for a business plan document for a company seeking initial investment; strategy will serve as a foundation for a first operating plan for company. Instructor consent required. Instructor: Fjeld. One course.

396. New Ventures 3: Operating Plan. Students develop full operating plans for a new venture, including a finance plan; detail will be suitable for a business plan document for a company seeking initial investment; plan should be fundable upon completion; teams follow a structured process in doing their analysis and making recommendations; students work with faculty advisors and business mentors. Students should have completed Markets and Management Studies 395. Instructor consent required. Instructor: Fjeld. One course.
Program Courses

Core Courses

Public Policy Studies
265. Enterpriseing Leadership
271S. Social Entrepreneurship in Action

Sociology
342D. Organizations and Global Competitiveness
344. Technology and Organizational Environments
345. Nations, Regions, and the Global Economy
355. Organizations and Management
358. Markets and Marketing
359. The Sociology of Entrepreneurship

Elective Courses

Art History
261. The Contemporary Art Market
508S. Art and Markets
538S. Museum Theory and Practice

Arts of the Moving Image
217SA. The Economics of Art (The Chicago Scene)
316SA. stARTup Project

Biomedical Engineering
385. Introduction to Business in Technology-Based Companies

Canadian Studies
328SA. Made in Quebec: Marketing and Cultural Identity

Cultural Anthropology
170. Advertising and Society: Global Perspective (DS4)
170D. Advertising and Society: Global Perspective (DS4)
210. Global Culture
272S. Advertising and Masculinity
425. Globalization and Anti-Globalization

Dance
279SA. The Economics of Art (The Chicago Scene)
307SA. stARTup Project

Economics
119. Introduction to Political Economy
222D. American Business History
271. Basic Finance and Investments
274. Advanced Financial and Managerial Accounting
321S. Art and Markets
343. The Contemporary Art Market
355. International Trade
373. Corporate Finance
464. Competitive Strategy and Industrial Organization

Engineering
350S. Ethics in Professions: Scientific, Personal and Organizational Frameworks

French
328SA. Made in Quebec: Marketing and Cultural Identity

German
266. Focus Germany: Business in Germany

History
107D. Introduction to the History of the Economic and Business Cultures
364D. American Business History

International Comparative Studies
273S. Advertising and Masculinity
404. Globalization and Anti-Globalization

Music
217SA. The Economics of Art (The Chicago Scene)
316SA. stARTup Project

Philosophy
270. Business Ethics: The Debate Over Corporate Social Responsibility

Political Science
145. Introduction to Political Economy
231. Wealth and Poverty of Nations: Prosperity and Distribution in the Long Run
250. The Politics of International Economic Relations: America in the World Economy
321. International Law and International Institutions

Markets and Management Studies 441
Marxism and Society

Michael Hardt, Director

A certificate, but not a major, is available in this program.

The Marxism and society program is devoted to the study of Marxist theory in its historical context and in relation to other contemporary theoretical paradigms, including theories of race, gender, and sexuality. The focus is on Marxism, not primarily as a political or ideological system, but as a scholarly methodology incorporating a variety of analytical techniques across a wide range of disciplines. Topics covered include sexual and racial inequality, alienation, development and underdevelopment in the world system, labor processes, protest movements, and ideologies.

The program requires six courses, including a gateway course, Literature 470, cross-listed as Cultural Anthropology 203, Education 239, and Sociology 339 (Marxism and Society), and the capstone course Literature 690-8 (Paradigms in Modern Thought) taught by Fredric Jameson. Four additional approved courses satisfy the requirements of the program. No more than three courses originating in a single department or program may satisfy the program of study.
203. Marxism and Society
241. Culture and Politics in China
242. Culture and Politics in Africa
243. Culture and Politics in Latin America
301. Theoretical Foundations of Cultural Anthropology
307. Development and Africa
423. Sex and Money
429. Gender and Sexuality in Latin America

Economics
311. History of Economic Thought

Education
239. Marxism and Society

English
180. Introduction to Cultural Studies

German
380. Marx, Nietzsche, Freud

History
103. Comparative Approaches to Global Issues
105. Old Worlds/New Histories, 500-1300 CE
281. Russian Revolutionary Cinema
307. History of Economic Thought
363. History of Capitalism in the United States

International Comparative Studies
195. Comparative Approaches to Global Issues
325. Culture and Politics in Latin America
426. Gender and Sexuality in Latin America

Literature
130. Introduction to Cultural Studies
280. Marx, Nietzsche, Freud
380. Marxism and Society
471S. Marxism and Culture
475S. Queer Theory

Philosophy
286. Marx, Nietzsche, Freud

Political Science
110. Comparative Approaches to Global Issues
378. Marx, Nietzsche, Freud

Public Policy Studies
207. Development and Africa

Russian
381. Russian Revolutionary Cinema

Sociology
195. Comparative Approaches to Global Issues
226. The Challenges of Development
316. Comparative Race and Ethnic Studies

Study of Sexualities
470S. Queer Theory

Visual and Media Studies
180. Introduction to Cultural Studies
229. Culture and Politics in Africa

Women’s Studies
1998. Thinking Gender: An Introduction to Feminist Theory
361. Money, Sex, Power
370S. Queer Theory
429. Gender and Sexuality in Latin America

Mathematics
Professor H. Layton, Chair; Professor Aspinwall, Associate Chair; Professor Schoen, Director of Undergraduate Studies; Assistant Professor of the Practice Schott, Associate Director of Undergraduate Studies; Associate Professor of the Practice C. Bray, Supervisor of First-year Instruction; Professors Aspinwall, Beale, H. Bray, Bryant, Calderbank, Daubechies, Durrett, Hain, Harer, H. Layton, Liu, Maggioni, Mattingly, Miller, Pardon, Petters, Reed, Rose, Saper, Schoen, Stern, Venakides, Witelski, and Zhou; Associate Professors Kraines, A. Layton, Mukherjee, Ng, and Plessier; Assistant Professors Getz, Lu, and Nolen; Professors Emeriti Allard, Hodel, Kitchen, Moore, Schaeffer, Smith, Trangenstein, Warner, and Weisfeld; Associate Professor of the Practice Blake; Assistant Professors of the Practice...
A major or a minor is available in this department.

Courses in Mathematics (MATH)

21. Introductory Calculus I. Credit awarded on the basis of national/international examinations in mathematics such as College Board, International Baccalaureate, British Advanced Level. Equivalent to Mathematics 111L as a prerequisite, except that students entering Mathematics 112L in the fall must have taken Mathematics 111L or Mathematics 106L at Duke. Instructor: Staff. One course.

22. Introductory Calculus II. Credit awarded on the basis of national/international examinations in mathematics such as College Board, International Baccalaureate, British Advanced Level. Equivalent to Mathematics 112L as a prerequisite. Instructor: Staff. One course.

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

105L. Laboratory Calculus and Functions I. QS A study of functions with applications, and an introduction to differential calculus, with a laboratory component. Topics include a review of algebra and functions, mathematical modeling with elementary functions, rates of change, inverse functions, logarithms and exponential functions, the derivative, graphical interpretations of the derivative, optimization, related rates. Not open to students who have credit for Math 21 or 111L(31L) or 121. Instructor: Staff. One course.

106L. Laboratory Calculus and Functions II. QS A continuation of Mathematics 105L. Topics include zeros of functions, antidifferentiation, initial value problems, differential equations, Euler's method, slope fields, review of trigonometry, modeling with trigonometric functions, Riemann sums, the Fundamental Theorem of Calculus, integration by substitution, integration by parts, separation of variables, systems of differential equations. Students who complete this course can enroll in Mathematics 112L. Not open to students who have credit for Mathematics 21 or 111L. Prerequisite: Mathematics 105L. Instructor: Staff. One course.

111L. Laboratory Calculus I. QS Introductory calculus with a laboratory component. Emphasis on laboratory projects, group work, and written reports. Differentiation, transcendental functions, optimization, differential equations, numerical approximations, Euler's method, the Fundamental Theorem, separation of variables, slope fields, and mathematical modeling. Not open to students who have credit for Mathematics 105L, 106L, or 121. One course.

112L. Laboratory Calculus II. QS Second semester of introductory calculus with a laboratory component. Emphasis on laboratory projects, group work, and written reports. Methods of integration, applications of integrals, functions defined by integration, improper integrals, introduction to probability and distributions, infinite series, Taylor polynomials, series solutions of differential equations, systems of differential equations, Fourier series. Not open to students who have had Mathematics 122 or 122L. Prerequisite: Mathematics 106L or 111L (AP/IPC/PMC placement credit for Math 21 is not sufficient if Math 122L is offered) or consent. Instructor: Staff. One course.

121. Introductory Calculus I. QS First topics in introductory calculus including differentiation, transcendental functions, optimization, numerical approximations, and the Fundamental Theorem. For transfer credit only. Transfer credit not to be granted to students with credit for Math 105L, 106L, or 111L. One course.

122. Introductory Calculus II. QS Transcendental functions, techniques and applications of integration, indeterminate forms, improper integrals, infinite series. Not open to students who have had Mathematics 112L or 122L. Prerequisite: Mathematics 21. Instructor: Staff. One course.

122L. Introductory Calculus II with Applications. QS Topics include sequences and series, the definition of the integral and its uses, Taylor and Fourier Series, differential equations and mathematical models. Weekly labs will involve explorations of applications, techniques, and Theory. Prerequisite: Advanced placement credit for Mathematics 21. Not open to students who have taken Mathematics 105L, 106L, 111L, 112L, or 122. Instructor: Staff. One course.

161FS. Introduction to Mathematical Modeling in Biology. QS, R Introduction to techniques used in the construction, analysis, and evaluation of mathematical models. How to frame a scientific question in mathematical terms. How to formulate a mathematical description or representation of the system in question. How to study the model using mathematical tools and techniques. How to interpret the results of the model in the context of the
scientific question. Modeling topics will primarily be in biology. Prerequisite: 112L or 122L or 122 or advanced placement credit for Math 22. Instructor: A. Layton. One course.

165S. Cryptography and Society. QS, STS, W Introduction to basic ideas of modern cryptography with emphasis on history and mathematics of encryption, applications in daily life, and implications for the individual and society. Topics may include: mathematical tools needed to analyze cryptosystems, including public key and stream ciphers; zero-knowledge protocols; attacks on "real-life" cryptosystems such as Enigma and the Data Encryption Standard; digital signatures, secure web connections; cryptography, free speech and copyright/fair use issues; applications to electronic communications and electronic commerce; privacy, computer security, and law enforcement; limitations and failures of modern cryptography. Instructor: Staff. One course.

168S. Mathematical Investigations in Genetics and Genomics. QS Introduction to basic mathematical methods in genetics and genomics: Mendelian segregation, population allele frequencies, sex-linked traits, genetic recombination, sequence analysis, phylogenetic trees. Necessary background in elementary probability, statistics, and matrix algebra will be provided. Prerequisite: Mathematics 21 or 111L or permission of the instructor. Instructor: Staff. One course. C-L: Genome Sciences and Policy

181. Math Everywhere: Mathematical Concepts and Reasoning in our Modern World. QS Mathematical concepts and reasoning, and their essential and exciting roles in our modern world. Topics include but not limited to: storage and communication of data, images, and music; social networks; evaluation of assessments based on statistics; design of visuals for video games and animated movies. Designed for students without college math but with interest in mathematical concepts important to modern applications. Six largely independent units, focused on building understanding and appreciation rather than development of mathematical techniques. Transfer credit not accepted as equivalent. Instructor: Staff. One course.

182FS. Mathematics of Finance. QS An introduction to the mathematical models used in finance and economics. Time value of money, interest theory, introduction to pricing stocks and derivatives. Emphasis on models that use binomial trees. How trading is conducted and what financial instruments are traded. Prerequisite: Math 112L or 122L or 122 or advanced placement credit for Math 22. Instructor: Braley. One course.

191. Independent Study. Directed reading in a field of special interest under the supervision of a faculty member. This course does not contribute to the requirements of a mathematics major. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

202. Multivariable Calculus for Economics. QS Gaussian elimination, matrix algebra, determinants, linear independence. Calculus of several variables, chain rule, implicit differentiation. Optimization, first order conditions, Lagrange multipliers. Integration of functions of several variables. Prerequisite: Mathematics 122, 112L or 122L. Not open to students who have taken Mathematics 222 or 212. Instructor: Staff. One course.

212. Multivariable Calculus. QS Partial differentiation, multiple integrals, and topics in differential and integral vector calculus, including Green's theorem, the divergence theorem, and Stokes's theorem. Not open to students who have taken Mathematics 202 or 222. Prerequisite: Mathematics 122, 112L, or 122L. Instructor: Staff. One course.

216. Linear Algebra and Differential Equations. QS Systems of linear equations, matrix operations, vector spaces, linear transformations, orthogonality, determinants, eigenvalues and eigenvectors, diagonalization, linear differential equations and systems with constant coefficients and applications, computer simulations. Intended primarily for engineering and science students. Prerequisite: Mathematics 202, 212 or 222. Not open to students who have had Mathematics 221 or 356. Instructor: Staff. One course.

221. Linear Algebra and Applications. QS Systems of linear equations and elementary row operations, Euclidean n-space and subspaces, linear transformations and matrix representations, Gram-Schmidt orthogonalization process, determinants, eigenvectors and eigenvalues; applications. Not open to students who have taken Mathematics 216. Prerequisite: Mathematics 122, 112L or 122L. Instructor: Staff. One course.

222. Advanced Multivariable Calculus. QS Partial differentiation, multiple integrals, and topics in differential and integral vector calculus, including Green's theorem, Stokes's theorem, and Gauss's theorem for students with a background in linear algebra. Not open to students who have taken Mathematics 202 or 212. Prerequisite: Mathematics 221. Instructor: Staff. One course.

281S. Problem Solving Seminar. QS Techniques for attacking and solving challenging mathematics problems and writing mathematical proofs. Course may be repeated. Consent of instructor required. Instructor: Staff. Half course.

305. Number Theory. QS Similar to Mathematics 305S but not taught in seminar format. Instructor: Staff. One course.

305S. Number Theory. QS, R Divisibility properties of integers, prime numbers, congruences, quadratic reciprocity, number-theoretic functions, simple continued fractions, rational approximations; contributions of Fermat, Euler, and Gauss. Prerequisite: Mathematics 122, 112L, 122L, or consent of instructor. Individual research paper required. Instructor: Staff. One course. C-L: Information Science and Information Studies

323S. Geometry. R Euclidean geometry, inverse and projective geometries, topology (Möbius strips, Klein bottle, projective space), and non-Euclidean geometries in two and three dimensions; contributions of Euclid, Gauss, Lobachevsky, Bolyai, Riemann, and Hilbert. Research project and paper required. Prerequisite: Mathematics 122, 112L, 122L, or consent of instructor. Instructor: Staff. One course.

333. Complex Analysis. QS Complex numbers, analytic functions, complex integration, Taylor and Laurent series, theory of residues, argument and maximum principles, conformal mapping. Prerequisite: Mathematics 212 and 221 or consent of instructor. Instructor: Staff. One course.

340. Advanced Introduction to Probability. QS Advanced introduction to basic, non-measure theoretic probability covering topics in more depth and with more rigor than MATH 230. Topics include random variables with discrete and continuous distributions. Independence, joint distributions, conditional distributions, generating functions, Bayes’ formula, and Markov chains. Rigorous arguments are presented for the law of large numbers, central limit theorem, and Poisson limit theorems. Prerequisite: Mathematics 202, 212, or 222. Not open to those who have taken Mathematics 230 or Statistical Science 230. Instructor: Staff. One course. C-L: Statistical Science 231

342D. Statistics. QS One course. C-L: see Statistical Science 250D; also C-L: Information Science and Information Studies


356. Elementary Differential Equations. QS First and second order differential equations with applications; linear systems of differential equations; Fourier series and applications to partial differential equations. Additional topics may include stability, nonlinear systems, bifurcations, or numerical methods. Not open to students who have had Mathematics 216 or Mathematics 355. Prerequisites: Mathematics 221 and one of 202, 212 or 222. Instructor: Staff. One course.

361. Mathematical Numerical Analysis. QS Development of numerical techniques for accurate, efficient solution of problems in science, engineering, and mathematics through the use of computers. Linear systems, nonlinear equations, optimization, numerical integration, differential equations, simulation of dynamical systems, error analysis. Not open to students who have had Computer Science 220 or 520. Prerequisites: Mathematics 212 and 221 and basic knowledge of a programming language (at the level of Computer Science 101), or consent of instructor. Instructor: Staff. One course.

361S. Mathematical Numerical Analysis. QS, R Development of numerical techniques for accurate, efficient solution of problems in science, engineering, and mathematics through the use of computers. Linear systems, nonlinear equations, optimization, numerical integration, differential equations, simulation of dynamical systems, error analysis. Research project and paper required. Not open to students who have had Computer Science 220 or 520. Prerequisites: Mathematics 212 and 221 and basic knowledge of a programming language (at the level of Computer Science 101), or consent of instructor. Instructor: Staff. One course.
371. **Combinatorics. QS** Permutations and combinations, generating functions, recurrence relations; topics in enumeration theory, including the Principle of Inclusion-Exclusion and Polya Theory; topics in graph theory, including trees, circuits, and matrix representations; applications. Prerequisite: Mathematics 122, 112L, 122L or consent of instructor. Instructor: Staff. One course.

375. **Introduction to Linear Programming and Game Theory. QS** Fundamental properties of linear programs; linear inequalities and convex sets; primal simplex method, duality; integer programming; two-person and matrix games. Prerequisite: Mathematics 221 or equivalence. Instructor: Staff. One course.

388. **Logic and Its Applications.** Topics in proof theory, model theory, and recursion theory; applications to computer science, formal linguistics, mathematics, and philosophy. Usually taught jointly by faculty members from the departments of computer science, mathematics, and philosophy. Prerequisite: a course in logic or consent of instructor. Instructor: Staff. One course. C-L: Computer Science 288, Philosophy 350

391. **Independent Study.** Directed reading in a field of special interest under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

392. **Independent Study.** Directed reading in a field of special interest under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Prerequisite: Mathematics 391. Instructor: Staff. One course.

393. **Research Independent Study. R** Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

394. **Research Independent Study. R** Individual research in mathematics or the applications of mathematics under the supervision of a faculty member. The goal must be a substantive paper containing significant analysis and interpretation of a previously approved topic. Prerequisite: Mathematics 393. Consent of instructor and director of undergraduate studies required. One course.

401. **Introduction to Abstract Algebra.** Groups, rings, and fields. Students intending to take a year of abstract algebra should take Mathematics 501 and 502. Not open to students who have had Mathematics 501. Prerequisite: Mathematics 221. Instructor: Staff. One course.

404. **Mathematical Cryptography. QS** Mathematics of cryptography and some applications. Topics include finite fields, discrete logarithms, integer factorization and RSA, elliptic curve cryptography, hash functions, digital signatures, DES and AES. Prerequisites: Math 221 or 216, and some programming experience. Math 401 or 501 would be useful. Instructor: Staff. One course.

411. **Topology. QS** Elementary topology, surfaces, covering spaces, Euler characteristic, fundamental group, homology theory, exact sequences. Prerequisite: Mathematics 221. Instructor: Staff. One course.

412. **Topology with Applications. QS** Introduction to topology from a computational viewpoint, with a focus on applications. Themes include: basic notions of point-set topology, persistent homology, finding multi-scale topological structure in point cloud data. Algorithmic considerations emphasized. Prerequisite: Mathematics 221 or equivalent. Instructor: Staff. One course. C-L: Computer Science 434

421. **Differential Geometry. QS** Geometry of curves and surfaces, the Serret-Frenet frame of a space curve, Gauss curvature, Cadazzi-Mainardi equations, the Gauss-Bonnet formula. Prerequisite: Mathematics 221. Instructor: Staff. One course.

431. **Advanced Calculus I. QS, W** Algebraic and topological structure of the real number system; rigorous development of one-variable calculus including continuous, differentiable, and Riemann integrable functions and the Fundamental Theorem of Calculus; uniform convergence of a sequence of functions; contributions of Newton, Leibniz, Cauchy, Riemann, and Weierstrass. Not open to students who have had Mathematics 531. Prerequisite: Mathematics 202, 212 or 222. Instructor: Staff. One course.

451S. **Nonlinear Ordinary Differential Equations. QS, R** Theory and applications of systems of nonlinear ordinary differential equations. Topics may include qualitative behavior, numerical experiments, oscillations, bifurca-
448  Mathematics

tions, deterministic chaos, fractal dimension of attracting sets, delay differential equations, and applications to the biological and physical sciences. Research project and paper required. Prerequisite: Mathematics 216 or 356 or consent of instructor. Instructor: Staff. One course.

453. Introduction to Partial Differential Equations. QS Heat, wave, and potential equations: scientific context, derivation, techniques of solution, and qualitative properties. Topics to include Fourier series and transforms, eigenvalue problems, maximum principles, Green's functions, and characteristics. Intended primarily for mathematics majors and those with similar backgrounds. Prerequisite: Mathematics 353 or 356 or consent of instructor. Instructor: Staff. One course.


476S. Seminar in Mathematical Modeling. QS, R Introduction to techniques used in the construction, analysis, and evaluation of mathematical models. Individual modeling projects in biology, chemistry, economics, engineering, medicine, or physics. This course is similar to Math 477S but there is less of a focus on scientific writing. Prerequisite: Mathematics 353 or 356 or consent of instructor. Not open to students who have taken Math 477S. Instructor: Staff. One course.

477S. Seminar in Mathematical Modeling with a Focus on Writing. QS, R, W Introduction to techniques used in the construction, analysis, and evaluation of mathematical models. Individual modeling projects in biology, chemistry, economics, engineering, medicine, or physics. Considerable attention is given to writing in an interdisciplinary context. Not open to student that have taken Math 476S. Prerequisite: Mathematics 353 or 356 or consent of instructor. Instructor: Staff. One course.


487. Introduction to Mathematical Logic. Propositional calculus; predicate calculus. Gödel completeness theorem, applications of number theory, incompleteness theorem, additional topics in proof theory or computability; contributions of Aristotle, Boole, Frege, Hilbert, and Gödel. Prerequisite: Mathematics 212 and 221 or Philosophy 250. Instructor: Staff. One course.

490. Topics in Mathematics. Topics vary. Instructor: Staff. One course.

490S. Seminar in Mathematics. R Intended primarily for juniors and seniors majoring in mathematics. Required research project culminating in written report. Prerequisite: Mathematics 212 and 221. Instructor: Staff. One course.

491. Independent Study. Same as Mathematics 391, but for seniors. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

492. Independent Study. Directed reading in a field of mathematics or its applications under the supervision of a faculty member resulting in a substantive paper containing significant analysis and interpretation of a previously approved topic. For seniors. Consent of instructor and director of undergraduate studies required. Prerequisite: Mathematics 491. Instructor: Staff. One course.

493. Research Independent Study. R Same as Mathematics 393, but for seniors. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

494. Research Independent Study. R Individual research in mathematics or the applications of mathematics under the supervision of a faculty member. The goal must be a substantive paper containing significant analysis and interpretation of a previously approved topic. For seniors. Prerequisite: Mathematics 493. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

501. Introduction to Algebraic Structures I. Groups: symmetry, normal subgroups, quotient groups, group actions. Rings: homomorphisms, ideals, principal ideal domains, the Euclidean algorithm, unique factorization. Not open to students who have had Mathematics 401. Prerequisite: Mathematics 221 or equivalent. Instructor: Staff. One course.
502. Introduction to Algebraic Structures II. Fields and field extensions, modules over rings, further topics in groups, rings, fields, and their applications. Prerequisite: Mathematics 501, or 401 and consent of instructor. Instructor: Staff. One course.

527. General Relativity. NS, QS One course. C-L: see Physics 622

531. Basic Analysis I. QS, W Topology of R^n, continuous functions, uniform convergence, compactness, infinite series, theory of differentiation, and integration. Not open to students who have had Mathematics 431. Prerequisite: Mathematics 221. Instructor: Staff. One course.

532. Basic Analysis II. QS Differential and integral calculus in R^n. Inverse and implicit function theorems. Further topics in multivariable analysis. Prerequisite: Mathematics 221; Mathematics 531, or 431 and consent of instructor. Instructor: Staff. One course.


545. Introduction to Stochastic Calculus. QS Introduction to the theory of stochastic differential equations oriented towards topics useful in applications. Brownian motion, stochastic integrals, and diffusions as solutions of stochastic differential equations. Functionals of diffusions and their connection with partial differential equations. Ito's formula, Girsanov's theorem, Feynman-Kac formula, Martingale representation theorem. Additional topics have included one dimensional boundary behavior, stochastic averaging, stochastic numerical methods. Prerequisites: Undergraduate background in real analysis (Mathematics 431) and probability (Mathematics 230 or 340). Instructor: Staff. One course.


555. Ordinary Differential Equations. QS Existence and uniqueness theorems for nonlinear systems, well-posedness, two-point boundary value problems, phase plane diagrams, stability, dynamical systems, and strange attractors. Prerequisite: Mathematics 221, 216 or 356, and 531 or 431. Instructor: Staff. One course.


565. Numerical Analysis. QS, R One course. C-L: see Computer Science 520; also C-L: Statistical Science 612

573S. Modeling of Biological Systems. QS, R Research seminar on mathematical methods for modeling biological systems. Exact content based on research interests of students. Review methods of differential equations and probability. Discuss use of mathematical techniques in development of models in biology. Student presentations and class
discussions on individual research projects. Presentation of a substantial individual modeling project to be agreed upon during the first weeks of the course. May serve as capstone course for MBS certificate. Not open to students who have had Modeling Biological Systems 495S. Prerequisites: Mathematics 216 or 356 or consent of instructor. One course. C-L: Computational Biology and Bioinformatics 573S

575. Mathematical Fluid Dynamics. QS Properties and solutions of the Euler and Navier-Stokes equations, including particle trajectories, vorticity, conserved quantities, shear, deformation and rotation in two and three dimensions, the Biot-Savart law, and singular integrals. Additional topics determined by the instructor. Prerequisite: Mathematics 453 or 551 or an equivalent course. Instructor: Staff. One course.

577. Mathematical Modeling. QS Formulation and analysis of mathematical models describing problems from science and engineering including areas like biological systems, chemical reactions, and mechanical systems. Mathematical techniques such as nondimensionalization, perturbation analysis, and special solutions will be introduced to simplify the models and yield insight into the underlying problems. Instructor: Staff. One course.

581. Mathematical Finance. QS An introduction to the basic concepts of mathematical finance. Topics include modeling security price behavior, Brownian and geometric Brownian motion, mean variance analysis and the efficient frontier, expected utility maximization, Ito's formula and stochastic differential equations, the Black-Scholes equation and option pricing formula. Prerequisites: Mathematics 212 (or 222), 221, and 230 (or 340), or consent of instructor. Instructor: Staff. One course. C-L: Economics 673

582. Financial Derivatives. A rigorous introduction to financial derivatives with applications. Topics include: binomial trees and geometric Brownian motion; European options, American options, forwards, and futures; put-call parity; the Black-Scholes-Merton pricing formula and its derivations; Delta and Gamma hedging; implied volatility; Merton jump-diffusion model; Heston model; GARCH(1,1) model. Prerequisites: Math 212 (or 222) and Math 230 (or 340) or consent of instructor. Instructor: Staff. One course. C-L: Economics 674

590-01. Special Readings. Instructor: Staff. One course.

601. Groups, Rings, and Fields. Groups including nilpotent and solvable groups, p-groups and Sylow theorems; rings and modules including classification of modules over a PID and applications to linear algebra; fields including extensions and Galois theory. Prerequisite: Mathematics 502 or equivalent. Instructor: Staff. One course.

602. An Introduction to Commutative Algebra and Algebraic Geometry. Affine algebraic varieties, Groebner bases, localization, chain conditions, dimension theory, singularities, completions. Prerequisite: Mathematics 601 or equivalent. Instructor: Staff. One course.

603. Representation Theory. QS Representation theory of finite groups, Lie algebras and Lie groups, roots, weights, Dynkin diagrams, classification of semisimple Lie algebras and their representations, exceptional groups, examples and applications to geometry and mathematical physics. Prerequisite: Mathematics 501 or equivalent. Instructor: Staff. One course. C-L: Physics 603

605. Number Theory. Binary quadratic forms; orders, integral closure; Dedekind domains; fractional ideals; spectra of rings; Minkowski theory; fundamental finiteness theorems; valuations; ramification; zeta functions; density of primes in arithmetic progressions. Prerequisites: Mathematics 502 or 601 or consent of instructor. Instructor: Staff. One course.

607. Computation in Algebra and Geometry. QS Application of computing to problems in areas of algebra and geometry, such as linear algebra, algebraic geometry, differential geometry, representation theory, and number theory, use of general purpose symbolic computation packages such as Maple or Mathematica; use of special purpose packages such as Macaulay, PARI-GP, and LiE; programming in C/C++. Previous experience with programming or the various mathematical topics not required. Corequisite: Mathematics 601 or consent of instructor. Instructor: Staff. One course.

611. Algebraic Topology I. QS Fundamental group and covering spaces, singular and cellular homology, Eilenberg-Steenrod axioms of homology, Euler characteristic, classification of surfaces, singular and cellular cohomology. Prerequisite: Mathematics 411 and 501 or consent of instructor. Instructor: Staff. One course.

612. Algebraic Topology II. QS Universal coefficient theorems, Künneth theorem, cup and cap products, Poincaré duality, plus topics selected from: higher homotopy groups, obstruction theory, Hurewicz and Whitehead theorems, and characteristic classes. Prerequisite: Mathematics 611 or consent of instructor. Instructor: Staff. One course.
619. Computational Topology. QS One course. C-L: see Computer Science 636

621. Differential Geometry. QS Differentiable manifolds, fiber bundles, connections, curvature, characteristic classes, Riemannian geometry including submanifolds and variations of length integral, complex manifolds, homogeneous spaces. Prerequisite: Mathematics 532 or equivalent. Instructor: Staff. One course.

625. Riemann Surfaces. Compact Riemann Surfaces, maps to projective space, Riemann-Roch Theorem, Serre duality, Hurwitz formula, Hodge theory in dimension one, Jacobians, the Abel-Jacobi map, sheaves, Cech cohomology. Prerequisite: Mathematics 633 and Mathematics 611 or consent of instructor. Instructor: Staff. One course.

627. Algebraic Geometry. Projective varieties, morphisms, rational maps, sheaves, divisors, sheaf cohomology, resolution of singularities. Prerequisite: Mathematics 602 and 625; or consent of instructor advised. Instructor: Staff. One course.

631. Real Analysis. QS Lebesgue measure and integration; L^p spaces; absolute continuity; abstract measure theory; Radon-Nikodym Theorem; connection with probability; Fourier series and integrals. Instructor: Staff. One course.

633. Complex Analysis. QS Complex calculus, conformal mapping, Riemann mapping theorem, Riemann surfaces. Prerequisite: Mathematics 532 or equivalent. Instructor: Staff. One course.

635. Functional Analysis. QS Metric spaces, fixed point theorems, Baire category theorem, Banach spaces, fundamental theorems of functional analysis, Fourier transform. Prerequisite: Mathematics 631 or equivalent. Instructor: Staff. One course.

641. Probability. QS Theoretic probability. Triangular arrays, weak laws of large numbers, variants of the central limit theorem, rates of convergence of limit theorems, local limit theorems, stable laws, infinitely divisible distributions, general state space Markov chains, ergodic theorems, large deviations, martingales, Brownian motion and Donsker's theorem. Prerequisites: Mathematics 631 or Statistical Science 711 or equivalent. Instructor: Staff. One course.

651. Hyperbolic Partial Differential Equations. QS Linear wave motion, dispersion, stationary phase, foundations of continuum mechanics, characteristics, linear hyperbolic systems, and nonlinear conservation laws. Prerequisite: Mathematics 557 or equivalent. Instructor: Staff. One course.


690-00. **Topics in Algebraic Geometry.** Schemes, intersection theory, deformation theory, moduli, classification of varieties, variation of Hodge structure, Calabi-Yau manifolds, or arithmetic algebraic geometry. Prerequisite: Mathematics 627 or consent of instructor. Instructor: Staff. One course.

690-05. **Topics in Number Theory.** A selection of topics from algebraic number theory, arithmetic geometry, automorphic forms, analytic number theory, etc. Instructor: Staff. One course.

690-10. **Topics in Topology.** Algebraic, geometric, or differential topology. Consent of instructor required. Instructor: Staff. One course.

690-20. **Topics in Differential Geometry.** QS Lie groups and related topics, Hodge theory, index theory, minimal surfaces, Yang-Mills fields, exterior differential systems, harmonic maps, symplectic geometry. Prerequisite: Mathematics 621 or consent of instructor. Instructor: Staff. One course.

690-30. **Topics in Complex Analysis.** QS Geometric function theory, function algebras, several complex variables, uniformization, or analytic number theory. Prerequisite: Mathematics 633 or equivalent. Instructor: Staff. One course.

690-32. **Topics in Analysis.** Topics in analysis geared towards topics of current research interest. The prerequisites will depend on the specific topic covered. Instructor: Staff. One course.

690-40. **Topics in Probability Theory.** QS Probability tools and theory, geared towards topics of current research interest. Possible additional prerequisites based on course content in a particular semester. Prerequisites: Mathematics 230 or 340 or equivalent, and consent of instructor. Instructor: Staff. One course. C-L: Statistical Science 690-40

690-50. **Topics in Partial Differential Equations.** QS Hyperbolic conservation laws, pseudo-differential operators, variational inequalities, theoretical continuum mechanics. Prerequisite: Mathematics 651 or equivalent. Instructor: Staff. One course.

690-82. **Topics in Mathematical Finance.** Topics of current research interest in mathematical models with relevant applications to finance. Prerequisites: Mathematics 230 or 340 or equivalent, or consent of instructor. Possible additional prerequisites depending on course content. Instructor: Staff. One course. C-L: Economics 690-82

**The Major**

The Department of Mathematics offers both the AB degree and the BS degree. Students who plan to attend graduate school in mathematics or the sciences should consider working toward the BS degree, which requires at least eight courses in mathematics numbered Mathematics 230 or above. The AB degree requires at least seven courses in mathematics numbered Mathematics 230 or above. At least half of the major/minor courses numbered above 212 should be taken at Duke. In particular, Mathematics 401 (or 501) and 431 (or 531) should be taken at Duke. The specific requirements for each degree are listed below.

The director of undergraduate studies can be consulted for additional information and advice on course selection. The *Handbook for Mathematics Majors and Minors*, published by the department, can be used as a guide in developing a coherent program of study consistent with professional goals.

**For the AB Degree**

**Prerequisites.** Mathematics 21 or 111L or 121 or an equivalent course; Mathematics 22 or 112L or 122 or 122L or an equivalent course; Mathematics 212 or 222 and Mathematics 221 or equivalent courses. (Many upper-level mathematics courses assume programming experience at the level of Computer Science 94. Students without computer experience are encouraged to take Computer Science 101.)

**Major Requirements.** Seven courses in mathematics numbered 230 or above including Mathematics 401 or 501 and Mathematics 431 or 531.

**For the BS Degree**

**Prerequisites.** Mathematics 21 or 111L or 121 or an equivalent course; Mathematics 22 or 112L or 122 or 122L or an equivalent course; Mathematics 212 or 222 and Mathematics 221 or equivalent courses. (Many upper-level mathematics courses assume programming experience at the level of Computer Science 94. Students without computer experience are encouraged to take Computer Science 101.)
Major Requirements. Eight courses in mathematics numbered 230 or above including Mathematics 401 or 501; Mathematics 431 or 531; and one of Mathematics 333, 342, 411, 412, 421, 502, 532, 541, 581. There is also a physics requirement. It may be met by receiving Advanced Placement credit for Physics 25 and 26; or by completing Physics 141L and 142L, Physics 151L and 152L, or Physics 161L and 162L; or by completing a program of physics courses approved by the director of undergraduate studies.

Departmental Graduation with Distinction

The department offers a program for Graduation with Distinction in mathematics. See the Handbook for Mathematics Majors and Minors and also the section on honors in this bulletin.

The Minor

Prerequisites. Mathematics 212 or 222 or the equivalent

Requirements. Five courses in mathematics numbered above 212, other than 222, to include at least one course (or its equivalent) from the following: Mathematics 230, 333, 361S, 401, 411, 412, 421, 431, 451S, 487, or any Mathematics course at the 500 or 600 level.

Mechanical Engineering and Materials Science

For courses in mechanical engineering, see page 702.

Medieval and Renaissance Studies

Professor Finucci, Director; Professor Finucci, Director of Undergraduate Studies; Professors Aers, Beckwith, Brothers, Bruzelius, Clark, Finucci, Gaspar, Grant, Greer, Longino, Martin, Mignolo, Porter, Quilligan, Rasmussen, Robisheaux, Shatzmiller, Silverblatt, Solterer, Tennenhouse, Wharton, and Van Miegroet; Associate Professors Eisner, Janiak, McCarthy, Neuschel, Sigal, and Woods; Assistant Professors Galletti, Hassan, Malegam, Pak, Riedel, and Stern; Professors Emeriti Bland, Clay, DeNeef, Garci-Gómez, Hillerbrand, Mauskopf, Newton, Randall, Rigsby, Silbiger, Steinmetz, Williams, and Witt; Visiting Assistant Professor Dubois; Adjunct Assistant Professor Morrow; Adjunct Associate Professor Keul

A major or a minor is available in this program.

The program in Medieval and Renaissance Studies is designed to provide the student with a well-rounded understanding of the historical, cultural, and social forces that shaped the medieval and Renaissance periods. The program is divided into four areas of study: fine arts (art and music); history; language and literature (English, French, German, Greek, Italian, Latin, and Spanish); and philosophy and religion. See the section on the major below.

Courses in Medieval and Renaissance Studies (MEDREN)

Core Courses

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

151. Medieval Cultures. ALP, CCI, CZ Interdisciplinary introduction to medieval culture that includes sources and methods from history, literature, and art history. Emphasizes interpretation of written texts, oral traditions, visual culture, and artifacts. Instructor: Staff. One course. C-L: Art History 121, Classical Studies 121, History 241

152. Renaissance Cultures. ALP, CCI, CZ A study of historical, literary, philosophical, and art historical materials introducing Renaissance culture and the methods developed for its study. Instructor: Staff. One course. C-L: Art History 152, History 116, Italian 381

190FS. Special Topics in Focus. Special topics in Medieval and Renaissance Studies open only to students in the Focus Program. Instructor: Staff. One course.

291. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic product. Instructor: Staff. One course.
293. **Research Independent Study.** R Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Usually undertaken by a student working on an Honors project in consultation with the student's project advisor. Consent of instructor required. Instructor: Staff. One course.

491. **Independent Study: Thesis.** Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic and/or artistic product that will contribute to developing an honors thesis. Instructor: Staff. One course.

493. **Research Independent Study: Thesis.** R Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Undertaken by a student working on an Honors project in consultation with the student's project advisor. One course.

**Other Courses**

For full descriptions of most of these courses, consult the cross-listings under the specified department in this bulletin.

105. **Old Worlds/New Histories, 500-1500 CE.** CCI, CZ, SS One course. C-L: see History 105; also C-L: African and African American Studies 134

125. **Early Modern Europe.** CCI, CZ, SS, STS One course. C-L: see History 117

190A. **Duke-Administered Study Abroad: Special Topics in Medieval and Renaissance Studies.** Topics differ by section. Instructor: Staff. One course.

201S. **Music History I: Antiquity through 1625.** ALP, CCI, CZ One course. C-L: see Music 255S

205S. **The Vikings and Their Literature.** ALP, CCI, EI One course. C-L: see German 261S

210. **Medieval Architecture.** ALP, CCI, CZ, R One course. C-L: see Art History 226

215. **Gothic Cathedrals.** ALP, CCI, CZ, R One course. C-L: see Art History 225

220. **The Art of Medieval Southern Italy.** ALP, CCI, CZ, R One course. C-L: see Visual and Media Studies 335

224S. **Romance of Arthur.** ALP, CZ One course. C-L: see German 260S

225. **Art in Renaissance Italy.** ALP, CCI, CZ One course. C-L: see Art History 255; also C-L: Italian 386

227. **Renaissance Architecture in Italy: Brunelleschi to Michelangelo.** ALP, CZ One course. C-L: see Art History 258; also C-L: Italian 258

227FS. **Renaissance Architecture in Italy: Brunelleschi to Michelangelo.** ALP, CZ One course. C-L: see Art History 258FS

229A. **Renaissance and Baroque Art History.** ALP, CCI, CZ One course. C-L: see Art History 255A

233. **Michelangelo in Context.** ALP, CCI, CZ One course. C-L: see Art History 259; also C-L: Italian 261

237. **French Art and Visual Culture in the Early Modern Period.** ALP, CCI, CZ, R One course. C-L: see Visual and Media Studies 293

242A. **History of Netherlandish Art in a European Context.** ALP, CCI, CZ One course. C-L: see Visual and Media Studies 262A; also C-L: International Comparative Studies

243A. **History of Netherlandish Art in a European Context.** ALP, CCI, CZ One course. C-L: see Visual and Media Studies 263A; also C-L: International Comparative Studies

249. **Netherlandish Art and Visual Culture in the Seventeenth and Eighteenth Centuries.** ALP, CCI, CZ, R One course. C-L: see Art History 337; also C-L: International Comparative Studies

254. **The Expansion of Medieval Europe.** CCI, CZ One course. C-L: see History 254

255. **The Caribbean, 1492-1700.** CCI, CZ One course. C-L: see History 318; also C-L: African and African American Studies 218

256. **Medieval Bodies: Sex & Food.** CCI, CZ, EI One course. C-L: see History 246; also C-L: Women's Studies 219, Study of Sexualities 210
257. Medieval Christendom, Conflict. CCI, CZ, EI One course. C-L: see History 242; also C-L: Religion 354
259. Europe Before The Crusades. CCI, CZ One course. C-L: see History 245
262. The Crusades to the Holy Land. CCI, CZ, R One course. C-L: see History 249; also C-L: Jewish Studies 249, Islamic Studies
268. Islamic Civilization I. CCI, CZ, EI One course. C-L: see Religion 375; also C-L: Cultural Anthropology 256, History 210, Asian & Middle Eastern Studies 327, Ethics Courses Offered Through Other Departments, Information Science and Information Studies, Islamic Studies
269. Islamic Civilization II. CCI, CZ, EI One course. C-L: see Religion 376; also C-L: Cultural Anthropology 257, History 211, International Comparative Studies, Ethics Courses Offered Through Other Departments, Islamic Studies
272. British Isles in the Middle Ages. CCI, CZ, EI One course. C-L: see History 247
275. Tudor/Stuart Britain. CZ, R, W One course. C-L: see History 269
279. The History of the Renaissance in Europe 1250-1550. CZ, W One course. C-L: see History 256; also C-L: International Comparative Studies
281. Reformation Europe. CCI, CZ One course. C-L: see History 257; also C-L: International Comparative Studies
284. The Reformation of the Sixteenth Century. CCI, CZ, EI One course. C-L: see Religion 358; also C-L: History 259, Ethics Courses Offered Through Other Departments
287. Magic, Religion, and Science since 1400. CCI, CZ, EI, STS One course. C-L: see History 260
287D. Magic, Religion, and Science since 1400. CCI, CZ, EI, STS One course. C-L: see History 260D
289. Rise of Modern Science: Early Science through Newton. CZ, STS, W One course. C-L: see History 302
290-1. Topics in Medieval Art and Architecture. ALP, CCI, CZ One course. C-L: see Art History 290-1
290AS-1. Topics in Renaissance British Literature. Two courses. C-L: see English 290AS-1
290S-1. Special Topics in Medieval and Early Modern Literature. ALP One course. C-L: see English 290S-1
301. Ancient Myth. ALP, CCI, CZ One course. C-L: see Classical Studies 208
303. Ancient and Medieval Epic. ALP, CCI One course. C-L: see Classical Studies 204
304S. Interpreting Rome. ALP, CCI, CZ, FL One course. C-L: see Latin 372S
308. Introduction to Old English. ALP, CCI, CZ, R One course. C-L: see English 205
312. Introduction to Italian Literature I. ALP, CCI, FL One course. C-L: see Italian 332
314. Introduction to Spanish Literature I. ALP, CCI, FL One course. C-L: see Spanish 332
317. Medieval English Literature to 1500. ALP, CCI, R One course. C-L: see English 231
318. Middle English 1100-1500. ALP, CCI, W One course. C-L: see English 207
320S. Chaucer I. ALP, CCI, R One course. C-L: see English 332S
321. Chaucer II. ALP, CCI, R One course. C-L: see English 333
326. Sixteenth-Century English Literature. ALP One course. C-L: see English 233
328. Seventeenth-Century English Literature. ALP One course. C-L: see English 238
330. Shakespeare. ALP, W One course. C-L: see English 235; also C-L: Theater Studies 222
331. Shakespeare Before 1600. ALP, EI, R One course. C-L: see English 336; also C-L: Theater Studies 336
332. Shakespeare After 1600. ALP, EI, R One course. C-L: see English 337; also C-L: Theater Studies 337
333. Shakespeare: Comedies and Romances. ALP One course. C-L: see English 334; also C-L: Theater Studies 334
337. Milton. ALP, R One course. C-L: see English 338
344. Italian Women Writers. ALP, EI One course. C-L: see Italian 382; also C-L: Women's Studies 282

345. The Devil's Pact: Faust and the Faust Tradition. ALP, CCI, EI One course. C-L: see German 370; also C-L: Literature 240

350. Medieval Philosophy. CCI, CZ, EI One course. C-L: see Philosophy 219

351. Jewish Mysticism. ALP, CCI, CZ, EI, W One course. C-L: see Religion 335; also C-L: Jewish Studies 335, Ethics Courses Offered Through Other Departments

354. Medieval Christianity in Film and Fiction. ALP, CCI, CZ, EI One course. C-L: see Religion 261; also C-L: History 244

390. Topics in Medieval and Renaissance Studies. Topics may focus on fine arts, history, language and literature, or philosophy and religion, frequently engaging interdisciplinary perspectives. Instructor: Staff. One course.

390-1. Topics in Renaissance Art. ALP, CCI, CZ One course. C-L: see Art History 390-1


426S. Capstone Seminar: Sex, Celibacy, and Purity in the Middle Ages. CCI, CZ, EI, R One course. C-L: see History 459S; also C-L: Religion 415S

429S. Capstone Seminar: The Black Death and Medieval Society. CCI, CZ, EI, R One course. C-L: see History 460S

430S. Capstone Seminar: Heresy and Inquisition in the Middle Ages. CCI, CZ, R One course. C-L: see History 462S

432S. Capstone Seminar: Medieval Communities. CCI, CZ, EI, R One course. C-L: see History 463S

450. Dante's Divine Comedy: Hell, Purgatory and Paradise. ALP, CCI, CZ, EI One course. C-L: see Italian 481; also C-L: Religion 262, History 253, Literature 245, International Comparative Studies

452. Courtly Love and Hate. ALP, CCI, FL One course. C-L: see French 418S

454. Sex, Death, and a Little Love: Boccaccio's Decameron. ALP, CCI, CZ, R One course. C-L: see Italian 482

458. Spanish Literature of the Renaissance and the Baroque. ALP, CCI, FL One course. C-L: see Spanish 410; also C-L: Information Science and Information Studies 251

459. Golden Age Literature: Cervantes. ALP, CCI, CZ, FL One course. C-L: see Spanish 411

470S. Italians Abroad, Foreigners in Italy: Seeing and Being Seen (DS2). ALP, CCI, CZ One course. C-L: see Italian 484S; also C-L: International Comparative Studies

475D. Women Writers of the Renaissance: Spain and England. ALP, CCI, CZ One course. C-L: see Spanish 481D; also C-L: English 433

504A. History of Netherlandish Art and Visual Culture in a European Context. ALP, CCI, CZ, R One course. C-L: see Visual and Media Studies 506A; also C-L: International Comparative Studies

505A. History of Netherlandish Art and Visual Culture in a European Context. ALP, CCI, CZ, R One course. C-L: see Visual and Media Studies 507A; also C-L: International Comparative Studies


522. Music in the Middle Ages. ALP, R One course. C-L: see Music 551

523. Topics in Renaissance Music. ALP, R One course. C-L: see Music 552

524. Music in the Baroque Era. ALP, R One course. C-L: see Music 553
550. Early and Medieval Christianity. CZ
A survey of the history of Christianity from its beginnings through the
fifteenth century. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Keefe and
Steinmetz. One course.

551. Modern European Christianity. CZ
A survey of the history of Christianity from the Reformation to the
present, with emphasis on the early modern era. Also offered as a Divinity School course. Open to juniors and seniors
only. Instructor: Heitzenrater and Steinmetz. One course.

556S. Religion, Conflict and Holy War in the Pre-Modern West: Sects and Violence. CCI, CZ, EI, SS, W One
course. C-L: see History 506S

570S. The Society and Economy of Europe, 1400 - 1700. CCI, CZ, R One course. C-L: see History 519S

575S. Religion and Society in the Age of the Reformation. CZ, R One course. C-L: see History 523S

576S. Microhistory. CCI, CZ, R, SS, W One course. C-L: see History 520S

590. Advanced Topics in Medieval and Renaissance Studies. Topics may focus on fine arts, history, language and
literature, or philosophy and religion. Open to seniors and graduate students; other students may need consent of
instructor. Instructor: Staff. One course.

590-1. Topics in Early Modern Studies. ALP, FL, R One course. C-L: see French 590

590S. Advanced Seminar in Medieval and Renaissance Studies. Topics may focus on fine arts, history, language
and literature, or philosophy and religion. These seminar courses frequently engage interdisciplinary perspectives,
historiography, and interpretation of medieval and Renaissance cultures. Open to seniors and graduate students;
other students may need consent of instructor. Instructor: Staff. One course.

590S-1. Topics in Romanesque and Gothic Art and Architecture. ALP, CCI, CZ, R One course. C-L: see Art
History 590S-3

590S-2. Topics in Italian Renaissance Art. ALP, CCI, CZ, R One course. C-L: see Art History 590S-4

605. Introduction to Old English. ALP One course. C-L: see English 505

607. History of the German Language. One course. C-L: see German 560; also C-L: Linguistics 560

608S. Medieval and Renaissance Latin. ALP, CCI, CZ, FL One course. C-L: see Latin 508S

609S. Old Norse: Introduction to the Language of Viking Scandinavia. ALP, CZ One course. C-L: see German
510S; also C-L: Linguistics 562S

610S. Introduction to Medieval German: The Language of the German Middle Ages and Its Literature. ALP,
FL, R One course. C-L: see German 610S

615S. Dante Studies. ALP, CCI, CZ One course. C-L: see Italian 583S

625S. Chaucer and His Contexts. ALP, CCI, R One course. C-L: see English 532S

630S. Shakespeare: Special Topics. ALP, R One course. C-L: see English 536S

632S. Special Topics in Renaissance Prose and Poetry: 1500 to 1660. ALP, R One course. C-L: see English 538S

642. Medieval Fictions. ALP, CCI, FL One course. C-L: see French 530; also C-L: Literature 541

647S. Latin Palaeography. ALP, CZ, FL One course. C-L: see Latin 584S

648. The Legacy of Greece and Rome. ALP, CCI, CZ One course. C-L: see Classical Studies 568

650. The Early Medieval Church. CZ Also offered as a Divinity School course. Open to juniors and seniors only.
Instructor: Staff. One course.

651S. The Early Medieval Church, Out of Africa: Christianity in North Africa before Islam. CZ Selected
writings of Tertullian, Cyprian, and Augustine, as well as lesser known African Fathers, on topics such as the African
rite of baptism, African creeds, and African church councils. Focus on major theological, liturgical, and pastoral
problems in the African church in order to gain perspective on the crucial role of the African church in the develop-
ment of the church in the West. Also offered as a Divinity School course. Open to juniors and seniors only.
Instructor: Staff. One course.
653. The Sacraments in the Patristic and Early Medieval Period. CZ A study of the celebration and interpretation of baptism or eucharist in the church orders and texts of the early church writers. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Staff. One course.

655. Early Christian Asceticism. CZ, EI One course. C-L: see Religion 634; also C-L: Women's Studies, Study of Sexualities


662. Origen. CZ, EI One course. C-L: see Religion 632

664. Augustine. CZ, EI One course. C-L: see Religion 633

667. Readings in Latin Ecclesiastical Literature. CCI, CZ Readings in Latin of pastoral, theological, and church-disciplinary literature from the late patristic and medieval period. Also offered as a graduate Religion and Divinity School course. Open to juniors and seniors only. Prerequisite: knowledge of Latin. Instructor: Staff. One course.

669S. Medieval Philosophy. CCI, CZ, R One course. C-L: see Philosophy 618S

672. The Christian Mystical Tradition in the Medieval Centuries. CZ Reading and discussion of the writings of medieval Christian mystics (in translation). Each year offers a special focus, such as: Women at Prayer; Fourteenth-Century Mystics; Spanish Mystics. Less well-known writers (Hadewijch, Birgitta of Sweden, Catherine of Genoa) as well as giants (Eckhart, Ruusbroec, Tauler, Suso, Teresa of Avila, Julian of Norwich, Catherine of Siena, and Bernard of Clairvaux) are included. Also offered as a Divinity School course, and as Religion 742. Open to juniors and seniors only. Instructor: Staff. One course.

675. Luther and the Reformation in Germany. CZ The theology of Martin Luther in the context of competing visions of reform. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Staff. One course.

676. The English Reformation. CZ The religious history of England from the accession of Henry VIII to the death of Elizabeth I. Extensive readings in the English reformers from Tyndale to Hooker. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Staff. One course.

677. Problems in Reformation Theology. CZ Consent of instructor required. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Staff. One course.

679. Problems in Historical Theology. CZ Consent of instructor required. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Staff. One course.

680. Readings in Historical Theology. CZ Also offered as a Divinity School course. Open to juniors and seniors only. Prerequisites: Medieval and Renaissance Studies 550 and 551. Instructor: Staff. One course.

682. Christian Thought in the Middle Ages. CZ A survey of the history of Christian theology from St. Augustine to the young Martin Luther. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Staff. One course.

690S-1. Special Topics in Middle English Literature: 1100 to 1500. ALP, CCI, R One course. C-L: see English 530S

690S-2. Topics in Renaissance Studies. ALP, CCI, CZ One course. C-L: see Italian 590S-1; also C-L: Art History 590S-2

The Major

The major requires ten courses, two requirements, and eight elective distribution courses taken in the following four areas of study: history; fine arts (art and music); language and literature (English, French, German, Greek, Italian, Latin, and Spanish); philosophy and religion.

Requirements. Students must either participate in the Medieval and Renaissance Focus Program or take Medieval and Renaissance Studies 151 and 152. In addition to these two courses, students must take the remaining eight elective courses in one of the following distributions: (a) 3-3-2-0, three courses in two of the four areas of study and two courses in a third area; or (b) 3-3-1-1, three courses in two of the four areas of study and one course in each of the other two areas.
Each program is tailored to the needs and interests of the student. After discussion with the director of undergraduate studies or another advisor for Medieval and Renaissance Studies, the student submits a provisional program of study outlining special interdisciplinary interests. Normally the program is planned before the end of the sophomore year to allow time to acquire a working knowledge of languages pertinent to specific interests.

**Graduation with Distinction**

 Majors are encouraged to pursue honors work in an area of special interest.

**Procedure for Selection of Students.** The student should apply to the director of undergraduate studies or program coordinator during the junior year, and must maintain a minimum GPA of 3.5 in the Medieval and Renaissance Studies major.

**Expected Product.** A written thesis based on at least one independent study (Medieval and Renaissance Studies 491, 493) with a Medieval and Renaissance studies faculty member who directs the thesis.

**Evaluation Procedure.** Evaluation by a committee of three Medieval and Renaissance Studies faculty members appointed by the director of undergraduate studies, one of whom must be the thesis director.

**Levels of Distinction.** Recommendation from the review committee for distinction, high distinction, and highest distinction based on the quality of the thesis and on performance in the major program.

**Special Courses.** The Medieval and Renaissance Studies independent study courses (Medieval and Renaissance Studies 491, 493) may count toward the major. The thesis may be written in conjunction with independent study work in either the junior or senior year.

**The Minor**

**Requirements.** Five courses, two of which must be focus program courses or Medieval and Renaissance Studies 151 and 152. The three remaining courses may be taken in any distribution suitting the student’s interests in consultation with a Medieval and Renaissance Studies advisor.

**The Four Course Study Areas**

 The following courses are taken in distributions across four areas of study. Some of these courses are available in more than one study area. Students who have participated in the focus program in Medieval and Renaissance Studies may take Medieval and Renaissance Studies 151 and 152 to fulfill distribution requirements. Cross-listed courses may count toward the major or minor in both Medieval and Renaissance Studies and in the cross-listed departments or programs.

**Area 1: Fine Arts**


**Area 2: History**


**Area 3: Language and Literature**


**Area 4: Philosophy and Religious Studies**


**Additional Topics and Seminar Courses**

 The following topics courses are taught in various disciplines and vary from semester to semester. They may be taken in any of the above four study areas depending on the nature of their subjects. Students need to consult with the director of undergraduate studies or a medieval and Renaissance studies advisor to determine how any one of these courses may be distributed: 89S, 100, 100S, 151, 152, 190A, 200, 291, 293, 300, 300S, 390, 390A, 390S, 400, 590, 590S.
Military Science—Army ROTC

Visiting Professor Langkamp, Lieutenant Colonel, US Army, *Chair*; Visiting Assistant Professor Kennealy, Captain, US Army, *Director of Undergraduate Studies*

The Department of Military Science offers students from all disciplines within the university the opportunity to study the following subjects: leadership theory and practice; management of time, personnel, and materiel; ethics; the role and responsibility of the military in contemporary society; and the philosophy and practice of military strategy and tactics. First-year and sophomore-level courses are open to all Duke students and do not require full participation in the Army ROTC program. The leadership laboratory provides students a unique and dynamic hands-on leadership experience in addition to an opportunity to put military skills and tactics into practice. The laboratory is offered as an optional course for nonprogram students enrolled in the freshman courses. It is mandatory each semester for contracted cadets (both scholarship and nonscholarship) and for students who intend to contract or to apply for a scholarship.

The Army ROTC program is made up of a two-year basic course of study (first-year and sophomore-level) and a two-year advanced course of study (junior and senior level), which includes a five-week leadership camp usually completed during the summer prior to the senior year. To be eligible for participation in the advanced course, students must successfully complete the basic course (unless direct entry is approved), be physically qualified, be of good moral character, be a US citizen, have a minimum of two years remaining as a student (undergraduate or graduate level), and sign a contract to accept a commission in the United States Army, the Army National Guard, or the Army Reserve as directed by the Secretary of the Army. Direct entry into the advanced course is sometimes permitted if an applicant has previous military training or experience, or when a five-week leader’s training course is completed.

Students who are interested in full program enrollment and scholarship opportunities should consult the Department of Military Science (call (919) 660-3090 collect, or (800) 222-9184 toll free) for more detailed information. Also see the Army Reserve Officers’ Training Corps section under special programs in this bulletin.

**Courses in Military Science—Army ROTC (MILITSCI)**

91L. **Leadership Laboratory - Fall Semester Only.** (Fall semester only.) Introduces students to basic Army operations; includes team building, map reading, first aid, confidence training, rifle marksmanship, drill and ceremonies, Army doctrine and small unit tactics. Must be repeated with each fall semester course. Instructor: Staff.

92L. **Leadership Laboratory - Spring Semester Only.** (Spring semester only) Introduces students to basic Army operations; includes team building, map reading, first aid, confidence training, rifle marksmanship, drill and ceremonies, Army doctrine and small unit tactics. Must be repeated with each spring semester course. Consent of instructor required. Instructor: Staff.

101S. **Leadership and Personal Development.** This course is designed to inspire an interest in the principles and practices of leadership and to explore how these high-impact principles and practices might be applied at Duke, in the military, and to the civilian world of work. The course will explore topics such as values-based behavior (courage, trust, ethics), leadership and management, power and authority, individual motivation, cohesion, team and group effectiveness, and crisis leadership. Laboratory required for ROTC cadets. Instructor: Staff. Half course.

150. **Introduction To Tactical Leadership.** Develop your ability to be an effective leader and manager through exposure to leadership and developmental theories, principles and practices by building on concepts learned in Military Science 101S. Students will practice leadership fundamentals such as problem-solving and presentation skills, and develop an appreciation of the historical and cultural complexity of the environment in which military officers apply leadership techniques. Laboratory required for ROTC cadets. Consent of instructor required. Instructor: Staff. Half course.

201. **Innovative Team Leadership (Lecture).** Explore the theory and practical application of group dynamics, team building, and innovative leadership in Explore the theory and practical application of group dynamics, team building, and innovative leadership in both civilian and military contexts. Students will participate in practical application of personal motivation and team building through planning, executing and assessing team exercises. Builds on concepts taught in Military Science 101S and 150S. Laboratory required for ROTC cadets. Prerequisites: completion of Military Science 150S or consent of instructor. Instructor: Staff. Half course.
250. **Foundations of Tactical Leadership.** Apply adaptive leadership concepts and team building theory to the practical challenges of leading tactical teams in a complex contemporary environment. This course is designed to prepare students for more detailed study of small unit tactics; specific skill development includes terrain analysis, patrolling and operations orders. Laboratory required for ROTC cadets. Prerequisites: completion of Military Science 201. Instructor: Staff. Half course.

291. **Independent Study.** Individual study under the supervision of a faculty member. Written consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

291-1. **Independent Study - Half Credit.** Individual study under the supervision of a faculty member. Written consent of instructor and director of undergraduate studies required. Instructor: Staff. Half course.

301. **Small Unit Military Leadership (Lecture).** The study, practice and evaluation of adaptive leadership skills in the context of squad tactical operations. Focus on developing cadets' tactical leadership abilities in preparation for ROTC's summer Leadership Development and Assessment Course (LDAC). Laboratory required for Army ROTC cadets. Consent of instructor required. Prerequisite: Completion of first two years of ROTC or prior military experience. Instructor: Staff. One course.

350. **Tactics, Techniques, and Procedures for Military Leaders.** Use of increasingly intense situational leadership challenges to build cadet awareness and skills in leading tactical operations up to platoon level. Aspects of combat, stability and support operations. Conduct military briefings and develop proficiency in garrison operations orders. Focus on developing skills in decision-making, persuading and motivating team members. Cadets evaluated as leaders in preparation for ROTC summer Leader Development Assessment Course (LDAC). Laboratory required for Army ROTC cadets. Consent of instructor required. Prerequisite: Military Science 301. Instructor: Staff. Half course.

401S. **Developing Adaptive Military Leaders.** Development of cadet proficiency in planning, executing and assessing complex operations, functioning as a member of a staff, and providing performance feedback to subordinates. Assessing risk, making ethical decisions, and leading fellow ROTC cadets; identifying responsibilities of key staff, coordinating staff roles and using situational opportunities to teach, train and develop subordinates. Study of military justice and personnel processes in preparation for transition to the Army. Laboratory required for Army ROTC cadets. Consent of instructor required. Prerequisite: Military Science 301 and 350. Instructor: Staff. One course.

450S. **Military Leadership in a Complex World.** The dynamics of leading in the complex situations of current military operations. Differences in customs and courtesies, military law, principles of war and rules of engagement in the face of international terrorism. Aspects of interacting with non-government organizations, civilians on the battlefield and host nation support. Laboratory required for ROTC cadets. Consent of instructor required. Prerequisite: Military Science 401S. Instructor: Staff. One course.

**Music**

Professor of the Practice Hawkins, *Chair*; Professor of the Practice Kelley, *Director of Undergraduate Studies*; Professor of the Practice Bagg, *Director of Performance*; Professors Berliner, Brothers, Gilliam, Jaffe, Lindroth, Todd; Associate Professors McCarthy, McIntjes, Rupprecht, Waeber; Assistant Professor Supko; Professors Emeriti Bryan, Douglass, Silbiger, Ward, and Williams; Associate Professor Emeritus Saville; Assistant Professor Emeritus Henry; Professor of the Practice Emeritus Jeffrey; Professors of the Practice Bagg, Davidson, Dunn, Hawkins, Ku, Parkins, Raimi, and Wynkoop; Associate Professors of the Practice Brown, Kelley, Pritchard, and Troxler; Assistant Professor of the Practice Mösenbichler-Bryant; Adjunct Associate Professor of the Practice Jensen; Adjunct Assistant Professor Roberts; Lecturers Ashton, Bonner, Britt, Byrne, Cotton, Eagle, Elliott, Fancher, Finucane, Gilmore, Greenberg, Heid, Kris, Lail, Lile, Linnartz, Liu, Newsome, Niketopoulos, Paolantonio, Reed, Robinson, Simmons, Warburg; Visiting Professor Kramer; Visiting Instructor Zimmerman

A major, a minor with concentration in performance, or a minor is available in this department.

Music is among the most ancient of human pursuits, and has long been viewed as a crucial part of education. As a discipline it has its own logic and grammar, in the understanding of which the mind is stretched and tested. Students at Duke encounter a variety of approaches to music that encompass the many ways that we create, perform, and comprehend it.
Courses fall into three broad categories: theory and composition, literature and history, and applied music (performance). Within these are included many kinds of instruction, such as lessons in performance and composition; theory; history and literature lectures and seminars; electronic music classes; ensembles; practical laboratory work (such as ear-training), coaching sessions in chamber music; and classes in jazz improvisation. Students' musical activity can vary widely across the spectrum. Almost every student has some personal involvement with music, and the courses aim to further that involvement, whether it is a simple hobby or a compelling interest.

**Courses in Music (MUSIC)**

**Theory and Composition**

161. Introduction to Music Theory (Advanced). ALP Rudiments of music theory, including meter, major-minor tonality, and chordal vocabulary. Introduction to harmony, four-part chorale writing. Prerequisite: some previous exposure to music theory through playing or singing; familiarity with elementary concepts, e.g. key signature, scales, clefs. Not open to students who have taken Music 161-1. (Students without playing or singing experience, see Music 161-1.) Instructor: Troxler or staff. One course.

161-1. Introduction to Music Theory (beginning). ALP Rudiments of music theory, including meter, major-minor tonality, chordal vocabulary. Introduction to harmony, four-part chorale writing. Prerequisite: ability to read music in one clef. (Students with playing or singing experience, see Music 161.) Students who have previously taken Music 161 may not register for 161-1. Instructor: Troxler or Staff. One course.

162S. Introduction to Composition: Explorations in Musical Time and Space. ALP Exploration, in seminar/workshop format, of sound and music, expressed through projects involving instruments, voices, and intermedia. Consideration of the current field will provide concrete examples, ranging widely across "kinds of music." Investigations will touch on music theory and acoustics, orchestration, music technology and analysis. Primary emphasis on composing: creative discovery of expressive possibilities and compositional value of craft. Intended for students who may have written songs or composed, and who would like to continue their explorations. Instructor: Jaffe or Supko. One course.

171. Jazz Improvisation I. ALP The theory of jazz improvisation and its practical application to the different styles of jazz. Consent of instructor required. Instructor: Finucane or staff. Half course.

172. Jazz Improvisation II. ALP See Jazz Improvisation I. Prerequisite: Music 171 or consent of instructor. Instructor: Staff. Half course.

176. The Songwriter's Vocabulary. ALP Writing songs in various twentieth-century popular styles. Fundamentals of form, harmony, voice leading, text setting, and production. Prerequisite: Music 55 or consent of instructor. Instructor: Staff. One course.

218. Musical Theater Workshop: Performance. ALP One course. C-L: see Theater Studies 211

219. Musical Theater Workshop: Creation. ALP One course. C-L: see Theater Studies 212

261. Theory and Practice of Tonal Music I. ALP Elementary principles of tonal organization: diatonic chord progressions and figured bass, two-part elementary counterpoint, introduction to musical forms. Writing of chorale-style settings. Laboratory. Prerequisites: basic knowledge of musical notation and vocabulary, including scales, basic chords and intervals, key signatures, meter, and rhythm; or Music 161. Instructor: Kelley, Lindroth, Parkins, Rupprecht, Supko, or staff. One course.


274S. Computer Music. ALP, R Computer music composition with an emphasis on digital synthesis, sampling, and related technologies. Study of recent computer music repertory. Prerequisite: Music 273 or 273S. Consent of instructor required. Instructor: Lindroth, Supko, or staff. One course. C-L: Information Science and Information Studies
275S. Electronic Music and Video Workshop. ALP, STS Instruction in writing electronic music, making videos and animation, and combining both in collaborative multimedia projects. Projects, including papers and multimedia compositions explore the way cultures continue to evolve through multimedia expression. Instructor: Supko. One course. C-L: Arts of the Moving Image 358S, Visual Arts 258S

281S. Composition I. ALP, R Composing original music in smaller forms for voice, piano, and other instruments. Studies in compositional techniques. Prerequisites: Music 261 and 361 or consent of instructor. Instructor: Jaffe, Kelley, Lindroth, or staff. One course.

281T. Composition I. ALP, R Same as Music 281S, in tutorial format. Composing original music in smaller forms for voice, piano, and other instruments. Studies in compositional techniques. Prerequisites: Music 261 and 361 or consent of instructor. Not open to students who have taken Music 281S. Instructor: Jaffe, Kelley, or Lindroth. One course.

290S-2. Special Topics in Music Theory. ALP Topics vary. Prerequisite: Music 361 or consent of instructor. Instructor: Brown, Jaffe, Lindsey, or staff. One course.

361. Theory and Practice of Tonal Music II. ALP Chromaticism, modulation, musical forms, and counterpoint. Writing of short pieces (minuets, variations, songs). Laboratory. Prerequisite: Music 261. Instructor: Kelley, Lindroth, Rupprecht, or staff. One course.

381S. Composition II. ALP, R See Music 281S. Prerequisites: Music 261 and 361 or consent of instructor. Instructor: Jaffe, Kelley, or Lindroth. One course.

381T. Composition II. ALP, R Same as Music 381S, in tutorial format. Individual lessons in compositional techniques. See Music 151 or 151A. Prerequisites: Music 261, 361, and 281S or 281T OR consent of instructor. Not open to students who have taken Music 381S. Instructor: Jaffe, Kelley, or Lindroth. One course.

390S-1. Advanced Special Topics in Music. ALP Opportunities to engage with a specific issue in music. Instructor: Staff. One course.


463S. Theory and Practice of Post-Tonal Music. ALP Analytical studies and compositions in various forms, techniques, and styles, with an emphasis on twentieth-century music. Prerequisite: Music 461 or consent of instructor. Instructor: Jaffe. One course.

465S. Counterpoint. R Polyphonic practice of the late baroque: writing of two- and three-part compositions in a variety of genres (baroque dances, inventions, preludes, fugues). Prerequisite: Music 461 or consent of instructor. Instructor: Jaffe or Kelley. One course.

481S. Advanced Composition. ALP, R Same as Music 481T except seminar format. Prerequisites: Music 281S and 381S or consent of instructor. Instructor: Jaffe, Kelley, Lindroth, or Supko. One course.

481T. Advanced Composition. ALP, R Individual weekly sessions for advanced students. May be repeated for credit. Prerequisites: Music 281S and 381S or consent of instructor. Instructor: Jaffe, Kelley, Lindroth, or Supko. One course.

History, Literature, and Ethnomusicology

89S. First-Year Seminar. ALP Topics vary each semester offered. Instructor: Brothers, Davidson, Todd, Waeber, or staff. One course.


117. Aspects of Performance. ALP, CZ Course designed as academic companion to large performance projects. Includes exploration of topics related to the composer, the work, and its performance history and practice. Enrollment not restricted to ensemble members. Instructor: Staff. Half course.

120. Music, Sound, and Style. ALP, CCI, CZ Study of the components of music (e.g. melody, rhythm) through comparative listening to styles from different places and times, ranging from current popular artists to classical, jazz,
and world music. Discussion of the shared and unique aspects of these styles, their historical and cultural links, and how those shape our tastes. Instructor: Davidson, Gilliam, Kelley, McCarthy, Meintjes, or staff. One course.

121S. Sound for Film and Video. ALP, STS One course. C-L: Arts of the Moving Image 350S, Information Science and Information Studies 243S

122. Choral Music Past and Present. ALP Exploration of great works of choral music from the 16th century to the present. Includes settings of the Requiem and classics such as Handel's "Messiah". No technical background required, just basic familiarity with musical notation. Instructor: McCarthy or staff. One course.

125. Listening to Music: The European-American Tradition. ALP, CCI Explores the elements, forms, and genres of the European and American traditions from the sixteenth to the twenty-first century, with attention to the growing dialogue between this "classical" repertoire and popular genres of the past century. Instructor: Davidson, Gilliam, Mösenbichler-Bryant, Todd or staff. One course.


129S. Sound, Music, and the Moving Image. ALP, CCI, CZ, W Introduction to film studies with emphasis on uses and functions of sound, film music, sound and other aural objects such as the voice, through a selected body of works. Topics include representations of sound, music and voice, the functions of pre-existing music and their relations with the moving image in cinema and television; gendered representations of music and voice in pop and rock music videos; Hollywood practices and non-Hollywood practices. Instructor: Waeber. One course. C-L: Arts of the Moving Image 230S, International Comparative Studies

130. World Music: Aesthetic and Anthropological Approaches. ALP, CCI, CZ Study of musical styles and practices in relation to issues of creativity, forms of power, and cultural survival; focus on the music and experiences of indigenous peoples, refugees, migrants, and immigrants. Instructor: Meintjes or staff. One course. C-L: Cultural Anthropology 131, International Comparative Studies, Documentary Studies

133S. African Mbira Music: An Experiential Learning Class. ALP, CCI, CZ Building and performing one of Africa's most popular musical instruments, the mbira (a kalimba or "finger piano"). Ethnomusicological readings on the instrument's history, role in society, and meaning for musicians. Analysis of musical examples; learning the mbira's repertory and mastering skills common to many forms of African music, including performance of polyrhythms, responsive integration of instrumental and vocal patterns, and formulation of unique renditions of pieces through improvisation. Weekly class labs. Course requires no prior experience with music or woodworking. Instructor: Berliner. One course. C-L: African and African American Studies 109S, Cultural Anthropology 133S

137. Music, Social Life, and Scenes. ALP, CCI, CZ, R, W Study of musical styles and performance practices in relation to issues of identity and other aspects of social life; focus on the diverse local musical scenes and traditions and on learning through doing original fieldwork. Instructor: Byerly or Meintjes. One course. C-L: Cultural Anthropology 137, Documentary Studies


140D. Introduction to Jazz. ALP, CCI A survey examining musical, aesthetic, sociological, and historical aspects. Instructor: Brothers, Brown, or staff. One course. C-L: African and African American Studies 140D

143. History of Rock. ALP, CZ The history of rock music from the 1950s to the present. Beginning with its roots in rhythm and blues, country and western, and commercial pop, examination of diverse musical styles, artists and bands, and the many historical, technological, and cultural factors that have contributed to the rise and popularity of rock music. Instructor: Brackett. One course.

144. Meet the Beatles and the 1960s. ALP, CZ, EI The music of the Beatles in the context of 1960s counterculture: rock and roll rebellion, Dylan and psychedelic drugs, recording studio techniques, Eastern religion and the anti-war movement. Instructor: Brothers. One course.

145. Hip-Hop/Rap Music Appreciation. ALP This course explores the development of Hip-Hop and Rap music from an inner-city expression of music into a worldwide social and cultural movement. Rap, considered popular music at the beginning of the 21st century, has a huge influence on mainstream culture. Students will have a unique opportunity to develop and/or enhance their knowledge and comprehension of this popular and influential genre. Instructor: Roberts. One course.
150S. Western Musical Instruments. ALP, CCI, CZ, W Survey of the history, technology, and classification of Western musical instruments. Comparative study of examples from Europe and America, concentrating on the period 1700-1945, but examining earlier, sometimes non-Western origins, as well as present-day usage. Hands-on, primary research on instruments in Duke's musical collections. Instructor: Staff. One course.

165. Let's Dance! Live Art and Performance. ALP, CCI, CZ One course. C-L: see Dance 165; also C-L: Theater Studies 104


190FS. Focus Seminar. ALP Topics vary each semester. Open only to students in the Focus Program. Instructor: Brothers, Jaffe, or McCarthy. One course.

190S. Special Topics in Music. ALP Opportunities to engage with a specific issue in music. Instructor: Staff. One course.

221S. Writing About Music. ALP, W Selected topics in writing about music, to include a range of musical genres and styles engaged through listening, analytical study, and concert attendance. Topics may vary each semester and include studies of critical prose, reviews, various kinds of analysis, program notes, abstracts, music itself as criticism, use of musical examples, bibliography. Prerequisite: Music 55 or basic knowledge of music vocabulary or consent of the instructor. Instructor: Staff. One course.

222S. Radio: The Theater of the Mind. ALP, CZ One course. C-L: see Theater Studies 207S; also C-L: Policy Journalism and Media Studies

234. Music in East Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 214; also C-L: Religion 245

235. Music in South Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 254; also C-L: Religion 246, Cultural Anthropology 259

238. The Arts and Human Rights. ALP, EI, SS One course. C-L: see Cultural Anthropology 248; also C-L: Study of Ethics 261, Public Policy Studies 252, International Comparative Studies 248

239S. Sound in Social Life. ALP, CCI, STS One course. C-L: see Cultural Anthropology 222S; also C-L: International Comparative Studies 246S

241. Piano Music. ALP The two-hundred-year tradition of music for the piano, the evolution of the instrument, and its principal composers (including Mozart, Beethoven, Chopin, Liszt, Brahms, and other major figures up to the present day). Performance traditions, the role of virtuosity, and improvisation. Instructor: Todd. One course.

242S. Opera. ALP, CCI History of opera in many forms, including operetta and Broadway musical. Exploration of opera as music, image, and text, in context of changing society and political climates. Includes study of modern stagings and relevance to modern society. Instructor: Waebter. One course. C-L: Italian 286S

243. The Great American Musical. ALP One course. C-L: see Theater Studies 210

249. Hollywood Film Music. ALP Film scores from the 1930s to the present. Technical, structural, and aesthetic issues, as well as the problem of musical style Instructor: Gilliam. One course. C-L: Arts of the Moving Image

251. Bach and His Time. ALP, CCI The music of Johann Sebastian Bach and its historical and cultural background. Some consideration also given to the music of Bach's contemporaries, including Vivaldi, Rameau, and Handel. Instructor: McCarthy or staff. One course. C-L: International Comparative Studies

252. Mozart and His Time. ALP, CCI, W The music of Wolfgang Amadeus Mozart and its relation to contemporary political and cultural developments. Instructor: McCarthy or staff. One course.

253. Beethoven and His Time. ALP, CCI The music of Beethoven and its relation to contemporary political and cultural developments. Instructor: McCarthy or staff. One course.

255S. Music History I: Antiquity through 1625. ALP, CCI, CZ The history of music in medieval and early modern Europe in its cultural and social context. Prerequisite: Music 261 or consent of instructor. Instructor: Brothers or McCarthy. One course. C-L: Medieval and Renaissance Studies 201S
256S. Music History II: From 1625 through 1800. ALP, CCI, CZ, R The history of music in Europe in its cultural and social context. Prerequisite: Music 261 or consent of instructor. Instructor: Staff. One course. C-L: International Comparative Studies

257. Music History III: 1800 through Present. ALP, CCI, CZ, R The history of music in Europe and the United States in its cultural and social context. Prerequisite: Music 261 or consent of instructor. Instructor: Gilliam or Todd. One course. C-L: International Comparative Studies

259. Music and Modernism. ALP, W A survey of Debussy, Stravinsky, Bartók, Varèse, Ives, and other composers who transformed music in Europe and the United States before World War II, as well as prominent post-war figures such as Lutoslawski, Messiaen, and Carter. Topics include the changing role of the composer in society, relationships to literary and visual modernism, the evolution of musical technology, and the composer’s dialogues with vernacular music and other traditions. Instructors: Jaffe, Lindroth, or Kelley. One course.

290. Special Topics in Music. ALP Opportunities to engage with a specific issue in music. Instructor: Staff. One course.


290S. Special Topics in Music. ALP Opportunities to engage with a specific issue in music. Instructor: Staff. One course.

290S-1. Special Topics in Music History. ALP Topics vary. Instructor: Staff. One course.

290S-3. Special Topics in Ethnomusicology. ALP, CZ Topics to be announced addressing a range of musical traditions from around the world. Instructor: Meintjes or staff. One course.

290S-4. Special Topics in Jazz. ALP Topics vary. Also taught as African and African American Studies 141S. Prerequisite: Music 140 or consent of instructor. Instructor: Brothers or staff. One course.

326S. The Art of Performance. ALP Fundamental issues in musical performance, examined through performing, comparative listening, readings, and discussion. In-class performance required. Prerequisites: Ability to read music and proficiency in instrumental or vocal performance. Consent of instructor required. Instructor: Dunn or staff. One course.

335. Michael Jackson and Performance of Blackness. ALP, CCI One course. C-L: see African and African American Studies 336; also C-L: Visual and Media Studies 353

341S. The Diaghilev Ballet:1909-1929. ALP, CCI, CZ, R, W One course. C-L: see Dance 326S; also C-L: Russian 218S

342. Music for Dancers. ALP One course. C-L: see Dance 375

390. Advanced Special Topics in Music. ALP Opportunities to engage with a specific issue in music. Instructor: Staff. One course.

490S. Advanced Topics in Music. ALP, R Primarily for junior and senior music majors. Topics to be announced. Prerequisites: Music 255S, 256S, 257, and 461. Instructor: Staff. One course.

Advanced Students

335. The History of Hip-Hop. ALP, CCI One course. C-L: see African and African American Studies 335; also C-L: Cultural Anthropology 335, Visual and Media Studies 337

501. Introduction to Musicology. ALP, R Methods of research on music and its history, including studies of musical and literary sources, iconography, performance practice, ethnomusicology, and historical analysis, with special attention to the interrelationships of these approaches. Instructor: Staff. One course.


552. Topics in Renaissance Music. ALP, R Selected topics. Instructor: Brothers or McCarthy. One course. C-L: Medieval and Renaissance Studies 523


560. Tonal Analysis. ALP, R In-depth study of various methods for analyzing tonal music. Approach and content vary by instructor. Instructor: Staff. One course.

561S. Analysis of Early Music. ALP Selected areas of "pre-tonal" music and various analytical methodologies that have been developed to understand them. Content changes, from semester to semester and with different instructors. Possible areas covered include plainchant, trouvère monophony, Machaut, Fifteenth-century polyphony, modal music of the Renaissance, early seventeenth-century repertories. Instructors: Brothers or McCarthy. One course.

590. Selected Topics in Analysis. ALP, R An exploration of analytical approaches appropriate to a diversity of music, which may include settings of literary texts, pre-tonal music, and music in oral and vernacular traditions. Prerequisite: Music 560 or consent of instructor. Instructor: Rupprecht or staff. One course.

663. Theories and Notation of Contemporary Music. ALP, R The diverse languages of contemporary music and their roots in the early twentieth century, with emphasis on the problems and continuity of musical language. Recent composers and their stylistic progenitors: for example, Ligeti, Bartók, and Berg; Carter, Schoenberg, Ives, and Copland; Crumb, Messiaen, and Webern; Cage, Varèse, Cowell, and Stockhausen. Instructor: Jaffe, Lindroth, Rupprecht, or Supko. One course.

690S-1. Composition Seminar: Selected Topics. ALP, R Selected topics in composition. Instructor: Brothers, Jaffe, Lindroth, or Supko. One course.

697. Composition. Weekly independent study sessions at an advanced level with a member of the graduate faculty in composition, producing musical scores (or in some cases, audio documents) which accrue towards the production of a portfolio. Consent of instructor required. Instructor: Jaffe, Lindroth, or Supko. One course.

698. Composition. Continuation of Music 697. Weekly independent study sessions at an advanced level with a member of the graduate faculty in composition, producing musical scores (or in some cases, audio documents) which accrue towards the production of a portfolio. Consent of instructor required. Instructor: Jaffe, Lindroth, or Supko. One course.

699. Composition. ALP Continuation of Music 698. Weekly independent study sessions at an advanced level with a member of the graduate faculty in composition, producing musical scores (or in some cases, audio documents) which accrue towards the production of a portfolio. Consent of instructor required. Instructor: Jaffe, Lindroth, or Supko. One course.

Independent Study

Admission will be subject to the approval of the director of undergraduate studies and the instructor. The instructor and course content will be established in accordance with the individual student’s interests and capacities.

393. Research Independent Study. R Individual research and/or theoretical analysis in a field of special interest, under the supervision of a faculty member, resulting in a substantial paper that contains significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

Applied Music

Provided they qualify by audition, students may enroll in private instruction and participate in ensembles. Auditions must be arranged with the instructor prior to registration. Enrollment in an applied music course does not guarantee permission to enroll in the instructor’s class or ensemble the following semester; in some cases another audition may be required. For those students who wish to study privately but do not qualify for university-level instruction, a list of music teachers in the immediate area who are available to Duke students can be obtained from the department office. All applied music courses may be repeated for credit, but no more than two ensembles may be taken concurrently.
Credit in Applied Music. Credit for instruction in courses below 210 is granted on the basis of a half course per semester for one hour of private instruction per week, or a half course per year for one half hour of private instruction or one period of class study. An additional weekly class meeting for performance and criticism may be required by the instructor without additional credit.

Fees. Applied music instruction in one medium (instrument or voice) is offered free to declared music majors. There is a fee for additional instruction for music majors and all instruction for minors and nonmajors. For specific information on those fees (for one-hour and half-hour private lessons and for class lessons) consult the Office of the Bursar.

Fees are not refundable after the final Drop/Add day.

No charge is made for practice room facilities for students registered at Duke. A fee schedule for the use of facilities by others is available from the music department office.

115S. Vocal Diction. Italian/English. For singers, actors, radio announcers, and public speakers. Introduction to the international phonetic alphabet. Students will be required to sing in class. Written, oral, and vocal performance examinations. Instructor: Cotton or Linnartz. Half course.


217SA. The Economics of Art (The Chicago Scene). ALP, CCI One course. C-L: see Theater Studies 217SA; also C-L: Visual and Media Studies 221SA, Arts of the Moving Image 217SA, Dance 279SA, Markets and Management Studies

316SA. stARTup Project. ALP, R One course. C-L: see Theater Studies 316SA; also C-L: Visual and Media Studies 315SA, Arts of the Moving Image 316SA, Dance 307SA, Markets and Management Studies

Instruction: Half Hour


101-7. Class Brass. Group lessons focused on the development of basic technique for brass instrumentalists. Emphasis placed upon a relaxed approach to tone production and the proper use of air and embouchure to produce a musical sound. Students will observe their peers during lessons and will perform literature appropriate to each individual's skill level. Instructor consent required. Instructor: Au. Quarter course.


103-2. Jazz Piano. Instructor: Paolantonio or staff. Quarter course.


105-1. Flute. Instructor: Troxler. Quarter course.


105-5. Saxophone. Instructor: Fancher. Quarter course.

**Instruction: One hour**


**Ensemble Classes: Satisfactory/Unsatisfactory**

318. Instrumental Conducting. ALP Development of techniques of conducting instrumental ensembles with emphasis on orchestral repertoire. Score-reading and analysis, principles of interpretation, and practical conducting experience. Prerequisite: Music 361 and consent of instructor. Instructor: Davidson, Mösenbichler-Bryant, or staff. One course.
319. Choral Conducting. ALP Development of techniques of conducting vocal repertoire, ranging from church anthems to large-scale works. Score-reading and analysis, principles of interpretation, and practical conducting experience. Prerequisite: Music 361 or consent of instructor. Instructor: Wynkoop. One course.
390-1. Special Topics in Interpretation and Performance. ALP Interpretative analysis of instrumental (piano, strings, winds) and vocal repertoire from baroque to modern composers. Participants expected to perform. Consent of instructor required. Instructor: Cotton, Dunn, Linnartz, Love, or Troxler. One course.
401. Advanced Study in Musical Performance. Open only to sophomores, juniors, and seniors possessing an exceptional technical and interpretative command of a musical medium. Requires either a half-length recital at the end of each semester of study or a full-length recital at the end of the second semester. In the latter case, a brief performance before a jury of music department faculty is required at the end of the first semester. May be repeated for credit. Prerequisites: previous registration in private instruction in applied music at Duke, audition, and consent of instructor. Instructor: Staff. One course.
418. Advanced Study in Conducting. Advanced work in reading scores, analysis, principles of interpretation, and practical conducting experience. May be repeated for credit. Prerequisite: Music 318 or 319 or consent of instructor. Instructor: Davidson, Mösenbichler-Bryant, or Wynkoop. One course.
511-1. Collegium Musicum. An opportunity to study and perform vocal and instrumental music from the Middle Ages through the Baroque. Weekly rehearsals; one or two concerts per semester. Audition and consent of instructor required. Instructor: McCarthy or staff.
Other Applied Music Courses
190. Special Topics in Music. ALP Opportunities to engage with a specific issue in music. Instructor: Staff. One course.
425S. Auditory Neuroscience - From Sound to Music. NS One course. C-L: see Neuroscience 425S; also C-L: Psychology 479S
The Major
The requirements present a balanced selection of courses in music theory, history, literature, and performance, and are a means of preparing graduates for further professional training in the art of music. The music major can also be an attractive pursuit for the well-rounded undergraduate planning a career in another field. A sequence of three courses seeks to develop the student’s fluency in music theory, while another three semesters are devoted to a survey of Western music history. Students add breadth to their program by choosing classes from three additional categories: music from the post-tonal era, music from outside the Western classical tradition, and studies in advanced performance and composition. As they progress through the major curriculum, students develop their practical
musician ship and performance skills through music theory labs, applied lessons, and participation in music department ensembles. A research seminar provides the music major’s senior year capstone experience.

The music major requires ten full course credits, at least eight of which must be at the 200 level or above, and can include Music 121S, 125, 129S, 130, 133S, 137, 143, 144, 145 and 150S, and study in applied music (see below). The major offers two tracks.

**Major in Music**

**Prerequisite.** Music 261

**Requirements.** Music 255S, 256S, 257, 361, 461, 490S or a 500-level course approved by the director of undergraduate studies. One course each from two of the following three groups:

- **Group A:** Music 259, 463S
- **Group B:** Music 130, 137, 142, 234, 235, 290S-3, 290S-4
- **Group C:** Music 401, 418, 461

One additional music elective approved by the director of undergraduate studies. Two semesters of applied music study in an instrument or voice; two semesters of participation in a departmental ensemble (excluding Music 210-3). Faculty advisory panel consultation during sophomore year. Those who plan graduate study in music are strongly advised to prepare themselves in two foreign languages.

**Major in Music With Concentration in Performance**

**Prerequisite.** Music 261

**Requirements.** Music 255S, 256S, 257, 361, 461, 490S or a 500-level course approved by the director of undergraduate studies

Two full credits of Music 401, culminating in a recital. One additional music elective approved by the director of undergraduate studies

At least five semesters of applied music (Music 103-108, 203-208, 401) earning a minimum of four full credits; two semesters of participation in a departmental ensemble (not 210-3).

Faculty advisory panel consultation during sophomore year

**Departmental Graduation with Distinction**

Music majors who have earned a minimum 3.5 average in music courses may undertake work leading to departmental Graduation with Distinction. The candidate must make application to the director of undergraduate studies by March 20 of the junior year. The project is normally a year-long endeavor involving an independent study or an appropriate graduate seminar each semester of the senior year. It must culminate in (a) a substantial paper (historical, analytical, or theoretical); or (b) a full-length recital with a shorter paper or composition; or (c) a major composition with a shorter paper or half-length recital. The final project must be approved by a faculty committee.

**The Minor**

A minimum of five and one-half course credits is required for the minor, of which at least three full course credits must be above the 213 level.

**Requirements:**

- Music 261
- One course in music history from among Music 255S, 256S, 257
- Two semester courses in performance from among Music 101-213 (excluding 210-3), 318, 319, 418, 401
- Two additional full course credits in music, one of which must be above 213, and can include 121S, 125, 129S, 130, 133S, 137, 143, 144, 145, and 150S.

**Graduation with Distinction in Music Performance for Nonmajors**

Candidates for distinction in music performance for nonmajors apply to the director of undergraduate studies by April 1 of their junior year and are admitted to the program by a faculty committee on the basis of recent live recordings. During the senior year the student will enroll in Music 401 (Advanced Study in Performance) both semesters. A distinction in musical performance project consists of (a) a full recital supported by a high-quality audio or video recording as documentation of the event; and (b) a written component, either in the form of an analytical
paper or other organized commentary on the recital. To be awarded distinction a student must maintain a GPA of 3.5 in the core music department courses, and a 3.3 GPA overall. For more information, please consult the music department website, music.duke.edu.

Naval Science—Naval ROTC

Professor Wright, Captain, US Navy, Chair; Visiting Assistant Professor Giarnella, Lieutenant, US Navy, Director of Undergraduate Studies; Visiting Associate Professor Shellabarger, Lieutenant Colonel, US Marine Corps; Visiting Assistant Professors Merles, Major, USMC Bloomfield, Lieutenant, US Navy; Ardito, Lieutenant, US Navy; and Giarnella, Lieutenant, US Navy

Neither a major nor minor is available in this program.

Courses in naval science are open to all students. A scholarship program is available for students in the department who commit to commissioning into service as an officer in the United States Navy or Marine Corps.

The Department of Naval Science offers students an opportunity to gain a broad-based knowledge in maritime security, strategy, and leadership. This understanding is derived from the study of maritime and military history; current naval operations, ship systems, practices and evolutions used on sea-going vessels around the world today; United States’ national strategic goals and operations that accomplish these goals; and the leadership and management skills required to accomplish these missions.

The program draws upon the expertise of visiting professors, all of whom are active duty naval officers as well as subject matter experts in current naval operations, offering a wide range of backgrounds in surface, undersea, air, and land warfare.

Courses in Naval Science—Naval ROTC (NAVALSCI)

101. Introduction to Naval Science. Introduction to the organization, missions, and branches of specialization within the United States Navy and Marine Corps. Customs, traditions, leadership, career opportunities, and Naval and Marine Corps operations. Instructor: Staff.

101L. Naval Orientation Laboratory. Practical application of the elements and material presented in Naval Science 101. Instructor: Staff.

111. Seapower and Maritime Affairs. CZ, STS This course is a conceptual study of the history and strategy of seafaring nations. The course examines the political and military impact of events from the birth of sea power in the Mediterranean, to the expansion through the Atlantic Ocean, and the spread of sea power to North America. It examines the development of strategy on the seas, and the impact on global economic forces. This course uses examples of military engagements on the seas from the American Revolution to the Global War on Terrorism and Operation Iraqi Freedom. Instructor: Staff. One course.

111L. Seapower and Maritime Affairs Laboratory. Case studies and contemporary issues dealing with United States Navy. Instructor: Staff.

189L. First Year Naval Leadership Laboratory. Practical application of military discipline, leadership and management. Also provides general military training. Mandatory for first year Naval ROTC program students. Instructor: Staff.

213S. Evolution of Warfare. CZ, STS Continuity and change in the history of warfare, with attention to the inter-relationship of social, political, technological, and military factors. Instructor: Staff. One course.

215S. Amphibious Warfare. Development of amphibious doctrine, with attention to its current applications. Instructor: Staff. One course.

223. Naval Leadership and Management. SS Examination of current and classical leadership and management theories, as well as organizational behavior in the context of military organization. Topics include managerial functions, performance appraisal, motivation theories, group dynamics, leadership theories and communication. Instructor: Staff. One course.

223L. Naval Leadership and Management I Laboratory. Practical application of the theories discussed in Naval Science 223. Instructor: Staff.
231. Concepts and Analyses of Naval Tactical Systems. NS The study of weapons systems used aboard naval vessels and aircraft. Detection systems and systems integration into current naval platforms and their offensive and defensive capabilities. Instructor: Staff. One course.

231L. Naval Tactical Systems Laboratory. Practical application of the theories and principles of naval tactical systems. Instructor: Staff.

289L. Second Year Leadership Laboratory. Practical application of military discipline, leadership and management. Also provides general military training. Mandatory for second year Naval ROTC program students. Instructor: Staff.

331. Naval Ship Systems. NS Quantitative study of basic naval ships' systems. Focus on detailed ship design, hydrodynamic forces, stability, propulsion, electrical theory and distribution, hydraulic theory, and damage control. Includes basic theory/design of various ship propulsion systems and case studies on leadership/ethical issues in the engineering arena. Instructor: Staff. One course.

331L. Naval Ships Systems Laboratory. Practical application of the theories and principles of naval ships systems. Instructor: Staff.


353L. Navigation Laboratory. Practical application of the theories and principles of navigation as presented in the lecture series. Instructor: Staff.

383L. Marine Leadership Laboratory. Continuation of Naval Science 381L. Instructor: Staff.

389L. Third Year Naval Leadership Laboratory. Practical application of military discipline, leadership and management. Also provides general military training. Mandatory for third year Naval ROTC program students. Instructor: Staff.

391. Independent Study. Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic product. Open only to qualified students in junior or senior years by consent of director of undergraduate studies. Instructor: Staff. One course.

423L. Naval Leadership and Management II Laboratory. The practical application of theories discussed in Naval Science 423S. Instructor: Staff.

423S. Leadership and Ethics. EI Capstone Course that examines principles of leadership and ethical decision-making through study and interactive discussion of classical and contemporary course documents and case studies. Coursework includes Constitutional Law, Natural Law Theory, as well as works by Kant, Mill, and Aristotle, among others. Instructor: Staff. One course.

453. Naval Operations. Components of general naval operations, including concepts and application of tactical formations and dispositions, relative motion, manoeuvring board and tactical plots, rules of the road, and naval communications. Prerequisite: Naval Science 353 or consent of instructor. Instructor: Staff. One course.

453L. Naval Operations Laboratory. Practical application of the theories of naval operations as presented in the lecture series. Instructor: Staff.

489L. Fourth Year Naval Leadership Laboratory. Advanced practical application of military discipline, leadership and management. Also provides general military training. Instructor: Staff.

**Neurobiology**

For courses in neurobiology, see the listing under Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates on page 663.

**Neuroscience**

Professor Williams, Director of Undergraduate Studies; Associate Professor White, Associate Director of Undergraduate Studies

A major or a minor is available in this program.
Like the inner workings of the brain itself, neuroscience synthesizes discovery from diverse sources of knowledge. The undergraduate curriculum in neuroscience reflects this interdisciplinary perspective and challenges students to explore knowledge derived from three levels of analysis: (1) the molecular and cellular level; (2) the level of neural circuits within which cells are organized and interconnected; and (3) the level of behavior where the functions of neural circuits and systems, including human cognition, are manifest. A comprehensive understanding of neuroscience requires knowledge of each level and integrative learning across levels.

The principal strength of this transdepartmental program is that it provides rich opportunities for undergraduate students to study brain science with faculty from diverse disciplines who bring their complimentary perspectives and expertise to the classroom and laboratory. Thus, the undergraduate curriculum in neuroscience is truly a joint, interdisciplinary major/minor that draws faculty and courses from several departments, chiefly the Department of Psychology & Neuroscience and the Department of Biology, both of which are in Trinity College of Arts & Sciences. There are also important contributions from the Department of Neurobiology in the School of Medicine and the Department of Biomedical Engineering in the Pratt School of Engineering. Furthermore, the broad impact of discovery in neuroscience now extends beyond these academic disciplines where neuroscientists collaborate and regularly interact with experts in ethics, law, business, social sciences, philosophy, the arts, and the humanities. Accordingly, our neuroscience curriculum reflects this broad interdisciplinary platform for discovery and learning, with a rich offering of experiences that reflect the exciting growth of neuroscience and its increasing relevance to real-world problems.

### Courses in Neuroscience (NEUROSCI)

#### Gateway Course


#### Core Courses

201. Fundamentals of Neuroscience (B). NS, STS One course. C-L: see Psychology 275; also C-L: Biology 224

211. Brain and Behavior (B). NS One course. C-L: see Psychology 276

212. Introduction to Cognitive Neuroscience (B, C). NS One course. C-L: see Psychology 257

223. Cellular and Molecular Neurobiology. NS One course. C-L: see Biology 223

#### Electives—Research

150. Research Practicum. Introduction to faculty-directed research, often preparing the student for independent study. Preliminary research activities include readings, regular research discussions, and, for some, data collection and analysis, as a means to explore the potential for the more formally planned and intensive Research Independent Study and the greater level of commitment required; does not obligate student or faculty to subsequent Research Independent Study. Instructor consent required. Satisfactory/unsatisfactory grading only. Instructor: Staff. Half course.

493. Research Independent Study 1. R First term of Research Independent Study in a subfield of neuroscience of special interest to a student, under the supervision of a faculty member. Concludes with submission of a substantive written report containing background, methods, and significant analysis and interpretation of data. Meets general requirement of a curriculum Research (R) course. Open to students after completion of 2 NEUROSCI courses; and pre-approval of project by supervising faculty and Director of Undergraduate Studies in Neuroscience required. May be repeated with new faculty mentor or continued in NEUROSCI 494. Instructor: Staff. One course.

494. Research Independent Study 2. R Second term of Research Independent Study in a subfield of neuroscience of special interest to a student, under the supervision of a faculty member. Concludes with submission of a substantive written report containing background, methods, and significant analysis and interpretation of data. Meets general requirement of a curriculum Research (R) course. Open to students continuing same project as for NEUROSCI 493; pre-approval of project by supervising faculty and Director of Undergraduate Studies in Neuroscience required. May be repeated with new faculty mentor or continued in NEUROSCI 495. Instructor: Staff. One course.

495. Research Independent Study 3. R Third term of Research Independent Study in a subfield of neuroscience of special interest to a student, under the supervision of a faculty member. Concludes with submission of a substantive written report containing background, methods, and significant analysis and interpretation of data. Meets general
requirement of a curriculum Research (R) course. Open to students continuing same project as for Neuroscience 493-494; pre-approval of project by supervising faculty and Director of Undergraduate Studies in Neuroscience required. May be repeated with new faculty mentor or continued in Neuroscience 496. Instructor: Staff. One course.

496. Research Independent Study 4. R Fourth term of Research Independent Study in a subfield of neuroscience of special interest to a student, under the supervision of a faculty member. Concludes with submission of a substantive written report containing background, methods, and significant analysis and interpretation of data. Meets general requirement of a curriculum Research (R) course. Open to students continuing same project as for Neuroscience 493-495; pre-approval of project by supervising faculty and Director of Undergraduate Studies in Neuroscience required. Instructor: Staff. One course.

Electives—Regular

111FS. The Neuroscience of Reading & Language Comprehension. NS, R One course. C-L: see Linguistics 211FS

116FS. Neuroscience and Human Language. NS, SS One course. C-L: see Linguistics 216FS; also C-L: Russian 216FS

116S. Neuroscience and Human Language. NS, SS One course. C-L: see Linguistics 216S; also C-L: Russian 216S

123FS. When the Head’s in Trouble: Language, Lesions and Loss. NS One course. C-L: see Linguistics 123FS

153FS. Drugs and the Law. SS Exploration of the relationship between addictive drugs and the law. Examine mechanisms by which drugs of abuse affect the brain and decision-making on the individual level, and consequences of those effects on the societal level, then examine how society responds to these behaviors in terms of attitudes and laws. Compare perspectives of the criminal justice system with that of drug users. Class consists of lectures, discussions, guest speakers, and media presentations and a project examining cross-generational views on drug use, abuse, and laws. Open only to students in the Focus Program. Instructor consent required. Instructor: Schramm-Sapyta. One course. C-L: Public Policy Studies 185FS

155FS. Vision. NS, W Course will explore the remarkable phenomenology of visual perception and its neural basis. Some background in neuroscience is desirable. Open only to students in FOCUS program. Director of Undergraduate Studies consent required. Instructor: Purves. One course. C-L: Psychology 155FS

157FS. Games and the Brain. NS One course. C-L: see Linguistics 115FS

193FS. Neurobiology of Mind. NS One course. C-L: see Neurobiology 193FS; also C-L: Psychology 193FS

241D. Flaubert's Brain: Neurohumanities. ALP, CCI, STS One course. C-L: see French 481D; also C-L: Literature 246D

242A. The Mimetic Brain: Literature and Cognition. ALP, NS, STS One course. C-L: see French 342A

258. Decision Neuroscience (B,C). NS, SS, STS One course. C-L: see Psychology 258

267. Neuroethics. EI, NS, SS, STS Focus on emerging ethical controversies concurrent with advances in neuroscience. Background material covered: concepts and methods in neuroscience; theories of ethics and morality from philosophy, law, and other fields. Ethical topics covered: biological bases of morality; emotions and decision making; neuroeconomics and neuromarketing; pathologies of mind and behavior; volition and legal culpability. Course format: combined lectures, discussion, interactive activities, with case studies and real-world examples (e.g., neuroimaging as legal evidence). Prior coursework in neuroscience and/or ethical inquiry recommended. Instructor: Huettel, Sinnott-Armstrong. One course. C-L: Psychology 278, Philosophy 353, Study of Ethics 269

277. Looking Inside the Disordered Brain (A, B, C). NS One course. C-L: see Psychology 277

278. Sex/Gender - Nature/Nurture: Intersections of Biology and Society. NS, STS One course. C-L: see Women's Studies 278; also C-L: Cultural Anthropology 278, Psychology 226, Study of Sexualities 278

280. Social and Affective Neuroscience (B,C). CCI, NS, SS One course. C-L: see Psychology 280

281. Neuroscientific Approaches to Social Behavior (B,C,S). NS, R One course. C-L: see Psychology 281

282. Neuroscience of Movement and Athletic Performance (B). NS One course. C-L: see Psychology 282

290. Special Topics in Neuroscience. Topics vary by semester. Undergraduate. Instructor: Staff. One course.
290-1. Topics in Literature and Neuroscience. ALP One course. C-L: see French 490-1

290A. Duke Administered Study Abroad: Special Topics in Neuroscience. Topics vary by semester. Instructor: Staff. One course.

290S. Special Topics in Neuroscience. Topics vary by semester. Instructor: Staff. One course.

301L. Bioelectricity (AC or GE). One course. C-L: see Biomedical Engineering 301L

322. From Neurons to Brain. NS One course. C-L: see Biology 322

340S. Educational Neuroscience (B,C,D). SS One course. C-L: see Psychology 340S; also C-L: Human Development


360. Drugs, Brain, and Behavior (B). NS One course. C-L: see Pharmacology and Cancer Biology 360; also C-L: Psychology 274

363. Behavior and Neurochemistry (B). NS One course. C-L: see Psychology 273

366S. Behavioral Neuroendocrinology (B). NS, W One course. C-L: see Psychology 376S

373. Behavioral Neuroimmunology: Brain and Behavior in Health and Disease (B). NS One course. C-L: see Psychology 279

376. Contemporary Neuroscience Methods (B,C). NS Explore the wide spectrum of methods commonly used in the field of neuroscience, ranging from molecular/genetic to electrophysiology and whole brain imaging. Multiple units of this team-based learning course will include interaction with a scientist currently practicing the technique. Prerequisite: Neuroscience 101. Instructor: Roberts. One course. C-L: Psychology 313

378. Perception and the Brain (B, C). NS, R, W One course. C-L: see Psychology 308L


381LA. Sensory Physiology and Behavior of Marine Animals. NS, R, W One course. C-L: see Biology 373LA; also C-L: Marine Sciences, Marine Science and Conservation

382. Functional Neuroimaging (B,C). NS, R One course. C-L: see Psychology 303


385L. Integrative Neuroscience Laboratory. NS, R, W Gain skills necessary to conduct neuroscience research and integrate findings from multiple levels of analysis (molecular, cellular and behavioral). Team-based learning format and collaboration with neuroscience lab to generate, analyze, and communicate novel scientific findings. Experimentation will occur in a model organism and may include PCR, live cell imaging and/or behavioral conditioning experiments. Prerequisite: Neuroscience 101 Instructor: Roberts. One course.

390. Special Topics in Neuroscience. Topics vary by semester. Instructor: Staff. One course.

390S. Special Topics in Neuroscience. Topics vary by semester. Instructor consent required to assure sufficient background knowledge. Instructor: Staff. One course.

421S. Biology of Nervous System Diseases (B). NS One course. C-L: see Biology 421S; also C-L: Psychology 477S

423S. Development of Neural Circuits. NS One course. C-L: see Biology 423S

425S. Auditory Neuroscience - From Sound to Music. NS An exploration of how sound is processed in brain, providing an introduction to stages of information processing from ears to auditory cortex and beyond. Methods of data acquisition (e.g., fMRI, electrophysiology, psychoacoustics) are introduced along with their advantages and
pitfalls. Sound and auditory perception are discussed, starting with basic properties such as frequency, loudness, pitch, and timbre, progressing to human speech and music. A textbook, primary research papers and scholarly reviews are assigned. An interest in all forms of sound and music and completion of Neuroscience 201 or Neuroscience 212 are strongly recommended. Instructor: Overath. One course. C-L: Music 425S, Psychology 479S

426S. Visual Processing. NS One course. C-L: see Biology 426S

427S. Current Topics in Sensory Biology. NS One course. C-L: see Biology 427S

461S. Neurobiology of Learning and Memory (B, C). NS One course. C-L: see Psychology 461S

469S. Cognitive Control and the Prefrontal Cortex (B, C). NS, R, W One course. C-L: see Psychology 469S

471S. Reward and Addiction (B). NS, W One course. C-L: see Psychology 471S; also C-L: Pharmacology and Cancer Biology 471S


490S. Special Topics in Neuroscience. Topics vary by semester. Instructor: Staff. One course.

499. Current Research in Neuroscience (B). EI, NS, R, W A formal component of the Graduation with Distinction in Neuroscience plan that includes review of directed reading and research in both theoretical and experimental neuroscience. Emphasis on the development of the ability to critically evaluate empirical research and to construct mathematical or deductive/inductive models. Final project includes preparation of a formal research proposal and a review of the role of ethics in science. Enrollment in an independent study and consent of instructor required. Along with research and thesis, required for Graduation with Distinction in Neuroscience. Instructor: Meck or Murphy. One course. C-L: Psychology 499

499S. Current Research in Neuroscience (B). EI, NS, R, W A formal component of the Graduation with Distinction in Neuroscience plan that includes review of directed reading and research in both theoretical and experimental neuroscience. Emphasis on the development of the ability to critically evaluate empirical research and to construct mathematical or deductive/inductive models. Final project includes preparation of a formal research proposal and a review of the role of ethics in science. Enrollment in an independent study and consent of instructor required. Instructor: Groh or Meck. One course. C-L: Psychology 499S

501S. Cognitive and Neurolinguistics. NS, R, SS One course. C-L: see Linguistics 501; also C-L: Russian 510

502. Neural Signal Acquisition (GE, IM, EL). One course. C-L: see Biomedical Engineering 502

503. Computational Neuroengineering (GE, EL). One course. C-L: see Biomedical Engineering 503

504. Fundamentals of Electrical Stimulation of the Nervous System (GE, EL). One course. C-L: see Biomedical Engineering 504

507. Neuronal Control of Movement (GE, EL). One course. C-L: see Biomedical Engineering 517

510. Brain and Language (B, C). NS One course. C-L: see Linguistics 510; also C-L: Psychology 575

511L. Intermediate Bioelectricity (GE, EL). One course. C-L: see Biomedical Engineering 511L

515. Neural Prosthetic Systems (GE,EL,IM). One course. C-L: see Biomedical Engineering 515

517S. From Neurons to Development: The Role of Epigenetics in Plasticity. NS One course. C-L: see Biology 517S

533. Essentials of Pharmacology and Toxicology. One course. C-L: see Pharmacology and Cancer Biology 533

555S. Topics in Philosophy of Mind. CZ, R, STS, W One course. C-L: see Philosophy 555S

560. Molecular Basis of Membrane Transport (GE, EL, MC). One course. C-L: see Biomedical Engineering 560

584S. Hormones, Brain, and Cognition (B, C). NS, R One course. C-L: see Psychology 684S

590. Special Topics in Neuroscience. Topics vary by semester. Instructor: Staff. One course.
590S. Special Topics in Neuroscience. Topics vary by semester. Undergraduate as well as Graduate/Professional students. Instructor: Staff. One course.

667S. Learning and Cognition in Humans, Animals, and Robots (B,C). NS One course. C-L: see Psychology 667S

669S. Affective Neuroscience (B, C). NS One course. C-L: see Psychology 669S

672S. Cognitive Neuroscience of Memory (B,C). NS One course. C-L: see Psychology 672S

685S. Biological Pathways to Psychopathology (A,B,C). NS One course. C-L: see Psychology 685S

686S. Principles of Neuroimmunology (B). NS One course. C-L: see Psychology 686S

The Major

For the BS Degree

Requirements: Ten courses in major (eight of ten courses must be 200 level or higher; one or more must be laboratory and methods; one or more must be a seminar at the 350 level or higher).

Corequisites (seven courses required). Foundational coursework is required in the disciplines of biology, chemistry, mathematics, and physics that may be completed concurrently with courses in the major. In biology, one of the two gateway courses, Biology 201L (Gateway to Biology: Molecular Biology) or Biology 202L (Gateway to Biology: Evolution & Genetics), will satisfy the pre/corequisite for the neuroscience major. Please note that AP credit will not be granted for the biology pre/corequisite. In chemistry, students have two options that reflect the diverse interests of neuroscience majors across levels of analysis. One option is completion of sufficient general chemistry—Chemistry 101DL (Core Concepts in Chemistry) or Chemistry 110DL (Honors Chemistry: Core Concepts in Context)—to then complete one term of organic chemistry—Chemistry 201DL (Organic Chemistry). The second option is completion of one term of general chemistry—Chemistry 101DL (Core Concepts in Chemistry) or Chemistry 110DL (Honors Chemistry: Core Concepts in Context)—without the added requirement of organic chemistry. Students who elect this second chemistry option must also complete one term of computer programming—Engineering 103L (Computational Methods in Engineering), Computer Science 101 (Program Design and Analysis I), or Neuroscience 590 (Special Topics: Computational Methods in Neuroscience). For students who are especially interested in molecular/cellular neuroscience, we encourage the first option. The second option should appeal to students who are interested in computational, cognitive, or theoretical neuroscience. For mathematics, two terms of calculus are required for the BS degree. The first semester calculus requirement can be satisfied by Mathematics 21 or Mathematics 111L or Mathematics 121, or Mathematics 105L and Mathematics 106. The second semester calculus requirement can be satisfied by: Mathematics 22 or Mathematics 112L or Mathematics 122 or Mathematics 122L. In physics, two terms of calculus-based physics are required, which may be satisfied by one of the following three sequences or their equivalent: Physics 141L (General Physics I) followed by Physics 142L (General Physics II), or Physics 151L (General Physics: Mechanics) followed by Physics 152L (General Physics: Electricity and Magnetism), or Physics 161L (Fundamentals of Physics I), followed by Physics 162L (Fundamentals of Physics II).

Gateway course Neuroscience 101 (Biological Basis of Behavior: Introduction and Survey) is the gateway to the major.

Core courses (three courses required). There are three core courses in the major in neuroscience that reflect the three levels of inquiry described above: Neuroscience 223 (Cellular and Molecular Neurobiology); Neuroscience 201 (Fundamentals of Neuroscience), which addresses neural circuits and systems, and either Neuroscience 212 (Introduction to Cognitive Neuroscience), which focuses on human cognition, or Neuroscience 211 (Brain and Behavior), which focuses on animal models that are used to study behavioral systems.

Statistics (one course required). Neuroscience majors are required to acquire competency in the elements of statistical design and practice that support the analysis and interpretation of neuroscientific data. Any one of the following courses will satisfy this curricular requirement: Statistical Science 101 (Data Analysis and Statistical Inference), Statistical Science 102 (Introductory Biostatistics), Statistical Science 111 (Probability and Statistical Inference), Statistical Science 130 (Probability and Statistics in Engineering), or Psychology 201 (Applications of Statistical Methods in Psychology).

Electives (five courses required). Neuroscience majors are required to explore the breadth and depth of the field by fulfilling five course requirements in neuroscience, with no more than two electives at the 100 level or below, at
least one elective being a seminar course (350S or above) and at least one laboratory or methods class. No more than one elective may count from a set of neuroscience courses that explore the intersection of the brain sciences and other disciplines (Neuroscience 241D, 242A, 267, 278, 290-1, 290A, 290S, 340S). Seminar, small-lecture, and laboratory elective offerings are drawn from a dynamic list of approximately fifty courses that are offered by five departments in Trinity College, as well as in departments in the School of Medicine and the Pratt School of Engineering.

For the BS2 Degree for BME Majors in the Pratt School of Engineering

Requirements: Seven corequisites and ten courses in major (eight of ten courses must be 200 level or higher, one or more courses must be laboratory or methods; one or more courses must be from 350 level or higher—seminars. All of the requirements for the BS degree listed above must be met with the following changes; Biomedical Engineering 301L/Neuroscience 301L (Bioelectricity) is required, the recommended course in statistical sciences is Statistical Science 130 (Probability and Statistics in Engineering). Of the four additional neuroscience electives, no more than two electives may be cross-listed between neuroscience and biomedical engineering, and none of the four may count toward fulfillment of requirements for the Biomedical Engineering major. Allied courses do not count, except by permission of the director of undergraduate studies in neuroscience.

For the AB Degree

Requirements: Six corequisites and ten courses in major (eight of ten courses must be 200 level or higher, one or more courses must be laboratory or methods; one or more courses must be from 350 level or higher—seminars).

Corequisites (Six courses required). Foundational coursework is required in the disciplines of biology, chemistry, mathematics, and physics that may be completed concurrently with courses in the major for completion of the AB degree. In biology, one of the two gateway courses, Biology 201L (Gateway to Biology: Molecular Biology) or Biology 202L (Gateway to Biology: Evolution & Genetics), will satisfy the pre/corequisite for the neuroscience major. Please note that AP credit will not be granted for the biology pre/corequisite. In chemistry, students are required to complete one term of general chemistry—Chemistry 101DL (Core Concepts in Chemistry) or Chemistry 110DL (Honors Chemistry: Core Concepts in Context)—without the added requirement of organic chemistry. Students must also complete one term of Computer Programming—Engineering 103L (Computational Methods in Engineering) or Computer Science 101 (Program Design and Analysis I). In Mathematics, Mathematics 21 or 111L or 121, or 105L and 106L is required. In physics, two terms of algebra- or calculus-based physics are required, which may be satisfied by one of the following three sequences: Physics 141L (General Physics I) followed by Physics 142L (General Physics II), or Physics 151L (General Physics: Mechanics) followed by Physics 152L (General Physics: Electricity and Magnetism), or Physics 161L (Fundamentals of Physics I), followed by Physics 162L (Fundamentals of Physics II).

Gateway course Neuroscience101 (Biological Basis of Behavior: Introduction and Survey) is the gateway to the major.

Core courses (three courses required). There are three core courses in the major in neuroscience that reflect the three levels of inquiry described above: Neuroscience 223 (Cellular and Molecular Neurobiology); Neuroscience 201 (Fundamentals of Neuroscience), which addresses neural circuits and systems, and either Neuroscience 212 (Introduction to Cognitive Neuroscience), which focuses on human cognition, or Neuroscience 211 (Brain and Behavior), which focuses on animal models that are used to study behavioral systems.

Statistics (one course required). Neuroscience majors are required to master the elements of statistical design and practice that support the analysis and interpretation of neuroscientific data. Any one of the following courses will satisfy this curricular requirement: Statistics101 (Data Analysis and Statistical Inference), Statistical Science 102 (Introductory Biostatistics), Statistical Science 111 (Probability and Statistical Inference), Statistical Science 130 (Probability and Statistics in Engineering), or Psychology 201 (Applications of Statistical Methods in Psychology).

Electives (five courses required). Neuroscience majors are required to explore the breadth and depth of the field by fulfilling five course requirements in neuroscience, with at least one elective being a seminar course (350S or above) and at least one must be a methods or laboratory course. Furthermore, for the AB degree, students must complete a course that explores the broader impact of neuroscience on society (e.g., Neuroscience 267-Neuroethics, or one of the following two course in philosophy: Philosophy 212 (Philosophy of Mind) or Philosophy/Neuroscience 555S (Topics in Philosophy of Mind) or one of several other classes that explore the intersection of the brain sciences and other disciplines (Neuroscience 241D, 242A, 278, 290-1, 290A, 290S, 340S). To complete the elective requirements for the AB degree, students may choose from a variety of seminar, small-lecture, and laboratory
offerings that are drawn from a dynamic list of more than fifty courses offered by five departments in Trinity College, as well as departments in the School of Medicine and the Pratt School of Engineering.

Please note that no more than two of the ten courses required for the major may be used to satisfy the requirements of another major, minor or certificate.

Graduation with Distinction in Neuroscience

Neuroscience majors with a GPA of 3.5 or above in neuroscience courses (not including pre/corequisites), may apply for Graduation with Distinction in neuroscience. They must also maintain at least this level of performance throughout the remainder of their studies at Duke. Candidates for distinction will conduct and complete an original research project carried out as a two-term research independent study in neuroscience. A substantial paper (thesis), usually based on empirical research and written in publication style, and a scientific poster are required. In addition, an oral defense of the thesis will be evaluated by a Graduation with Distinction in neuroscience committee comprising three members. One member of the committee (either the research mentor or one of the two additional committee members) must be a neuroscience faculty member from an arts and sciences department, or be a faculty member who teaches regularly in undergraduate neuroscience. One member of your committee can be a postdoctoral fellow or an advanced graduate student who has completed her/his preliminary exam. Both the director of undergraduate studies and the associate director are available as committee members and should be consulted if there is a question about committee membership.

Either following completion of the two-terms of independent study or, more commonly, concurrent with completion of the second-term of independent study, students aspiring to Graduate with Distinction in neuroscience will take Neuroscience 499 (Current Research in Neuroscience). This spring-term course includes review of directed reading and research in both theoretical and experimental neuroscience, as well as discussion of the students' independent study projects. Emphasis is placed on the development of the ability to critically evaluate empirical research and to construct mathematical or deductive/inductive models. The final project in this course includes preparation of a formal research proposal and a review of the role of ethics in science.

Evaluation of the student for distinction is based on the written thesis, an oral poster presentation and the oral examination before the distinction committee. The distinction committee will then decide whether the overall performance of the candidate qualifies for Graduation with Distinction in neuroscience (only one distinction level is recognized). Finally, Graduation with Distinction in neuroscience research projects will be presented as scientific posters in April during an undergraduate research forum.

The Minor

Requirements for students in Trinity College of Arts & Sciences: Five neuroscience courses

The minor in neuroscience for students in Trinity College requires a minimum of five neuroscience courses from gateway, core, and elective course offerings. Four of the courses must be 200 level or higher and at least two courses must be from the core or gateway offerings.

Please note that no more than two of the five courses required for the minor may be used to satisfy the requirements of another major or minor.

Requirements for Biomedical Engineering Majors in the Pratt School: Five neuroscience courses

The minor in neuroscience for biomedical engineering majors in the Pratt School requires a minimum of five neuroscience courses from gateway, core, and elective course offerings. For biomedical engineering majors that were admitted into the "Exploring the Mind" Focus Program, Neuroscience 193FS (Neurobiology of Mind) will satisfy this gateway requirement. For all other biomedical engineering students, Neuroscience 101 (Biological Basis of Behavior: Introduction and Survey) is the gateway to the minor in neuroscience. Next, the biomedical engineering major will complete Neuroscience 201 (Fundamentals of Neuroscience), which also satisfies the life science elective requirement for the biomedical engineering major, or one of the other core courses in neuroscience—Neuroscience 211, 212, 223. The biomedical engineering major is also required to complete Biomedical Engineering 301/Neuroscience 301 (Bioelectricity) for the minor in neuroscience. Finally, completion of the minor requires two neuroscience electives that are not cross-listed in biomedical engineering and do not also satisfy a requirement for the biomedical engineering major.
Nonlinear and Complex Systems

The Center for Nonlinear and Complex Systems (CNCS) is an interdisciplinary organization at Duke that brings together researchers and teachers with interests in nonlinear dynamics, chaos, complex systems and related topics. The center provides an enrichment course, Nonlinear and Complex Systems 501, that encourages students to explore and learn about diverse aspects of the field, as applied broadly in science, engineering, mathematics, and social sciences. A large selection of other courses is also relevant to the center. Students should contact the director for additional information.

Courses in Nonlinear and Complex Systems (NCS)
501. Survey of Nonlinear and Complex Systems. NS Half course. C-L: see Physics 501

Pathology

For courses in pathology, see Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates on page 663.

Pharmacology

For courses in pharmacology, see Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates on page 664.

Health, Wellness, and Physical Education

Associate Professor of the Practice Yakola, Chair; Assistant Professor of the Practice Hampton, Director of Undergraduate Studies; Professors Buehler; Assistant Clinical Professor Alphin; Professor of the Practice Dale; Professor Emeritus LeBar; Lecturing Fellow McNally Instructors Amos, Avery, Beguinet, Bowen, Brane, Branson, Daffron, Dobbins, Kaufmann, Leary, King, McCune, McKinnis, Miller, Moore, Ogilvie, Orr, Rollins, Rosenthal, Silar, Spector, Todd, Wasielewski, Welsh, Westbrook, Whitfield, Wilbourn, and Wright

Courses in the program of health, wellness, and physical education do not count toward distributional requirements.

Courses in Health, Wellness, and Physical Education (PHYSEDU)

Activity Courses

Each activity course listed below carries a half credit and is given on a satisfactory/unsatisfactory basis. The maximum amount of credit that counts for the undergraduate degree is one full course credit, but additional courses may be taken without credit toward graduation. Students may repeat activity courses.


102. Training x 3. Designed to incorporate training through indoor cycling, swimming, and running, with focus on fitness training through strength and endurance exercise. Introduction to a variety of styles of fitness training at all fitness levels, and assistance with designing individual fitness programs. Prerequisite: ability to swim at an intermediate level recommended. Instructor: Dobbins. Half course.

103. Indoor cycling. Introduction to indoor cycling as an exercise option for all levels of fitness. Focus on a variety of simulated rides at varying degrees of intensity. Learn proper riding technique, correct bike settings, and appropriate intensity levels for a safe, effective workout. Instructor: Branson or Dobbins. Half course.

104. Circuit Training. Combine strength and cardio training in a variety of settings (weight room, courts, fields, track, etc) to create an efficient and challenging program to develop strength, endurance, flexibility and coordination. Instructor: Branson or Dobbins. Half course.


106. Advanced Pilates Mat and Ball. A series of exercises based in yoga, dance and sport training. Advanced techniques used to continue work on posture, breathing, balance, coordination, strength and flexibility. Equipment
used includes stability balls, BOSU balls, tubing, Pilates rings, gliding discs, foam rollers. Previous pilates training
necessary. Instructor: Wright. Half course.

107. **Group Fitness Overview.** All forms of group activity: step, hi-lo, yoga, and circuits. Half course. Instructor:
Avery, Branson, or Wright. Half course.

109. **Cardio-Kickboxing.** A noncontact activity designed to teach self-defense techniques while building the

110. **Intermediate Cardio-Kickboxing.** A workout that combines aerobics, cardiovascular and body toning while
learning more advanced boxing and kickboxing skills for self-defense tactics. Prerequisite: Physical Education 109.
Instructor: Bowen. Half course.

111. **Core Fitness Training and Meditation.** Designed to develop functional fitness, using core stability training
techniques that focus on working deep muscles of the entire torso at once. Develop core strength with exercises on

113. **Weight Training.** Progressive, cumulative, and measurable physical conditioning. Instructor: Avery, Dobbins,
McNally, Wilbourn, or staff. Half course.

115. **Aquatic Cardio Fitness and Strength Training.** Promote fitness through aqua training. Instructor: Staff.
Half course.

116. **Weight Training for Women.** Introduction to basic principles and techniques. Instructor: McNally, Ogilvie,
or staff. Half course.

117. **Fitness for Women.** Development of an individualized lifetime physical activity program for women.
Emphasis on women's issues in exercise, assessment, application of fitness principles, exercise adherence, and cross
training. Instructor: Hampton or staff. Half course.

118. **Personal Trainer Certification.** Preparation to be ACE-certified Personal Trainer. Review of knowledge and
skills needed to design and implement personalized fitness programs for yourself or for paying personal training
clients. Instructor: Dobbins or McNally. Half course.

121. **Women's Basketball.** Development of individual and team skills specifically for women. Instructor: Silar. Half
course.

122. **Basketball.** Development of individual and team skills. Instructor: King, Silar, or Welsh. Half course.

123. **Bowling.** Beginning, intermediate, and advanced instruction in the fundamentals of approach, release, arm


125. **Soccer.** Basic soccer skills. Instructor: Amos. Half course.


131. **Beginning Golf.** Instructor: Miller. Half course.


135. **Beginning Swimming.** Propulsion techniques, water safety, introduction to the five basic strokes. Instructor:
McCune or staff. Half course.

136. **Intermediate Swimming.** Development of the five basic strokes, overarm side trudgen, and trudgen crawl.
Instructor: McCune or staff. Half course.

137. **Endurance Swimming.** Individualized programs to improve skills and fitness. Instructor: Adams or McCune
or staff. Half course.

138. **Lifeguard Training.** American Red Cross course that prepares an individual to qualify as a lifeguard. Preven-
tative lifeguarding, emergencies, health and sanitation, water rescue and special situations, search and recovery opera-
tions, weather and environmental conditions. Instructor: McCune or staff. Half course.

143. **Beginning Tennis.** Instructors: Hampton or Rosenthal. Half course.


160. Mixed Martial Arts Training. A high energy workout designed to develop physical fitness while learning realistic self defense, kick boxing, and ground fighting techniques, to provide the student with a wide self defense system. Instructor: Bowen. Half course.


166. Intermediate Tai Chi. Building on fundamentals taught in Physical Education 164 (Physical Education 138). Includes full long form of Chen style Tai Chi, the 78-count "Laojia." Instructor: Kaufmann. Half course.

167. Short Staff Aikijo. Basic principles and movements with short staff; foundational movements of Aikijo through study and practice of short and long forms. Instructor: Kaufmann. Half course.

170. Yoga. Traditional hatha yoga combined with balanced structural alignment to develop strength, flexibility, and mental concentration. Instructor: Orr or Spector. Half course.

171. Intermediate Yoga. Building on previous hatha yoga experience to deepen student's practice, level of mindfulness, and understanding of philosophy relevant to experiential work with the goals of improved flexibility, strength, balance, concentration, and calmness. Prerequisites: Physical Education 170 or previous hatha yoga experience. Instructors: Orr or Spector. Half course.

172. Massage Therapy. Emphasis on techniques and philosophies of massage therapy which enhance the connection of body, mind, and spirit. Benefits and healing potential. Techniques which can be integrated into a more healthy lifestyle. Instructor: Brame. Half course.


177. Beginning Equitation. Introduction to horseback riding: basic horsemanship; walk, trot, and canter. Instructor: Rollins. Half course.


180. **Introduction to Outdoor Adventure.** Provides an introduction to basic skills and concepts in a variety of outdoor adventure pursuits. Covers trip planning, menu preparation, cooking, orienteering, navigation, first aid and safety, with emphasis on 'learning by doing'. Focus is on the fundamentals of backcountry camping, with an introduction to climbing, mountain biking, and kayaking. Includes a 1-2 night trip. Instructor: McKinnis. Half course.

181. **Beginning Rock Climbing.** Designed for students with minimal or no experience in rock climbing. Includes top rope climbing technique, fitness, rappelling, anchor systems, and other topics. Instructor: Westbrook. Half course.


183. **Kayaking.** Basic skills for kayaking in whitewater. Open to juniors and seniors only. Instructor: Staff. Half course.

184. **Mountain Biking.** Individualized programs in mountain biking including bike maintenance, safety tips, single- and multi-track riding. Instructor: Staff. Half course.

185. **Introduction to Trip Leading.** Explore topics related to outdoor leadership. Learn the technical skills required to lead backpacking trips. Instructor: McKinnis. Half course.


**Theory Courses**

Each Theory course listed below carries one course credit. Taking Theory classes does not cancel a student's ability to take two activity classes for credit toward their undergraduate degree. Theory classes are general electives.

89S. **First-Year Seminar.** Topics vary each semester offered. Instructor: Buehler or Hampton. One course.

192. **Independent Study.** Individual non-research directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic product. Instructor: Staff. One course.


202. **Hot Topics in Health.** Current media hot topics in health and wellness, dispelling myths and assuring accuracies in the field. Focus on sexual health, nutrition, physical fitness, smoking, alcohol, body image, mental health, and more. Instructor: Staff. One course.


204. **Women’s Health Issues.** Lifetime fitness, nutrition, body image, self esteem, health issues, realistic social norms, and healthy coping mechanisms. Instructor: McNally. One course.

205. **Health Effects of Exercise.** Examines the physical and mental health benefits and consequences of exercise from a participant and practitioner perspective. Instructor: McNally. One course.

206. **Exercise Physiology.** Reviews physiological adaptations (cardiorespiratory, musculoskeletal, nervous, endocrine) that occur with exercise training leading to improved health and performance. Examines practical applications such as workout design, nutrition, fitness testing, and body composition management. Instructor: McNally. One course.
212. **Sports Media.** Examine the production and consumption of information through various media forms and the impact it has on influencing and shaping the sports industry. Topics include content development and delivery through television, radio, newspaper, and the internet, image shaping through the media, regulatory issues, intellectual property and content, market coverage and current hot topics. Instructor: Moore. One course. C-L: Policy Journalism and Media

220. **History and Issues of Sports.** Sports from ancient to modern times with an emphasis on sports in America. Not open to students who have taken this course as Health, Physical Education, and Recreation 49S. Instructor: Buehler. One course.

221. **Administration in Sports Management.** Philosophy, financial structure, administrative structure, fund-raising, NCAA legislation, personnel decisions, and scheduling events. Instructor: Yakola. One course.

222. **Sports Marketing.** The multi-faceted elements associated with marketing within the sports industry. Instructor: Yakola. One course.

223. **Sport Ethics.** Moral reasoning and ethical values in sport today. Emphasis on character development and sportsmanship and their influence on fair play for everyone. Instructor: Dale. One course.

224. **Sport Finance.** Financial resource management in the sports industry including forms of ownership, financial analysis, feasibility studies, revenue generation, economic impact, and current issues. Instructor: Yakola. One course.

240. **Theory and Practice of Coaching.** Fundamentals, strategies, and psychology of coaching. Emphasis on basketball, and track and field. Additional topics such as safety and liability, gender equity, the media, regulations, and ethics. Instructor: Welsh. One course.

241. **Psychology of Sport and Performance.** To provide students with an in-depth view of the theoretical and applied aspects of the psychology of sport and physical activity with an emphasis on performance enhancement. Instructor: Dale. One course.

**Persian**

For courses in Persian, see Slavic and Eurasian studies on page 606.

**Philosophy**

Professor Rosenberg, Chair; Professor Wong, Director of Undergraduate Studies; Professors Adler (law, economics, and public policy), Brandon, Buchanan, Farahany (law, genome sciences & policy), Ferejohn, Flanagan, Gillespie (political science), Grant (political science), Hoover, McShea (biology), Moi (english), Neander, Norman, Purves (neurobiology), Rosenberg, Sinnott-Armstrong, Sreenivasan, and Wong; Visiting Professor van Inwagen; Associate Professor Janiak; Assistant Professors Bernstein, De Brigard, and Pavese; Professors Emeriti Golding and Sanford; Associate Research Professor Hawkins

A major or a minor is available in this department.

The undergraduate program in the Department of Philosophy acquaints students with the content and the structure of philosophical theory in various areas. Classes encourage discussion so that students can engage actively in the philosophical examination of problems.

Course offerings fall into two general categories: the systematic and the historical. In a systematic treatment, the organization of a course reflects the problems presented by the subject matter of that course, as in logic, ethics, and metaphysics. Historical courses direct attention more to the order of development in the thought of a particular philosopher (Plato, Aristotle, Kant) or in a historical period. In all courses, reading of the works of philosophers acquaints the students with the important and influential contributions to the definition and solution of philosophical issues.

The problems raised in philosophy about various fields of the arts and sciences involve questions that these particular disciplines typically neglect. In the consideration of such problems, students will acquire some understanding and perspective of the major areas of the human intellectual endeavor. Philosophical comprehension is in this way an essential part of a complete education.
Philosophy provides a sound preparation for the demands of many professions. For example, precision of argument and broad acquaintance with intellectual traditions emphasized in philosophy form an excellent basis for the study of law.

Only one course from among Philosophy 101, 102, 103S, and 104S may be taken for credit. These courses are not open to juniors and seniors.

Courses in Philosophy (PHIL)

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. Introduction to Philosophy. CZ, W Examination of problems in philosophy; emphasis on metaphysics and theory of knowledge. Open only to freshmen and sophomores. Instructor: Staff. One course.

102. Introduction to Philosophy. CZ, EI, W Examination of problems in philosophy; emphasis on ethics and value theory. Instructor: Staff. One course.

103S. Introduction to Philosophy. CZ, W Philosophy 101 conducted as a seminar. Open only to freshmen and sophomores. Instructor: Staff. One course.

104S. Introduction to Philosophy. CZ, EI, W Philosophy 102 conducted as a seminar. Instructor: Staff. One course.

110. Information, Society & Culture: Bass Connections Gateway. CZ, STS One course. C-L: see Information Science and Information Studies 110; also C-L: Computer Science 110, Public Policy Studies 110

123FS. Freedom and Responsibility. EI, SS, W One course. C-L: see Political Science 175FS; also C-L: Ethics Courses Offered Through Other Departments

150. Logic. CZ The conditions of effective thinking and clear communication. Examination of the basic principles of deductive reasoning. Instructor: Staff. One course.


163D. Ethics for Robertson Scholars. CZ, EI Robertson Scholars First-Year colloquium; Introduction to ethical reasoning & argument. Asks questions/examines concepts & arguments related to the nature of moral reasoning. Examines contemporary ethical issues to gain understanding of the kinds of reasons/arguments used to establish or support ethical claims. Restricted to Robertson scholars. Class meets half the semester at Duke, half at UNC, with weekly discussion sections on both campuses. One course.

190A. Duke-Administered Study Abroad: Special Topics in Philosophy. Topics differ by section. Instructor: Staff. One course.

190FS. Focus Program Seminar: Topics in Philosophy. Topics vary each semester offered. Open only to students in the Focus program. Consent of Instructor required. Instructor: Staff. One course.

195FS. The Human Enhancement Project: Ethical Issues in Genomics. CZ, EI, STS Exploration of controversial applications of genome science-based technologies to human beings, focusing on debate about the use of such technologies to enhance human capacities and characteristics. Overview of current and anticipated prospects for biomedical enhancement of humans, eugenics movements of late 19th to mid-20th centuries, critical examination of chief arguments in favor of and against 'the enhancement project,' critical exploration of policy options for controlling development and employment of enhancement biotechnologies. Instructor: Buchanan. One course. C-L: Genome Sciences and Policy

197FS. Evolution and Human Nature. CZ, EI Examination of attempts to apply evolutionary theory to human behavior/human social systems (now called human sociobiology). Readings from Charles Darwin to mid 20th Century with selections from ethologist Konrad Lorenz and evolutionary biologist Theodosius Dobzhansky. Also studies contemporary sociobiology, ending with critiques of human sociobiology, especially nature/nurture controversy. Open only to students in the Focus program. Consent of instructor required. Instructor: Brandon. One course.

198FS. Puzzles of the Mind: Humans, Animals, and Machines. CZ The nature and constitution of mind in humans, animals, and robots. Relation between body/mind and consciousness/cognition. Related philosophical problems about the mind: subjectivity, skepticism about other minds, relation of language to mind, and the effects of
brain lesions on mental life. Readings from philosophy, psychology, neuropsychology, cognitive ethology, and artificial intelligence. Open only to students in the Focus Program. One course.

199FS. Science, Philosophy, and Religion: The Faces of Science. CZ, STS Transformation of the shifting boundaries between science and philosophy, science and religion. From the scientific revolution in the seventeenth century to the twenty-first century. Open only to students in the Focus Program. Instructor: Janiak. One course.

201. History of Modern Philosophy. CCI, CZ Seventeenth and eighteenth century attempts to address philosophical problems concerning knowledge and the nature of reality in Descartes, Spinoza, Malebranche, Leibniz, Locke, Berkeley, Hume, and Kant. Instructor: Janiak or staff. One course.

202. Aesthetics: The Philosophy of Art. ALP, CZ The concept of beauty, the work of art, the function of art and society, the analysis of a work of art, criticism in the arts. Instructor: Ward. One course. C-L: Visual and Media Studies 299

203. History of Ancient Philosophy. CCI, CZ The pre-Socratics, Socrates, Plato, Aristotle, and post-Aristotelian systems. Not open to students who have taken Classical Studies 93 or Philosophy 93. Instructor: Ferejohn or staff. One course. C-L: Classical Studies 271

204. Foundations of Scientific Reasoning. CZ, STS Introduction to inductive logic, probability, and causality. Probability as a measure of belief, probability as frequency, philosophical problem of induction, determinism and indeterminism in causation. General versus particular causal claims. Instructor: Brandon or Rosenberg. One course. C-L: Information Science and Information Studies

206. Philosophy of Law. CZ, EI Natural law theory, legal positivism, legal realism, the relation of law and morality. Instructor: Staff. One course. C-L: Study of Ethics

207. Political and Social Philosophy. CZ, EI Basic ethical concepts involved in political organization and in a variety of periods, such as equality, human dignity and rights, source of political obligation, political education. Discussion of contemporary problems. Examination of contemporary viewpoints such as liberalism and feminism. Instructor: Wong. One course. C-L: Study of Ethics

208. Introduction to the Evolution of Human Culture, Behavior, and Institutions. CCI, NS, SS Interdisciplinary examination of philosophical foundations, anthropological framework, psychological/social ramifications of long term interaction of hereditary and non-inheritary traits of Homo sapiens with its original and later environments, including those created by human culture. Instructor: Rosenberg. One course. C-L: Evolutionary Anthropology 280

209. Philosophy of Language. CZ A philosophical analysis of problems arising in the study of language and symbolism. Topics include: theories of language, the nature of signs and symbols, theories of meaning, types of discourse (scientific, mathematical, poetic), definition, ambiguity, metaphor. Instructor: Staff. One course. C-L: Linguistics 209

210. Knowledge and Certainty. CZ, R Problems in the theory of knowledge: conditions of knowledge, skepticism, perception, memory, induction, knowledge of other minds, and knowledge of necessary truths. Instructor: Bernstein or Ferejohn. One course. C-L: Information Science and Information Studies

211. Appearance and Reality. CZ, R Problems in metaphysics: theories of existence, substance, universals, identity, space, time, causality, determinism and action, and the relation of mind and body. Instructor: Bernstein or Ferejohn. One course.

212. Philosophy of Mind. CZ, R Such topics as mind and body, the nature of thought, perception, consciousness, personal identity, and other minds. The relevance of cognitive psychology, neuroscience, and computer science to the philosophy of mind. Instructor: Flanagan or Neander. One course. C-L: Linguistics 208, Visual and Media Studies 302, Information Science and Information Studies

215. Applied and Environmental Ethics. CZ, EI, STS A critical examination of ethical dimensions of several contemporary individual and political normative problems, including abortion, affirmative action, national and international economic redistribution, and the environmental impact of economic changes and political decisions. Instructor: Staff. One course. C-L: Study of Ethics 265, Marine Science and Conservation
216. Problems in Ethical Theory. CZ, EI The nature of morality, amoralism, utilitarianism, and deontology. Both historical and contemporary readings. Instructor: Flanagan or Wong. One course.

217. Ancient and Modern Ethical Theory. CCI, CZ, EI Major ethical theories both classical and modern; virtue theories and rule-based theories. Readings from Plato and Aristotle with a variable comparative component, Chinese, Indian, Buddhist depending on the instructor, as well as Kant and Mill. Open only to undergraduates. Instructor: Flanagan or Wong. One course. C-L: Study of Ethics

218. Philosophical Issues in Medical Ethics. CZ, EI, STS Ethical issues arising in connection with medical practice and research and medical technology. Definition of health and illness; experimentation and consent; genetic counseling and biological engineering; abortion, contraception, and sterilization; death and dying; codes of professional conduct; and the allocation of scarce medical resources. Prerequisite: for freshmen, previous philosophy course and consent of instructor. Instructor: Staff. One course. C-L: Study of Ethics, Genome Sciences and Policy


222. Philosophical Issues in Feminism. CZ, EI Issues in political and moral philosophy in their bearing on feminist concerns, including political equality and rights, preferential treatment, feminist and nonfeminist critiques of pornography, and the morality of abortion. Instructor: Wong. One course. C-L: Women's Studies 222, Women's Studies


226. Philosophy of Sport. CZ, EI Play, sport, and game in western culture: sport and leisure, sport vs. athletics, discipline of the body, spectatorship, the amateur and the professional. Course deals with ethical context and implications of competition and the urge to win, with sport as rule-governed behavior. Also examines significance of infractions of the rules, associated penalties, and ethical issues like cheating, performance-enhancing substances in sport, concept of the "team" and ideals of individual performance. Instructor: Ward. One course.

229. Issues in the History of Philosophy. CZ Topics in one or more periods in the history of philosophy (e.g., ancient, medieval, or modern) such as skepticism, mind-body relations, the nature of persons and personal identity, the relation between physics and metaphysics, causation and explanation. Instructor: Janiak or staff. One course.

230. Philosophy of Religion. CZ, EI, R Justification for and content of religious belief. Topics considered include arguments for the existence of God, the problem of evil, religious diversity, and the importance of religion for morality. Instructor: Staff. One course.


236A. The Birth of Reason in Ancient Greece. CCI, CZ, EI A study of the Classical Greeks' pronounced emphasis on the rational aspect of human nature, which enabled them to lay the foundations for subsequent intellectual developments in western thought. The Athenian Empire as a case study for an investigation of the five major ancient ethical systems. Taught only in the Duke Greece Summer Study Abroad program. Instructor: Ferejohn. One course. C-L: Classical Studies 272A

237A. Political Philosophy of Globalization. CCI, CZ, EI, SS Examination of the claim made for and against the expansion of free exchange on economic, political, and cultural institutions and conditions, from the perspectives of competing ethical theories and political philosophies. Taught only in the Duke in Geneva Summer Study Abroad program. Instructor: Rosenberg. One course. C-L: Political Science 297A, Public Policy Studies 204A, Economics 303A


246. Prisoner's Dilemma and Distributive Justice. EI, SS One course. C-L: see Political Science 331; also C-L: Economics 361, Ethics Courses Offered Through Other Departments, Information Science and Information Studies

250. Symbolic Logic. CZ Detailed analysis of deduction and of deductive systems. Open to sophomores by consent of instructor. Instructor: Brandon or staff. One course. C-L: Linguistics 250, Information Science and Information Studies

252. Philosophy and Neuroscience. SS Explores relevance of recent findings in neuroscience (and cognitive neuroscience) to traditional philosophical areas of inquiry. Also addresses philosophical issues regarding practice of neuroscience and relation to other disciplines/sciences. Possible topics include: epistemology of neuroscience data, relation between neuroscience/psychology, neurolinguistics, neuroethics, neural representations, neuroscience & consciousness. Instructors: Flanagan or Neander. One course. C-L: Neuroscience 252

262. Human Rights in Theory and Practice. CCI, CZ, EI, SS One course. C-L: see Political Science 272; also C-L: Public Policy Studies 231, International Comparative Studies 272, Documentary Studies, Ethics Courses Offered Through Other Departments, Global Health

263. Chinese Philosophy. CCI, CZ, EI The major schools of classical Chinese philosophy: Confucianism, Moism, and Taoism. Confucianism on the ideals of harmonious human life; Moism's charge that Confucianism encourages an unjustified partiality toward the family; Taoism's claim that no logically consistent set of doctrines can articulate the "Truth." Debates and mutual influences among these philosophies. Comparisons between Chinese and Western cultures with respect to philosophical issues and solutions. Instructor: Wong. One course. C-L: Study of Ethics


274S. Feminist Classics. ALP, CCI One course. C-L: see Literature 365S; also C-L: Women's Studies 365S, English 388S

281. Global Bioethics. CZ, EI Examines various problems of international ethics, discussing them in the context of general ethical theory and then in the specific context of various controversies concerning the conduct of clinical trials in developing countries. Problems include moral universalism and relativism; poverty relief and international aid; international health disparities; human rights; and exploitation. Instructor: Sreenivasan. One course. C-L: Global Health 241, International Comparative Studies 282

282. Science, Ethics, & Democracy. EI, SS, STS Examines relationships between scientific knowledge, ethics, & formation of public policies in a democratic society. Science influences public policy & public policy shapes scientific enterprise. How can citizens reliably identify genuine scientific expertise? If scientific expertise conflicts with
religious views of some citizens, can public policy rely on scientific expertise without violating principles of religious toleration? What are ethical rules of public deliberation—must citizens appeal only to reasons accessible from secular viewpoints? To what extent should science goals be shaped by scientific community versus democratic processes?

Instructor: Buchanan. One course. C-L: Bioethics and Science Policy 282

283. The Existentialist Imagination. ALP, CZ, EI One course. C-L: see German 385; also C-L: Literature 242

283D. The Existentialist Imagination. ALP, CZ, EI One course. C-L: see German 385D; also C-L: Literature 242D

286. Marx, Nietzsche, Freud. CCI, CZ, SS One course. C-L: see German 380; also C-L: Literature 280, Political Science 378, Marxism and Society

286D. Marx, Nietzsche, Freud. CCI, CZ, EI, SS One course. C-L: see German 380D; also C-L: Literature 280D, Political Science 378D

290. Special Topics in Philosophy. Instructor: Staff. One course.

290S. Seminars in Philosophy. CZ Instructor: Staff. One course.

291. Fall Independent Study. Individual reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open only to highly qualified students in the junior and senior year with consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

293. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing a significant analysis and interpretation of a previously approved topic. Open only to highly qualified students in the junior and senior year with consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

310. Information and Philosophy: Personal Identity, Knowledge, Ethics. CZ, EI, SS, STS What is information? How does it shape human life? How does it structure modern society? Investigates mathematical and conceptual theories of information and connects them to traditional and new problems of philosophy: communication and meaning, the informational nature of mind and cognition, knowledge, the nature of personal identity in the information age, the structure of the information society, and information ethics. Reflects broadly on the philosophical methodology of philosophy of information and contrasts it with alternative approaches to philosophical problems. Instructor: Staff. One course. C-L: Information Science and Information Studies 310

313S. Philosophy of Mathematics. CZ Survey of mathematical thought including the nature of infinity, Platonism, constructivism, and the foundational crisis of the early twentieth century. Prerequisite: one course in calculus or logic or philosophy; or consent of instructor. Instructor: Staff. One course.

314. Philosophy of Biology. CZ, NS, R, STS An introduction to conceptual and methodological issues raised in contemporary biology, including teleology, reductions, the units of selection, and the structure of evolutionary theory. Prerequisites: Biology 25. Instructor: Brandon or Rosenberg. One course. C-L: Biology 255, Genome Sciences and Policy, Marine Science and Conservation

316. Happiness and Freedom. CZ, EI Analyzes concepts central to moral & political philosophy: well-being or notion of a good life (happiness being one view of a good life), personal autonomy or self-rule, & freedom. Also looks at moral dilemmas framed as conflicts between two or more of these values. Instructor: Hawkins. One course.


331. Kant. CZ, EI Immanuel Kant's philosophy, its background and influence. His early work in metaphysics and ethics and his mature philosophy of the 'Critical Period' in which he wrote The Critique of Pure Reason, The Critique of Practical Reason, and The Critique of Judgment. (NOTE: No prerequisites, but helpful to take Philosophy 201 beforehand or concurrently.) Instructor: Janiak. One course.

338. Analytic Philosophy in the Twentieth Century. CZ, R An historical survey from Frege, Moore, Russell, and the logical positivism of the Vienna Circle to current developments. Philosophers covered include Wittgenstein, Ryle, Austin, Quine, and Davidson. Prerequisite: one philosophy course or consent of instructor. Instructor: Staff. One course.

345. The Philosophy and Methodology of Economics. EI, SS, W Introduction to conceptual and methodological issues raised in modern economics. Topics may include choice, rationality and irrationality, realism, models, the relationship between microeconomics and macroeconomics, prediction and explanation, value judgments and policymaking, and causality. Case studies of applications to economic problems. Prerequisites: One course in economics or consent of instructor. Instructor: Hoover or Rosenberg. One course. C-L: Economics 319

350. Logic and Its Applications. One course. C-L: see Mathematics 388; also C-L: Computer Science 288

353. Neuroethics. EI, NS, SS, STS One course. C-L: see Neuroscience 267; also C-L: Psychology 278, Study of Ethics 269

380S. The Scientific Revolution. CZ, STS, W Study emergence of modern physical sciences as leading means for understanding the natural world; read primary documents from Copernicus, Kepler, Galileo, Descartes, Boyle, Hooke and Newton; learn how past science shaped the modern world; learn how history of science enables understanding of 21st-century science. Instructor: Janiak. One course.

384AS. Classical and Contemporary Political Theory. EI, SS Examines crucial debates in classical and contemporary political thought, especially question of individual freedom, from end of English Civil War to present day. Equips students with theoretical expertise to make persuasive arguments of their own. Not open to students who have taken Philosophy 207, Political Science 223, or Political Science 224. If you take this course you cannot get credit for Philosophy 207, Political Science 223, or Political Science 224. Open only to students in the Duke in Oxford program. Consent of instructor required. Instructor: Stears. Two courses. C-L: Political Science 377S

385AS. Science, Ethics, and Society. CZ, EI Major recent public debates involving science, ethics, and policy in Britain and the United States. Exploration of issues ranging from stem cell research and global warming to health care policy and the teaching of evolution, as differently framed in the two countries. Examination of scientific, philosophical, and theological dimensions of such controversies, and how their manifestations in the public realm illuminate the relationships between scientists and laypersons, academic and popular culture, and public attitudes toward government and regulation. Open only to students in the Duke in Oxford program. Instructor consent required. Instructor: Ward. Two courses. C-L: Religion 282AS, Public Policy Studies 258S


411. Philosophy of Time & Space. CZ Topics include: the possibility of time travel, the direction of time, comparisons between space and time, special relativity, and existence of the past and future. Instructor: Bernstein. One course.


465. Politics, Philosophy, and Economics Capstone. R, SS One course. C-L: see Political Science 449; also C-L: Economics 389

486S. Ordinary Language Philosophy. ALP One course. C-L: see Literature 486S; also C-L: English 485S

490S. Seminars in Philosophy. CZ Instructor: Staff. One course.

495S. Distinction Seminar Program. Original research project culminating in a 40-60 page thesis. Covers philosophy-specific research techniques as well as fundamentals of academic bibliographic research. Students share their research and receive/provide feedback. Instructor Consent Required. Instructor: staff. Half course.

502S. Comparative Ethics. CCI, CZ, EI Chinese and Western ethics compared, including conceptions of the virtues, the good life, right action, and the person. Instructor permission required. Instructor: Wong. One course.
503S. Contemporary Ethical Theories. CZ, EI, SS The nature and justification of basic ethical concepts in the light of the chief ethical theories of twentieth-century British and American philosophers. Consent of instructor required. Instructor: Flanagan or Wong. One course. C-L: Political Science 582S, Women's Studies

506S. Responsibility. CZ, EI The relationship between responsibility in the law and moral blameworthiness; excuses and defenses; the roles of such concepts as act, intention, motive, ignorance, and causation. Instructor: Staff. One course.

508S. Political Values. CZ, EI Analysis of the systematic justification of political principles and the political values in the administration of law. Instructor: Staff. One course.

510S. Adversarial Ethics. EI, SS Course attempts to identify general principles for designing the rules & regulations for deliberately adversarial institutions (ie; markets, electoral systems/legislatures, criminal law, warfare, sports). Looks at the special virtues of sportsmanship, professionalism, business ethics, etc. people are expected to follow within these hyper-competitive contexts. By examining ways the criteria for being an ethical businessperson, lawyer, soldier, and so on may differ from the criteria for simply being an "ethical person", this course seeks to prepare students for future professional roles in these adversarial domains. No formal pre-requisites. Instructor: Norman. One course. C-L: Political Science 585S


536S. Hegel's Political Philosophy. EI, R, SS One course. C-L: see Political Science 676S; also C-L: German 575S

537S. Nietzsche's Political Philosophy. CZ, EI, SS One course. C-L: see Political Science 577S; also C-L: German 576S

538S. Problems in the Philosophy and Policy of Genomics. CZ, R, STS, W An examination of normative, methodological, and metaphysical issues raised by molecular biology, and its relations to other components of biology, including human behavior. Instructor: Rosenberg. One course. C-L: Genome Sciences and Policy, Information Science and Information Studies

539S. Race Theory: Biological Classification and Moral Implications. CZ, EI Topics to include: Biological classification theory and its applications to humans; The fit, or lack thereof, of biological categories and folk classifications of race; The historical/political motivations behind human racial classifications; The role of race in moral interactions; and The role of race in the construction of personal identity. Instructor: Brandon. One course. C-L: African and African American Studies 580S

541S. Historical and Philosophical Perspectives on Science. CZ, STS An integrated introduction to the nature of science and scientific change, and its impact on society. Instructor: Janiak or Rosenberg. One course. C-L: Literature 521S, Women's Studies 541S, History 577S

551S. Epistemology. CZ, R Selected topics in the theory of knowledge; for example, conditions of knowledge, skepticism and certainty, perception, memory, knowledge of other minds, and knowledge of necessary truths. Instructor: Dretske or staff. One course.

552S. Metaphysics. CZ, R Selected topics: substance, qualities and universals, identity, space, time, causation, and determinism. Instructor: Bernstein or staff. One course.

555S. Topics in Philosophy of Mind. CZ, R, STS, W One or more topics such as mental causation, animal minds, artificial intelligence, and foundations of cognitive science. Includes relevant literature from fields outside philosophy (for example, psychology, neuroscience, ethology, computer science, cognitive science). Instructor: Dretske or Neander. One course. C-L: Neuroscience 555S

559. The Biological Basis of Music. One course. C-L: see Neurobiology 559; also C-L: Psychology 580

566S. Topics in Early Modern Political Thought from Machiavelli to Mills. CCI, R, SS One course. C-L: see Political Science 579S

570. Body Works: Medicine, Technology, and the Body in Early Twenty-First Century America. ALP, CCI, STS One course. C-L: see Information Science and Information Studies 670; also C-L: Literature 623, Genome Sciences and Policy
573S. Heidegger. CZ, EI, SS One course. C-L: see Political Science 581S

590. Special Topics in Philosophy Lecture. CZ Topics vary each semester. Instructor: Staff. One course.

590S. Special Fields of Philosophy Seminar (Topics). CZ Instructor: Staff. One course.

618S. Medieval Philosophy. CCI, CZ, R Study of Augustine against background of late ancient Roman philosophy, and Thomas Aquinas and others against background of medieval Muslim philosophy, in particular Avicenna and Averroes, and Neoplatonism. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 669S

625S. British Empiricism. CZ A critical study of the writings of Locke, Berkeley, or Hume with special emphasis on problems in the theory of knowledge. Instructor: Janiak. One course.

627S. Continental Rationalism. CZ A critical study of the writings of Descartes, Spinoza, or Leibniz with special emphasis on problems in the theory of knowledge and metaphysics. Instructor: Janiak. One course.

628S. Recent and Contemporary Philosophy. CZ A critical study of some contemporary movements, with special emphasis on analytic philosophers. Instructor: Staff. One course. C-L: Linguistics 528S

629S. Topics in the History of Philosophy. CZ Topics in one or more periods in the history of philosophy (for example, ancient, medieval, or modern) such as skepticism, mind-body relations, the nature of persons and personal identity, the relation between physics and metaphysics, causation and explanation. Instructor: Flanagan, Ferejohn, Janiak, or Rosenberg. One course.

631S. Kant's Critique of Pure Reason. CZ Instructor: Janiak. One course.

633S. Methodology of the Empirical Sciences. CZ, STS Recent philosophical discussion of the concept of a scientific explanation, the nature of laws, theory and observation, probability and induction, and other topics. Consent of instructor required. Instructor: Brandon or Rosenberg. One course.

634S. Problems in the Philosophy of Biology. NS, STS Selected topics, with emphasis on evolutionary biology: the structure of evolutionary theory, adaptation, teleological or teleonomic explanations in biology, reductionism and organismism, the units of selection, and sociobiology. Consent of instructor required. Instructor: Brandon, Neander, or Rosenberg. One course. C-L: Biology 555S

640S. Philosophical Psychology. CZ A study of recent work on the nature of the self and the nature and function of consciousness. Work from philosophy, psychology, cognitive neuroscience, and evolutionary biology will be discussed. Instructor: Flanagan or Neander. One course.

650S. Topics in Formal Philosophy. Topics selected from formal logic, philosophy of mathematics, philosophy of logic, or philosophy of language. Instructor: Staff. One course.

681S. Wittgensteinian Perspectives on Literary Theory. ALP One course. C-L: see Literature 681S; also C-L: English 582S

692S. Bioethics. EI Course offers a graduate-level intro to bioethics. Topics include the history of bioethics; research ethics; limit setting in health care; and reproductive ethics. Course primarily intended for seniors and graduate students. Instructors Ross McKinney, Sreenivasan, and other faculty from the Trent Center for Bioethics, Humanities, and the History of Medicine. One course.


The Major

Requirements. Ten courses in philosophy, eight of which must be at the 200 level or above. The courses must include Philosophy 201 and 203; a course at the 200 level or above in value theory (for example, ethics, political philosophy); a course at the 200 level or above in metaphysics, epistemology, philosophy of mind, or philosophy of science; a course in logic (Philosophy 150 or 250); and at least one seminar at the 500-600 level.

Departmental Graduation with Distinction

The department offers work leading to Graduation with Distinction. See the section on honors in this bulletin.
The Minor

Requirements. At least five courses, no more than two of which may be below the 200 level. No specific courses are required. All students who wish to pursue a minor are encouraged to seek advice from faculty members in the department.

Philosophy, Politics, and Economics

Professor Munger, Director

A certificate, but not a major, is available in this program.

The politics, philosophy, and economics interdisciplinary certificate program at Duke is designed to enable students to secure an understanding of the common foundations and the intersection of methods employed in normative inquiry by the three disciplines that make up the program. Political philosophy and political economy face similar questions and exploit common resources, and the alternative answers they provide to these questions are grounded in competing philosophical theories. Students intending to major in any of the three disciplines, or for that matter in any other discipline with an impact on public institutions and civil society, national, and international governance, and economic development, will find the certificate’s program of studies valuable.

The politics, philosophy, and economics certificate program is composed of six courses, including two cross-listed courses, one that functions as a gateway to the certificate program, a second that figures as its capstone, and four other classes in economics, philosophy, and political science.

Program Preparation

Preparation for participation in the gateway course should normally include the following prerequisites: a) Economics 101 (Economic Principles), and b) Philosophy 207 (Political and Social Philosophy), or Political Science 175 (Introduction to Political Philosophy). However, students without this previous preparation may enroll in the gateway course with the permission of the instructor.

Program Requirements

Six specified courses distributed across the three disciplines in accordance with the table below, including gateway and capstone courses.

Gateway Course

All students in the certificate program must take the politics, philosophy, and economics introductory course: Political Science 331 (Prisoner’s Dilemma and Distributive Justice) (C-L: Economics 361, Philosophy 246)

Capstone Course

In their senior year students must take the politics, philosophy, and economics capstone course: Political Science 449 (C-L: Economics 389, Philosophy 465)

Core Courses

Beyond the gateway course, and prior to or concurrent with the capstone course, students must take a common core of selected sequence of four courses in microeconomics, rational choice, ethical theory/political philosophy, and the history of economic thought. The four courses will be chosen from three groups: This sequence will be selected in consultation with the program director, and must be approved for each student separately. The four courses must include one course from each of the three core disciplines of the certificate—politics, philosophy, and economics—as well as one additional course that will reflect the interests of the student and will be chosen with an eye toward facilitating completion of the major paper in the capstone class.

Physics

Professor Gao, Chair; Professor Kotwal, Associate Chair for Teaching; Professor Scholberg, Director of Undergraduate Studies; Professors Aspinwall, Baranger, Bass, Behringer, Beratan, Bray, Chang, Curtarolo, Edwards, Finkelstein, Gauthier, Goshaw, Greenside, Howell, Johnson, Katsouleas, Kim, Kotwal, Kruse, Liu, Mueller, Oh, Palmer, Petters, Plessier, Samei, Scholberg, Smith, Socolar, Springer, Wu and Yang; Associate Professors Chandrasekharan, Dobbins III, Mehen, Teitsworth, C. Walter; Assistant Professors Arce, Barbeau, Buchler, Charbonneau, Lu, Mikkelsen; Professors Emeriti Evans, Han, Meyer, Roberson, Robinson, Thomas, Tornow, R. Walter, and Weller; Associate
A major or a minor is available in this department.

Physics offers its majors a chance to learn about many extraordinary insights that the human race has discovered in its effort to understand the universe. Examples include what are the properties of matter and light, what are the concise remarkable laws that govern the properties of matter and light, how does complex structure emerge from the interactions of simpler pieces, and how physical laws and insights can be used to solve a great diversity of basic and applied problems. The analytical and experimental insights that a physics or biophysics major gains are valuable to the study of all areas of science and engineering. The physics department also offers courses for students with a casual interest in science, who wish to learn about what physicists have discovered about nature and how physicists think about nature.

Courses in Physics (PHYSICS)

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Lawson. One course.

127S. Physics and the Universe. NS Exploration of our understanding of the universe, including the formation of large scale structure, galaxies, stars, the elements, and life. Scientific innovations driving this picture including esoteric theories such as general relativity and string theory, and technological breakthroughs such as the Hubble space telescope and gravitational wave detectors. Instructor: Staff. One course.

131S. Introductory Seminar on Big Questions in Physics. NS, STS Introduction to six big questions representing frontiers of 21st century physics, such as what are the ultimate laws of nature, how does complex structure arise, and how can physics benefit society. Classes will involve presentations by researchers and by students, discussions of journal articles, and tours of physics labs involved with related research. Prequisites: Precalculus and at least one quantitative science course at the high school level, such as chemistry or physics. Instructor: Gao. Half course.

131S-1. Introductory Seminar on Big Questions in Physics. NS, STS Introduction to six big questions representing frontiers of 21st century physics, such as what are the ultimate laws of nature, how does complex structure arise, and how can physics benefit society. Classes will involve presentations by researchers and by students, discussions of journal articles, and tours of physics labs involved with related research. Prerequisites: Precalculus and at least one quantitative science course at the high school level, such as chemistry or physics. Instructor: Gao, Greenside, Kotwal, Teitsworth. One course.

134. Introduction to Astronomy. NS, QS How observation and scientific insights can be used to discover properties of the universe. Topics include an appreciation of the night sky, properties of light and matter, the solar system, how stars evolve and die, the Milky Way and other galaxies, the evolution of the universe from a hot Big Bang, exotic objects like black holes, and the possibility for extraterrestrial life. Prerequisite: high-school-level knowledge of algebra and geometry. Instructor: Kruse. One course. C-L: Visual and Media Studies 150

135. Conceptual Physics. NS, STS Concepts relevant for the explanation of common physical phenomena and their impact on society. Understanding of fundamental principles of Physics that underlie the modern world in which we live. Exploring examples of how these apply to critical technologies that make modern civilization possible. Intended for students not majoring in science or engineering; no previous knowledge of physics is assumed. Instructor: Staff. One course.


137S. Energy in the 21st Century and Beyond. NS, STS Concepts of energy from a scientific perspective for understanding problems of energy conversion, storage, and transmission in modern society. Topics include fundamental concepts (kinetic and potential energy, heat, basic thermodynamics, mass-energy equivalence), established power generation methods and their environmental impacts, emerging and proposed technologies (solar, wind, tidal, advanced fusion concepts). Final team project. Sophomores, juniors, and seniors from non-science majors are particularly encouraged to attend; no previous knowledge of physics is assumed. Instructor: Teitsworth. One course. C-L: Energy and the Environment
138S. Physics Research and the Economy. NS, STS Analyses of the role of physics in the development of commercial technologies, with emphasis on curiosity driven research. Seminar requiring independent investigations of the intellectual origin of technological devices, with equal attention to physics principles and political or socioeconomic influences on research funding and product development. No prior instruction in physics assumed. Instructor: Howell. One course.

141L. General Physics I. NS, QS First part of a two-semester, calculus-based, physics survey course for students planning study in medicine or the life sciences. Topics: kinematics, dynamics, systems of particles, conservation laws, statics, gravitation, fluids, oscillations, mechanical waves, sound, thermal physics, laws of thermodynamics. For credit, enrollment in Physics 141L and a lab/recitation (Physics 141L9, 141D) section required. Students planning to major in physics should enroll in Physics 161L, 162L in their freshman year. Closed to students having credit for Physics 151L, 153L, or 161L. Prerequisites: one year of college calculus (or equivalent) such as Mathematics 105L, 106L, or 21. Mathematics 122 recommended. Instructor: Edwards or Wu. One course.

141LA. General Physics I. NS, QS First part of a two-semester, calculus-based, physics survey course for students planning study in medicine or the life sciences. Topics: kinematics, dynamics, systems of particles, conservation laws, statics, gravitation, fluids, oscillations, mechanical waves, sound, thermal physics, laws of thermodynamics. For credit, enrollment in Physics 141L and a lab/recitation (Physics 141L9, 141D) section required. Students planning to major in physics should enroll in Physics 161L, 162L in their freshman year. Closed to students having credit for Physics 151L, 153L, or 161L. Prerequisites: one year of college calculus (or equivalent) such as Math 105L, 106L, or 21. Math 122 recommended. Instructor: Tyndall. One course. C-L: Marine Sciences

142L. General Physics II. NS, QS The second-semester of a calculus-based course on the principles of physics for students who do not plan to major in physics or in engineering. Topics include: electric fields, DC and AC circuits, magnetic fields, Faraday's law, Maxwell's equations, electromagnetic waves, properties of light, geometric optics, and wave optics. Students must enroll in a lecture section (PHY 142L), a lab section (PHY 142L9), and a recitation section (PHY 142L9R) to receive credit. Closed to students having credit for Physics 152L, 153L or 162L. Prerequisites: Physics 141L, 151L, or 161L. Instructor: Bass or Gauthier. One course.

142LA. General Physics II. NS, QS Second part of a two-semester calculus based course surveying principles of physics for students planning to study medicine or life sciences. Topics include: electrostatic fields and potential, capacitors, DC circuits, magnetic fields, electromagnetic induction, Maxwell's equations, electromagnetic waves, properties of light (including reflection, refraction, polarization), geometric optics, wave optics, atomic and nuclear physics. Students must enroll in both a lecture and a lab/recitation section to receive credit. Open only to students in the Duke Marine Lab. Closed to students having credit for Physics 152L, 153L or 162L. Prerequisites: Physics 141L, 151L, or 161L. One course. C-L: Marine Sciences

151L. Introductory Mechanics. NS, QS The fundamentals of classic physics. Topics include: vectors, units, Newton's Laws, static equilibrium, motion in one and two dimensions, rotation, conservation of momentum, work and energy, gravity, simple and chaotic oscillations. Numerical methods used to solve problems in a workstation environment. Intended principally for non-physics majors in the physical sciences and engineering. Students planning a major in physics should enroll instead in Physics 161L, 162L in their freshman year. Closed to students having credit for Physics 141L or 161L. Prerequisites: Mathematics 21, 122, or equivalent; Mathematics 122 may be taken concurrently with Physics 151L. Instructor: Goshaw. One course.

152L. Introductory Electricity, Magnetism, and Optics. NS, QS Intended principally for students in engineering and the physical sciences. Topics include: electric charge, electric fields, Gauss's Law, potential, capacitance, electrical current, resistance, circuit concepts, magnetic fields, magnetic and electric forces, Ampere's Law, magnetic induction, Faraday's Law, inductance, Maxwell's Equations, electromagnetic waves, elementary geometric optics, wave interference, and diffraction. Prerequisites: Physics 151L and Mathematics 122 or equivalents. Instructor: Barbeau. One course.

153L. Applications of Physics: A modern perspective. NS, QS Intended principally for students in engineering and the physical sciences as a continuation of Physics 152L. Topics include: mechanics from a microscopic perspective, the atomic nature of matter, energy, energy quantization, entropy, the kinetic theory of gases, the efficiency of engines, electromagnetic radiation, the photon nature of light, physical optics and interference, waves and particles, applications of wave mechanics. Not open to students having credit for Physics 142L or 162L. Prerequisites: Physics 152L and Mathematics 212 or the equivalents. Instructor: Springer. One course.
161D. Fundamentals of Physics I. NS, QS First semester of a two-semester sequence intended for potential physics or biophysics majors. Course discusses vector algebra, description of motion, Newton's laws, work and energy, systems of particles, conservation laws, rotation, gravity, mechanics of fluids, oscillations, mechanical waves, and sound. Prerequisites: Mathematics 21 and 122 or equivalents; Mathematics 122 may be taken concurrently. Recommended that course is taken concurrently with Physics 161L. Instructor: Springer. One course.

161L. Introductory Experimental Physics I. NS, QS, W First in a series of half-courses on experimental physics techniques for physics and biophysics majors. Experiments focus on core physics concepts of mechanics: force, motion, conservation laws, and oscillations. Students work in teams and use computers to collect, visualize, and analyze data. Key components: written documentation of experimental procedures and results in a scientific notebook; interpreting results and testing hypotheses; experimental design and refinement; multiple opportunities for open-ended laboratory activities that inspire team and individual creativity. Designed to be taken concurrently with Physics 161D. Instructor: Walter. Half course.

162D. Fundamentals of Physics II. NS, QS Second semester of a two-semester sequence intended for potential physics or biophysics majors. Course discusses basic principles and applications of electrodynamics, including electric fields, Gauss's Law, electric potential, capacitance, DC and AC circuits, magnetic fields, Ampere's Law, electric and magnetic forces, magnetic induction, Maxwell's equations, electromagnetic waves, properties of light, ray optics, and wave optics. Prerequisites: Physics 161D and Mathematics 122 or consent from instructor. Recommended that course is taken concurrently with Physics 162L. Instructor: Brown. One course.

162L. Introductory Experimental Physics II. NS, QS, W Second in series of half-courses on experimental physics techniques for physics and biophysics majors. Focus on core physics concepts of electricity, magnetism and optics: electrostatics, magnetostatics, magnetic induction, electromagnetic waves, geometrical and physical optics. Students work in teams and use computers to collect, visualize, and analyze data. Key components: written documentation of experimental procedures and results in a scientific notebook; interpreting results and testing hypotheses; experimental design and refinement; multiple opportunities for open-ended laboratory activities that inspire team and individual creativity. Designed to be taken concurrently with Physics 162D. Instructor: Scholberg. Half course.

174. Introduction to Frontiers of Biophysics. NS, STS Once-per-week class with goal of introducing students to representative frontiers of biophysics. Course will be a mixture of presentations by researchers, presentations by students of journal articles, and some lab tours. Prerequisites: Knowledge equivalent to Advanced Placement courses in biology, chemistry and physics, or with permission of the instructor. Instructor: Greenside. Half course.

190. Special Topics in Physics. NS Special topics in physics, intended for non-majors. Instructor: Staff. One course.


190S. Special Topics in Physics. NS Special topics in physics, intended for non-majors. Instructor: Staff. One course.


215L. Basic Research Skills for Physics. Covers basic skills necessary in physics research. Possible topics include document software (LaTex, MS Office), computer interfacing (LabView), C++ (or Java) programming, graphing and statistical analysis software (PAW, ROOT, Mathematica, Matlab), and Laboratory techniques (Vacuum, Nuclear/HEP Electronics, sensors, optics). Instructor: Staff. Half course.

264L. Optics and Modern Physics. NS, QS Third course in sequence for physics and biophysics majors. Introductory treatments of special relativity and quantum mechanics. Topics include: wave mechanics and interference; relativistic kinematics, energy and momentum; the Schrodinger equation and its interpretation; quantum particles in one-dimension; spin; fermions and bosons; the hydrogen spectrum. Applications to crystallography, semiconductors, atomic physics and optics, particle physics, and cosmology. Prerequisites: Physics 162L and Mathematics 212 or their equivalents. Instructor: Chang. One course.

271L. Electronics. NS, QS Elements of electronics including circuits, transfer functions, solid-state devices, transistor circuits, operational amplifier applications, digital circuits, and computer interfaces. Lectures and
laboratory. Prerequisites: Physics 142L, 152L, or 162L, or equivalent; Mathematics 212 or equivalent. Instructor: Scholberg. One course. C-L: Information Science and Information Studies

305. Introduction to Astrophysics. NS, QS Basic principles of astronomy treated quantitatively. Cosmological models, galaxies, stars, interstellar matter, the solar system, and experimental techniques. Prerequisites: Physics 264, Mathematics 103, Math 107 strongly encouraged; or consent of instructor. Instructor: Walter. One course.

320L. Optics and Photonics. NS One course. C-L: see Electrical and Computer Engineering 340L; also C-L: Visual and Media Studies 325L

361. Intermediate Mechanics. NS, QS Newtonian mechanics at the intermediate level, Lagrangian mechanics, linear oscillations, chaos, dynamics of continuous media, motion in noninertial reference frames. Prerequisite: Mathematics 216 or equivalent (may be taken concurrently). Instructor: Howell. One course.

362. Electricity and Magnetism. NS, QS Electrostatic fields and potentials, boundary value problems, magnetic induction, energy in electromagnetic fields, Maxwell's equations, introduction to electromagnetic radiation. Prerequisite: Mathematics 216 or equivalent. Instructor: Redlich. One course.

363. Thermal Physics. NS, QS Thermal properties of matter treated using the basic concepts of entropy, temperature, chemical potential, partition function, and free energy. Topics include the laws of thermodynamics, ideal gases, thermal radiation and electrical noise, heat engines, Fermi-Dirac and Bose-Einstein distributions, semiconductor statistics, kinetic theory, and phase transformations. Also taught as Electrical and Computer Engineering 311. Prerequisite: Physics 264L. Instructor: Finkelstein. One course.


414. Introduction to Biophysics. NS, QS How theory and experimental techniques from physics can be used to analyze and understand biological structure and function, including chemical, mechanical, electrical, collective, and information-processing aspects. Prerequisites: Biology 201L and knowledge of statistical physics by taking either Physics 363 or Chemistry 311. Instructor: Beratan. One course.

417S. Advanced Physics Laboratory and Seminar. NS, QS, R, W Experiments involving the fields of electricity, magnetism, heat, optics, and modern physics. Written and oral presentations of results. Instructor consent required. Instructor: Oh. One course.

464. Quantum Mechanics I. NS, QS Introduction to the non-relativistic quantum description of matter. Topics include experimental foundations, wave-particle duality, Schrödinger wave equation, interpretation of the wave function, the state vector, Hilbert space, Dirac notation, Heisenberg uncertainty principle, one-dimensional quantum problems, tunneling, the harmonic oscillator, three-dimensional quantum problems, angular momentum, the hydrogen atom, spin, angular momentum addition, identical particles, elementary perturbation theory, fine/hyperfine structure of hydrogen, dynamics of two-level systems, and applications to atoms, molecules, and other systems. Prerequisite: Mathematics 216 or 221 and Physics 264L. Instructor: Roy. One course.

465. Quantum Mechanics II. NS, QS Advanced topics in quantum mechanics with applications to current research. Topics might include theory of angular momentum, role of symmetry in quantum mechanics, perturbation methods, scattering theory, the Dirac equation of relativistic quantum mechanics, systems of identical particles, and quantum entanglement. Prerequisite: Physics 464. Instructor: Mehen. One course.

491. Independent Study: Advanced Topics. Reading in a field of special interest under the supervision of a faculty member. Intended for students interested in studying topics not offered in regularly available courses. Format and grading are determined by the supervising faculty member and then approved by the DUS. Consent of instructor required. One course. Instructor: Staff. One course.

493. Research Independent Study. R Original research conducted under the supervision of a faculty member. At least one written substantive report or a poster presentation is required. Consent of instructor and DUS required. Instructor: Staff. One course.

495. Thesis Independent Study. R, W Original research conducted under the supervision of a faculty member leading to a substantial written report that follows standard guidelines for the presentation of physics research. The report must be revised at least once in response to feedback from the instructor. Typically taken following Physics
493 or summer research experience with the instructor. Consent of instructor and DUS required. Instructor: Staff. One course.

501. Survey of Nonlinear and Complex Systems. NS Survey lectures by Duke experts active in CNCS research; regular attendance in the CNCS seminar series; and a weekly meeting to discuss the lectures and seminars. May be repeated once. Prerequisite: Physics 513. Instructor: Staff. Half course. C-L: Nonlinear and Complex Systems 501

505. Introduction to Nuclear and Particle Physics. NS, QS Introductory survey course on nuclear and particle physics. Phenomenology and experimental foundations of nuclear and particle physics; fundamental forces and particles, composites. Interaction of particles with matter and detectors. SU(2), SU(3), models of mesons and baryons. Weak interactions and neutrino physics. Lepton-nucleon scattering, form factors and structure functions. QCD, gluon field and color. W and Z fields, electro-weak unification, the CKM matrix, Nucleon-nucleon interactions, properties of nuclei, single and collective particle models. Electromagnetic and hadronic interactions with nuclei. Nuclear reactions and nuclear structure, nuclear astrophysics. Relativistic heavy ion collisions. Prerequisites: for undergraduates, Physics 464, 465; for graduate students, Physics 715, which may be taken concurrently. Instructor: Arce. One course.

509. Quantum Nanophysics. NS Quantum phenomena in nanostructures, emphasizing interference, dimensionality, and electron interactions. Uses current research topics to introduce fundamental building blocks of the subject, thereby providing in addition a background in solid-state physics. Topics covered may include: graphene, carbon nanotubes, and topological insulators; scanning tunneling microscopy; quantum point contacts and quantum dots; spintronics, single electronics, and molecular electronics; superconducting qubits; giant and colossal magnetoresistance; quantum Hall effect. Emphasis placed on phenomena observed in the last two decades. Prerequisite: Physics 464 or instructor consent. Instructor: Baranger. One course.

513. Nonlinear Dynamics. QS, R Introduction to the study of temporal patterns in nonequilibrium systems. Theoretical, computational, and experimental insights used to explain phase space, bifurcations, stability theory, universality, attractors, fractals, chaos, and time-series analysis. Each student carries out an individual research project on a topic in nonlinear dynamics and gives a formal presentation of the results. Prerequisites: Computer Science 101, Mathematics 216, and Physics 161L, 162L, or equivalent. Instructor: Behringer. One course. C-L: Computer Science 524

522. Special and General Relativity. NS, QS Review of special relativity; ideas of general relativity; mathematics of curved space-time; formation of a geometric theory of gravity; Einstein field equation applied to problems such as the cosmological red-shift and blackholes. Prerequisite: Physics 361 and Mathematics 216 or equivalents. Instructor: Chandrasekharan. One course.


566. Computational Physics. NS, QS Introduction to numerical algorithms and programming methodologies that are useful for studying a broad variety of physics problems via simulation. Applications include projectile motion, oscillatory dynamics, chaos, electric fields, wave propagation, diffusion, phase transitions, and quantum mechanics. Prerequisites: Physics 264L and 363. Experience with a programming language is desirable, but can be acquired while taking the course. Instructor: Bass. One course.

590S. Selected Topics in Theoretical Physics. NS Topics vary as indicated on Physics Department Web site. Consent of Instructor required. Instructor: Staff. One course.

603. Representation Theory. QS One course. C-L: see Mathematics 603

621. Advanced Optics. QS This course presents a rigorous treatment of topics in Photonics and Optics targeted at students with an existing photonics or optics background. Topics will include, Optical Sources, Statistical Optics and Coherence Theory, Detection of Radiation; Nonlinear Optics; Waveguides and Optical Fibers; Modern Optical Modulators; Ultrafast lasers and Applications. These topics will be considered individually and then from a system...
level perspective. Prerequisite: Electrical and Computer Engineering 340L or equivalent. Instructor: Adam Wax. One course. C-L: Electrical and Computer Engineering 541, Biomedical Engineering 552

622. General Relativity. NS, QS This course introduces the concepts and techniques of Einstein's general theory of relativity. The mathematics of Riemannian (Minkowskian) geometry will be presented in a self-contained way. The principle of equivalence and its implications will be discussed. Einstein's equations will be presented, as well as some important solutions including black holes and cosmological solutions. Advanced topics will be pursued subject to time limitations and instructor and student preferences. Prerequisite: A familiarity with the special theory and facility with multivariate calculus. Instructor: Staff. One course. C-L: Mathematics 527

627. Quantum Information Science. NS, QS One course. C-L: see Electrical and Computer Engineering 523


671. Quantum Optics. NS, QS The linear and nonlinear interaction of electromagnetic radiation and matter. Topics include lasers, second-harmonic generation, atomic coherence, slow and fast light, squeezing of the electromagnetic field, and cooling and trapping of atoms. Prerequisite: Physics 465 and 560. Instructor: Staff. One course.

The Major

By the time they graduate, physics majors are well prepared for graduate work in physics, engineering, and in other science disciplines, for the study of medicine, and for employment in commercial and industrial organizations as well as in governmental laboratories. Students planning to major in physics should take Physics 161L and 162L during their first year if possible. They should also arrange to complete the mathematics requirements by the end of their sophomore year.

For the AB Degree

Prerequisites. Physics 161L and 162L or equivalents; Mathematics 122, 212, and 221

Major Requirements. Physics 264L and 363 and two courses out of 361, 362, 464, 513, or one 300-level or higher physics course approved by the DUS. One laboratory-related course which can be Physics 271L, 417S, or 493 with a substantial experimental component. One other physics elective numbered above 200.

For the BS Degree

Prerequisites. Physics 161L and 162L or equivalents; Mathematics 122, 212, 221, and 356.

Major Requirements. Physics 264L and 363 and two courses out of 361, 362, 464, 513, or one 300-level or higher physics course approved by the DUS. One laboratory-related course which can be Physics 271L, 417S, or 493 with a substantial experimental component. One other physics elective numbered above 200.

Departmental Graduation with Distinction

The department offers students many possibilities to do physics research, and this research may lead to Graduation with Distinction. Consult with the director of undergraduate studies during or before the junior year and see the section on honors in this bulletin.

The Minor

Requirements. Physics 161L and 162L or equivalents; Physics 264L; plus two additional physics courses numbered above 200 that need to be approved by the physics DUS or by a physics advisor. A total of five physics courses must be taken at Duke to satisfy the minor.

The Biophysics Major

Biophysics is the study of quantitative biological questions using insights, concepts, theory, and experimental techniques from physics, as well as knowledge from biology, chemistry, mathematics, and computer science. The major is a good choice for students who like biology and who enjoy thinking quantitatively. The major prepares students for graduate school in biophysics, biology, or medical science or for one of the health professions. This major is administered in close cooperation with the departments of biology and chemistry.
For the BS Degree

**Prerequisites.** Physics 161L and 162L or equivalents; Mathematics 21, 122, 212 and 216, or equivalents. Chemistry 101DL and 210DL, or equivalents.

**Major Requirements.** Physics 174S (0.5 course), 264L, 414 (CL-Biology 418), 464 and two of the following: 361, 362, 363 (but not if Chemistry 311 is chosen). Chemistry 201DL, Biology 201, 220. For students interested in the cellular biophysics, two of the following: Biology 202L, 227, 329L, 373LA, 412S, 414LS, Neuroscience 201, Independent Study. For students interested in molecular biophysics: Chemistry 310, 311 and 310L or 311L.

**Double majors:** For double majors with physics, no more than three physics courses may be counted toward both majors, not counting prerequisites. For double majors with biology, no more than two biology courses may be counted, not counting prerequisites. For double majors with chemistry, no more than three chemistry courses may be counted, not counting prerequisites.

For the AB Degree

**Prerequisites.** Physics 161L and 162L or equivalents; Mathematics 21, 122, 212, or equivalents. Chemistry 101DL and 210DL, or equivalents.

**Major Requirements.** Physics 174S (0.5 course), 264, 414 (CL-Biology 418), 464 and one of the following: 361, 362, 363 (but not if Chemistry 301 is chosen). Biology 201L, 220. For students interested in cellular biophysics, two of the following: Biology 202L, 227, 329L, 373LA, 412S, 414LS, Neuroscience 201, Independent Study. For students interested in molecular biophysics, Chemistry 301 and 301L and one of the following: Chemistry 302, Biology 414LS, Biochemistry 622 (CL-SBB 622, CBB 622), Biochemistry 301, Biochemistry 658, Independent Study.

**Double majors:** For double majors with physics, no more than three physics courses may be counted toward both majors, not counting prerequisites. For double majors with biology, no more than two biology courses may be counted, not counting prerequisites. For double majors with chemistry, no more than two chemistry courses may be counted, not counting prerequisites.

Policy Journalism and Media Studies

Lecturer Rogerson, *Director*

A certificate, but not a major, is available in this program.

The DeWitt Wallace Center for Media and Democracy offers an interdisciplinary certificate in policy journalism and media studies, which helps to prepare students for careers in media policy, journalism, and associated professions in the rapidly shifting arena of global communications. Courses for the certificate focus on educating students about the institutional, economic, and political complexities of media policies worldwide through the study of the interaction between the key players in media policymaking, journalism, media-concerned nongovernmental organizations (NGOs), and academics specializing in media studies. Students will research contemporary media policymaking and its impact on the practice of journalism in order to learn about the broad political dynamics which condition both United States and international media policy—past and present. Students will also examine conceptions of media, media policy, and journalism in a global market, as well as the current educational challenges confronting journalists whose knowledge needs to be increasingly specialized in order to explain complex global situations to their audiences.

Program Requirements

The policy journalism and media studies certificate is open to all undergraduates. Candidates must complete the prescribed combination of six courses, at least four at the 200 level or above. The six courses must include three core courses, two of which must be the capstone course, Public Policy Studies 410 (Policy Journalism and Media Studies), and Public Policy Studies 371S (News As Moral Battleground), and a third core course, either Public Policy Studies 365S, 366S, or 367S, (Television Journalism, Magazine Journalism, or News Writing and Reporting); as well as three elective courses from an approved list which can be found at dewitt.sanford.duke.edu/certificate-courses/. New courses, special topics courses, and independent study courses may also be approved as elective courses by the program. Each student is also required to complete an internship in the field prior to taking the capstone course (the internship must be approved before it is begun). No more than four courses may be in a single department; if students take four public policy studies courses, the fourth course must be cross-listed with another department. No
more than two courses that are counted toward this certificate may satisfy the requirements of any major, minor, or other certificate program. A minimum of three courses must be taken by the end of the junior year.

Students should register for the policy journalism and media studies certificate at the Office of the University Registrar (or, if they are declaring a major for the first time, through the Pre-Major Advising Center) and also see Program Director Ken Rogerson in the Sanford School of Public Policy, room 148.

Courses in Policy Journalism and Media Studies (PJMS)

120. Internship in Media-Related Field. For students enrolled in the Policy Journalism & Media Studies certificate program. Field work in media-related organization with pre-approval of the program Chair. Must submit approval form in advance, and a brief memo two weeks after internship ends. Director of undergraduate studies consent required. Instructor: Rogerson.

135S. Introduction to Audio Documentary. ALP, R One course. C-L: see Documentary Studies 135S

290. Special Topics in Policy Journalism & Media Studies. SS Selected Policy Journalism & Media Studies topics. Instructor: Staff. One course.

290S. Special Topics in Policy Journalism & Media Studies. SS Selected Policy Journalism & Media Studies topics. Instructor: Staff. One course.

310S. The Short Audio Documentary. ALP, R One course. C-L: see Documentary Studies 310S


367S. News Writing and Reporting. R, SS, W Seminar on reporting and writing news and feature stories for newspapers. Students required to produce actual news stories every week, based on original reporting and writing, including interviews, use of the Internet and electronic databases, public records, and written publications. Written assignments critiqued in class; final project. Consent of instructor required. Instructor: Rogerson. One course. C-L: Public Policy Studies 367S, Visual and Media Studies 307S

370S. Press, the Presidency and Congress in a New Media Age. EI, SS How political figures manage and avoid the press -- and how the press manages politicians -- in an era of 24/7 coverage, social media and the partisan echo chamber. Politician strategies of talking points, staged events, the empty theatrics of the daily White House briefing, and town halls on YouTube. Contraposed by cable news, partisan media and the relentless quest for conflict and scoops. Instructor: Adair. One course. C-L: Public Policy Studies 370S

371. News as Moral Battleground. EI, R, SS, W Ethical inquiry into journalism traditions and its effect on public discourse. Issues includes accuracy, transparency, conflicts of interest and fairness. Stories presenting special issues such as national security, reporting on vulnerable people and the privacy of public figures. New challenges in blogging, social media and the 24-hour news cycle. Instructor: Adair or Bennett. One course. C-L: Public Policy Studies 371, Study of Ethics 259

372. Information, Policy, and Ethics. EI, SS, STS The development of the Internet as a medium of communication and the policies and regulations that have emerged both internationally and nationally (in the United States). The political aspects of the access to information on the Internet and the more controversial issue of Internet content. Includes Internet monitoring project designed to encourage in-depth analysis in order to place the Internet in its historical context; contemporary political and social impacts of the Internet. Instructor: Rogerson. One course. C-L: Public Policy Studies 372
376S. Journalism of Economic Crisis. EI, SS Seminar explores how the news media has covered periods of economic crisis. Examines the history of reporting about boom and bust before turning to key questions about the news media and current coverage of the economy. Explores what can be concluded about the performance of journalism in informing and educating the public, holding executives and officials accountable, representing the human story of struggle, hardship and inequality. Students will read deeply and research, analyze and write about economic coverage. Instructor: Bennett. One course. C-L: Public Policy Studies 362S

378S. The Future of News and Accountability Journalism in the Digital Age. SS, W The transformation of the news industry in a digital age and the growth of new journalistic forms to hold policymakers and government accountable. The rise of partisan media and the impact on political discourse. The role of social media and aggregators in a crowded media ecosystem. The disruptive force of citizen journalism and the benefits for legacy companies. The promise -- and limitations -- of foundation-funded journalism and the challenge to find new business models. Instructor: Adair. One course. C-L: Public Policy Studies 378S

379S. The First Amendment in the Digital Age. EI, SS Analysis of the role of the First Amendment in content-oriented media and communications. Examination of the relationship between American intellectual property regimes and the Bill of Rights, proscription of “any law...abridging the freedom of speech, or of the press...”. Critical readings of commentary and some case law, with extensive classroom discussion in a small seminar format. Substantive topics include policy-based perspectives on digital encryption and performance, open source software, rights clearance issues, infringement theory in derivative works, dilution theory, and jurisdiction in cyberspace. Prerequisite Public Policy Studies 373S or PJMS 373S, Intellectual Property. Instructor: Frey. One course. C-L: Public Policy Studies 379S

381S. Science and The Media. SS, STS, W Technique and goals of science writing. Introduce different modes, publication outlets, and peculiar editorial demands of each. Making complex, nuanced ideas about science, health and related policy matters understandable to nonscientists in limited space and in engaging ways. Encompasses both deep and broad reading with attention to science stories as told by the best in the field, and writing, on the readings, scientists and their science, and its significance to a public bombarded by, fascinated with and alienated from science. Instructor: Angrist. One course. C-L: Public Policy Studies 381S, Environment 364S

382S. Narrative Journalism in the Digital Age. SS, STS, W Long-form journalism's decades-long ability to distinguish elite publications, attract great writers and produce stories that deepen readers' understanding of issues. Examination of journalism storytelling and the impact of new technologies in print, on television and online. Different forms of storytelling and the influence on what kind of issues and subjects receive attention. Production of original journalism required. Instructor: Bennett. One course. C-L: Public Policy Studies 382S

385S. Higher Education and The News Media. SS Analysis of content and methods of media coverage of major issues in higher education. Ways institutions try to shape (and respond to) media coverage. Includes a review of the history and distinctive characteristics of American higher education. Focus on a number of issues including finance, athletics, town-gown relations, academic freedom and political correctness, student culture, conflict of interest, rankings, scandals, globalization, and the impact of changing information technology. Instructor: Burness. One course. C-L: Public Policy Studies 385S, Education 385S

386S. Crash: The Intersection of Politics, Policy and Media. SS An examination of decision-making at intersection of politics, public policy and media. Draws on real-world and real-time examples and case studies, readings, and guest speakers. Issues include: role, power and practice of lobbying, rise of think tanks and interest groups as key players, theater of politics and policy, the many faces of media, scandal and commodification of outrage, crisis management and mismanagement. Instructor: Schoenfeld. One course. C-L: Public Policy Studies 369S

388S. Journalism and War: Covering International Conflicts. EI, SS In depth study of foreign correspondents work to analyze how news media influence foreign policy and public perception. Case studies drawn from a century of armed conflicts, with focus on recent and current events. Emphasis on U.S. media but includes comparisons with other countries. Issues include human rights, bias and propaganda, dissent and press freedoms, changes in methods and business of journalism and roles of technology and social media. Instructor: Bennett. One course. C-L: Public Policy Studies 368S

390. Special Topics in Policy Journalism and Media Studies. Selected policy, journalism and media studies topics. Instructor: Staff. One course.
390A-01. Study Abroad/Away, Duke Program. Study abroad or study away, through a Duke-in-___ program, in which the area of study focuses on policy journalism or media studies. Instructor: Staff. One course.

390A-02. Study Abroad/Away, non-Duke Program. Study Abroad or Study Away, through a program that is not a Duke-in-___ program. The area of academic focus must relate to policy journalism or media studies. Instructor: Staff. One course.

391. Independent Study. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or project containing significant analysis and interpretation of a previously approved topic. Consent of instructor and chair of policy journalism & media studies certificate program required. Instructor: Staff. One course.

410. Policy Journalism and Media Studies Capstone Course. R, SS Capstone course for the Policy Journalism and Media Studies certificate. Course to be taken after the student completes an internship in a media organization. Designed to integrate student's practical experience with the more conceptual and theoretical knowledge gleaned from the classroom. Students meet in formal course setting to discuss what they have learned, present examples of the work they have accomplished culminating in a research paper. Course requirements include writing a major research paper that synthesizes ideas and concepts learned in coursework with the internship's practical experience and a class presentation about the student's internship. Instructor consent required. Instructor: Rogerson or Roselle. One course. C-L: Public Policy Studies 410

675S. Advanced Magazine Journalism. R, SS, W Advanced version of Public Policy Studies 366S. Students study current magazines as cultural documents; read and analyze stories across a broad swath of magazines; research, report, and write stories on complex public policy issues; conceptualize a magazine as a class project. Instructor: Bliwise. One course. C-L: Public Policy Studies 675S, Policy Journalism and Media Studies

676. Media and Social Change. CCI, R, SS, STS Media perform crucial connecting links between civil society and leadership. Authoritarian regimes or single-party states seeking to suppress formation of civil society can be changed drastically when media use changes. This course will examine why and how such processes can take place, focusing on Russia, Eastern Europe, and other cases, such as China. Instructor: Staff. One course. C-L: Political Science 619, Public Policy Studies 676, Russian 516

Journalism Practical Core Course Cluster

Documentary Studies
356S. Magazine Journalism
Public Policy Studies
365S. Television Journalism
366S. Magazine Journalism
367S. News Writing and Reporting
Visual and Media Studies
305S. Television Journalism
306S. Magazine Journalism
307S. News Writing and Reporting

Elective Courses

Art History
203. Visualizing Cultural Dissent in Modernism, 1880-1945
537S. Critical Studies in New Media
Arts of the Moving Image
201. Introduction to Film Studies
207. Cultural History of the Televisual
325. Fundamentals of Web-Based Multimedia Communications
331S. The Documentary Experience: A Video Approach
333S. Editing the TV Documentary: From Creativity to Collaboration to Negotiation

Asian & Middle Eastern Studies
325. Islamic Awakening: Revival and Reform
335. Chinese Media and Pop Culture

Computer Science
92L. Technical and Social Analysis of Information and the Internet

Cultural Anthropology
106S. The Documentary Experience: A Video Approach
170. Advertising and Society: Global Perspective (DS4)
213. Cyborgs
272S. Advertising and Masculinity

**Documentary Studies**
105S. The Documentary Experience: A Video Approach
111S. Documentary Writing: Creative Nonfiction Through Fieldwork
230S. Small Town USA: Local Collaborations
264. Introduction to Film Studies
279S. Editing the TV Documentary: From Creativity to Collaboration to Negotiation
290S. Special Topics in Documentary Studies
310S. The Short Audio Documentary
415S. Advanced Documentary Photography

**English**
111S. Documentary Writing: Creative Nonfiction Through Fieldwork
181. Introduction to Film Studies
310A. The Business of Art and Media
391A. Duke in New York Arts and Media Independent Stud

**Environment**
364S. Science and The Media

**History**
125S. The Documentary Experience: A Video Approach
298. Genocide in the Twentieth Century

**Information Science and Information Studies**
101L. Technical and Social Analysis of Information and the Internet
240. Fundamentals of Web-Based Multimedia Communications
283. Cultural History of the Televisual
294L. Interactive Graphics: Critical Code
535. Chinese Media and Pop Culture
565S. New Media, Memory, and the Visual Archive
650S. Critical Studies in New Media

**International Comparative Studies**
273S. Advertising and Masculinity

**Linguistics**
170. Advertising and Society: Global Perspective (DS4)

**Literature**
110. Introduction to Film Studies
621S. Critical Studies in New Media

**Music**
222S. Radio: The Theater of the Mind

**Physical Education**
212. Sports Media

**Political Science**
105S. The Documentary Experience: A Video Approach
201. Public Opinion
242. Campaigns and Elections
501S. Politics and Media in the United States
619. Media and Social Change

**Public Policy Studies**
170S. The Documentary Experience: A Video Approach
290. Selected Public Policy Topics
372. Information, Policy, and Ethics
373S. Intellectual Property: Law, Policy, and Practice
379S. The First Amendment in the Digital Age
381S. Science and The Media
382S. Narrative Journalism in the Digital Age
384S. Global Democratization: Uses and Misuses of Ratings and Measurements
385S. Higher Education and The News Media
389S. Small Town USA: Local Collaborations
398S. Advanced Documentary Photography
415. Critical Reflection and Adaptive Leadership in Complex Systems
674. Media and Democracy
675S. Advanced Magazine Journalism
676. Media and Social Change

**Religious Studies**
372. Islamic Awakening: Revival and Reform

**Russian**
Theater Studies
207S. Radio: The Theater of the Mind
278. Introduction to Film Studies

Turkish
372. Representing the Middle East

Visual Arts
232S. Small Town USA: Local Collaborations
242L. Interactive Graphics: Critical Code
415S. Advanced Documentary Photography

Visual and Media Studies
106S. The Documentary Experience: A Video Approach
170. Advertising and Society: Global Perspective (DS4)
203. Visualizing Cultural Dissent in Modernism, 1880-1945
224S. Small Town USA: Local Collaborations
274S. Editing the TV Documentary: From Creativity to Collaboration to Negotiation
288. Fundamentals of Web-Based Multimedia Communications
289. Introduction to Film Studies
345. Cultural History of the Televisual
397L. Interactive Graphics: Critical Code
415S. Advanced Documentary Photography
561S. Critical Studies in New Media
563. Media and Democracy
565S. New Media, Memory, and the Visual Archive

Women's Studies
215. Cyborgs

Polish
For courses in Polish, see Slavic and Eurasian studies on page 606.

Political Science
Professor Knight, Chair; Professor deMarchi, Associate Chair; Associate Professor Leventoglu, Director of Undergraduate Studies; Professors Aldrich, deMarchi, Feaver, Gillespie, Grant, Grieco, Hamilton (Public Policy), Hough, Jentleson (Public Policy), Kitschelt, Knight, Krishna (Public Policy), Kuran (Economics), Lange, McClain, McCubbins, Michiewicz (Public Policy), Munger, Niou, Price, Remmer, Rohde, Rosenberg (Philosophy), Siegel, Spragens, Vanberg, Ward, and Wibbels; Associate Professors Beardsley, Beramendi, Buthe, Goss (Public Policy), Hacohen (History), Haynie, Hillygus, Leventoglu, Malesky, Mayer (Public Policy); Assistant Professors Balcells, Bermeo (Public Policy), Johnson (Public Policy), Jardina, Johnston, Kelley (Public Policy), Kirshner, and Siegel (Law); Professors Emeriti Eldridge, Fish, Hall, Holsti, Horowitz (Law), Johns, Kornberg, McKean, and Paletz; Research Professors Emeriti Euben and Soskice; Research Professors Brennan and Keech; Adjunct Professors Engstrom, MacKuen, and Stimson; Adjunct Associate Professor Kessler; Associate Professor of the Practice Charney (Public Policy) and Maghraoui

A major or a minor is available in this department.

Courses in political science for undergraduates are offered in six subfields: political institutions; political economy; security, peace and conflict; political behavior and identity; political methodology; and political philosophy. More information on courses and subfields is found at www.poli.duke.edu/undergraduate. The area of knowledge designation is followed by the relevant curriculum codes. Following the course descriptions, you will find information on internships, and requirements for the major, minor, and honors.
Courses in Political Science (POLSCI)

Introductory Courses

The following courses introduce the study of political science. Courses numbered 89S, and 110 through 190 serve as introductions to the discipline. Students ordinarily will take at least one of these courses before proceeding to more advanced courses. Some advanced courses may require a particular introductory course as a prerequisite.


21. Comparative Government and Politics. Credit for Advanced Placement on the basis of the College Board examination in comparative government and politics. Does not satisfy course requirements of the political science major. One course.

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.


108. Introduction to African Studies (DS3 or DS4). ALP, CCI, CZ One course. C-L: see African and African American Studies 103; also C-L: Cultural Anthropology 105, History 129, International Comparative Studies 110

110. Comparative Approaches to Global Issues. CCI, CZ, SS, W One course. C-L: see International Comparative Studies 195; also C-L: Cultural Anthropology 195, History 103, Sociology 195, Women's Studies 195, Marxism and Society

114D. From Voting to Protests: Introduction to Political Attitudes, Groups and Behaviors. CCI, SS Covers basic core concepts for understanding political behavior - attitudes, beliefs, and actions of the general public in political life - and the development and consequences of racial, ethnic, and other types of (politically relevant) identities. Broadly comparative approach, looking at publics throughout the world. Special focus on political behavior and identities in democracies, where behavior is consequential in ordinary workings of politics. Also examines extraordinary political behavior, such as participation in protests, riots, and civil wars. Instructor: Staff. One course.

115. Rules of Power: How Institutions Shape What Politics Deliver. SS Formation of states out of tribal societies; predatory and self-limiting rules; rule of law; forms of non-democratic political organization: military, personal, single party rule; democracy and transitions to democracy; institutional components of democratic rule: presidential and parliamentary executives; legislatures and their task structures (debate, oversight, law preparation, budgeting); electoral laws and political parties; veto-institutions: judicial control, federal delegation of authority to political subsidiaries; consequences of institutional choice: economic performance, political regime support. Instructor: Staff. One course.

115D. Rules of Power: How Institutions Shape What Politics Deliver. SS Same as Political Science 115 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course.

116. The American Political System. SS Focus on the institutional structure of the American national government, the goals of the political actors who operate within it, and the contexts that affect political action. Institutional analysis of the effects of the original constitutional structure and of developments since. Emphasis on the relationship between the preferences of the general public and the decisions of government actors. Instructor: Staff. One course.

116D. The American Political System. SS Same as Political Science 116 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course.

117. Democracy, Development and Violence: Introduction to Comparative Politics. CCI, EI, SS Analysis of creation and break down of political order. Exploration of why some societies establish democratic political orders but others dictatorial rule; how democracies and dictatorships work; impact of political regimes and institutions on economic growth, development, poverty, and inequality; civil wars and revolutions. Goal is to understand how political regimes and economic development shape the dynamics of collective violence and how political orders collapse. Examples drawn from contemporary world history and current world affairs, including advanced capitalist
democracies and low- and middle-income countries. Instructor: Staff. One course. C-L: International Comparative Studies

117D. Democracy, Development, and Violence: Introduction to Comparative Politics. CCI, EI, SS Same as Political Science 117 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course. C-L: International Comparative Studies, Islamic Studies

120D. The Challenges of Living an Ethical Life. CZ, EI One course. C-L: see Study of Ethics 101D

125D. Introduction to Global Development: Politics, Policy and Practice. CCI, SS Introduces intellectual tools for understanding why development varies across the globe and practical tools for designing and evaluating foreign aid programs. Course focuses on foundations for sustained development, including geography, historical legacies, technological innovation and political institutions, and practical challenges associated with aid programming aimed at promoting development. Also explores how international donors work, what constitutes a good development program, and how to evaluate whether a development project "works". Instructor: Wibbels. One course.

130D. Introduction to Political Inquiry. SS Introduction to the deductive, quantitative, and historical techniques used in empirical inquiry in political science. Examines the study of politics as a social science and explores the assumptions underlying various methodologies used in the field. Reviews methods of measurement, comparison, and the construction of empirical and theoretical models of political phenomena. Intended for students who have taken at least one political science course, but there are no prerequisites. Not open to students who have previously taken this course as Political Science 107. Instructor: Staff. One course.

145. Introduction to Political Economy. EI, SS Introduction to history of political economy. Three components: (1) history of economic thought as outgrowth of moral philosophy; (2) microeconomics and price theory; (3) macroeconomics and monetary policy. Intended as an economics course for non-majors. No prerequisite except high school mathematics. Does not count toward Economics major or minor. Instructor: Munger. One course. C-L: Economics 119, Energy and the Environment, Markets and Management Studies

160. Introduction to Security, Peace and Conflict. CCI, SS The theory and practice of international politics and foreign policy; analysis of the various elements of national power and its impact on differing world views and foreign policy behavior, the instruments of foreign policy, and the controls of state/nation behavior across different historical periods and from different national and analytical perspectives. Instructor: Staff. One course.

160D. Introduction to Security, Peace and Conflict. CCI, SS Same as Political Science 160 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course.

175. Introduction to Political Philosophy. EI, SS An intensive comparative examination of the nature and enduring problems of political philosophy through the confrontation, interpretation, and normative assessment of classic texts from the Greek polis to the present. Selected theorists and their arguments and beliefs within the Western political tradition concerning justice, the good life, freedom, community, power, authority, and others. Careful attention to the ways argument and rhetoric operate in texts of political philosophy, as well as diverse modes of interpretation. Instructor: Staff. One course. C-L: Study of Ethics

175D. Introduction to Political Philosophy. EI, SS Same as Political Science 175 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course. C-L: Study of Ethics

175FS. Freedom and Responsibility. EI, SS, W Conflicting visions of freedom and responsibility that characterize the modern world; the possibility of leading ethical lives in the face of conflicting demands that a complex vision of the good engenders. Readings include Luther, Hobbes, Locke, Rousseau, Marx, Kant, and Jack London. Course aims to be an intense introduction to Western philosophical ideas of freedom and responsibility. Instructor: Gillespie. One course. C-L: Philosophy 123FS, Study of Ethics

180FS. Hierarchy and Spontaneous Order: The Nature of Freedom in Political and Economic Organizations (C-N). EI, SS, W An examination, drawing on great works of political and economic thought, of ideal and real regimes to evaluate two opposed positions: that hierarchy and some form of imposed coercive organization are essential to liberty and human self-realization, and that the most important kinds of order and action in human societies are spontaneous and voluntary. Close scrutiny and interpretation of texts on religion and historical arguments. Readings include Aristotle, Plato, Hobbes, Locke, Rousseau, and other classic texts. Open only to students in the Focus Program. Instructor: Gillespie. One course.
181FS. Reason, Virtue, and Rights. CCI, CZ, EI, SS The theoretical meanings and practical consequences of historical views of rights; their philosophical resuppositions in relation to a view of human nature and of reason. Open only to students in the Focus Program. Instructor consent required. Instructor: Hull. One course.

182FS. Introduction to Middle East Politics. CCI, CZ, EI, SS Introduction to political systems, processes, movements, and conflicts in the Middle East. Open only to students in the Focus Program. Instructor: Maghraoui. One course. C-L: Islamic Studies

183FS. Conflict, Collusion, and Cooperation. SS Applications of modern decision theory to the study of political science. Topics include: individual decision theory and rational choice; game theory and human interaction; and social choice theory and the mechanisms by which individual choices are aggregated into collective choices. Political institutions such as voting rules, legislatures, parties, and hierarchy, alternative voting methods and political institutions, and how societies solve some practical distributive problems. Although course has no mathematical prerequisites, students should be willing to consider abstract models and follow logically rigorous arguments. Open only to students in the Focus Program. Instructor: Demarchi. One course.

184FS. Ancient and Modern Liberty. CCI, CZ, EI, SS Introduction to various conceptions of liberty in Greek and Roman political and philosophical writing. Considerations of such questions as: what is distinctive about the modern conceptions of political and civil liberty; whether there is any necessary ethical connection between liberty and virtue, or whether there is liberty and active citizenship, or liberty and privacy; whether ancient conceptions of liberty can still serve as a model in contemporary politics and should be considered exemplary or inferior to modern conceptions of freedom. Open only to students in the Focus Program. Instructor: Grant. One course. C-L: Classical Studies 186FS

185FS. The Politics of Language. SS One course. C-L: see Slavic and Eurasian Studies 215FS; also C-L: Linguistics 213FS, International Comparative Studies 228FS

187FS. American Democracy: Two Centuries of Creating Institutions to Achieve its Principles. CZ, SS Analysis of American democracy: rooted in stirring sentences (“all men are created equal”), yet knowingly designed imperfectly. How have American political institutions been created and recreated? Is “a more perfect union” possible or illusory? How can we reconcile politics that often expands political opportunities for citizens, yet leads politicians to a shutdown they claim they did not want? Open only to students in the FOCUS Program. Instructor consent required. Instructor: Aldrich. One course. C-L: Study of Ethics 187FS

188FS. American Perspectives on Citizenship. EI, SS An overview of American perspectives on citizenship. Explores ongoing controversies about the influence of liberalism and republicanism on American conceptions of citizenship, whether American individualism threatens civic duty, whether civil disobedience is justified, whether there are certain values and experiences that all American citizens should share, and whether national identities are relevant in an increasingly global world. Open only to students in the FOCUS Program. Director of Undergraduate Studies consent required. Instructor: Hanagan. One course. C-L: Study of Ethics 188FS

190FS. Special Topics in the Focus Program. Open only to students in the Focus Program. Topics differ by semester. Instructor: Staff. One course.

Study Abroad Courses
190A. Duke-Administered Study Abroad: Special Topics in Political Science. Topics differ by section. Instructor: Staff. One course.

213SA. Culture and Politics in Turkey and the Middle East. CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 343SA; also C-L: Asian & Middle Eastern Studies 303SA

214SA. Media and Power in Washington. SS One course. C-L: see Public Policy Studies 238SA

240SA. Theory and Practice: People, Places and Policy Cases. SS One course. C-L: see Public Policy Studies 217SA


283A. Duke Summer/Semester Program: Madrid. CCI, SS Instructor: Staff. One course.


285A. Duke Summer/Semester Program: St. Petersburg, Russia. CCI, SS Permission of instructor required. Instructor: Staff. One course.


287A. Duke Semester Program: Venice. CCI, SS Topics differ by section. One course.


293A. Research Independent Study on Contemporary China. R Research and field studies culminating in a paper approved and supervised by the resident director of the Duke in China program. Includes field trips on cultural and societal changes in contemporary China. Offered only in the Duke in China Program. Instructor: Staff. One course.


297A. Political Philosophy of Globalization. CCI, CZ, EI, SS One course. C-L: see Philosophy 237A; also C-L: Public Policy Studies 204A, Economics 303A

298A. Themes in Chinese Culture and History. CCI, CZ, SS One course. C-L: see Cultural Anthropology 343A; also C-L: History 224A, International Comparative Studies

299. Environment, Health, and Development in China. CCI, EI, SS, STS One course. C-L: see Cultural Anthropology 395A; also C-L: Global Health 383A, Ethics Courses Offered Through Other Departments

Other Undergraduate Courses

201. Public Opinion. EI, SS Examines nature and role of public opinion in American democracy, providing broad-based introduction to dynamics of citizens’ social and political attitudes in contemporary United States. Goal of course is to help students arrive at a more comprehensive understanding of forces that shape beliefs, attitudes, and opinions of American public, the means by which those views are publicly expressed, and the influence of those opinions on policy outcomes. Instructor: Hillygus. One course. C-L: Policy Journalism and Media

201S. Public Opinion. EI, SS Same as Political Science 201 except in seminar format. Instructor: Hillygus. One course.

202. Film, Race and Politics. CCI, SS Broad overview of the salience of race in American politics and film, and how film structure black, Latino, Asian-American, and white attitudes on a number of cultural, political, and policy dimensions. Instructor: McClain. One course.

203. Women and the Political Process. R, SS One course. C-L: see Women's Studies 225

204. Race, Ethnicity and Citizenship. CCI, SS Provides a critical framework for which to access origins, manifestations and evolution of race, ethnicity and citizenship. Reviews and addresses origins of and theoretical orientations of race, ethnicity and citizenship as constructs with social and political implications. Examines different ethnographies as well as quantitative studies to pinpoint how social scientists actually examine and draw conclusions about race, ethnicity and citizenship. Instructor: Staff. One course. C-L: African and African American Studies 280, Sociology 204

205D. Introduction to Racial and Ethnic Minorities in American Politics. CCI, SS The politics of four of the United States principal racial minority groups -- blacks, Latinos, Asians, and American Indians. Instruction is provided in two lectures and one small discussion meeting each week. Instructor: McClain. One course. C-L: African and African American Studies 257D

206. American Values, Institutions, and Culture--1760 to 1845. CCI, SS Introduction to American politics and institutions. Political thought of the American and French revolutions; the formation of the institutions of American government; the role of property, especially slavery, in shaping American politics and policy; and the expansion of American ambition, through "manifest destiny" at home and the Monroe doctrine abroad. Instructor: Munger. One course.

207. Reason and Passion in Politics. SS Examines the psychology of politics and political judgment at the intersection of reason and passion. Explores how emotion and motivation interact with cognition to produce political and moral judgments, and how political elites utilize these for their own ends. Significant consideration is given to questions of (1) the possible severability of reason from passion, particularly at the level of neurophysiology, (2) the roles that passion plays for democratic citizenship, (3) the ego-protective functions of political reasoning, and (4) the broader normative implications of passion's various influences for democracy, both good and bad. Instructor: Johnston. One course.

208. Mass Media and American Politics. SS Course examines the changing relationship among people, mass media, and national politics. Topics include how mass media has changed the nature of politics from the Revolutionary Era until the First World War; classic and contemporary literature about the political use of television; and the present and near future political issues and the role of media. Instructor: Staff. One course.

209D. Contemporary Constitutional Law. EI, SS Exploration of the role of the Supreme Court in the context of constitutional issues of particular importance in 21st century America. Includes the study of the structure of the Court itself, including an analysis of the nomination process, as well as the study of the Court's work across a range of issues highlighting the most significant cases of the past decade, such as Citizens United (political speech for corporations) and National Federal v. Sebelius (Affordable Care Act). Focus throughout the course will be on opposing theories of constitutional interpretation. Instructor: Metzloff. One course.

210. Religion and American Politics. CZ, EI Course is a survey of the influence religion has had on American politics from the Puritan founding to the present. Instructor: Staff. One course.

211. Democracy: Ancient and Modern. CCI, CZ, EI, SS One course. C-L: see Classical Studies 275; also C-L: History 234

212. The American Presidency. EI, SS The American presidency and its influence on American government and politics across various historical periods. The role of the presidency as it relates to important ethical and political issues and controversies at various times in American political history. Comparison with executive offices in various countries. Instructor: Hough. One course.

215. American Constitutional Law. EI, SS Survey of the law of the United States Constitution. Focus on both constitutional structure, including separation of powers and federalism, and civil rights and civil liberties. Attention to reading, analyzing, and evaluating court opinions and legal arguments. Instructor: Staff. One course. C-L: History 366

216. Modern American Constitutional Development II. SS Development of the United States Constitution through Supreme Court decisions: national power and federalism in the context of modern political and economic life, New Deal to the present. Instructor: Staff. One course. C-L: History 367

217. Law and Politics. SS Examination of the nature and functions of law and legal institutions through critical interpretation of legal texts and practices. Relationships among bench, bar, legislators, and administrators in the development of public as well as private law. Attention to judicial reasoning used in the resolution of cases and controversies involving the common law, statutes including selected aspects of civil procedure, and the American Constitution. Instructor: Staff. One course.
218. Constitutional Rights in U.S. History. CZ, EI, SS One course. C-L: see History 339

219. Comparative Government and Politics: Selected Countries. CCI, SS Special topics course treating the evolution and function of various national political systems at different stages of their historical and political development. The focus changes depending upon which nations and peoples are analyzed. Instructor: Staff. One course.

220. Putin's Russia: The History of Economic and Political Consolidation. CCI, CZ, EI, SS One course. C-L: see History 283; also C-L: Slavic and Eurasian Studies 382

221. South African History, 1870 to the Present. CCI, CZ, EI, SS One course. C-L: see History 208; also C-L: African and African American Studies 214

222. The Arab Spring Revolutions. CCI, EI, SS Examines mass protest movements that topple autocratic leaders in the Arab World. Studies causes, dynamics, and pattern of authoritarian breakdown and transition in Tunisia, Egypt, Libya, Yemen and Syria. Questions include: What is driving sudden protest movements? Why now? How important is role of youths and new technologies of communication? What does religion have to do with these movements? Why have Arab republics been more vulnerable? Are Arab monarchies (Jordan, Morocco, and Saudi Arabia) really immune? Instructor: Maghraoui and McLarney. One course. C-L: Asian & Middle Eastern Studies 229, Islamic Studies

223S. Critical Current Issues in North America. CCI, EI, SS, W One course. C-L: see Canadian Studies 250S; also C-L: Public Policy Studies 221S, International Comparative Studies 251S

225S. Research in International Policy Issues. CCI, R, SS One course. C-L: see Public Policy Studies 237S

226. The European Union: History, Institutions and Policies. SS Comprehensive introduction to European integration with respect to both "process" and "outcome". Course traces the evolution of the European integration process from the late 1940's onwards. Discussion of the composition and core functions of major European Union institutions including the European Parliament, European Council, and European Commission. Study major areas of policy including agriculture policy, cohesion policy, economic and monetary policy, and foreign and security policy. Instructor: Staff. One course.


230. Networks in a Globalizing World. R, SS Network perspective on understanding politics; focus on aspects of security, peace, and conflict as seen from a global network perspective; focus on major concepts of network analysis: nodes, links, cliques, centrality, as well as the dynamics of the spread of political phenomena through networks. Students will learn to conduct studies of politics that use network concepts and data. Instructor: Staff. One course.

231. Wealth and Poverty of Nations: Prosperity and Distribution in the Long Run. SS Overview of the different explanations for the economic development of nations in the long run and the differential patterns of distribution within them. Approach is global (what explains the dynamics of global inequality, the contrast between the developed and the developing world), historical (long term structural constraints and early institutional choices and their legacies), and analytical (theoretical identification of the mechanisms driving the wealth and poverty of nations, and the methodological strategies to approach them empirically). Instructor: Beramendi. One course. C-L: Markets and Management Studies

232. Introduction to Terrorism. CCI, SS Nature of terrorist organizations and government responses to them. Includes analysis of different aspects of terrorism: historical, social, cultural, economic, political, religious context; determinants of terrorism at state and individual level; organizational structure of terrorist groups’ weapons and tactics; mobilization and recruitment within terror networks; terrorist finance; methods of counterterrorism. Details different methods of study of terrorism. Instructor: Siegel. One course.

233. Nuclear Weapons: US Foreign Policy and the Challenges of Global Proliferation. SS, STS Implication of nuclear weapons to U.S. foreign policy and international politics. Topics include basic science of nuclear fission and fusion, history of nuclear proliferation, theory of nuclear deterrence, evolution of U.S. nuclear posture during and
after Cold War, and case studies of other nuclear proliferation with detailed coverage of North Korea and Iran. Emphasis in readings and assignments will be placed on being able to understand how these weapons apply to theories of international relations and foreign policy and on being able to make causal inferences regarding their importance. Instructor: Beardsley. One course.

235S. Comparative Urban Politics and Policymaking. CCI, EI, SS Duke Immerse Seminar. A comparative examination and analysis of urban governance in South Africa and the U.S. Examines potential consequences of persistent racial and class disparities for housing and neighborhoods, public health, education, community infrastructure, and general economic and social development. Specific attention to how the physical layout, government structures, politics, culture, and the civil society of cities and urban areas may both promote and hinder human development and social justice. Instructor consent required. Instructor: Haynie and Lawrence. One course.

236S. Advanced Research Seminar in Urban Politics and Policymaking. CCI, R, SS, W Duke Immerse Seminar. Advanced research and writing seminar. Participants produce a 30-40 page research paper based on field work and archival research experiences in Durham and an approved South African city. Includes tutorials in research design and comparative research methods. There is a required field work component of the course which entails a two-week trip to South Africa. Students will collect data, do interviews, visit municipalities offices, and or spend time at NGOs in Pietermaritzburg. Instructor consent required. Instructor: Haynie and Lawrence. One course.

239S. Political Communication in a Changing Media Environment. R, SS Examination of interaction between citizens, media and political actors in today's fragmented information environment. Topics include evolution of political communication and media, emergence of new communication technologies, changes in campaign communication strategy, nature of news, theories of attitude formation and change, and role of political communications in campaigns and elections. Focus on implications of changing information environment for political communication strategies and for citizen knowledge and engagement in democratic process. Instructor: Hillygus. One course.

240. Political Psychology. CCI, SS How individuals interact with their political environment and with other individuals and groups. Theories and findings from both disciplines to gain deeper insights into political processes and decisions. Likely topics include individuals' political attitudes, decisions and judgments. Other likely topics include theories of how people cooperate with each other and how groups come into conflict with each other, psychological approaches to analyzing political leaders and/or the way members of different cultures process political information. Instructor: Staff. One course. C-L: Psychology 225

241S. Political Persuasion. R, SS Examines political persuasion and democratic decision-making, with particular attention paid to political campaigns in the U.S. Explores what techniques political elites use to attempt to influence mass opinions and behaviors; who is likely to be influenced by such appeals; and the role of the mass media. Readings drawn from political communication, political psychology, and political behavior. Pre-requisite: any one field introduction taken at the 100 level. Instructor: Hillygus. One course.

242. Campaigns and Elections. SS The campaign process, voting and elections in the United States, with emphasis on the varying role of media in campaigns. The nomination and election process; focus on the critical evaluation of various empirical models of voting behavior in presidential and congressional elections and the impact of election outcomes on the content and direction of public policy in various historical eras in American politics. Instructor: Staff. One course. C-L: Policy Journalism and Media


245. American Constitutional Development and Interpretation I: The Constitutional Structure. EI, SS Introduction to primary themes of American constitutional structure (judicial review, democracy, federalism, and separation of powers), their shaping and reshaping through cultural conflict over course of American history, and basic methods of constitutional interpretation (text, structure, history, precedent, consequences, identity, and aspirationalism). Special focus on relationships among constitutional text, judicial doctrine, and constitutional interpretation outside the courts. Instructor: Siegel. One course. C-L: Public Policy Studies 251

249. Denial, Faith, Reason: Sustainability and Survival. EI One course. C-L: see Study of Ethics 285; also C-L: Economics 285, Environment 276, History 292

250. The Politics of International Economic Relations: America in the World Economy. CCI, SS Introduction to politics of international economic relations through an examination of persistent major debates and current events
in world politics and global economy. Topics include politics of trade; politics of money and finance; foreign direct investment, multinational corporations, and global value chains; politics of foreign aid and economic development; and corporate social responsibility in a global economy. Examines how material interests, historical and socio-political context, and institutions at domestic and international level shape a country's foreign economic policies. Special focus on U.S. foreign economic policy in comparative perspective. Instructor: Buthe. One course. C-L: Public Policy Studies 240, Markets and Management Studies

252. Life Within Capitalism: A History of its Values, Measures and Struggles. CZ, EI One course. C-L: see Study of Ethics 271; also C-L: Economics 270, History 284

261. Ethnicity and U S European Policy. SS The domestic politics of the Cold War. The impact of the conflicts between the homelands of the European-American ethnic groups in World War I, World War II, and the postwar settlement upon American domestic politics and foreign policy towards Europe. The manner in which Presidents and political parties handled this enormously sensitive issues, and the role of code words in the political discourse on foreign policy. Instructor: Hough. One course. C-L: International Comparative Studies 261

262. The Holocaust. CCI, CZ, EI, STS One course. C-L: see History 297; also C-L: Jewish Studies 342, Religion 342

265. Introduction to American Political Thought. EI, SS Basic elements of the American political tradition examined through a critical analysis of the ethical and political issues and controversies that developed from its historical English roots to the present day. Instructor: Grant or Spragens. One course. C-L: Study of Ethics

266. Distributive Justice. EI, SS Exploration of what constitutes a fair or just distribution of goods in society (e.g. whatever results from a free market; to each according to her needs; whatever distribution is to the advantage of the least advantaged.). Topics include the ownership of private property, egalitarianism, welfare state liberalism, socialism. Readings in political theory with emphasis upon contemporary theories. Instructor: Charney or Spragens. One course. C-L: Public Policy Studies 234S, Study of Ethics

267. Theories of Liberal Democracy. EI, SS Classic theorists, such as Locke, Rousseau, Mill, Tocqueville, Madison, and Marx, and contemporary theories of liberal democracy. Attention to the historical setting, the normative philosophical presuppositions, and the ethical and policy implications of the theories. Instructor: Grant or Spragens. One course. C-L: International Comparative Studies 267, Study of Ethics

268. Politics and Literature. ALP, EI, SS The enduring questions of ethical and political issues and controversies as expressed in political philosophy and politics and as illustrated in literature. Comparative historical, literary, and philosophical analysis. Instructor: Staff. One course. C-L: Study of Ethics

269. Ancient Political Theory. EI, SS, W Ancient political philosophy, history, and drama emphasizing the comparison of ancient and modern democracy and the alternative ancient understanding of the conception of the individual and of society. Readings from Plato, Sophocles, Aristophanes, and Thucydides. Instruction is provided in two lectures and one small discussion meeting each week. Instructor: Grant. C-L: Classical Studies 420D. One course. C-L: Classical Studies 374, Ethics Courses Offered Through Other Departments

270. Ambition and Politics. EI, SS, W A theoretical examination of the role of ambition in politics, including works by or on Homer, Plato, Plutarch, Machiavelli, Shakespeare, Tocqueville, Nietzsche, and Hitler. Instructor: Gillespie. One course. C-L: Study of Ethics

272. Human Rights in Theory and Practice. CCI, CZ, EI, SS The nature and value of human rights; examining some major debates over their status and meaning and assessing the role which the idea of human rights has played in changing lives, practices, and institutions. Questions considered include: whether commitments to human rights depend on a belief in moral truth; whether the idea of universal human rights makes sense in a culturally diverse world; and what forms of social action are most likely to achieve respect for human rights. Instructor: Staff. One course. C-L: Public Policy Studies 231, Philosophy 262, International Comparative Studies 272, Documentary Studies, Study of Ethics, Global Health

273S. Citizenship and Civic Action: From the Nineteenth Century Township to the Global Village. EI, SS Examination of prominent theories of citizenship alongside accounts of real-world social movements, civic associations and political actors. Topics to be considered include: the role of neighborhood associations and local government in a globalizing world, the challenges of transnational political action, the feasibility and desirability of

275. Left, Right, and Center: Competing Political Ideals. CCI, EI, SS Analysis of liberalism, conservatism, socialism, and their diverse conceptions of justice, freedom, community, and equality. Exploration of how these political philosophies interpret various social, religious, and political issues. The origins of these ideologies in early modern European thought. Instructor: Staff. One course. C-L: International Comparative Studies 275, Study of Ethics

276. Contemporary Documentary Film: Filmmakers and the Full Frame Documentary Film Festival. ALP, CCI, STS One course. C-L: see Arts of the Moving Image 205; also C-L: Documentary Studies 270, Public Policy Studies 374, Visual and Media Studies 264

277D. The Ethics of War: Self-Defense, Humanitarian Intervention, Terrorism and Law. EI, SS Examines ethical questions of war: 1) when are you justified in taking up arms and killing others?; 2) what limits, if any, does morality place on how wars can be prosecuted?; 3) what is required of combatants in the aftermath of conflict?; 4) how do the existence of international laws and institutions affect our answers to these questions? Will also consider the ethical dilemmas raised by the following issues: preemptive invasions, terrorism, cyber and nuclear weapons, and unmanned drones. Readings include classic and modern works of just war theory. Instructor: Kirshner. One course.

291-1. Sophomore/Junior Independent Study Political Theory. Individual non-research directed study in a field of special interest, under the supervision of a faculty member. Offered only in areas of study not otherwise provided in department course offerings, and with the direct approval and sponsorship of a faculty member. Will not generally be offered unless student has first established an extensive record of work with the faculty member. Written permission of faculty member, and detailed description of course of directed study, required before contacting the Director of Undergraduate Studies for permission number. Fulfills a political theory course requirement. Instructor: Staff. One course.

291-2. Sophomore/Junior Independent Study Political Institutions. Same as Political Science 291-1 except fulfills a political institutions course requirement. Instructor: Staff. One course.


291-4. Sophomore/Junior Independent Study Political Behavior and Identities. Same as Political Science 291-1 except fulfills a political behavior and identities course requirement. Instructor: Staff. One course.

291-5. Sophomore/Junior Independent Study Political Methodology. Same as Political Science 291-1 except fulfills a political methodology course requirement. Instructor: Staff. One course.

291-6. Sophomore/Junior Independent Study Political Economy. Same as Political Science 291-1 except fulfills a political economy course requirement. Instructor: Staff. One course.

292-1. Internship. Open to students engaging in practical or governmental work experience during the summer or a regular semester. A faculty member in the department will supervise a program of study related to the work experience, including a substantive paper on a politics-related topic, containing significant analysis and interpretation. Consent of director of undergraduate studies required. Instructor: Staff. One course.


303. Gender, Race, and Ethnicity in Politics and Public Policy. SS Examines gender, race, and ethnicity as salient and significant cleavages in politics, and explores how they factor into public policies and the policy making process. Also considers the distinctive roles women and racial and ethnic minorities play in the policy process. Topics include courts and the law, legislative processes, public opinion, and voting and elections. Specific policy domains examined may include healthcare, environmental, education, social welfare, affirmative action, and foreign policies. Instructor: Haynie. One course. C-L: African and African American Studies 241, Public Policy Studies 235, Women's Studies 303

304. Latino Immigration and Elections. R, SS Course investigates the role of Latino immigrants in the U.S. political system. Examines patterns of Latino immigration historically and when and how both citizen and non-
citizen Latinos engage in politics and to what extent these groups influence political outcomes. Pre-requisite: any one field introduction taken at the 100 level. Instructor: Staff. One course.

306S. Politics and the Libido. CCI, EI, SS The construction of gender and sexuality across nations and cultural groups. Effects of the libido on elite and mass political activities in the United States. Ethical and political issues and policy controversies at various times when the government has regulated or sought to regulate sex-inspired behavior. Instructor: Paletz. One course. C-L: Women's Studies, Study of Sexualities

307. Elections and Social Protest in Latin America. CCI, CZ, SS Introduction to the literature on electoral behavior and social movements and overview of elections and protest--who votes, who protests, and why they do it. Analysis of the following six countries: Bolivia, Mexico, Chile, Argentina, Venezuela, and Guatemala. Open to sophomores and juniors with a basic background in Latin American history. Instructor: Staff. One course. C-L: Latin American Studies 351

308. Islam and the State: Political Economy of Governance in the Middle East. CCI, CZ, R, SS One course. C-L: see Economics 326; also C-L: Islamic Studies

308S. Islam and the State: Political Economy of Governance in the Middle East. CCI, CZ, R, SS One course. C-L: see Economics 326S

309. Law and Constitutional Reform in Russia and the Former Soviet Union. CCI, CZ One course. C-L: see Russian 351

310. Political Analysis for Public Policy-Making. SS, W One course. C-L: see Public Policy Studies 301

311. Political Polarization in America: Causes and Consequences. SS Examines various conceptions of polarization; forces that led to recent apparent rise in polarization; the consequences of polarization for governance, civil discourse, political conflict. Instructor: Rohde. One course.

312. Dictators and Democrats in Modern Latin America (B). CCI, EI, R, SS The dynamics of political change in Latin America with emphasis on broad historical patterns of political conflict, institutional change, and socioeconomic development. Topics include: military rule, democratic transitions, civil-military relations, transitional justice, regional integration, and United State-Latin American relations. Instructor: Remmer. One course.

313. Social Movements in Age of Globalization. CCI, CZ, EI, SS One course. C-L: see Literature 332; also C-L: Sociology 323

314S. Ethics of Political Violence. EI, SS Engagement with questions of "what is done?" and "what ought to be done?" with respect to political violence. Topics include the institutionalization of violence by the state and quantitative and qualitative accounts of both state repression and rebellion in democracies and autocracies. Includes discussion of thinkers of the Renaissance, the Enlightenment, Industrial Revolution and post-colonial eras to understand ethics of the use of violence. Instructor: Staff. One course.

316. American Political Parties. SS Introduction to the American party system. Social choice, structural-functionalism, and systems theory: why parties might be a necessary component of advanced industrial societies. Comparison of different social settings (ethnic, religious, class divisions) and how constitutional and party structures may relate. Tripartite theory of parties: parties in the electorate, as organizations, and in government. Historical development of parties in the United States since the Founding. The impact of media, regional, racial, gender, ethnic, and class identities on American party development. Instructor: Staff. One course.

318. Congress and the President. SS, W Critical interpretations of public policies and institutional practices to better understand the United States system of divided government. Special attention to understanding the consequences of cooperative and adversarial goals of the executive branch and the Congress. Features of this institutional balance of power in policy-making; institutional and political origins of laws and regulations. Instructor: Staff. One course.

319. US Comparative State Politics. CCI, SS Intensive comparative examination of government, political cultures, and politics in the American States, including institutions (governors, legislatures, courts), history of federalism, policies, practices, and diverse cultural factors such as class, race, ethnicity, gender, religion, urban-rural-suburban residencies that affect state politics. Duke Immerse students only. Instructor consent required. Instructor: Haynie. One course.
321. International Law and International Institutions. CCI, R, SS, W The relationship between international politics and international law; how international institutions operate and affect social practices, and how legalization of institutions changes the manner of interpretation of legal texts. The nature of legal and political discourse over issues subject to international law such as human rights; issues of compliance with rules, the connections between international relations and domestic law, and the overall effects of international law and institutions on world politics; cross-national differences in attitudes toward issues such as environmental regulation, trade liberalization, and military intervention on behalf of human rights. Prerequisite: Political Science 160 or equivalent. Instructor: Staff. One course. C-L: International Comparative Studies 324, Markets and Management Studies

322. Introduction to Middle East Politics. CCI, CZ, EI, SS Introduction to political systems, processes, movements, and conflicts in the Middle East. Instructor: Maghraoui. One course. C-L: Islamic Studies

323. Political Regime Transitions: The Historical European and the Contemporary Global Experience. CCI, SS The development of the modern political systems of Britain, France, Germany, and other European countries; the spread of capitalism, the emergence of mass democracy and the rise of the welfare state. Contemporary developments examined in historical and theoretical perspective. Instructor: Kitschelt. One course.

324. Chinese Politics. CCI, SS The Communist revolution, the structure of the political system and political decision making in the People's Republic of China in different eras of its evolution. The relations between state and society, and the political implications and consequences of reforms undertaken in the post-Mao era. Instructor: Niou. One course. C-L: International Comparative Studies

325. Comparative Government and Politics: Western Europe. CCI, SS Modern political institutions and processes of European democracies: political parties, interest groups and parliaments; regional, religious, and class divisions; political participation and mobilization; relationships of state, society and economy; political, social and economic change in postwar Europe. Instructor: Kitschelt. One course.

326. China and the World. CCI, SS The formulation and development of Chinese foreign relations and foreign policy since 1949. The rationales of policy as well as organizational, cultural, and perceptual factors that influence Chinese foreign policy formulation. Instructor: Staff. One course. C-L: International Comparative Studies

327S. The Economic and Political Performance of Civilizations. CCI, CZ, R, SS One course. C-L: see Economics 351S

328. International Conflict Resolution. SS, W The origins of armed conflicts and the means to resolve them, with special attention to strategic interaction, international law and third-party conflict managers. Historical and contemporary case studies used to illustrate theories of the onset and termination of violence in both interstate and intrastate conflicts. Writing developed in a multi-part assessment of an ongoing conflict that include simulation of a peace process. Instructor: Beardsley. One course.


330. Quantitative Political Inquiry and Evaluation. QS, SS Theory and practice of causal inference in political science research and policy impact evaluation. Students master how to test hypotheses and evaluate the substantive impacts of policy treatments using regression, experimental and survey techniques. Also develop skills in software applications such as Stata and R. Assigned texts assist learning of both the quantitative methods and how they are applied in practice and assignments emphasize practical applications. Prerequisites: Statistical Science 101 or higher; first semester of calculus (Mathematics 21, 111L or 121). Not available if received credit for Political Science 130D in Spring 2013 (Malesky) or Fall 2013 (Beardsley). Instructor: Staff. One course.

or political philosophy. Instructor: Staff. One course. C-L: Economics 361, Philosophy 246, Study of Ethics, Information Science and Information Studies

332. Games and Politics. QS, SS Applications of modern decision theory to the study of political science. Topics include: individual decision theory and rational choice; game theory and human interaction; and social choice theory and the mechanisms by which individual choices are aggregated into collective choices. Political institutions such as voting rules, legislatures, parties, and hierarchy, alternative voting methods and political institutions, and how societies solve some practical distributive problems. Although course has no mathematical prerequisites, students should be willing to consider abstract models and follow logically rigorous arguments. Not open to students who have taken Political Science 671S. Instructor: Niou. One course.

335S. Economic, Political, and Social Institutions. CCI, SS Surveys theories of institutions based on economic, political and social perspectives with three parts: (1) an examination of what institutions are, how they originate, how they change, and why they often don't change; (2) consideration of the effects of different institutional arrangements on development, growth, and stability in nations; (3) normative theories of evaluation and comparison - are some institutions better than others, and how could we tell? Covers selections from Aristotle, Buchanan, Dewey, Durkheim, Marx, North, Ostrom, Weber, as well as other thinkers. Prerequisite: introductory course in political philosophy. Instructor: Munger. One course. C-L: Politics, Philosophy, and Economics

338. Political Economy of South East Asia. CCI, EI, SS Course studies the history, political institutions, and economic development of South East Asia. Topics include the history of the region including the pre-colonial period, forms of colonialism, the impact of World War II, the struggles for independence, nationalism, and communism, and the impact of the Asian Financial Crisis; tools of political economy to place the countries in a broader comparative perspective; and issues of great powers in South East Asia and the growing influence of political Islam in the region. Instructor: Malesky. One course.

339S. Politics of International Finance. SS Presentation of fundamental variables that shape international finance. Introduction to technical forces that determine international transactions, problems caused by unsustainable imbalances and subsequent domestic and international political responses; establishes a conceptual framework for understanding the dynamics and constraints of global economy. Instructor: Molano. One course.

340D. The Modern Regulatory State. CZ, EI, R, SS One course. C-L: see History 365D; also C-L: Public Policy Studies 219D, Environment 365D


344. Environmental Politics in the United States. EI, SS, STS Examine the role environmental issues play in the U.S. political system. Study the way ordinary citizens think about the environment: importance of environmental concerns and how environmental issues influence voting behavior. Assess the role played by each of the major institutions in American politics - Congress, the president, the bureaucracy, the judiciary, state and local governments, political parties, and the media. Pre-requisite: any one field introduction taken at the 100 level. Instructor: Staff. One course. C-L: Environment 345, Public Policy Studies 281, Energy and the Environment


346. Business, Politics, and Economic Growth. CCI, SS The historical origins of political institutions affecting economic growth across advanced capitalist countries in Europe, America, and East Asia: capital markets, labor relations, research and development policy, social policy; effect of globalization and technological change on these nationally diverse arrangements; global convergence of corporate governance, national divergence of labor relations, research and development policies, and social policies. Instructor: Kitschelt. One course. C-L: Markets and Management Studies

347. Globalization and Domestic Politics. CCI, EI, R, SS Examines the economic and political consequences of integrating international markets for democracy. Will explore the political and ethical implications of various features of globalization including trade, outsourcing, mobile finance capital, reform of the welfare state, international and intra-national inequality, uneven economic development, regional integration, etc. Class will end with a
consideration of political and policy challenges presented by globalizing markets. Instructor: Wibbels. One course. C-L: Markets and Management Studies


349. Political Economy of Latin America. CCI, SS Study of interaction between politics and economies in Latin America with central emphasis on political correlates of alternative strategies of economic development, the impact of global economic forces on domestic policy choice, and interrelationships among political institutions, electoral choice, public policy, and economic performance. Topics include financial meltdowns, market-oriented reform, democratic transitions, ethnic mobilization, and rise of leftist-populism in the region. Readings will combine discussion of specific countries with broader theoretical literature addressing major debates in study of political economy of development. Instructor: Remmer. One course. C-L: Latin American Studies

350. International Political Economy. CCI, R, SS Examination of the politics of international economic relations from the perspective of both advanced industrialized and developing countries. Focus on international trade; money and finance; multinational corporations and global value chains; foreign aid and the politics of development; distributional consequences of economic globalization; and the role of power and institutions in the governance of world economy. Instructor: Buthe. One course. C-L: Public Policy Studies 222, International Comparative Studies 350, Markets and Management Studies

351. Economic History and Modernization of the Islamic Middle East. CCI, CZ, SS, W One course. C-L: see Economics 306; also C-L: Islamic Studies

352S. U.S. Policy in the Middle East. CCI, EI, SS U.S. foreign policy: Middle East; Arab-Israeli-Palestinian conflict; oil and security; cold war; military cooperation and intervention; aid and democracy promotion; Iran, the Arab Spring; realism vs. liberalism in US foreign policy. Instructor: Maghraoui. One course.

353. Comparative Democratic Development. CCI, SS The past three decades have witnessed an unprecedented upsurge in democratic forms of rule in Asia, Africa, Eastern Europe, Latin America, and Middle East. Course explores reasons for this global pattern of political change, analyzes the process of political transition in a variety of empirical settings, and provides comparative perspective on challenges facing political leaders in new democracies. Instructor: Remmer. One course.


355. Comparative Health Care Systems. CCI, EI, SS One course. C-L: see Public Policy Studies 335; also C-L: Sociology 371, Ethics Courses Offered Through Other Departments, Global Health

356. Politics and Markets. EI, SS Exploration of relationship between politics and markets with focus on classical and contemporary works in political economy from authors such as Adam Smith, Anthony Downs, James Buchanan and John Tomasi. Topics include whether political liberty and economic liberty are importantly different, and whether people behave differently when making economic or political decisions. Instructor: Staff. One course.

357. Civilians in Path of War. EI, R, SS Major social science theories and ethical frameworks for understanding mass violence against civilians; prominent cases of such violence. Normative and legal restraints on killing of civilians; societal cleavages, goals of political leaders, guerilla warfare, effect of organizational or bureaucratic cultures, and regime type. Instructor: Staff. One course. C-L: Study of Ethics

358. Globalization and Public Policy. R, SS One course. C-L: see Public Policy Studies 212; also C-L: International Comparative Studies, Islamic Studies

360. Foundations of Modern International Politics. CCI, SS Causal mechanisms that relate domestic and international politics as introduced through basic game-theoretic examples. How domestic politics can affect state behavior and how international politics can reverberate on domestic politics. Discussion of various problem areas such as security, economics, and nationalism by focusing on institutions and processes. How globalization and
culture affect the structure and institutions that govern domestic and international interactions. No prerequisite, but Political Science 160 recommended. Instructor: Staff. One course.

361. Force and Statecraft. EI, SS The theory and practice of the use of force as an instrument of state policy in different historical periods and with different nations. Examines the ethical arguments and beliefs which have been fashioned in statecraft to justify or prohibit the use of force in international politics. Prerequisite: Political Science 160 or equivalent. Instructor: Staff. One course.

362. International Security. EI, SS, STS The various causes, processes and impacts of international conflict in contemporary international affairs. Factors that contribute to conflict, including the impact of scientific and technological developments on war and the ethical arguments and beliefs associated with war making. Contemporary and future threats to international security. Instructor: Staff. One course.

362D. International Security. EI, SS, STS Same as Political Science 301 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course. C-L: Islamic Studies

363. International Human Rights in World Politics. EI, SS Investigate the question of how and to what extent the rise of international human rights norms and discourse have affected the theory and practice of state sovereignty. Examine if and how international human rights norms, such as political, social and economic rights entailed in the international bill of rights and the prohibitions on genocide and torture pose limits on governments' freedom of action and decision-making, domestically and in their interactions with others. Analyze the effect that international human rights procedures, such as international criminal courts, regional human rights bodies and UN have on the nature and actions of sovereign states. Instructor: Staff. One course.

364. Political Geography of World Affairs. SS Role of geography in politics. Introduction to the map and cartography as methods for the presentation of political ideas and data. Major topics: Demography: Global Public Health, population dynamics, infectious diseases, and disability adjusted life expectancy around the globe; Economic forces: inequality, income, wealth, petroleum consumption and production, world trade, and productivity; Politics: the role of territory, political and economic freedoms, international and domestic conflicts, crime as conflict, foreign aid of all sorts (economic, military, humanitarian). Instructor: Ward. One course.

365D. Foreign Policy of the United States. CCI, SS Internal and external sources of American Foreign Policy, including the role of ethnicity, nationality, and distinct world views of Americans and other peoples. The formulation and conduct of American foreign policy in different historical periods with an examination of foreign policy in the post-Cold War era and prospects for alternative futures. Instruction is provided in two lectures and one small discussion meeting each week. Instructor: Feaver. One course.


369. International Conflict and Violence. CCI, R, SS, STS The various causes, processes and impacts of violent international and domestic social conflicts in international affairs. Emphasis on analyzing various factors that contribute to violence, including the impact of scientific and technological developments on war and the ethical arguments and beliefs associated with war making in different cultures. Analysis of those factors in various cultures that hinder or contribute to peace making and peace keeping following the termination of war. Instructor: Staff. One course.

370. War and Peace. CCI, R, SS Evaluation of the social science literature on the causes of war. Focus on theoretical and empirical works, using a variety of research strategies. Application of prominent theories of war to the analysis of several case studies. Course objectives: identification of strengths and weaknesses of the literature concerning the causes of war: definition of specific questions and issues for future research; and application of knowledge of causes of war to historical case studies. Required research paper involving case study. Instructor: Staff. One course.

372. Institutions and Governance in China. CCI, SS Institutions set the framework of rules and incentives that affect how people utilize resources in political and economic decision-making. Course studies the creation and evolution of Chinese and political and economic institutions from both the historical and theoretical perspectives. Topics include taxation schemes, granary systems, political participation, voting methods, political control mechanisms, community compact and local governance, and money raising methods. Course previously taught as Political Science 261S. Instructor: Niu. One course.
374. Secularization and Modernity: Cross-Disciplinary Readings 1750-1914. ALP, CCI, CZ, EI, R One course. C-L: see English 285; also C-L: Sociology 348, German 376, Romance Studies 360, Literature 243

375. Classics of Western Civilization: The German Tradition, 1750-1930. ALP, CCI, CZ One course. C-L: see German 375; also C-L: History 268, Literature 247

376. Power, Order and Law. CZ, EI, SS Competing theories of law, social order, and political authority. How these arise, what (if anything) makes them legitimate, and how to assess them. Origins and development of these theories and how they matter in today's controversies. Focus on careful reading of demanding texts in law and social/political thought. Instructor: Purdy. One course.

377S. Classical and Contemporary Political Theory. EI, SS Two courses. C-L: see Philosophy 384AS

378. Marx, Nietzsche, Freud. CCI, CZ, SS One course. C-L: see German 380; also C-L: Philosophy 286, Literature 280, Marxism and Society

378D. Marx, Nietzsche, Freud. CCI, CZ, EI, SS One course. C-L: see German 380D; also C-L: Philosophy 286D, Literature 280D

379S. Religion and Politics. CCI, EI, SS One course. C-L: see Public Policy Studies 229S; also C-L: Religion 274S

380S. Human Rights Activism. CCI, EI, R, SS One course. C-L: see Cultural Anthropology 235S; also C-L: Public Policy Studies 230S

381. Greek and Roman Law. CCI, CZ One course. C-L: see Classical Studies 308; also C-L: History 240

383. Gender and Political Theory. CCI, SS One course. C-L: see Women's Studies 367

390-1. Special Topics in Political Theory. SS Topics in Political Theory. Topics vary from semester to semester. Instructor: Staff. One course.

390-2. Special Topics in Political Institutions. SS Special topics in political institutions. Topics vary semester by semester. Instructor: Staff. One course.


390-4. Special Topics in Political Behavior and Identities. SS Special topics in political behavior and identities. Topics vary from semester to semester. Instructor: Staff. One course.

390-5. Special Topics in Political Methodology. SS Special topics in political methodology. Topics vary from semester to semester. Instructor: Staff. One course.

390-6. Special Topics in Political Economy. SS Special topics in political economy. Topics vary from semester to semester. Instructor: Staff. One course.

390S-1. Special Topics in Political Theory. SS Special Topics in Political Theory. Same as Political Science 390-1 except in seminar format. Instructor: Staff. One course.

390S-2. Special Topics in Political Institutions. SS Special Topics in Political Institutions. Same as Political Science 390-2 except in seminar format. Instructor: Staff. One course.


390S-4. Special Topics in Political Behavior and Identities. SS Special Topics in Political Behavior and Identities. Same as Political Science 390-4 except in seminar format. Instructor: Staff. One course.

390S-5. Special Topics in Political Methodology. SS Special topics in political methodology. Same as Political Science 390-5 except in seminar format. Instructor: Staff. One course.

390S-6. Special Topics in Political Economy. SS Special topics in political economy. Same as Political Science 390-6 except in seminar format. Instructor: Staff. One course.

391-1. Senior Independent Study in Political Theory. Individual non-research directed study in a field of special interest under faculty member supervision. Offered only in areas of study not otherwise provided in department course offerings and with the direct approval and sponsorship of a faculty member. Will not generally be offered unless student has first established an extensive record of work with the faculty member. Written permission of
faculty member and detailed description of course of directed study required before contacting the Director of Undergraduate Studies for permission number. Fulfills a political theory course requirement. Instructor: Staff. One course.

391-2. Senior Independent Study in Political Institutions. Same as Political Science 391-1 except fulfills a political institutions course requirement. Instructor: Staff. One course.


391-4. Senior Independent Study in Political Behavior and Identities. Same as Political Science 391-1 except fulfills a political behavior and identities course requirement. Instructor: Staff. One course.

391-5. Senior Independent Study in Political Methodology. Same as Political Science 391-1 except fulfills a political methodology course requirement. Instructor: Staff. One course.

391-6. Senior Independent Study in Political Economy. Same as Political Science 391-1 except fulfills a political economy course requirement. Instructor: Staff. One course.

393-1. Sophomore/Junior Research Independent Study Political Theory. R Individual directed research under the supervision of a faculty member. Central goal is substantive research paper or report containing significant analysis and interpretation of a previously approved topic. Offered only in areas of study not otherwise provided in department course offerings and with the direct approval and sponsorship of a faculty member. Will not generally be offered unless student has first established an extensive record of work with the faculty member. Written permission of faculty member and detailed description of course of directed study required before contacting the DUS for permission number. Fulfills a political theory course requirement. Instructor: Staff. One course.

393-2. Sophomore/Junior Research Independent Study Political Institutions. R Same as Political Science 393-1 except fulfills a political institutions course requirement. Instructor: Staff. One course.


393-4. Sophomore/Junior Research Independent Study Political Behavior and Identities. R Same as Political Science 393-1 except fulfills a political behavior and identities course requirement. Instructor: Staff. One course.

393-5. Sophomore/Junior Research Independent Study Political Methodology. Same as Political Science 393-1 except fulfills a political methodology course requirement. Instructor: Staff. One course.

393-6. Sophomore/Junior Research Independent Study Political Economy. R Same as Political Science 393-1 except fulfills a political economy course requirement. Instructor: Staff. One course.

445S. Capstone Seminar: Russia-USSR-Russia: History of Communism. CCI, CZ, EI, R, SS One course. C-L: see History 467S; also C-L: Slavic and Eurasian Studies 420S

449. Politics, Philosophy, and Economics Capstone. R, SS Capstone course open only to students in the Politics, Philosophy, and Economics program. Integrates and synthesizes the analytical framework and factual studies provided in other PPE courses. Consent of instructor required. Instructor: Staff. One course. C-L: Economics 389, Philosophy 465

493-1. Senior Research Independent Study Political Theory. R Individual directed research under the supervision of a faculty member. The central goal is a substantive research paper or report containing significant analysis and interpretation of a previously approved topic. Offered only in areas of study not otherwise provided in department course offerings and with the direct approval and sponsorship of a faculty member. Will not generally be offered unless student has first established an extensive record of work with the faculty member. Written permission of faculty member and detailed description of research project required before contacting the DUS for permission number. Fulfills a political theory course requirement. Instructor: Staff. One course.

493-2. Senior Research Independent Study Political Institutions. R Same as Political Science 493-1 except fulfills a political institutions course requirement. Instructor: Staff. One course.

493-4. Senior Research Independent Study in Political Behavior and Identities. R Same as Political Science 493-1 except fulfills a behavior and identities course requirement. Instructor: Staff. One course.

493-5. Senior Research Independent Study in Political Methodology. R Same as Political Science 493-1 except fulfills a political methodology course requirement. Instructor: Staff. One course.

493-6. Senior Research Independent Study in Political Methodology. R Same as Political Science 493-1 except fulfills a political economy course requirement. Instructor: Staff. One course.

497S. Capstone Seminar: Latin American Left Turns: A New Politics for the 21st Century?. CCI, CZ, R, SS, W One course. C-L: see History 471S; also C-L: Latin American Studies 471S

497S-5. Senior Seminar in Political Methodology. SS Special topics in political methodology; open also, if places are available, to qualified juniors who have earned a 3.0 average and obtain the consent of the instructor. Instructor: Staff. One course.

497S-6. Senior Seminar in Political Economy. SS Special topics in political economy; open also, if places are available, to qualified juniors who have earned a 3.0 average and obtain the consent of the instructor. Instructor: Staff. One course.

501S. Politics and Media in the United States. R, SS, STS, W The impact of the media of communication and new technologies on American political behavior, government, politics, issues and controversies. Development of critical interpretive skills and arguments as students write research papers assessing the media's political influence and effects. Instructor: Staff. One course. C-L: Canadian Studies, Arts of the Moving Image, Policy Journalism and Media

502S. Understanding Ethical Crisis in Organizations. EI, R, SS One course. C-L: see Study of Ethics 562S; also C-L: Sociology 542S, Public Policy Studies 558S

503S. Crisis, Choice, and Change in Advanced Democratic States. CCI, SS Contributions of Marx, Weber, and Durkheim toward analysis of modern democracies. Examination of selected contemporary studies using these three perspectives to highlight processes of change and crisis. Unsettling effects of markets upon political systems, consequences of bureaucratic regulation, and transformation of sources of solidarity and integration in modern politics. Instructor: Kitschelt. One course. C-L: International Comparative Studies

504S. Comparative Ethnic Politics. CCI, CZ, SS Why and when ethnicity becomes a salient cleavage for political mobilization and the conditions under which ethnic collective action may take violent or non-violent forms. Approaches to the study of social identities; types of ethnic collective action, including non-violent (electoral participation and social protest) and violent ones (riots, rebellions, civil war, and terrorism); and main normative debates in favor and against ethno-cultural group rights. Comparisons include Latin America, Africa, Europe, and South Asia. Instructor: Staff. One course.

505S. Race in Comparative Perspective. CCI, SS Comparative study of the way race is socially constructed in the United States, several European, Latin American, and other countries. The real effects of this social construction on the social and political lives of communities of color in these countries. Instructor: McClain. One course. C-L: International Comparative Studies 505S

507S. Religion and Comparative Politics. CCI, SS The relationship between states, societies, and religious institutions in contemporary world politics. Theories that emphasize the explanatory role of religious ideas, religious market structures, and different socio-economic and political conditions. Major focus on Christianity (Catholicism, Protestantism and Evangelicalism) mostly in Latin America, Western and Central Europe, and the United States. Attention also to Islam and Hinduism in Africa, the Middle East, and India. Instructor: Staff. One course.

508S. Public Opinion and Behavior. R, SS Several facets of the political behavior of mass actors in American politics. Likely topics include the factors that cause the type and amount of individual participation, mobilization by elites, ideology and information, partisanship, partisan stability and change, socialization, macro-level change, negative advertising, economic voting, issue evolution, and the effects of institutional changes (especially election rules) on voter turnout. Consent of Instructor required. Instructor: Aldrich or Hillygus. One course.

509S. Political Participation: Comparative Perspectives. CCI, SS The study of political participation through development of an understanding of relevant research methods. The effects of political culture on political partici-
pation. Popular participation and mobilization systems in liberal democracies and developing countries. Instructor: Staff. One course. C-L: International Comparative Studies 511S

510S. Collective Action and Social Movements. CCI, SS Seminar course will introduce students to two dominant paradigms in the study of contentious mobilization: economic theories of collective action and sociological theories of social movements. Study of dissident collective action in autocracies, democracies, and hybrid regimes (e.g. electoral autocracies). Explore contemporary movements including civil rights, ethnic and nationalist, religious, feminist, anti-abortion, peasant, and workers movements in Latin America, Western and Eastern Europe, North Africa, and the U.S. Draw on historical, quantitative and game-theoretic work. Instructor: Staff. One course.

511. Organized Crime in New Democracies. SS Purpose of course is to explore (i) the conditions under which transitions to democracy in poor and middle-income countries generate waves of organized crime and (ii) the conditions under which criminals embrace insurgent and terrorist actions to control states. Special attention given to the illegal trade of drugs, kidnapping for ransom, extortion, and to the plundering of natural resources. Students will be reading game-theoretic analyses and empirical research based on aggregate data, individual survey data, ethnographies and natural and field experiments. Instructor: Staff. One course.

512S. Values and Ideology. SS Examines the political preferences of the public through in-depth examination of the concepts of "values" and "ideology". Topics include: structure of mass belief systems; core human values and core political values, their nature and origins, and their use in political judgment; nature and meaning of ideological self-identifications; origins of mass ideology in biological and psychological processes; ideology and its dynamics over time at the aggregate level; and relationship of ideology to institutional legitimacy. Instructor: Johnston. One course.

515S. Post War Europe, 1945-1968: Politics, Society, and Culture. CCI, CZ, EI, SS, STS One course. C-L: see History 537S; also C-L: International Comparative Studies 537S

516S. Rule of Law. EI, SS An investigation, employing both historical and conceptual analysis, of the idea of the rule of law. Several classic and contemporary texts will be considered. Topics include: the nature of law; the relationship between law and morality; the relationship between the rule of law and politics; the role, if any, of the rule of law in facilitating social and economic development; and the ways in which the rule of law might be institutionalized in modern society. Permission of instructor required. Instructor: Knight. One course.

517S. Democratic Institutions. CCI, R, SS How constitution makers choose basic rules of the democratic game, such as the relations between legislatures and executives, the role of parties, electoral system, prerogatives of constitutional courts, and other important elements of democratic institutional design; the impact of such arrangements on various groups within the state, and the overall performance of democracies; durability of arrangements, the structuring of power relations among parties, and whether democratic institutions affect economic and social policy outcomes. Instructor: Kitschelt. One course.

518. The Politics of Health Care. EI, SS One course. C-L: see Public Policy Studies 635

519. The American Party System. SS Role of political parties and the party system in the origin and perpetuation of democratic politics. Critical evaluation of different theories and models of the origins, structures, and activities of American political parties and their contribution to maintenance of a democratic society. Development of original research or critical evaluation of research findings using an extensive array of evidence, including statistical estimation and formal modeling. Instructor: Aldrich. One course.

520S. Congressional Policy-Making. SS Lawmaking and oversight of the executive branch by the U.S. Congress. Committee, party, executive, and interest group roles. Instructor: Rohde. One course.

521S. Gender, Identity, and Public Policy. R, SS One course. C-L: see Public Policy Studies 530S; also C-L: Women's Studies 515S

522S. Comparative Party Politics. CCI, R, SS The concepts, models, and theories employed in the study of political parties in various competitive democracies. Focus on advanced industrial democracies where there is a rich empirically oriented literature on this topic. The resurgence of democracy in developing areas and the role of party competition and democracies in these regions of the world. Instructor: Kitschelt. One course. C-L: Canadian Studies

526S. Markets and Democracy in Latin America. CCI, R, SS Explores the interaction between markets and democracy in Latin America in relationship to broader theoretical and substantive debates in the field of comparative politics. Addresses competing theoretical perspectives on the interaction between markets and democratic institutions; focuses upon issues of regime change and consolidation with emphasis on the political economy of democratic transitions and institutional change; and examines the politics of market-oriented reform in the new international context of regional development with emphasis on policy formation in Latin America. Instructor: Remmer. One course.

527S. Africa in a Global Age. CCI, EI, SS One course. C-L: see Cultural Anthropology 561S; also C-L: African and African American Studies 510S, History 561S, International Comparative Studies 510S

543. Counterterrorism Law and Policy. EI, R, SS One course. C-L: see Public Policy Studies 504

544. 9/11: Causes, Response & Strategy. EI, SS, W One course. C-L: see Public Policy Studies 561; also C-L: International Comparative Studies 561

545S. International Environmental Regimes. EI, SS, STS Law, politics, and institutional design of international regimes created among nations to cope with environmental problems. Includes study of particular conventions and treaties (for example, acid rain, ozone, carbon reduction, biodiversity, Antarctica, regional seas, ocean dumping), and the environmental implications of international trade rules and regimes (for example, GATT). Instructor: Staff. One course. C-L: Public Policy Studies 581S, International Comparative Studies 521S

546S. Assisting Development. R, SS, W One course. C-L: see Public Policy Studies 515S; also C-L: International Comparative Studies 514S

547. Politics of United States Foreign Policy. EI, R, SS One course. C-L: see Public Policy Studies 506; also C-L: International Comparative Studies 506


550S. Predicting Politics: Counter Insurgency, Elections, and Stability. QS, R, SS Learn modes of predicting political events and outcomes. Survey of ways that are used to predict US National Presidential and Congressional elections, as well as polls. During election years, will focus on active campaigns. Second half of course devoted to prediction of conflict outbreaks around the world. Students will develop their own data, models, and forecasts for political processes. Pre-requisites: 300 level course in the subfield as well as all general requirements in the major: Political Science 102, 175, and Statistical Science 101. Instructor: Ward. One course.

555S. The Politics of Market Competition in a Global Economy. R, SS Course examines the history and contemporary political, economic, and legal aspects of antitrust law and its enforcement. Explores evolution of antitrust thought and practice in the United States and Europe over past century, the recent rapid spread of competition laws, as well as domestic and international conflicts and cooperation over competition policy. Students will write original research papers on a related topic of their own choosing. Instructor consent required. Instructor: Buthe. One course.

560S. International Relations Theory and Chinese Foreign Policy. CCI, SS Examines range of theories and conceptual approaches to the study of international relations to see how these may or may not work in explaining Chinese foreign policy and whether or not patterns of Chinese foreign policy require evaluation of theories. Instructor: Staff. One course. C-L: International Comparative Studies

561S. Problems in International Security. SS The impact of democratic political structures on state foreign policy behavior. Emphasis on the influence of democratic norms and principles on the use of force. Theoretical debates on the influence of democracy and the use of force, with attention to the methodological and statistical difficulties of both measuring democracy and estimating its impact on international politics. Prerequisite: a course in international relations or American foreign policy. Instructor: Staff. One course.

562S. American Grand Strategy. CZ, R, SS, W Study of policy that nations adopt to marshal their political, economic, military, technological, and diplomatic resources to achieve their national goals in the international environment they face, drawing on political science, history, public policy, law and political economy and other disciplines to achieve these ends. Course examines the history, current reality, and future prospects of American grand

563S. Public Opinion and American Foreign Policy. R, SS Course will focus on the relationship between American public opinion and U.S. foreign policy. Central areas include: the American public and coherent attitudes about US foreign policy; influence of American leaders and media in the formation of public opinion; how attitudes toward foreign policy issues influence American elections; and how public opinion influences American foreign policy behavior. Instructor: Staff. One course.

573S. Intellectual History and Political Theory. CCI, CZ, EI, SS One course. C-L: see History 541S

574S. Dissent, Disobedience and Revolution. R, SS Examines boundaries of democratic practice - including hate speech, protest, and secession. Key topics in democratic theory will be addressed including scholarly debates over free speech, civil disobedience, and justified revolution. Readings include works by Mill, Locke, Waldron, Buchanan, Cristiano, Elster. Instructor: Kirshner. One course.

575S. Ancient Political Philosophy. CCI, EI, SS Intensive analysis of the political philosophy of Plato, Aristotle, and other ancient theorists. Research paper required. Instructor: Gillespie or Grant. One course. C-L: Classical Studies 571S, Philosophy 571, Ethics Courses Offered Through Other Departments

576. Politics and Philosophy of Self and Other. EI, SS Epistemological, ontological, ethical, and political dimensions of relations between self and other. Theorists may include Husserl, Merleau-Ponty, Levinas, Derrida, Adorno, Gadamer, Sartre, Foucault, and Bahktin. Instructor: Staff. One course.

577S. Nietzsche's Political Philosophy. CZ, EI, SS Study of the thinker who has, in different incarnations, been characterized as the prophet of nihilism, the destroyer of values, the father of fascism, and the spiritual source of postmodernism. An examination of his philosophy as a whole in order to come to terms with its significance for his thinking about politics. Instructor: Gillespie. One course. C-L: German 576S, Philosophy 537S

578S. Contemporary Theories of Liberal Democracy (C-N). EI, SS Reading and discussion of some of the most important theoretical conceptions of democratic ideals and purposes since 1970. Topics include social justice, individual rights and community, deliberative democracy, and the normative implications of moral and religious pluralism. Instructor: Spragens. One course. C-L: Study of Ethics

579S. Topics in Early Modern Political Thought from Machiavelli to Mills. CCI, R, SS Topics vary from semester to semester. Topics course. Instructor: Staff. One course. C-L: Philosophy 566S

580S. Social Theory and Social Practice. Comparison and critique of answers given by philosophers and social theorists to the questions: what can we know about society and what is the practical utility of that knowledge? Theorists and topics include Aristotle, early modernity's "new science of politics," Marxist praxis, Weber's "weltfrei" science, Mill's logic of the "moral sciences," Comte's sociology, Mannheim's sociology of knowledge, behaviorism and its critics, the vocation of social science. Instructor: Spragens. One course.

581S. Heidegger. CZ, EI, SS An examination of the philosophy of Martin Heidegger from its phenomenological beginnings to its postmodernist conclusions with particular attention to its meaning for questions of identity, history, nihilism, technology, and politics. Instructor: Gillespie. One course. C-L: Philosophy 573S

582S. Contemporary Ethical Theories. CZ, EI, SS One course. C-L: see Philosophy 503S; also C-L: Women's Studies

583S. Thucydides and the Realist Tradition. CCI, CZ, EI, SS Focus on Thucydides as a foundational text in the international relations tradition of realism. Issues include human nature; the relationship between self-interest and moral norms; conceptions of power; and motivations of justice. Readings will include Thucydides' History, selections from Hobbes' Leviathan, evidence from the post-Napoleonic and post-World War I periods, and modern interpretive studies. Instructor: Staff. One course.

584S. Modern Political Theory. CCI, EI, SS A historical survey and philosophical analysis of political theory from the beginning of the seventeenth to the middle of the nineteenth century. The rise of liberalism, the Age of Enlightenment, the romantic and conservative reaction, idealism, and utilitarianism. Instructor: Grant or Spragens. One course. C-L: Study of Ethics

585S. Adversarial Ethics. EI, SS One course. C-L: see Philosophy 510S
586S. Political Thought in the United States. EI, SS American political thought and practice through the Civil War period. A critical analysis of the writing of our founders and their European antecedents. Focus on the philosophical and political debates and the underlying ethical and political issues found in the debates over the Constitution, slavery, and the Union. Instructor: Gillespie or Grant. One course. C-L: Study of Ethics

616S. Persistence and Change in Political Institutions. CCI, R, SS Persistence and Change in Political Institutions. International and domestic institutions in world politics; focus on causes and mechanisms of institutional persistence and change in comparative perspective. Examines, for instance, evolution of political-economic institutions under the impact of globalization. Instructor: Buthe. One course.


618S. Politics of Institutional Reform. R, SS Research seminar focusing on the political economy of institutional change with emphasis on less industrialized and emerging market nations. Open to undergraduates with permission of the instructor. Instructor: Remmer. One course.

619. Media and Social Change. CCI, R, SS, STS One course. C-L: see Policy Journalism and Media Studies 676; also C-L: Public Policy Studies 676, Russian 516, International Comparative Studies, Information Science and Information Studies, Policy Journalism and Media

630. Introduction to Empirical Approaches to Political Science (M). Offers an introduction to empirical methods used in contemporary research in political science. Course develops an applied understanding of the linear regression model in the context of political science research questions. Students will be able to evaluate and interpret allied aggression results as well as develop their own simple models. Required of all incoming graduate students. Instructor: Staff. One course.

631L. Introduction to Deductive & Analytical Approaches to Political Phenomena. R, SS Introduction to deductive and analytical approaches currently used to study political phenomena, with focus on fundamentals of non-cooperative game theory. Students will become good consumers of applied game theoretic research as well as be able to develop some simple game theoretic models of political phenomena. Required of all incoming graduate students. Instructor: Leventoglu or Niou. One course.


633S. Positive Political Theory. R, SS Introduction to formal models in political science and a field of research that is at various times called political economy, positive political theory, formal theory, and public choice. Focus on three basic models that form the foundation of the field: individual choice, game theory, and social choice. Not open to students who have taken Political Science 352. Instructor: Aldrich or Niou. One course.

634. Networks and Interdependence in Political Science. QS, R, SS Theory of and empirical support for importance of networks and interdependent behavior in political and social processes. Methodology covered includes tools for empirical analysis of relational data as well as game theoretic and computational/behavioral modeling approaches to analyzing role of network structure. Substantive ties to literatures in political science, economics, and sociology. Instructor: Siegel. One course.

642S. Global Inequality Research Seminar. ALP, CCI, R, SS One course. C-L: see African and African American Studies 642S; also C-L: Economics 541S, Sociology 642S, Public Policy Studies 645S

645S. Political Economy of Growth, Stabilization and Distribution. R, SS Examines why some nations are rich and others poor; whether financial crises are inevitable; whether economic growth reduces poverty, increases inequality, or both. Addresses extent to which answers to these questions are under human control. Instructor: Keech. One course. C-L: Economics 548S, Public Policy Studies 630S

646S. The Politics of European Integration. CCI, R, SS Politics and institutions of the European Union (EU) and the historical process that led to it. Theoretical perspectives discussed include classics of integration theory (neofunctionalism, intergovernmentalism) but also theories of state formation, delegation, and distributional politics (EU comparatively as instance of common political phenomena). Social constructivist, gender, and Marxist theories also
considered. Research papers on process of European integration or contemporary EU politics. Instructor: Buthe. One course.

647S. International Democratization. EI, R, SS One course. C-L: see Public Policy Studies 513S

650S. Political Economy of International Relations. R, SS Provides an intensive investigation of the major political-economic actors and their interactions in the modern world economy: states, multinational enterprises, and international institutions. Serves as capstone experience for undergraduate students who are pursuing Political Economy or Security, Peace and Conflict as concentrations in political science, or who are pursuing a certificate in Markets and Management. Designed to help graduate students prepare for the qualifying exam in Security, Peace and Conflict and in Political Economy, and to provide them with an opportunity to conduct sustained research in these two fields. Instructor: Büthe. One course. C-L: Markets and Management Studies

651S. Theories of International Political Economy. SS Advanced discussion of core issues and the research frontier in IPE (trade, finance, economic development, globalization). Focus on theoretical debates over the source of preferences, the role of power and institutions, conflict and cooperation in the world economy. Open to qualified seniors with consent of the instructor. Instructor: Büthe. One course.

658S. Political Economy of Terrorism. SS Seminar in the formal, quantitative study of subnational terrorism. Addresses historical terror examples, aggregate and individual determinants of terrorism, mobilization and terror networks, methods of terror and counter-terror and their consequences, organization of and competition between terror groups. Focuses on unsolved problems and opportunities for research. Instructor: Siegel. One course.

659S. Civil Wars. CCI, EI, R, SS In-depth examination of internal armed conflict. Exploration of micro and macro level approaches to causes of civil wars; types of civil wars; ethnicity and conflict; warfare; repertoires and dynamics of violence in conflict; armed group organizations and their tactics; relationship between armed groups and the state; duration and termination of internal conflicts; consequences of conflict and processes of transitional justice after conflict termination. Overview of both classical and more recent works on these topics. Instructor: Balcells. One course.

660S. Theories of International Conflict. R, SS Social science literature review of the causes of international conflict emphasizing the theories concerning the causes of war. Objectives of course: to identify the strengths and weaknesses of the literature concerning the causes of war; to define specific questions and issues which must be addressed by future research; and to develop concrete research strategies for investigating these questions. Instructor: Staff. One course.

661S. Courts, Wars, Legacies of Wars. R, SS The impact of international wars, international policing, and domestic wars relating to national security on the United States courts of the Fourth Circuit (Maryland, Virginia, West Virginia, North and South Carolina), and the role played by these courts in the Mid-Atlantic South from the American Founding into the Cold War Era. The American Constitution, laws, and treaties of the United States, and principles of admiralty and international law which figure in assigned published and unpublished judicial decisions of the region's United States district and old circuit courts and of the post-1891 Fourth Circuit Court of Appeals. Research paper required. Also taught as Law 548S. Instructor: Fish. One course. C-L: History 562S

662S. Problems in International Politics. CCI, R, SS The development and critical analysis of various models in political science and economics that focus on the relationship between international economics and international security. Various models of the impact of political-military dynamics on international economic relationships, and the impact of international economics on the likelihood of war and peace among nations. Attention to the interplay between economics and security in a key region of the world--East Asia. Prerequisite: one course in international relations, foreign policy, or diplomatic history. Instructor: Staff. One course.


664S. Leaders, Nations, and War. CCI, R, SS, W The interaction between state structures and the international system, with a focus on the rise and development of European nations. Topics include war and its effects on national political institutions, nationalism, and state formation; war and national revolution; imperialism and decolonization; and economic dependency and national autonomy. Research paper required. Prerequisite: Political Science 160. Instructor: Grieco. One course. C-L: International Comparative Studies 664S
665S. Theory and Practice of National Security. R, SS, STS, W In-depth look at the theoretical and empirical literature explaining how states seek to guarantee their national security. Topics include: grand strategy, nuclear deterrence and warfighting, coercive diplomacy, military intervention, decisions for war, and civil-military relations. Special attention paid to U.S. national security during and after the Cold War. Consent of instructor required. Instructor: Feaver. One course.

667S. American Civil-Military Relations. R, SS Theory and practice of relations between the military, society, and the state in the US. Special attention paid to how civil-military relations play out in the use of force. Other topics include: public opinion, casualty sensitivity, and the role of the military in partisan politics. Consent of instructor required. Instructor: Feaver. One course.

668S. Theory and Practice of International Security. R, SS Analysis and criticism of the recent theoretical, empirical, statistical, and case study literature on international security. This course highlights and examines potentially promising areas of current and future research. No prerequisite, but Political Science 160 recommended. Instructor: Staff. One course.

669S. Theories of War and Peace in Twentieth Century Europe. R, SS Identify the ways by which history and political science can be used as complementary approaches to the study of the problem of war and peace among nations. Will review major works from the two disciplines that examine the same problem of how to explain the origins of World War I and World War II in Europe. Will also provide students with an opportunity to undertake and present a significant research project that integrates elements of the two disciplines. Instructor: Grieco. One course.

670S. Contemporary United States Foreign Policy. EI, R, SS One course. C-L: see Public Policy Studies 502S

675S. Economy, Society, and Morality in Eighteenth-Century Thought. R, SS Explorations of eighteenth-century topics with a modern counterpart, chiefly (a) self-interest, liberal society, and economic incentive; and (b) the passions, sociality, civic virtue, common moral sensibilities, and the formation of taste and opinion. Original texts: for example, Bacon, Newton, Shaftesbury, Mandeville, Hutcheson, Hume, Smith, Hogarth, Burke, Cato’s Letters, Federalist Papers, Jane Austen. Stress on integrating economic and political science perspectives. Open only to seniors majoring in either political science or economics. Not open to students who have had Economics 312. Prerequisites: Economics 205D; and Economics 210D. Instructors: De Marchi and Grant. One course. C-L: Economics 547S

676S. Hegel’s Political Philosophy. EI, R, SS Within context of Hegel’s total philosophy, an examination of his understanding of phenomenology and the phenomenological basis of political institutions and his understanding of Greek and Christian political life. Selections from Phenomenology, Philosophy of History, and Philosophy of Right. Research paper required. Instructor: Gillespie. One course. C-L: Philosophy 536S, German 575S

677S. Contemporary Continental Political Thought. EI, R, SS Exploration and assessment of the major theories (critical theory, hermeneutics, post-structuralism) and thinkers (Adorno, Habermas, Gadamer, Foucault, Derrida) of European political thought from World War II to the present. Themes addressed include alienation, power, liberation, social construction of identity. Research paper required. Instructor: Staff. One course.

678S. Democracy and Constitutionalism. EI, R, SS Study of the essential questions of constitutional democracy and constitutional law: what makes democracy valuable and how constitutions work and are interpreted. Class will provide a strong foundation in both constitutional and political theory. Readings include works by Hamilton, Dahl, Ely, Dworkin, and Ackerman. Instructor: Kirshner. One course.

690-1. Advanced Topics in Political Theory. SS Advanced topics in political theory. Instructor: Staff. One course.

690-2. Advanced Topics in Political Institutions. SS Advanced topics in political institutions. Instructor: Staff. One course.


690-4. Advanced Topics in Political Behavior and Identities. SS Advanced topics in political behavior and identities. Instructor: Staff. One course.

690-5. Advanced Topics in Political Methodology. SS Advanced topics in political methodology. Instructor: Staff. One course.
690-6. Advanced Topics in Political Economy. SS Advanced topics in political economy. Instructor: Staff. One course.

690S-1. Advanced Topics in Political Theory. SS Advanced topics in political theory. Same as Political Science 690-1 except in seminar format. Instructor: Staff. One course.

690S-2. Advanced Topics in Political Institutions. SS Advanced topics in political institutions. Same as Political Science 690-2 except in seminar format. Instructor: Staff. One course.


690S-4. Advanced Topics in Political Behavior and Identities. SS Advanced topics in political behavior and identities. Same as Political Science 690-4 except in seminar format. Instructor: Staff. One course.

690S-5. Advanced Topics in Political Methodology. SS Advanced topics in political methodology. Same as Political Science 690-5 except in seminar format. Instructor: Staff. One course.

690S-6. Advanced Topics in Political Economy. SS Advanced topics in political economy. Same as Political Science 690-6 except in seminar format. Instructor: Staff. One course.

Political Internships

The department administers an internship program, primarily in Washington, DC, for political science majors and interested nonmajors. Students participate by qualifying for a position obtained by the department or by acquiring their own relevant employment, with or without compensation. Course credit can be obtained by enrolling in Political Science 292-1 or 292-2 and writing a substantive paper containing significant analysis and interpretation on a politics-related topic. Potential applicants should contact the internship director at any time, but preferably in the fall semester.

The Major

Major Requirements. Ten courses for the major; this includes Political Science 130, Statistical Science 101, and Political Science 175 as the foundation requirements, three courses in one subfield concentration within the major, two courses in different subfields for breadth, and two (2) additional electives (at any level in any subfield).

Political Science 130 and Statistical Science 101 will introduce social science research methods; Political Science 175 will introduce political philosophy. A more advanced statistics course may be substituted for Statistical Science 101 with approval of the director of undergraduate studies.

The three-course subfield concentration requirement and two courses for breadth are satisfied by selecting courses from the following subfields: political institutions; political economy; security, peace and conflict; political behavior and identity; political methodology; and political philosophy. An election must be made respecting courses bearing more than one field designation. Courses offered by visiting faculty, courses taken abroad, courses transferred from other universities, or special topics courses in which the content varies from year to year will be assigned subfields by the director of undergraduate studies.

The three courses in the subfield concentration must include one introduction in that subfield at the 100 level; one intermediate course at the 300 level; and one advanced course at the 400 or higher level.

Course levels are:

- Political Science 100-199: Introductory courses in subfields and foundation courses. Students must take any one (1) subfield introduction listed at the 100 level before taking 300 or higher listings. They may, however, take 200 level courses without any prerequisite.
- Political Science 200-299: Nonintroductory courses with no prerequisite.
- Political Science 300-399: Intermediate courses that require any one subfield introduction course taken at the 100 level.
- Political Science 400-499: Advanced undergraduate and capstone courses that require an intermediate subfield course taken at the 300 level in addition to meeting all of the general requirements of the major.
- Political Science 500-699: Advanced undergraduate and introductory graduate courses.

New majors who wish to create an inter-field concentration made up of courses listed under different areas of concentration/fields or from different departments may do so in consultation with the director of undergraduate studies and their faculty advisor.
Of the ten required political science courses, at least eight must be Duke courses taught by a member of the Duke instructional staff. However, this requirement may be reduced to seven courses if the student: 1) is engaged in political science courses in a year-long study abroad through either a Duke-administered or Duke-approved program, or 2) transferred to Duke after completing two undergraduate years at another institution.

In satisfying the requirements of the major, students in the Robertson Scholars Program may count, exclusive of transfer courses, as many as two UNC-Chapel Hill courses offered at a level below the 400 level at Duke.

**Advanced Placement Credit.** Advanced placement credits in political science (score of 4 or 5). These course credits are designated as Political Science 90A (American Government and Politics) and Political Science 90B (Comparative Government and Politics). Such credits are applied toward the thirty-four credits needed for graduation. Advanced placement course credits (20, 21) do not satisfy course requirements for the political science major.

**Suggested Work in Related Disciplines.** Selected courses in such disciplines as anthropology, economics, history, philosophy, psychology, public policy, religion, sociology, and statistics are desirable.

**Interdepartmental Major.** For information on declaring an interdepartmental major, consult "Degree Programs and Academic Credit" on page 21.

**Departmental Graduation with Distinction**

The department offers students majoring in political science an opportunity to achieve Graduation with Distinction in political science by the submission of an original research paper.

To be eligible for honors, students must have:
- taken two courses in the subfield of your proposed research;
- completed Political Science 130, Statistical Science 101 or better (Statistical Science 210 or the equivalent is recommended), the political theory requirement (Political Science 175 in most cases), and a minimum of six courses in political science;
- the statistics requirement may be waived if students are pursuing honors in the area of political theory; or
- have a minimum undergraduate GPA of 3.3, and a major GPA of 3.5; this GPA must be maintained until graduation.

Other requirements may be waived in rare cases by the director of undergraduate studies.

The goal of honors in political science is an original research paper of journal length, which will be submitted to the Honors Thesis Committee by December 15 of each year. Journal length papers are between twenty-five and thirty-five pages in most cases, and the key criterion is that the paper must feature original research.

The Honors Thesis Committee will, in most cases, either accept or reject the paper for honors and the paper will be read by a minimum of two members of the committee. Rarely, a revision may be requested by the committee (to be conducted by the student in the spring semester and due by April 1). If at all possible, students should start working on their honors research the spring of the junior year and over that summer.

Students may begin their honors research by producing a quality, journal-level paper in:
- a 400, 500 or 600 level political science seminar;
- an independent study; or
- the department's summer research initiative: [http://polisci.duke.edu/undergraduate/summer-research-initiative](http://polisci.duke.edu/undergraduate/summer-research-initiative).

Often, the student will need to polish the paper during or after these options before submitting it to the Honors Thesis Committee.

In addition, the department staffs a yearly course covering research design for juniors who are interested in pursuing the honors option. The course will not be required for honors; however, it will be designed to facilitate independent student research and the pursuit of the honors option. Students in the course will be expected to produce a research proposal (and a specific one; for example, an empirical proposal would detail the data to be used down to the selection of variables and an outline of the model). If students are at all unsure about their capacity to do independent research, we encourage them to take the research design course.

**The Minor**

**Requirements.** A minimum of five courses in political science, at least two of which are at the 300 or higher level. Four courses must be Duke courses taught by a member of the Duke political science instructional staff, but one course may be a transfer course. However, in satisfying the minor, students in the Robertson Scholars Program...
may count, exclusive of the transfer course, one course taken at UNC-Chapel Hill. Courses taken satisfactory/unsatisfactory and advanced placement courses do not satisfy course requirements for the minor.

Portuguese

For courses in Portuguese, see romance studies on page 577.

Psychology and Neuroscience

Professor Huettel, Chair; Senior Lecturing Fellow Murphy, Director of Undergraduate Studies; Visiting Assistant Professor Vieth, Associate Director of Undergraduate Studies; Professors, Asher, Bettman, Blumenthal, Bonner, Brannon, Brownell, Cabeza, Caspi, Chartrand, Cooper, Costanzo, Costello, Curry, Dawson, DeBellis, Dodge, Fairbank, Fitzsimons, Flanagan, George, Groh, W. C. Hall, Hariri, Holditch-Davis, Hoyle, Huettel, F. Keefe, R. Keefe, Kollins, LaBar, Larrick, Leary, Levin, Lisanby, J. Lynch, Madden, March, Meck, Moffitt, Nicolelis, Nowicki, Palmer, Payne, Platt, Purves, Putallaz, Reese, Rezvani, Robins, Roth, Rubin, Schmajuk, Sheppard, Sherwood, Siegler, Sikkema, Smith-Lovin, Sprenner, Strauman, Surwit, Swartzwelder, Thompson, Vidmar, Weinfurt, Whitfield, C. Williams, R. Williams, and Woldorf; Associate Professors Angold, Bennett, Bilbo, Day, Egger, Fitzsimons, Gold, Goldston Kay, Linville, Luber, Marsh, McClintock, Odgers, Shah, Wells, and Welsh-Bohmer; Assistant Professors Adcock, Compton, Diaz, Edwards, Egner, Fitzgerald, Fuemmeler, Gassman-Pines, Gibson-Davis, Mauro, Mead, Mitroff, Puffer, Rosenthal, Smart-Richman, Wilbourn, Yin, and Zucker; Professors Emeriti Coie, Eckerman, C. Erickson, R. Erickson, Kremen, Lockhead, H. Schiffman, and M. Wallach; Research Professor Mazuka, L. Wallach; Research Professor Rabiner; Assistant Research Professor Appelbaum; Assistant Professor of the Practice Grimes; Adjunct Assistant Professor Serra; Research Associates Batson, Jurkowski; Senior Lecturing Fellow Murphy; Research Scholar Carrig; Visiting Assistant Professor Kotter-Grüehn, Vieth

A major or a minor is available in this department.

There are five areas within the major: abnormal/health, biological, cognitive, developmental, and social. Most courses are classified into one or more of these areas. For a complete listing of courses by area, check the undergraduate section of the psychology and neuroscience website.

Courses in Psychology and Neuroscience (PSY)

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. Introductory Psychology. SS, STS Broad survey of the field of modern psychology. The class includes a broad study of behavior with emphasis on biological, evolutionary, cognitive, and developmental perspectives while placing this work in its historical, social and philosophical context. Conceptual issues unifying the subfields of psychology are highlighted along with consideration of techniques and methods by which knowledge about the brain, mind, thought and behavior is acquired and refined. There is also discussion about the impacts on life and society of contemporary scientific approaches and technologies. Students are required to participate in psychological research. Instructor: Grimes/Murphy/Vieth/Staff. One course.

102. Cognitive Psychology: Introduction and Survey (C). NS Overview of cognitive processes including pattern recognition, concept formation, attention, memory, imagery, mental representation, language, problem solving, and modes of thinking. The basic approach is both empirical (using data collection and analysis) and theoretical (building models using inductive/deductive reasoning). Application of basic laboratory results to cognition in everyday life. Students are required to participate in psychological research. Prerequisite: Psychology 101 strongly recommended. Instructors: Cabeza, Day, Mitroff, or Rubin. One course.

103. Developmental Psychology: Introduction and Survey (D). SS Overview of the cognitive, social, and emotional changes that occur throughout the lifespan, with emphasis on the period from infancy to adolescence. Examines both the empirical evidence (data collection and analysis) and the theoretical models (constructs using inductive-deductive reasoning) used in understanding human psychological development. Required participation in psychological research. Prerequisite: Psychology 101 strongly recommended. Instructor: Kotter-Grüehn, Wilbourn. One course.

104. Social Psychology (S). SS Effects of social interaction and social processes on a wide range of individual attitudes and behaviors (for example, conformity, leadership, prejudice, aggression, altruism). Emphasis on the logic, reasoning, research designs, and methods by which knowledge is generated. Equal attention to experimental and
non-experimental research. Prerequisite: Psychology 101 strongly recommended. Instructor: Leary, Richman, Shah or Staff. One course.

105. Abnormal Psychology (A). SS This course provides a broad overview of abnormal psychology. Areas of focus include: Reviewing different theoretical perspectives for conceptualizing abnormal behavior; Approaches to the diagnosis and assessment of psychopathology; Major classes of psychopathology including how they are defined and treated; Current research in the field of abnormal psychology. There is a research participation requirement for this course. Instructor: Rosenthal, Zucker, or staff. One course.

106. Biological Bases of Behavior: Introduction and Survey (B). NS, STS An introduction to the methods, models, and reasoning that have led to discoveries about brain-behavior relations, and a critical evaluation of the current theories that guide our thinking about the neurobiology, development and evolution of sensory and cognitive processes, sleep, pain, emotion, hunger, and thirst as well as maternal and sexual behavior patterns. Recommended background: AP Biology or strong Biology background. Psychology 101 recommended for Psychology majors. Instructor: Williams, Murphy or Staff. One course. C-L: Neuroscience 101

155FS. Vision. NS, W One course. C-L: see Neuroscience 155FS

185FS. Decoding Human Behavior. SS, STS What makes us who we are? Are we molded by our experiences, our genomes, or both? An investigation into the factors that contribute to shaping our behavior, drawing on evidence from diverse fields such as genetics, genomics, psychology and medicine. Explores recent scientific advances and examines how they further our understanding of normal and maladaptive behavior (their influence on health and wellbeing, and how this information might be used to shape lives at personal and societal levels). Course readings draw primarily from scientific literature, but will also include select book chapters and on-line resources. Open only to students in the FOCUS program. Instructor consent required. Instructor: Sugden. One course.

190A. Duke-Administered Study Abroad: Special Topics in Psychology. Topics differ by section. Instructor: Staff. One course.

190FS. Focus - Special Topics Seminars. Seminar for students in Focus Program only. Content varies by semester. Different courses (and areas of psychology) indicated by section number. Instructor: Staff. One course.

193FS. Neurobiology of Mind. NS One course. C-L: see Neurobiology 193FS; also C-L: Neuroscience 193FS

201. Introduction to Statistical Methods in Psychology (G). QS Introduction to statistical methods used in psychological research. Topics in applied statistical methods: measures of central tendency and variability; probability and distributions; confidence intervals and hypothesis testing; t-test and analysis of variance; correlation and regression; chi-square tests. Calculate and interpret statistics referencing data and research questions typical in psychological research. Includes a lab section with instruction in management and analysis of data using statistical software designed for use in social science research. Required for the major. Pre-requisites: two Psychology or two Neuroscience courses or one Psychology and one Neuroscience course or consent of department. Instructor: Staff. One course.

203. Practicum. Introduction to the research of a faculty member, often preparing the student for independent study. Format varies, including readings, data collection and analysis, discussions, or other activities. Term paper required in the form of an independent Study proposal using the department form for this purpose; does not oblige the student to take the independent study. Department consent required. Satisfactory/Unsatisfactory grading only. Does not count toward the major. Formerly: Psychology 103 Instructor: Staff. Half course.

205. Health Psychology and Behavior Change (A,S). SS The interplay of psychological, social, cultural and biological factors in health and disease prevention. Major topics include psychosocial and contextual influences on health and behavior; the design and evaluation of individual treatments and population interventions; stress and coping; psychosocial impacts of disease on patients and families. Emphasis on theory, research design, and causal inference. Students should have basic understanding of social science research methods. Instructor: Bennett, Sikkema. One course.


208. Behavioral Medicine (A). SS, STS Overview of interdisciplinary field of behavioral medicine, emphasizing integration of social and behavioral sciences in the service of understanding physical health and illness. Psychosocial risk factors for medical illness; biobehavioral mechanisms whereby psychosocial risk factors affect pathophysiology; and biobehavioral intervention to treat and rehabilitate patients with major medical disorders in interdisciplinary settings. Instructor: R.B. Williams. One course.

209. Stress and Coping (A). SS Psychological theory and empirical work on stress and coping, with an emphasis on post-traumatic stress. Focus on the research designs, methods and reasoning by which stress is inferred and its effects assessed. Instructor: Keefe. One course.

211. Media and Health Communication (A,C,S). SS Major topics include the impact of media on health and behavior, use of mass, new, and social media strategies for health promotion, patient-provider communication, and the role of culture in health communication campaign design. Students should have basic understanding of social science research methods. Instructor: Bennett. One course. C-L: Global Health 261, International Comparative Studies 211


213. Advanced Abnormal Psychology (A). NS, R, SS An advanced course in the study of adult psychopathology. Lecture and readings emphasize psychological and neuroscience perspectives on disorders such as depression and schizophrenia. Readings are primarily journal articles and other original sources. Topics also include the logic of diagnostic systems, methodological and ethical issues in psychopathology research, integration across levels of analysis, and translating research findings into effective interventions. Instructor: Strauman. One course.

220. The Psychology of Gender (S). CCI, SS The psychology of gender in this country, including sex differences, separation and individuation, and achievement; sexuality; sex-roles; mental health problems particularly salient to genders: cultural influences on gender development and views within the field of psychology of gender. Instructor: Vieth. One course. C-L: Women's Studies

221. Personality (A,S). SS Theory and research dealing with the human personality, focusing on universal features of personality that are part of human nature, ways in which personality variables and processes differ across people, and the processes through which personality relates to thought, emotion, and behavior. Topics include personality traits, genetic and biological influences on personality, cognitive aspects of personality, motivation and emotion, self and identity, unconscious processes, personality measurement, and personality dysfunctions. Students required to participate in psychological research. Instructor: Curry, Leary, Fitzgerald. One course.

224. Self and Society (S). CCI, SS One course. C-L: see Cultural Anthropology 204; also C-L: International Comparative Studies 234, Women's Studies

225. Political Psychology. CCI, SS One course. C-L: see Political Science 240

226. Sex/Gender - Nature/Nurture: Intersections of Biology and Society. NS, STS One course. C-L: see Women's Studies 278; also C-L: Cultural Anthropology 278, Neuroscience 278, Study of Sexualities 278

227. Anthropology and Psychology (C, P). CCI, SS One course. C-L: see Cultural Anthropology 227

235. Human Development (D). CCI, EI, R, SS One course. C-L: see Human Development 224; also C-L: Sociology 224

236. Psychosocial Aspects of Human Development (D). CCI, EI, SS One course. C-L: see Human Development 260; also C-L: Sociology 260, Ethics Courses Offered Through Other Departments
237. Social Development (D,S). CCI, SS Examines children's social development from birth to age twelve. Attention to influences of family, peers, schools, television on aspects of social development including emotional attachments, self-concept, achievement motivation, sex-role development, social competence, aggression, and moral development. Throughout, attention is also given to major theoretical perspectives (psychoanalytic, ethological, behavior-genetic, cognitive, social learning, ecological/cultural), research methodology, and applied and policy implications of research. Readings focus on children and families from diverse cultural backgrounds. Prerequisites: Psychology 103, Psychology 104, or Psychology 221. Instructor: Asher. One course. C-L: Child Policy Research

238. Psychology of Ethnicity and Context (A, D, S). CCI, SS Focuses on children and families as they are shaped and impacted by race, culture, ethnicity, socioeconomic status, and community/neighborhood context. Aspects considered include: parental beliefs, expectations, disciplinary strategies, children's mental health and academic and career goals. Prerequisite: Psychology 103, recommended. Instructor: Staff. One course. C-L: African and African American Studies 248, Global Health

239. Adolescence (D). SS Adolescent development, including identity formation, intelligence, sexuality, peer and parent relationships, vocational choices, drugs, and psychopathology. Theory and empirical findings. Emphasis on the methods and research designs that have led to an understanding of adolescent development. Required participation in service learning. Instructor: Grimes. One course. C-L: Child Policy Research

240. Educational Psychology (C, D). CCI, EI, SS One course. C-L: see Education 240; also C-L: Child Policy Research, Ethics Courses Offered Through Other Departments

241. Cross-Cultural Perspectives on Human Development: A View From Modern Day Japan and Asia (C,D). CCI, SS Cross-cultural examination of issues in human development from an Asian perspective, especially from modern day Japan. Issues such as parenting, cognitive and social development, education, family, and aging will be evaluated from the perspectives of Japan and other cultures in Asia including China and Korea, and contrasted to American perspectives. Instructor: Mazuka. One course. C-L: Cultural Anthropology 249, Child Policy Research

250. Myths and Mysteries of Memory (C). SS, STS Understanding the feats and failures of memory in everyday situations. Exploration of the use and misuse of memory of interest across professions (e.g., medicine, law, advertising, education), via demonstrations, lecture, and readings. Topics include repression, how to study for exams, remembering names, early childhood memories, amnesia, photographic memory, eyewitness testimony, and pharmacological effects. Instructor: Marsh. One course.

251. Learning and Adaptive Behavior (B, C). NS Principles of instrumental learning in animals and humans. Topics include elicitation, classical conditioning, reinforcement, punishment, problem solving, behavioral economics, and verbal behavior. Focus on empirical data, quantitative analysis, research methodology, and technologies generated from learning research. Prerequisite: none, but some knowledge of quantitative science desirable. Instructor: Schmajuk. One course.

252. Psychology of Thinking (C). SS, STS Overview of high level cognitive processes in both theoretical and applied areas. Emphasis on the research designs, methods, and reasoning for understanding how people engage in categorization, problem solving and decision making. The social implications of cognitive testing and an appreciation of the role of human factors in a technological age. Prerequisite: one previous psychology course. Instructor: Serra. One course.

254. The Creative Mind (C). ALP, SS The nature of the creative thinking; the conscious and unconscious processes involved. Creativity in problem solving, sciences and math, the visual arts, literature, music, movies, theater, business, and destruction. Instructor: Schmajuk. One course. C-L: Information Science and Information Studies

255. Human Cognitive Evolution. NS, SS One course. C-L: see Evolutionary Anthropology 260

255K. Cognitive Evolution: Apes, Kids and What Makes Humans Smart and Successful. NS, SS C-L: see Evolutionary Anthropology 260K

256. Psychology of Language (C). R, SS Examination of linguistic structures and their psychological "reality," language and cognition, biological bases, animal communication, language pathologies, nonverbal communication, linguistic universals, and bilingualism. Everyday language phenomena (for example, slips of the tongue) as well as experimental and theoretical research. Emphasis on the research designs, methods and reasoning by which the features of language are assessed. Research proposal required. Instructor: Day. One course. C-L: Linguistics 207
257. Introduction to Cognitive Neuroscience (B, C). NS The biological bases of higher brain function, including perception, attention, memory, language, emotion, executive functions and consciousness. Emphasis on human brain function at the macroscopic network-level, and the current theories and controversies in this rapidly growing field. Course is not recommended for Freshmen. Prerequisites (one of the following): Neuroscience 101/Psychology 106, or Psychology 102, or Psychology 275/Neuroscience 201/Biology 224, or Neurobiology 195FS/Neuroscience 195FS, or Neurobiology 193FS/Psychology 193FS/Neuroscience 193FS, or permission of instructor. Instructor: Egner, LaBar. One course. C-L: Neuroscience 212

258. Decision Neuroscience (B,C). NS, SS, STS How new research in neuroscience, cognitive psychology, and behavioral economics shapes our understanding of decision making. Topics include functional organization of key brain systems, approaches to measuring and interpreting neuroscience data, methods for measuring decision-making behavior, economic and cognitive modeling, and impact of neuroscience on real-world decision-making. Emerging topics will include applications in policy, marketing, and finance. Prior coursework in neuroscience or decision sciences is strongly recommended. Instructor: Huettel. One course. C-L: Neuroscience 258

260. Psychological Anthropology (C, D, S). CCI, SS One course. C-L: see Cultural Anthropology 237

273. Behavior and Neurochemistry (B). NS The role of brain chemicals (neurotransmitters, peptides, and hormones) in behavior. Hypotheses addressing the neurobiology of mental disorders and how they can be treated by pharmacological intervention. Emphasis on the development and critical evaluation of pharmacological models of brain function using mathematical and/or deductive/inductive models of reasoning and experimentation. Prerequisite: Psychology 106/Neuroscience 101. Instructor: Meck or staff. One course. C-L: Neuroscience 363

274. Drugs, Brain, and Behavior (B). NS One course. C-L: see Pharmacology and Cancer Biology 360; also C-L: Neuroscience 360

275. Fundamentals of Neuroscience (B). NS, STS Introduction to neuroscience: basic physiology; microstructure and anatomy of neural tissues; mechanisms of neuronal development and integration; sensory-motor control; auditory, visual, and olfactory systems; neural foundations of animal behavior; evolution of nervous systems. Emphasis on development and critical evaluation of neuronal theories of brain function using biochemical, mathematical, and/or deductive/inductive models of reasoning and experimentation. Pre-requisites: Chemistry 101DL or equivalent; Neuroscience 101/ Psychology 106 is required for Neuroscience majors; must have completed or be currently enrolled in Biology 201L or 202L; not recommended for first year students. Instructor: Bilbo or Meck. One course. C-L: Biology 224, Neuroscience 201

276. Brain and Behavior (B). NS *Introduces students to behavioral neuroscience—the study of how the brain generates behavior. Focus on detailed biological mechanisms underlying specific behaviors in many organisms, especially mammals. Topics covered include control of movement, sleep, learning and memory, motivation, emotion, and decision making. Prerequisite (one of the following): Psychology 106/Neuroscience 101, Psychology 275/Neuroscience 201, Psychology 195FS/Neurobiology 193FS/Neuroscience 193FS, Neurobiology 195FS. Instructor: Yin. One course. C-L: Neuroscience 211

277. Looking Inside the Disordered Brain (A, B, C). NS What brain circuits give rise to the dazzling diversity of human behavior, and how do even subtle disturbances within these circuits lead to abnormal behavior or psychopathology? This course provides students with a working knowledge of the brain circuits that create order in our social, emotional and cognitive worlds, and how disorder within these circuits leads to a broad range of psychopathology including depression, anxiety, phobias, PTSD, OCD, addiction, autism, schizophrenia, psychopathy and violence. Instructor: Hariri. One course. C-L: Neuroscience 277

278. Neuroethics. EI, NS, SS, STS One course. C-L: see Neuroscience 267; also C-L: Philosophy 353, Study of Ethics 269

279. Behavioral Neuroimmunology: Brain and Behavior in Health and Disease (B). NS An exploration of the interactions among the nervous, immune, and endocrine systems, and their consequences for neural function and behavior, using examples from both the human and animal literatures. Topics include the role of the immune system in cognition and emotions, neuroendocrine-immune interactions during stress, and the effects of stress on health and disease. The potential role of infections in the etiology of psychopathology (autism, schizophrenia) and neurodegenerative conditions (Parkinson’s, Alzheimer’s) will also be discussed. Prerequisite: one of the following: Psychology 106/
Neuroscience 101, Psychology 275/Biology 224/Neuroscience 201, Biology 101L, or equivalent. Instructor: Bilbo. One course. C-L: Neuroscience 375

280. Social and Affective Neuroscience (B,C). CCI, NS, SS Understanding how individual, interpersonal, and intergroup behaviors are processed in the brain. Topics include neuroscience of self- and group identity, self-regulation, social and affective communication, stereotyping, pro- and anti-social behavior, power motivation, group cooperation and competition, and cultural differences in emotion processing. Prerequisites - one of the following: Psychology 195FS/Neurobiology 193FS/Neuroscience 193FS, Neurobiology 195FS, Psychology 106/Neuroscience 101, Psychology 257/Neurobiology 212/Philosophy 249), Psychology 275/Neurobiology 201/Biology 224. Instructor: LaBar. One course. C-L: Neuroscience 280

281. Neuroscientific Approaches to Social Behavior (B,C,S). NS, R Incorporates social psychological questions and cognitive neuroscience methodologies to answer questions of social behavior and neural function. Covers a variety of scientific methods commonly used in social psychology, cognitive neuroscience, cognitive psychology, philosophy, computer science, developmental psychology, evolutionary anthropology, behavioral economics, and behavioral neuroscience, among others. Surveys the more common of these methodologies, focuses on fundamental questions in the field, prepares the student for research that address social questions relative to the brain, and neuroscience questions influenced by social behavior. Prerequisite: Psychology 101 and 106 or 104. Instructor: Staff. One course. C-L: Neuroscience 281

282. Neuroscience of Movement and Athletic Performance (B). NS Addresses neurobiology of movement, sports and other forms of physical performance at a variety of levels, from biochemical and physiological to cognitive and behavioral. Starting with neurophysiology of muscle development and movement and progressing through use of imagery and cognitive training, we will discuss the variety of neurobiological processes involved in athletic performance, as well as methods used to study these processes. Explores neuromuscular diseases, injuries and dysfunctions as well as use of exercise and movement as therapy for neuromuscular and non-neuromuscular disorders. Prerequisite: Neuroscience 101/Psychology 106. Instructor: Murphy. One course. C-L: Neuroscience 282

290. Special Topics in Psychology - Lecture. SS Topics vary by semester and section from the areas of Psychology: Abnormal/Health, Biological, Cognitive, Developmental or Social. Consent of instructor and/or specific prerequisites may be required for specific offerings. Instructor: Staff. One course.

290A. Duke Administered Study Abroad: Special Topics in Psychology. Topics differ by section. Instructor: Staff. One course.

290S. Special Topics in Psychology - Seminar. Topics vary by semester and section from the different areas of Psychology: Biological, Cognitive, Developmental or Personality/Social. This course counts toward the electives requirement, but it does not fulfill the Seminar requirement for the major. Consent of instructor and/or specific prerequisites may be required for specific offerings. Instructor: Staff. One course.

301. Research Methods in Psychological Science (G). R, SS, W Hands-on experience in designing and conducting research in psychology. Theoretical topics include experimental and non-experimental methods, including observational, archival, and case-study methods. Problems of validity and control. Using these theoretical tools, students review literature, design experiments, collect data, analyze data, and write papers on areas such as learning, cognitive science, sensation and perception, and social and psychology. Instructor: Cooper, Grimes, or Staff. One course.

302. Brain Waves and Cognition (B, C). NS, R, W Combined lecture/lab course on the event-related potential (ERP) method and its use in cognitive neuroscience. ERPs--electrical brain waves triggered by sensory and cognitive events--provide a powerful means to noninvasively study the timing and sequence of the neural activity underlying cognitive processes. How ERPs are generated, recorded, and analyzed, how they are used to study cognitive processes, and their relationship to other measures of brain activity. Students gain direct experience with the method in the lab. Prerequisites: two of the following: Psychology 106, 102, 257 or 275). Prior course in statistics and proficiency with computers strongly recommended. Instructor: Woldorff. One course. C-L: Neuroscience 383

303. Functional Neuroimaging (B,C). NS, R Overview of use of functional magnetic resonance imaging (FMRI) in the investigation of human sensory, motor, and cognitive function. Topics will include FMRI to study human brain systems involved with movement, sensation, perception, and memory. Students will design and execute a neuroim-
aging experiment. Prior course in Statistical Science is strongly recommended. Consent of instructor required. Instructor: Diaz. One course. C-L: Neuroscience 382

304. Child Observation (D). R, SS, W Introduction of research methods used to study children, with particular emphasis on observational techniques. Focus on developing proficiency in research methodology, becoming skilled at communicating research findings to other psychologists, and increasing knowledge and expertise with young children. Prior course in Statistical Science is strongly recommended. Junior and Senior only and consent of instructor required. Instructor: Grimes. One course. C-L: Child Policy Research


308L. Perception and the Brain (B, C). NS, R, W Explores capacities and limitations of human sensory systems. How the sense organs detect objects and events and what brains then do with that information. Concentrates primarily on the visual system, with some forays into other sensory modalities. Prerequisites: Psychology 102 or 106. Prior course in statistics is strongly recommended. Instructor: Groh. One course. C-L: Neuroscience 378


310. Research Methods in Psychopathology and Psychotherapy (A). R, SS, W Classic and contemporary research methods for the diagnosis and investigation of psychopathology as well as for conducting psychotherapy outcome and process research. Focus on developing proficiency in research methodology, developing skill in interpreting research reports and communicating research findings to other behavioral scientists, and increasing knowledge in the content domains of psychopathology and psychosocial intervention. Prerequisites: Junior or senior status and consent of instructor. Psychology 105 and prior course in statistics are strongly recommended. Instructor: Vieth. One course. C-L: Global Health

313. Contemporary Neuroscience Methods (B,C). NS One course. C-L: see Neuroscience 376

316S. Clinical Issues for the LGBTQ Community (A). CCI, SS One course. C-L: see Study of Sexualities 235S; also C-L: Women's Studies 235S

317S. Coping with Catastrophic Events (A). R, SS, W Impact, recovery process, and treatment techniques including psychological interventions focused on individuals, groups, and community. Instructor: Keefe. One course.

318S. Psychology of Positive Emotion and Experience (A). CCI, R, SS Critical examination of the positive psychology movement, including prior contributions to the field. Measures quality of data; issues related to gender, ethnicity, and culture. Focus on application to health. Prerequisite: One prior psychology class. Instructor: Staff. One course.

321S. Personality and Individual Differences (A,D). SS, STS Study of assessment of personality and cognitive-ability traits, and their influence on the life course. Topics include: assessment of personality traits; behavioral genetics; personality continuity and change across the life course; influence of personality traits and intelligence on health and status attainment. Prerequisite: introductory course work in psychological methods and statistics in the behavioral sciences. Instructor: Caspi. One course.

322S. Freud and Sexuality. CCI, R, SS One course. C-L: see Women's Studies 372S; also C-L: Literature 260S, Study of Sexualities 310S


336S. Issues in Language Development (C, D). CCI, SS, W "Critical Period" in language development, the role of 'motherese,' infant speech perception, innovative word creation, telegraphic speech, bilingualism and second language learning, learning to read, language, cognition and culture, and language pathology. Focus on learning to
critically evaluate empirical research papers from various areas of language development. Appropriateness of hypotheses, methodology and analyses, and whether or not the data the researchers gather warrants the conclusions they draw. Instructor: Mazuka. One course. C-L: Linguistics 336S, Child Policy Research

337S. Infancy (C, D, S). R, SS Critical analysis of research on perceptual, cognitive, social, emotional, and motor development in human infants. Existing models of development in these areas evaluated in light of recent experimental findings. Final projects integrating research findings across different domains, creating novel hypotheses and designing experiments to test these hypotheses. Prerequisite: Psychology 103, and one other psychology course. Instructor: Grimes. One course. C-L: Child Policy Research

339S. Life Span Analysis of Social Relationships (A,D). R, SS The emergence of different types of relationships at different ages (for example, friendship, marital relationship, parenthood) and the developmental changes that occur in social relationships across the life span; the differing roles these relationships play in the development of the individual. The beneficial and harmful effects of social relationships at different stages in life. Prerequisite: Psychology 101 or 103 or 104 or 221. One course. Instructor: Kotter-Grüehn. One course.


353S. Medical Decision Making (C). SS, STS Various topics in medical decision making explored from the perspective of behavioral science: emotion and medical decisions; allocation of health care resources; adaptations to changing health states; cognitive shortcuts used by patients and care providers; communication and understanding of risk information; informed consent; and improving the quality of decision making. Prerequisite: include one of the following Psychology courses: 101, 102, 205, 208, 209, or 257, or consent of instructor. Instructor: Weinfurt. One course. C-L: Public Policy Studies 334S

371S. Cognition in the Classroom: Applying the Science of Learning to Education (C). NS, R, SS An overview of the science of learning and memory, emphasizing applications to education. Cognitive psychology as related to topics such as study strategies, discovery learning, long-term maintenance of knowledge, metacognition, concept learning, individual differences across learners, and the skill of teaching. Prerequisite: prior course in cognitive psychology. Instructor: Marsh. One course.

374S. Human Sexuality (B). NS, STS The biological, endocrinological, and physiological correlates of human sexual behavior including sexual differentiation, pubertal development, adult male and female sexual behavior, premenstrual syndrome, menopause, sexuality and aging, homosexuality, and deviant sexual behavior. Emphasis on the reasoning, research designs, and methods for understanding gender roles and sexuality. Prerequisite: Psychology 106/Neuroscience 101 or background in biology. Instructor: Staff. One course. C-L: Study of Sexualities

375L. Functional Anatomy of the Human Brain (B). NS, STS One course. C-L: see Neuroscience 380L

376S. Behavioral Neuroendocrinology (B). NS, W The adaptive functions and physiological mechanisms of hormone-brain-behavior interaction through an examination of research and models in the field. Empirical and theoretical papers on the hormonal modulation of reproduction, rhythms, sexual differentiation, mood, learning and memory; perspectives on topics ranging from clinical basic science, with consideration of ethical issues. Research paper required. Prerequisite Psychology 106/Neuroscience 101 and at least 2 other courses in Psychology, Neuroscience or Evolutionary Anthropology to provide background. Instructor: Williams. One course. C-L: Neuroscience 366S

390S. Special Topics in Psychology. Topics vary by semester and section from the different areas of Psychology: Biological, Cognitive, Developmental or Personality/Social. Consent of instructor and/or specific prerequisites may be required for specific offerings. Instructor: Staff. One course.
390SA. Duke Administered Study Abroad: Special Topics in Psychology. Topics differ by section. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Meets general requirement of a curriculum Research (R) course but does not fulfill major requirement for an advanced seminar or methods course. Junior year fall. Prerequisite: Two courses in Psychology. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


405S. Great Ideas in Psychology (C). R, SS Ideas in psychology drawn from many content areas (including perception, personality, motivation, biological, social, cognitive, developmental, learning) and various methodological approaches (including experimental, introspection, observation, interview, longitudinal, computer simulation). Inductive/deductive approaches to psychology. Research paper required. Prerequisite: junior or senior psychology-major status and consent of instructor. Instructor: Day. One course.

406S. Theoretical Issues in General Psychology (C, D, S). SS Examination of theoretical and philosophical issues, such as relativism, the relation between mind and brain, and whether psychology is or can become a science, that cut across different areas of psychology. Emphasis on different views of the mind and what can be known about it. Instructor: Wallach. One course.

407S. History of Modern Psychology (A, B, C, D, S). SS, STS Major developments in psychology from the late nineteenth century to the present. Includes consideration of early experiments, William James, Freud and clinical psychology, behaviorism, Gestalt psychology, evolutionary thinking, psychological testing, Piaget, humanistic psychology, cognitive psychology, and questions about psychology’s future. Instructor: Wallach. One course.


411S. Disorders of Anxiety (A). SS Provides students with a solid foundation in the DSM anxiety (and anxiety-related) disorders, focusing on presentation and correlates, as well as etiological formulations and treatments associated with multiple theoretical perspectives. Readings include journal articles, case studies, and empirically supported treatment guides; class activities include role-plays and treatment demonstrations. Open to juniors and seniors only, with priority given to psychology majors. Prerequisite: Psychology 105 and consent of instructor. Instructor: Vieth. One course.

425. The Psychology of Consumers (C,S). EI, SS The psychology of consumers and ways of influencing consumer behavior. How knowledge of consumer psychology and behavior is used to develop marketing techniques. How to use consumer psychology in making business decisions; the ethical issues associated with consumer influence. Prerequisites: Prior course in Psychology. Instructor: Vieth or staff. One course. C-L: Markets and Management Studies

426. Social Psychology of Business (S). CCI, SS Application of social psychological principles to the understanding of how businesses respond to significant environmental change. Focus on multinational firms to allow for consideration of cross-cultural influences. Prerequisites: Psychology 104/Sociology 104 or a Markets and Management course. Instructor: Bleak or Gerend. One course. C-L: Markets and Management Studies

435S. The Role of Race and Culture on Development (C, D, S). CCI, EI, SS Critical examination of racial, cultural, and social influences on development of African American children in the U.S. Traditional and nontraditional theoretical and empirical approaches; issues surrounding children's cognitive, language, and psychosocial development, plus educational attainment explored from a socio-cultural perspective. Includes discussion of racial stereotypes, familial interactions, social policy, the media, and peer groups. Prerequisites: Introductory Psych, Devel-

436. Clinical Interventions with Children and Families (A,D). SS Study of techniques used by clinical psychologists to treat and prevent psychological disorders of childhood. Focus on a) understanding major types of clinical interventions, b) how clinical psychologists develop, implement, and evaluate interventions, c) ethical issues in treating children and families, d) integration of research and practice in the treatment and prevention of childhood psychological disorders. Prerequisites: Psychology 105 or 207, and a research methods course or statistics course. Instructor: Staff. One course. C-L: Child Policy Research

461S. Neurobiology of Learning and Memory (B, C). NS An active, team-based learning seminar addressing the neurobiological mechanisms of learning and memory. Focusing on the cellular basis of information encoding and retrieval, this course enables you to evaluate contemporary findings, design experiments and synthesize and communicate conclusions. Prerequisite: Psychology 257, 275, 276 or Biology 223/Neuroscience 223 or permission of instructor. Instructor: Roberts. One course. C-L: Neuroscience 461S

469S. Cognitive Control and the Prefrontal Cortex (B, C). NS, R, W Review and critical analysis of current and historical perspectives on functional neuroanatomy of the prefrontal cortex. Discussion is informed by anatomical, neuropsychological, neurological, neuroimaging, animal models, and computational approaches. Open to juniors and seniors majoring in Psychology or Neuroscience, and to graduate students. Instructor consent required. Instructor: Egner. One course. C-L: Neuroscience 469S

471S. Reward and Addiction (B). NS, W Biological and psychological mechanisms of reward and addiction from a "molecules to mind" perspective. Topics include: neural mechanisms of reward, vulnerability to addiction, self-medication, addiction as a learning process, animal models of addiction, gateway drugs, roles of stress and impulsivity, adolescence, genetic vs. environmental predisposition, neural alterations resulting from drug intake. Prerequisite: Psychology 106/Neuroscience 101 or Psychology 275/Biology 224/Neuroscience 201. Instructor: Schramm-Sapyta. One course. C-L: Pharmacology and Cancer Biology 471S, Neuroscience 471S

473S. The Neurobiology of the Pain System: Its Function and Dysfunctions (A,B,C). NS, R, W The physiological basis of the pain system and its role in everyday life. Pain system disorders and dysfunctions, such as phantom limb pain, chronic pain, and fibromyalgia are discussed in terms of biological mechanisms and the perceptions and experiences of patients. Practice reading and writing scientific papers. Prerequisites: Psychology 106/Neuroscience 101 or Psychology 275/Biology 224/Neuroscience 201. Instructor: Murphy. One course. C-L: Neuroscience 473S

474S. Biological Psychology of Human Development (A, B, D). R, SS, W Multidisciplinary perspectives bearing on key processes in human development from infancy through old age; the way that biological and psychological processes act together in normal and pathological behavior and development. Clinical case material and videotapes. Open to juniors and seniors only, preferably Psychology majors and students in the Program in Human Development. Instructor: Thompson. One course. C-L: Human Development

477S. Biology of Nervous System Diseases (B). NS One course. C-L: see Biology 421S; also C-L: Neuroscience 421S

478S. Motivation, Action, Choice: Neural and Behavioral Mechanisms (B,C). NS, W Behavioral analysis and neural mechanisms underlying goal-directed and voluntary actions--how they are driven by needs and desires of the organism and controlled by cognitive processes that provide a rich representation of self and world. Discussion of models of behavioral and cognitive control and their neural mechanisms and implications of such models for psychiatric disorders, consciousness, free will, and responsibility. Participation in class discussion and short weekly writing assignments required. Prerequisites: Exploring the Mind courses or Psychology 106/Neuroscience 101 and at least one other psychology or neuroscience class. Instructor: Yin. One course. C-L: Neuroscience 478S

479S. Auditory Neuroscience - From Sound to Music. NS One course. C-L: see Neuroscience 425S; also C-L: Music 425S

490A. Duke Administered Study Abroad: Special Topics in Psychology. Topics differ by session. Instructor: Staff. One course.

493. Research Independent Study. R See Psychology 393. Senior year fall. Prerequisite: Two psychology courses. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.
494. Research Independent Study. R See Psychology 393. Senior year spring. Prerequisite: Two psychology courses. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

496. Graduation with Distinction Thesis Preparation Workshop I. Designed to help prepare students for writing of Graduation with Distinction thesis. (Restricted to distinction candidates.) Topics include: variation in experimental approach, design, and data analysis; thesis preparation using APA format; presentation of results for scientific conferences. Practical, science-writing workshops intermixed with research presentations by departmental faculty to provide different perspectives on methodology within the field. Satisfactory/Unsatisfactory grading only. Consent of director of undergraduate studies required. Instructor: Staff. Half course.

497. Graduation with Distinction Thesis Preparation Workshop II. Continuation of Psychology 496. Focus on completion and submission of Graduation with Distinction thesis. Satisfactory/Unsatisfactory grading only. For undergraduates only. Consent of department required. Instructor: Staff. Half course.


499S. Current Research in Neuroscience (B). EI, NS, R, W One course. C-L: see Neuroscience 499S

510S. Developmental Psychopathology (A, D). EI, R, SS, STS Examines emotional and behavioral disorders in childhood and adolescence from a developmental perspective. Issues addressed include biological, cognitive, familial, and social aspects of the disorders and relevant risk and protective factors. Open only to graduate students and advanced undergraduate students. Instructor: Curry. One course.

575. Brain and Language (B, C). NS One course. C-L: see Linguistics 510; also C-L: Neuroscience 510

580. The Biological Basis of Music. One course. C-L: see Neurobiology 559; also C-L: Philosophy 559

590. Special Topics in Psychology. SS Advanced topics vary by semester and section from the areas of Psychology: Abnormal/Health, Biological, Cognitive, Developmental or Social. Consent of instructor and/or specific prerequisites may be required for specific offerings. Open to Undergraduate and Graduate/Professional students. Instructor: Staff. One course.

605S. Obesity and Eating Disorders (A,B). CCI, NS, R, SS A review of obesity and of the major clinical eating disorders (including binge eating disorder, bulimia nervosa and anorexia nervosa) and their pathophysiology, and their treatments. Prerequisite: Introductory Biology. Instructor: Surwit. One course.

607S. Personality, Stress, and Disease (A). NS, SS, STS The role of psychosocial factors in the development and course of physical disease. Both epidemiological and laboratory-based research considered. Become familiar with major behavioral medicine research studies that have made significant contributions to our understanding of the role of psychosocial factors in medical illness and develop skills necessary for critical evaluation of research on psychosocial factors and disease. Appropriate for students with interests in medical careers or in health psychology. Instructor: R. B. Williams. One course.

608S. Gender, Pain, and Coping (A). R, SS, W Examination of recent research on gender differences manifested in severity of pain, in healthcare seeking behaviors for painful conditions, and in responses to pain management interventions such as medications or self-help efforts. Exploration of gender-related factors, psychological, social, spiritual, cultural, and biological, which influence responses to persistent pain. Writing intensive seminar requiring student critiques of recent journal articles focused on sex and gender differences in the pain experience, as well as a review paper analyzing recent research in this area. Instructor: Keefe. One course.

609S. Psychosocial Determinants of Health (A,S). SS Provides an in-depth understanding of psychosocial determinants of health. Emphasis on the ways psychological factors interact with social, cultural, economic, and environmental contexts of health. Topics include impact of social integration, socioeconomic position, discrimination, health behaviors, and affective states on health outcomes. Students will gain competency through lectures, discussions, written work, and oral presentations. Prerequisite: Psychology 104 or 105, Research Methods. Open to Juniors, Seniors and Graduate students. Instructor: Richman. One course.

610S. The Psychology of Mindfulness Meditation: Theory, Research, and Practice (A). CCI, NS, SS Mindfulness meditation in relation to psychological and physical health. Traditional Buddhist teachings and contemporary Western perspectives on mindfulness. Survey of empirical research, including controlled trials and studies of basic mechanisms and processes through self-report, psychophysiological, and neuroimaging methods. Use of mindfulness practices in behavioral and other psychotherapies. Includes experiential learning through meditation
practices in class and for homework assignments, as well as lecture and discussion. Readings mostly original journal articles and book chapters. Prerequisites: Psychology 102, 105, or 106 desirable. Open to graduate and advanced undergraduate students. Instructor: Robins. One course.

611. Global Mental Health. CCI, NS, R, SS, STS One course. C-L: see Global Health 660; also C-L: Cultural Anthropology 611

612S. The Psychology of Trauma and Memory (A,C). R, SS Critical examination of the empirical research on and theoretical assumptions and logic about memory for trauma in normal and clinical populations. Topics include claims and data concerning ongoing debates about accuracy, narrative coherence, involuntary versus voluntary memory, the effect of extremes of emotion on memory and the posttraumatic stress disorder diagnosis. Levels of analysis range from neural substrates, through behavior and thought processes to the social construction of memory and trauma. Prior course work in either cognitive or personality or clinical psychology is desirable. Instructor: Rubin. One course.

625S. Motives, Goals, and Social Behavior (S). SS Covers a variety of topics involving the motivations underlying a variety of social behaviors (such as interpersonal relationships, stereotyping, and achievement) and the social and psychological processes involved when people try to regulate their own motives, thoughts, emotions, and behavior. Reading and discussion of literature on current theory and research on motivation, goal-directed behavior, and self-regulation. Instructor: Shah. One course.

627S. Stereotypes and Stigma (S). CCI, SS Experimental research in stereotyping and stigma; readings from psychology, public health, and sociological perspectives on issues related to ethnicity, gender, and social class. Consent of instructor required. Prerequisites: Psychology 104. Instructor: Richman. One course.


654S. Psychology of Aging (A,C,D,S). SS, STS An interdisciplinary approach to the study of aging. Psychological development in middle adulthood and old age as linked to disciplines such as Public Policy, Sociology, Geriatric Medicine & Psychiatry. Age-related changes in well-being, cognition, personality, and social relationships. Real-life issues that will affect most people in the future (e.g., successful retirement, decreasing one's risk of dementia). Open to undergraduate and graduate students. Prerequisites: none. Instructor: Kotter-Gruehn. One course.

655S. Children's Peer Relations (D). SS Examination of the empirical literature with emphasis on the functions that peers serve for children, the developmental course of these relationships, the clinical ramifications and possible explanations for inadequate peer relations (including an examination of the family's role), and interventions used to improve children's relationships with their peers. Regular opportunities to analyze, critique, and synthesize primary research literature. Consent of instructor required. Instructor: Asher or Putallaz. One course. C-L: Child Policy Research

658S. Seminar in Emotion (D, S). SS Theories of emotion, covering biological, developmental, social, ethological, and cultural perspectives. Topics include facial and vocal expression of emotion, individual differences in emotion development, the role of emotion in social relationships, emotion and psychopathology, and emotion and physical health. Prerequisite: Psychology 104 or 114 and consent of instructor. Instructor: Staff. One course. C-L: Women's Studies

659S. Nonverbal Cognition (B,C,D). Exploration of Nonverbal cognition in animals and human infants. Focus on nonverbal counting and the relationship between the representation of number, time, and space. Topics include animal cognition, developmental psychology, neuropsychology, and brain imaging to sketch a complete picture of how the mind represents number in the absence of linguistic counting. Upper level undergraduates may enroll with consent of the instructor. Prerequisite: Consent of instructor. Brannon. One course.

660S. Achievement Motivation. R, SS Course provides an in-depth look at the development of achievement motivation in educational settings (primarily elementary through college) from a psychological perspective.
Addresses how students' responses to questions such as "Can I do this task?" and "Why do I want to do this task?" shape engagement and learning. Focus will be on how achievement motivation develops and what can be done to promote the development of adaptive forms of motivation. Course readings include an advanced text accompanied by theoretical and empirical journal articles. Instructor consent required. Prerequisites: Junior or Senior status and completion of PSY 103 or 104. Instructor: Staff. One course.

665S. Autobiographical Memory (C). SS A review and critical analysis of the literature, theory, and empirical study of autobiographical memory within cognitive psychology. Emphasis on the reasoning, research designs, and methods used in examining autobiographical memory. Consent of the instructor required. Instructor: Rubin. One course.

667S. Learning and Cognition in Humans, Animals, and Robots (B,C). NS Connectionist theories of human and animal learning and cognition applied to robotics. Neural network theories of classical conditioning; concepts of models of the environment, prediction of future events, redundancy reduction, competition for limited capacity short-term memory, mismatch between predicted and observed events, stimulus configuration, inference generation, modulation of attention by novelty, and timing. Neural networks of operant conditioning; concepts of goal-seeking mechanisms, response-selection mechanisms, and cognitive mapping. How neural network models can be used to develop psychological theories, models of the brain, and robots. Instructor: Schmajuk. One course. C-L: Neuroscience 667S, Information Science and Information Studies

668S. Everyday Cognition (C). SS Selected cognitive processes (e.g., encoding, retrieval, representation, information load) and how they work in everyday settings. Cognition in classrooms, courtrooms, hospitals, grocery stores, jobs, athletics, and dance. Special focus on medical cognition, courtroom cognition, and memory for movement. For each setting, successful vs. mediocre performance, task analysis, errors, experiments, applications. Presentations by the instructor, students, and specialists from the everyday world (e.g., pharmacists, judges, choreographers). Instructor consent required. Instructor: Day. One course.

669S. Affective Neuroscience (B, C). NS A critical examination of current theory and experimental research related to neurobiology of emotional information processing and emotion-cognition interactions. Topics range from animal studies to clinical disorders, including neurogenomics, social cognition, functional brain imaging, emotional learning and memory, neuroethics, and individual differences. Basic background in neuroanatomy and cognitive neuroscience expected. Consent of instructor required. Prerequisites: Psychology 257 or Psychology 275. Instructor: LaBar. One course. C-L: Neuroscience 669S


671S. Nature and Treatment of Eating Disorders Across the Lifespan (A,D). R, SS Study of atypical and typical development of conscious somatic sensation, i.e. how individuals sense and understand body signals and how extremes of sensitivity may form part of the core phenomenology of disorders such as anorexia nervosa, pediatric obesity, and autism spectrum disorders. Study of detailed narratives of patients have served as a springboard for novel hypotheses about human function. Readings alternate between primary journal articles to patient memoirs and narratives. Students interview patients struggling with eating disorders, children who binge eat, and children with high functioning autism, among other clinical conditions. Juniors, Seniors and Graduate students. Instructor: Zucker. One course.

672S. Cognitive Neuroscience of Memory (B,C). NS Research on the neural correlates of memory in humans. Neuropsychological studies with brain-damaged patients and functional neuroimaging studies with healthy individuals. Cognitive neuroscience models of memory, including episodic memory, working memory, semantic memory, priming, and procedural memory. Prerequisite: Psychology 102 or Psychology 106/Neuroscience 101, and consent of instructor. Instructor: Cabeza. One course. C-L: Neuroscience 672S

673S. Computer Models and the Treatment of Psychiatric Disorders. NS, QS Introduce students to the use computational neuroscience modeling for understanding the mechanisms involved in different psychiatric disorders (e.g., anxiety, substance abuse, post-traumatic stress disorder). In the context of computational models, we will then analyze behavioral interventions (e.g., exposure-based therapies) and pharmacological therapies (e.g., administration of haloperidol in the treatment of schizophrenia). Instructor consent required. Instructor: Schmajuk/Rosenthal. One course. C-L: Computer Science 673S, Information Science and Information Studies 673S, Pharmacology and Cancer Biology 673S
681S. Genetics and Environment in Abnormal Behavior (A,B,C,D). EI, NS, SS Introduces students to an emerging topic in behavioral science: the interaction between genes and environments. Evaluates research showing that genes influence susceptibility to the environmental causes of abnormal behavior, and research showing that genes' connections to behaviors depend on environmental experiences. Readings are primary journal articles. Topics include the design and analysis of genetic research into mental disorders, and ethical issues stemming from genetic research into human behavior. Prior coursework in statistics/research methods, genetics, and/or abnormal psychology is desirable. Consent of instructor required. Instructors: Caspi and Moffitt. One course. C-L: Genome Sciences and Policy


685S. Biological Pathways to Psychopathology (A,B,C). NS Introduces students to emerging methodologies for understanding the biological pathways of psychopathology. Evaluates research showing that the integration of psychology, neuroimaging, pharmacology and genetics can illuminate specific biological pathways that help shape risk for and emergence of psychopathology. Readings are primary journal articles. Topics include the design and analysis of multimodal research (fMRI, PET, pharmacology, molecular genetics) examining the biological underpinnings of behavioral traits relevant to psychopathology. Prerequisite: Psychology 277/Neuroscience 277 or Instructor consent required. Instructor: Hariri. One course. C-L: Neuroscience 685S

686S. Principles of Neuroimmunology (B). NS Bidirectional communication between the brain and immune system, in disease and during normal function/homeostasis. Historical foundations of the field in disorders such as multiple sclerosis and HIV; the anatomy of CNS-immune connections; blood-brain-barrier function and dysfunction; leukocyte trafficking, surveillance, and infiltration of the CNS; cellular players including peripheral vs. CNS-resident immune cells and antigen presentation; neuroinflammation and neurodegenerative disease; recent literature highlighting the critical role of immune molecules in neural development and lifelong plasticity. Instructor consent required for undergraduates. Instructor: Bilbo. One course. C-L: Neuroscience 686S

690S. Special Topics in Psychology. Topics vary by semester and section from the different areas of Psychology: Biological, Cognitive, Developmental or Personality/Social. Consent of instructor and/or specific prerequisites may be required for specific offerings. Open to Undergraduate as well as Graduate/Professional students. Instructor: Staff. One course.

The Major

For the AB Degree

Major Requirements. Eleven courses in psychology are required for the major. The major is devised to provide breadth and depth, a small group course in psychology, and familiarity with the quantitative techniques and research methods used in psychology. Students with AP credit for Psychology 101 (an AP score of five is required) are encouraged to begin with one of the 100-level area survey courses. Please note that students who receive AP credit for Psychology 101 will still need to complete a total of eleven courses in the major in addition to the AP credit for Psychology 101. For students without AP credit for Psychology 101, this class is strongly recommended as the first course taken in the major as it provides a foundation for all other courses; the survey courses should be taken next as they provide a foundation for additional courses in each area.

For breadth, the student is required to take Psychology 101 (Introductory Psychology) and at least two survey courses that cover major areas of the field. One of these survey courses must be Psychology 106 (Biological Bases of Behavior) or Psychology 102 (Cognitive Psychology), and one must be Psychology 105 (Abnormal Psychology), Psychology 103 (Developmental Psychology), or Psychology 104 (Social Psychology). Students seeking additional breadth may count up to four of these survey courses toward the major. Psychology 101 is strongly recommended as the first course taken in the major as it provides a foundation for all other courses; the survey courses should be taken next as they provide a foundation for additional courses in each area.

For depth, the student is required to complete at least three courses in two areas where a survey course was completed. At least one course beyond the survey level must be in the biological or cognitive area and at least one must be in the abnormal/health, developmental, or social area. For example, if a student completed survey courses in
the biological (Psychology 106) and developmental (Psychology 103) areas, at least three additional courses in the biological and developmental areas are required, with a minimum of one course in each area.

For **instruction in small groups**, the student is to take at least one seminar. It is recommended that the seminar be taken in an area where a survey course was completed.

For **quantitative techniques**, the required course is Psychology 201 (Introduction to Statistical Methods in Psychology). The course completed to satisfy this requirement will also count as one of the eleven courses required for the major. The following courses are also acceptable: Mathematics 342, Statistical Science 101, 102, 111, or 250. Other courses may be substituted only with advance permission of the director of undergraduate studies. Students who plan on taking courses in the Department of Statistical Science should consult with the director of undergraduate studies in psychology and neuroscience prior to enrolling in their initial statistics class. Please note that students may not use multiple introductory-level statistics classes to satisfy elective requirements.

For an introduction to **research methods** in psychology, each student will take Psychology 301 (Research Methods in Psychological Science), or one of the specialized research methods in the 301-315 series. Students are advised against enrolling in research methods prior to statistics.

Of the eleven courses required for the major at least nine must be taken in the psychology department at Duke; others, if approved, may count toward the thirty-four credits needed for graduation but will not count toward the major. Information is also available at [http://psychandneuro.duke.edu/undergraduate-major-minor-in-psychology](http://psychandneuro.duke.edu/undergraduate-major-minor-in-psychology).

**For the BS Degree**

The BS degree requires completion of all requirements for the AB degree plus additional courses in the quantitative studies (QS) and natural sciences (NS). Students must complete at least two psychology courses that have a NS designation. The two required NS courses in psychology can count toward courses required for the AB degree or, if not used to meet AB requirements, toward the five elective NS classes required by the BS degree.

For the additional **quantitative studies** requirement (QS), students must take one of the following: Mathematics 112 or 122, or Statistical Science 210 or 340. Note that Psychology 201, the statistics class in psychology, will not enable students to enroll in Statistical Science 210 or 340, and students should review the Statistical Sciences website for the prerequisites for these classes.

For the **natural sciences elective** requirement (NS), students must take five elective courses selected from an approved list that meet the following criteria: (a) classes come from at least two departments, and (b) at least three of the five are at or above the 200 level. Note: Psychology & Neuroscience courses not used to fulfill other major requirements (including up to two semesters of empirically oriented independent study credit) may be counted toward the five, but courses cross-listed with psychology and another department do not count as a second department. Additional research methods courses may be counted toward the elective requirement only with prior approval of the director of undergraduate studies in psychology. A list of currently approved classes for the neuroscience elective requirement can be found on the undergraduate section of the Psychology & Neuroscience website.

**The Minor**

**Requirements.** Five courses in psychology including Psychology 101 (Introductory Psychology) and at least two survey courses that cover major areas of the field. One of these survey courses must be Psychology 106 (Biological Bases of Behavior) or Psychology 102 (Cognitive Psychology) and one must either be Psychology 105 (Abnormal Psychology), Psychology 103 (Developmental Psychology), or Psychology 104 (Social Psychology). At least one of the remaining courses must be beyond the survey level (i.e., above 106).

**Independent Study**

A program of individualized readings or an empirical research project may be carried out by arrangement with a faculty supervisor and enrollment in Psychology 393, 394, 493, and 494. Psychology 203 serves as an excellent introduction to independent study. A written plan of the program must be approved by the supervisor and the director of undergraduate studies. At most only one of these independent study courses may count toward the depth requirement, and only two may count toward the major.

**Graduation with Distinction Program**

The Graduation with Distinction program is based on a special project that requires original empirical research, usually developed through participation in independent studies. With approval from the director of undergraduate
studies, a critical analysis of a problem in the field based on an extensive literature review may be substituted for an empirical research study. The project is to be summarized in a carefully written thesis to be the subject of an oral examination. The opportunity to write a thesis and qualify for Graduation with Distinction is open to those majoring or minoring in psychology. It is also open to students in Program II with a relevant topic. Applicants must have an overall GPA of 3.0 and a GPA in Psychology of 3.5 without rounding by graduation. Psychology minors and Program II students must have 3.5 GPA in the major program of study. Independent study classes in psychology are not included when calculating the GPA.

An application to the Graduation with Distinction program should be submitted no later than the last day of classes of the second semester of the junior year, with the expectation that at least two semesters will be devoted to the project. The application must include names of the three people who will serve on the student's committee.

Guidelines concerning Graduation with Distinction committees are as follows: 1) One member must be a core member of the psychology faculty; 2) The second committee member must be either a core faculty member or hold a secondary appointment in psychology; and 3) The third committee member may be a graduate student, psychology post doc or a faculty member who is not a member of the psychology faculties.

Students who are accepted into the program will register for two of the courses listed (393, 394, 493, 494) in two consecutive semesters. Ordinarily, the same mentor will serve in both semesters. Candidates for Graduation with Distinction must also enroll in two half-credit classes, 496 and 497, focusing on the conduct of psychological research, ethics in research, professional opportunities, and especially science writing in order to prepare a quality thesis; this is typically done in students’ senior year. Near the end of the final semester, candidates should submit three copies of the thesis to their mentor. The student will then convene the faculty committee for an oral examination of the student and a decision as to whether the overall performance qualifies for Graduation with Distinction. An exceptional thesis combined with outstanding performance in psychology may qualify a student for the Zener Award. Graduation with Distinction research projects will be displayed at the spring Psychology Research Poster Fair.

Public Policy Studies

Professor Brownell Dean; Professor of the Practice Rogerson, Director of Undergraduate Studies; Professors Agre (chemistry), Clotfelter, P. Cook, Darity, Dodge, Feaver (political science), Fleishman, Healy (environment), Jentleson, Korstad, Krishna, Ladd, McClain (political science), Munger (political science), Nechyba (economics), Merli, Pizer, Price (political science), Sanders Schroeder (law), Sloan (economics), and Weiner (law); Associate Professors Ananat, Balleisen, Conrad, Frankenberg, Mayer, Peck, Pfaff, and Whetten; Assistant Professors, Bellemare, Bermeo, Brands, Carnes, Charney, Chen, Gassman-Pines, Gibson-Davis, Goss, Harding, Jeuland, T. Johnson, Kelley, Mohanan, Pearson, Rangel, Rose, Sexton and D. Taylor; Professors of the Practice Adair, Bennett, Brown, Glenday, Harris, Joseph, Kelly, Lethem, Pomerantz, Shukla, Skloot Spengler, Stangl (statistics), and T. Taylor; Associate Professor of the Practice F. Fernholz; Research Professors and Vaupel; Assistant Research Professor Muschkin; Adjunct Professor Yaggy; Adjunct Associate Professor Pickus; Adjunct Lecturer Shoenefeld; Visiting Professors Gillis Oberschall, and Roselle; Visiting Associate Professors Krupp and Schanzer; Visiting Assistant Professors Sasser, Schewel, Tham, and Zanalida; Visiting Professors of the Practice Burness, Johnson, and; Lecturer Blount and Owen; Visiting Lecturers Angrist, Bliwise, T. Cook, Elon, Emmett, R. Fernholz, Gergen, Hahn, Healey, C. Johnson, Kaufman, Moriarty-Lempke, Moses, McCorkle, Saponara, Slawson-Kuniholm, So, Sud, Weddington and VanSant; Senior Research Scientists Vaupel, Rabiner, and Rosch; Research Scientists Babinski and Snyder-Fickler

A major is available in this department.

Courses in public policy are open to all students providing that any prerequisites are met.

Courses in Public Policy Studies (PUBPOL)

89S. First-Year Seminar. Topics may vary each semester offered. Instructor: Staff. One course.

110. Information, Society & Culture: Bass Connections Gateway. CZ, STS One course. C-L: see Information Science and Information Studies 110; also C-L: Philosophy 110, Computer Science 110

120. Undergraduates Internship Requirement. Field work in chosen policy area with pre-approval of the Internship Coordinator. Must submit approval form, five page memo, and self-evaluation form two weeks after
internship ends. Prerequisites: Economics 201D, Public Policy 155D, 301, 302, 303D/equivalent, Statistical Science 101, and approval from Internship Coordinator. Instructor consent required. Instructor: Staff.

121. Internship. For students working in a public agency, political campaign, or other policy-oriented group under the supervision of a faculty member. Prior consent of assistant director of internships, placement, and alumni and director of undergraduate studies required. Requires a substantive paper (or papers) containing significant analysis and interpretation. Satisfactory/Unsatisfactory grading only. Prerequisite: Economics 201D, Public Policy 155D, 301, 302, 303D/equivalent, Statistical Science 101, and approval from Internship Coordinator. Instructor: Staff. One course.

155D. Introduction to Policy Analysis. SS Basic concepts of analytical thinking including quantitative methods for assessing the probabilities of outcomes and appraising policy alternatives. Illustrated by problems faced by busy decision makers in government, business, law, medicine. Instructor: Bermeo, Kelley, Mayer, or Taylor. One course. C-L: Global Health

160D. Introduction to the History of War, Military, and Society. CZ, EI, SS One course. C-L: see History 114D

161D. Introduction to the History of Law and Governance. CZ, EI, SS One course. C-L: see History 110D

165. Introduction to the United States Health Care System. SS Overview of the key health policy issues in the United States. Topics include: (1) sources of morbidity and mortality; (2) access to health care; (3) financing of health care including an overview of how health insurance works, Medicare and Medicaid and why there are uninsured persons and to what effect; (4) quality of health care; (5) the role of innovation in both treating disease and influencing costs; (6) mental health, including why drug and alcohol treatment is generally considered to be a mental health service; (7) the role of non-profit versus for-profit ownership of health care facilities and to what effect; (8) long term care; and (9) the impact of social phenomenon such as income inequality, social class and culture on health care. Instructor: Taylor. One course.


182. Public Speaking: Policy Advocacy and Communication. W Theoretical and practical understanding of the elements of effective advocacy, especially as applied to policy issues. Focus on oral communication (both formal public speaking and interactive exchange), written exposition, and presentation skills. Emphasis on the human dimensions of the communication process-voice and body behavior, audience evaluation, focus, control and self-awareness. Identifies techniques for minimizing communication distraction, developing confidence in presentation situations, and analyzing informational requirements. Does not apply toward public policy studies major. Instructor: Byerly or Frey. One course.

184FS. Synthetic Genomics: Science, Policy and Ethics. EI, NS, SS, STS One course. C-L: see Genome Sciences and Policy 138FS

185FS. Drugs and the Law. SS One course. C-L: see Neuroscience 153FS

190FS. Focus Program Introductory Special Topics in Public Policy. SS Introductory and basic topics in public policy. Topics vary each semester. Does not count for public policy studies major. Open only to students in the Focus Program. Instructor: Staff. One course.

201A. Environmental Policy in Europe: Duke in Berlin. CCI, SS One course. C-L: see Political Science 295A; also C-L: German 320A, International Comparative Studies

202. Law, Culture, and the Russian Legal Tradition. CCI, CZ, EI, SS One course. C-L: see Russian 353; also C-L: International Comparative Studies

203. The 1960S: History and Public Policy. CZ, R, SS One course. C-L: see History 378
204A. Political Philosophy of Globalization. CCI, CZ, EI, SS One course. C-L: see Philosophy 237A; also C-L: Political Science 297A, Economics 303A

207. Development and Africa. CCI, CZ, SS One course. C-L: see African and African American Studies 307; also C-L: Cultural Anthropology 307, International Comparative Studies 308, Marxism and Society

208S. Language and Politics: Eurasian Perspectives. CCI, SS One course. C-L: see Linguistics 471S; also C-L: Slavic and Eurasian Studies 484S, Sociology 471S


210DA. Berlin Since the War. CCI, CZ One course. C-L: see German 366DA; also C-L: History 334DA

211. Engineering Sustainable Design and the Global Community. QS, STS One course. C-L: see Civil and Environmental Engineering 315; also C-L: Environment 365, Energy and the Environment

211-20. Engineering Sustainable Design and the Global Community: Structural Focus. QS, STS One course. C-L: see Civil and Environmental Engineering 315-20; also C-L: Environment 365-20

211-60. Engineering Sustainable Design and the Global Community: Environmental Focus. QS, STS One course. C-L: see Civil and Environmental Engineering 315-60; also C-L: Environment 365-60

212. Globalization and Public Policy. R, SS How the various aspects of globalization affect, and are affected by public policy at the international, national and local levels. Development of an analytic framework for thinking about globalization and its core concepts, major institutions and political dynamics; survey of a range of major policy areas affected by globalization; focus on a policy area of particular interest. Instructor: Jentleson. One course. C-L: Political Science 358, International Comparative Studies, Islamic Studies

214FS. Law and Globalization in Emerging Markets. CCI, SS One course. C-L: see Russian 214FS; also C-L: International Comparative Studies 277FS

214S. Law and Globalization in Emerging Markets. CCI, SS One course. C-L: see Russian 214S

216S. The U.S. Border and its Borderlands. CCI, CZ, EI, SS, W Examines the challenges and opportunities of the U.S. border from a geopolitical perspective. Detailed review of how the current U.S. boundaries were set, and how this shapes current attitudes and conflicts. Assessment of various means of border control, including visa issues, border walls and port of entry screening. Cultural and historical comparison of two borderlands, Seattle-Vancouver and San Diego-Tijuana, and the EU experience. Overall course theme: Can the border effectively and ethically screen noxious elements without blocking legitimate and necessary travel and trade. Specific skills taught: policy memo writing and oral briefing strategies. Instructor: Kelly. One course. C-L: Canadian Studies 350S, Political Science 343S, International Comparative Studies 359S, International Comparative Studies, Latin American Studies

217SA. Theory and Practice: People, Places and Policy Cases. SS Talks by Congress members, legislative staff members, interest group leaders, journalists, and other members of the public policy community in Washington. Visits to government buildings, historical sites, and other policy-rich attractions in the nation's capital. Discussion and written assignments require analysis and linkages between "real world" of policy practice and theories and concepts from political science and public policy studies. Offered through the Duke in DC program. Instructor: Goss. One course. C-L: Political Science 240SA

218. Sports, Economics and Politics in Russia and Eastern Europe. CCI, CZ, SS One course. C-L: see Slavic and Eurasian Studies 320

218S. Conflict Analysis in Africa (case studies). CCI, CZ, SS One course. C-L: see African and African American Studies 310S; also C-L: Cultural Anthropology 310S

219D. The Modern Regulatory State. CZ, EI, R, SS One course. C-L: see History 365D; also C-L: Environment 365D, Political Science 340D

222. International Political Economy. CCI, R, SS One course. C-L: see Political Science 350; also C-L: International Comparative Studies 350

223. Global Russia. CCI, CZ, EI, SS One course. C-L: see Russian 399; also C-L: Cultural Anthropology 399, International Comparative Studies 399
224S. Doing Good: Anthropological Perspectives on Development. CCI, EI, R, SS One course. C-L: see Cultural Anthropology 328S; also C-L: International Comparative Studies 366S

225S. Women in the Public Sphere: History, Theory and Practice. CCI, SS, W One course. C-L: see Women's Studies 385S

226. Anthropology and Public Policy. CZ, EI, SS One course. C-L: see Cultural Anthropology 340

227S. Animals and Ethics: Welfare, Rights, Utilitarianism, and Beyond. CCI, EI, SS One course. C-L: see Women's Studies 270S

228S. Documentary and Policy: How Documentary Influences Policy. ALP One course. C-L: see Documentary Studies 272S; also C-L: Arts of the Moving Image 336S

229S. Religion and Politics. CCI, EI, SS Explore the appropriate relationship between religion and politics. Emphasize American politics but consider in relation to global politics. Topics include Constitutional law and separation of church and state: should there be a "wall of separation" or does such a wall discriminate against religion and impoverish politics? Faith-based initiatives, religious fundamentalism, liberal "public reason" and role of religion in public political debate. Readings from political theory, Constitutional law, and public commentary. Instructor: Goldman. One course. C-L: Political Science 379S, Religion 274S

230S. Human Rights Activism. CCI, EI, R, SS One course. C-L: see Cultural Anthropology 235S; also C-L: Political Science 380S

231. Human Rights in Theory and Practice. CCI, CZ, EI, SS One course. C-L: see Political Science 272; also C-L: Philosophy 262, International Comparative Studies 272, Documentary Studies, Ethics Courses Offered Through Other Departments, Global Health


234S. Distributive Justice. EI, SS One course. C-L: see Political Science 266; also C-L: Ethics Courses Offered Through Other Departments

235. Gender, Race, and Ethnicity in Politics and Public Policy. SS One course. C-L: see Political Science 303; also C-L: African and African American Studies 241, Women's Studies 303

236. Globalization and History. CCI, CZ, SS One course. C-L: see History 201

237S. Research in International Policy Issues. CCI, R, SS Surveys several issues displaying different forms or policy responses in various geographical regions and cultures. Examples include: competition over energy resources, design of international organization, trends of human migration, privatization of security, and patterns of economic inequality. An interdisciplinary approach with attention to political, economic and social patterns. The goal is to introduce international policy issues that remain unsolved, while understanding how present-day relationships and policies are shaped by the past. Particularly useful for students looking for international topics for honors theses or other research projects. Instructor: Johnson. One course. C-L: Political Science 225S


239. Ethnic Conflict. CCI, R, SS One course. C-L: see Political Science 227; also C-L: International Comparative Studies 322

240. The Politics of International Economic Relations: America in the World Economy. CCI, SS One course. C-L: see Political Science 250; also C-L: Markets and Management Studies


243S. Children, Schools, and Society. CCI, EI, SS, W One course. C-L: see Education 243S; also C-L: Child Policy Research, Ethics Courses Offered Through Other Departments

244S. School Dropout and Educational Policy. CCI, R, SS, W One course. C-L: see Education 310S

245. Promising Paradigms: Issues and Innovations in American Classrooms. EI, SS, STS One course. C-L: see Education 241; also C-L: Child Policy Research

246A. Marine Conservation Policy - a Practicum. SS One course. C-L: see Environment 346A; also C-L: Marine Sciences, Marine Science and Conservation

250FS. Law, Ethics & Responsibility. EI, SS, STS One course. C-L: see Linguistics 212FS

251. American Constitutional Development and Interpretation I: The Constitutional Structure. EI, SS One course. C-L: see Political Science 245

252. The Arts and Human Rights. ALP, EI, SS One course. C-L: see Cultural Anthropology 248; also C-L: Study of Ethics 261, Music 238, International Comparative Studies 248

255S. Civic Engagement: Reflection and Transformation. CCI, CZ, EI, SS One course. C-L: see Religion 270S; also C-L: Study of Ethics 360S

258S. Science, Ethics, and Society. CZ, EI Two courses. C-L: see Philosophy 385AS; also C-L: Religion 282AS

259S. Women as Leaders. SS, W Explore the long history of women's activism in the United States, and how that history has shaped current debates about women leaders. Explore the variety of ways that women exercise leadership—not just in party politics and corporations, but in neighborhoods, schools, and unions among other places. Learn about theories of leadership, and connect theory to practice through the process of exercising leadership on campus through a hands-on final project. Both men and women welcome in the class. Instructor: Staff. One course. C-L: Women's Studies, Marine Science and Conservation

260. Leadership, Policy, and Change. EI, SS Ethical and practical issues of social and organizational change, including conflicts about power and authority, violence, gender, race, fairness, wealth and work. How imagination, fictional and historical narratives, anger, friendship, and teaching skills can be useful in working for change. Problems of group dynamics, integrity, responsibility, and self-understanding faced by those supporting or opposing changes. Instructor: Staff. One course. C-L: Study of Ethics

261SA. Whose Democracy? Participation and Public Policy in the United States. SS Overview of patterns in Americans' engagement in and disengagement from civic life. Theories of why people do (and do not) participate. Differences across lines of gender, race, ideology, generation, and class. Role of American interest groups and social movements in policy change. Influence of public policies (e.g., federal tax laws, participation requirements, programs such as AmeriCorps) on civic and political participation. Implications for equality, voice, and the health of American democracy. Classroom discussion; guest speakers; short memos. Offered through the Duke in DC program. Instructor: Goss. One course. C-L: Political Science 241SA

262. The Politics of Civic Engagement. CCI, EI, SS This course explores ethical issues related to civic engagement by college students, their reasons for participating, the goals of the university in sponsoring their summer experiences, and the impact they had on the people and organizations they worked with. Students will read books and articles from different political perspectives on the value and appropriateness of civic engagement. Required discussion sections will allow students to share the challenges of their own engagement. Consent of instructor required. Instructor: Korstad. One course.
263. Border Crossing: Leadership, Value Conflicts, and Public Life. CCI, EI, SS, W Preparation course for students who plan to conduct community-based research projects in the summer through Service Opportunities in Leadership, or another research service learning opportunity. Through case studies of religious and political groups in U.S., Europe, and Middle East with conflicting views about the role of religious faith in public life, explores leadership as the art of working productively with difficult value conflicts in groups, institutions, and social systems. Includes training in basic research methods and ethics of human subjects research, completion of a 20-hour service project for a community organization, and exploration of a leadership framework for undertaking complex problem-solving work in the public arena. Instructor: Blount. One course. C-L: Marine Science and Conservation

265. Enterprising Leadership. EI, SS The central goal of Leadership, Development, and Organizations is to provide students with relevant insights, knowledge, analytical competence, and skills important to exercising ethical, enterprising leadership in organizations and informal groups. Instructor: Brown. One course. C-L: Markets and Management Studies, Marine Science and Conservation

266S. Whose Democracy? Participation and Public Policy in the United States. R, SS Overview of patterns in Americans' engagement in and disengagement from civic life. Theories of why people do or do not participate. Differences across gender, race, ideology, generation, and class. Role of interest groups and social movements in policy change. Influence of public policies (e.g., federal tax laws, participation requirements, programs such as AmeriCorps) on civic and political participation. Reflection on normative questions of democracy, voice, and equality in 21st-century America. Classroom discussion; short memos; and team-based "research service learning," consisting of research-based policy memo for Durham-area grassroots organization and 10 hours of direct service. Instructor: Goss. One course. C-L: Political Science 243S

267. Leading as a Social Entrepreneur. EI, SS A dynamic introduction to social entrepreneurship and entrepreneurial leadership. Through this interactive class, students craft a personal leadership plan and learn how to develop a promising idea for social change. Instructor: Brown. One course.

268. Animals and Ethics: Welfare, Rights, Utilitarianism, and Beyond. CCI, EI, SS One course. C-L: see Women's Studies 270

269. Twentysomething Leadership. EI, SS Provides students with knowledge, analytical competence, and skills important to exercising leadership as they navigate the transition from college to post-college life. Explores the many facets of leadership and leadership development during the period of emerging adulthood, particularly in understanding how values can be aligned with professional, volunteer, and personal leadership for the benefit of others and to enhance personal development. Instructor: Brown. One course.

270. Civic Participation and Community Leadership. EI, SS Explores ways in which value conflicts in communities affect civic and political participation, as well as policy design. Examines a series of questions about reinventing democracy at the grassroots. Challenges students to develop a framework of problem solving approaches and to consider diverse ways to exercise leadership in the face of competing interests. Instructor: Blount. One course. C-L: Study of Ethics


271S. Social Entrepreneurship in Action. EI, SS Social Entrepreneurship in Action is a leadership course in applied social innovation. The course provides students with knowledge, analytical competence, and leadership skills important to becoming a changemaker. The teaching method is interactive and experiential and assumes that the students are highly motivated to be part of an action learning community. Instructor: Brown, Gergen. One course. C-L: Study of Ethics, Markets and Management Studies, Marine Science and Conservation

272D. Historical Perspectives on Public Policy: The United States from 1945 to the Present. CZ, EI, SS Explores history of domestic and foreign policy in the United States from end of World War II to present. Illuminate how past decisions have helped to shape today's policy environment. Cases studies on issues such as health, civil rights, the environment, taxation, foreign aid, and military force; identify what has worked and not worked in policy making. Weekly documentary film series and student-led discussion groups focused on differing interpretations of the nation's recent past. Instructor: Korstad, Peck, Kuniholm. One course. C-L: History 344D

275. United States Environmental Policy. EI, SS, STS, W One course. C-L: see Environment 212; also C-L: Energy and the Environment, Marine Science and Conservation
276. Global Disasters: Science and Policy. NS, SS, STS One course. C-L: see Engineering 260; also C-L: Environment 260

277. Global Disasters: Reasons, Response and Recovery. NS, SS, STS One course. C-L: see Engineering 261; also C-L: Environment 262

278. North American Environmental History. CZ, EI, STS One course. C-L: see History 345; also C-L: International Comparative Studies 340

278D. North American Environmental History. CZ, EI, STS One course. C-L: see History 345D


280S. Marine Science and Conservation Leadership. EI, NS, SS, STS One course. C-L: see Environment 350S; also C-L: Marine Sciences, Marine Science and Conservation

281. Environmental Politics in the United States. EI, SS, STS One course. C-L: see Political Science 344; also C-L: Environment 345, Energy and the Environment

281A. Marine Policy. EI, SS, STS One course. C-L: see Environment 286A; also C-L: Marine Sciences, Marine Science and Conservation

282. International Trade. CCI, SS, STS, W One course. C-L: see Economics 355; also C-L: International Comparative Studies 358, Markets and Management Studies

289. Public Finance. QS, SS One course. C-L: see Economics 438

290. Selected Public Policy Topics. SS Instructor: Staff. One course. C-L: Policy Journalism and Media

290S. Selected Public Policy Topics. SS Seminar version of Public Policy Studies 290. Instructor: Staff. One course.

290S-1. Selected Topics in Public Policy. Satisfactory/Unsatisfactory grading only. Instructor: Staff. Half course.

294. Racial and Ethnic Economic Inequality: A Cross National Perspective. CCI, EI, SS Explores origins and causes of differences in patterns of economic performance between ethnic and racial groups from a comparative perspective across the globe. Consideration of a variety of accounts for wide disparities in incidence of poverty and affluence across ascriptively differentiated groups, with particular attention to economic problems in ethnically or racially plural societies and use of various social policies to redress intergroup inequalities, including Malaysia's New Economic Policy, India's reservations system for scheduled castes, and affirmative action in U.S. and South Africa. Instructor: Darity. One course. C-L: African and African American Studies 244, Economics 248

301. Political Analysis for Public Policy-Making. SS, W Analysis of the political and organizational processes which influence the formulation and implementation of public policy. Alternative models. Prerequisite: Public Policy 155D. Instructor: Goss, Jentleson, or Krishna. One course. C-L: Political Science 310

302. Policy Choice as Value Conflict. EI, SS Theoretical and practical problems in decision making in relation to conflicts of value and of interest. The manifestation of norms deriving from professional ethics, ideology, law, and other sources in such policy issues as welfare, environmental management, and national defense. Prerequisites: Public Policy Studies 155D. Instructor: Charney, Korstad, Pearson, Peck, or Pickus. One course. C-L: Study of Ethics

302D. Policy Choice as Value Conflict. EI, SS Same as Public Policy Studies 302 except instruction is provided in two lectures and one small discussion meeting each week. Prerequisite: Public Policy Studies 155D. Instructor: Charney, Korstad, Pearson, Peck, or Pickus. One course. C-L: Marine Science and Conservation

303D. Microeconomic Policy Tools. SS Development and application of analytical economic tools in a policy environment. Emphasis on application of economic methods in a variety of policy settings and developing testable hypotheses that might be used to guide economic policy. Analytical topics include willingness to pay, derived demand, multi-market interactions, comparative advantage, investment analysis, and decision making under uncertainty. Applications include tax analysis, including incidence, effective protection, shadow pricing, introduction to government expenditures, labor market policy, examples of regulation and pricing externalities. Instructor: Ananat, Conrad, Hamoudi, or Ladd. One course.
304. Economics of the Public Sector. SS Applies tools of intermediate micro economics to the public sector. Develops economic justifications for government intervention into the economy and examines and evaluates various government policies and programs including regulation of externalities, welfare programs, social security and other social insurance programs. Provides a solid foundation for applied benefit cost analysis. Analyzes tax policy and other forms of government financing, both at national and subnational levels. Prerequisites: Public Policy Studies 303D or Economics 201D. Instructor: Ananat, Hamoudi, Ladd, or Sexton. One course. C-L: Economics 338


315. Gender and the Law. CCI, EI, SS One course. C-L: see Women's Studies 401; also C-L: Literature 430

328. United States Racial/Ethnic Health Disparities: Social Determinants and Public Policy Implications. CCI, R, SS The most commonly used indices to measure United States health disparities by race/ethnicity; origins and evolution of racial/ethnic categories in the United States Census; role of poverty, racial residential segregation, and inadequate health care in explaining racial/ethnic health disparities; and the promise and limitations of academic-community partnerships and public policy initiatives designed to reduce and ultimately eliminate those health disparities. Instructor: James. One course. C-L: African and African American Studies 260

330. Global Health Ethics: Interdisciplinary Perspectives. EI, SS Ethical issues of conducting research on or working with marginalized/stigmatized populations, using theoretical frameworks and case studies. Investigations of ethical choices made by multinational, national and local policymakers, clinicians and researchers, and their impact on individuals, families and communities. Emphasis on working with community partners to develop needs assessment programs. Topics include: differential standards of care; protection of human subjects; access to essential medicines; genetic information and confidentiality; pharmaceutical development; health information technology; placebo controlled trials; best outcomes vs distributive justice. Requires a background in Global Health. Instructor: Whetten. One course. C-L: Global Health 210, International Comparative Studies 397, Global Health

330K. Global Health Ethics: Interdisciplinary Perspectives. EI, SS C-L: see Global Health 210K

331. Health Economics. SS One course. C-L: see Economics 334


334S. Medical Decision Making (C). SS, STS One course. C-L: see Psychology 353S

335. Comparative Health Care Systems. CCI, EI, SS The interaction of historical, political, economic, cultural, legal/ethical, and sociological factors in the organization and operation of health care systems. Emphasis on how cultural values penetrate the social institutions (politics, economics) that determine health care policies and their reception by societal members. Effects of social and technological change on health care systems, comparing their effects across societies with differing histories, cultural values, and economic systems. Major focus on United States, England, Sweden, and other Western societies. Instructor: Taylor. One course. C-L: Sociology 371, Political Science 355, Canadian Studies, International Comparative Studies, Ethics Courses Offered Through Other Departments, Global Health

348. Science and Policy of Obesity. SS, STS One course. C-L: see Genome Sciences and Policy 248

362S. Journalism of Economic Crisis. EI, SS One course. C-L: see Policy Journalism and Media Studies 376S

363S. Legal Issues for the Performing Arts. EI, SS One course. C-L: see Theater Studies 311S; also C-L: Economics 223S, Dance 379S

365S. Television Journalism. SS One course. C-L: see Policy Journalism and Media Studies 365S; also C-L: Visual and Media Studies 305S, Information Science and Information Studies, Policy Journalism and Media Studies

367S. **News Writing and Reporting.** R, SS, W One course. C-L: see Policy Journalism and Media Studies 367S; also C-L: Visual and Media Studies 307S, Arts of the Moving Image, Policy Journalism and Media Studies

368S. **Journalism and War: Covering International Conflicts.** EI, SS One course. C-L: see Policy Journalism and Media Studies 388S

369S. **Crash: The Intersection of Politics, Policy and Media.** SS One course. C-L: see Policy Journalism and Media Studies 386S

370S. **Press, the Presidency and Congress in a New Media Age.** EI, SS One course. C-L: see Policy Journalism and Media Studies 370S

371. **News as Moral Battleground.** EI, R, SS, W One course. C-L: see Policy Journalism and Media Studies 371; also C-L: Study of Ethics 259, Documentary Studies

372. **Information, Policy, and Ethics.** EI, SS, STS One course. C-L: see Policy Journalism and Media Studies 372; also C-L: Study of Ethics, Information Science and Information Studies, Policy Journalism and Media

373S. **Intellectual Property: Law, Policy, and Practice.** EI, SS, STS One course. C-L: see Policy Journalism and Media Studies 373S; also C-L: Policy Journalism and Media

374. **Contemporary Documentary Film: Filmmakers and the Full Frame Documentary Film Festival.** ALP, CCI, STS One course. C-L: see Arts of the Moving Image 205; also C-L: Documentary Studies 270, Political Science 276, Visual and Media Studies 264

375S. **Video for Social Change.** ALP, CCI, SS One course. C-L: see Documentary Studies 271S; also C-L: Arts of the Moving Image 335S

377S. **Medicine and the Vision of Documentary Photography.** ALP One course. C-L: see Documentary Studies 206S; also C-L: Visual and Media Studies 204S

378S. **The Future of News and Accountability Journalism in the Digital Age.** SS, W One course. C-L: see Policy Journalism and Media Studies 378S

379S. **The First Amendment in the Digital Age.** EI, SS One course. C-L: see Policy Journalism and Media Studies 379S; also C-L: Policy Journalism and Media

380. **Politics of Food: Land, Labor, Health, and Economics.** ALP, CCI, EI, R One course. C-L: see Documentary Studies 341S; also C-L: Cultural Anthropology 238S, International Comparative Studies 342S

381S. **Science and The Media.** SS, STS, W One course. C-L: see Policy Journalism and Media Studies 381S; also C-L: Environment 364S, Policy Journalism and Media

382S. **Narrative Journalism in the Digital Age.** SS, STS, W One course. C-L: see Policy Journalism and Media Studies 382S; also C-L: Policy Journalism and Media

383S. **Advanced Documentary Filmmaking.** One course. C-L: see Arts of the Moving Image 470S; also C-L: Documentary Studies 470S, Visual and Media Studies 470S, Information Science and Information Studies

384S. **Global Democratization: Uses and Misuses of Ratings and Measurements.** SS, STS Global expansion of democracy and how this trend is studied, analyzed, ranked and rated, with particular attention to organizations that employ methods of ranking and disseminate the results. Includes discussing the policy uses and consequences of these methods, the context and history of democratization and exploring current examples of democratic transition. Instructor: Staff. One course. C-L: Policy Journalism and Media

385S. **Higher Education and The News Media.** SS One course. C-L: see Policy Journalism and Media Studies 385S; also C-L: Education 385S, Policy Journalism and Media


389S. **Small Town USA: Local Collaborations.** ALP, CCI, R One course. C-L: see Documentary Studies 230S; also C-L: Visual Arts 232S, Visual and Media Studies 224S, Policy Journalism and Media Studies

391. Independent Study. Supervised reading in a field of special interest under the sponsorship of a faculty member. Requires a substantive paper containing significant analysis and interpretation. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


396S. Documentary Engagement Through Field-Based Projects. ALP One course. C-L: see Documentary Studies 450S


399S. The Photographic Essay: Narratives Through Pictures. ALP One course. C-L: see Documentary Studies 239S; also C-L: Visual Arts 241S

410. Policy Journalism and Media Studies Capstone Course. R, SS One course. C-L: see Policy Journalism and Media Studies 410

411S. Human Trafficking: Past and Present. CCI, CZ, EI, R, SS Examines social and cultural history of human trafficking to North America from the Seventeenth century to the present, beginning with the organization of both the servant trade from Great Britain and the slave trade from Africa in the 1600s to the creation of sex trafficking in the late nineteenth and twentieth centuries. Instructor: Peck. One course. C-L: History 411S

412S. Capstone Seminar: Regulating American Business: Historical Perspectives. CZ, EI, R, SS, W One course. C-L: see History 477S

413S. Capstone Seminar: Immigration Policy History. CZ, EI, R, SS, W One course. C-L: see History 487S

414S. Research in Human Rights. CCI, EI, R, SS Focuses on human rights issues in North Carolina, the United States, and around the world. General human rights literature along with several detailed case studies will prepare students to undertake an original piece of research on a topic of their choice. Offered through the DukeImmerse Program. Director of Undergraduate Studies consent required. Instructor: Korstad. One course.


415S. Critical Reflection and Adaptive Leadership in Complex Systems. EI, R, SS, W Capstone seminar for students completing community-based research (CBR) projects through Service Opportunities in Leadership Program. Involves critical reflection on summer projects, exploration of leadership, politics, and policy design concepts. Exploration, drawing upon students' experiences, questions, and insights as a starting point, of how lives of commitment to the common good are formed and sustained. Consent of instructor required. Instructor: Blount. One course.

445A. Climate Change in the Marine Environment. EI, NS, STS One course. C-L: see Environment 445A; also C-L: Biology 445A, Marine Sciences, Marine Science and Conservation

450AS. Glasgow Seminar in Public Policy. CCI, R, SS Analysis of the British political system and important public policy problems in Britain including: privatization, Britain and the European community, and economic and social policy. (Taught in Scotland.) Prerequisite: Public Policy Studies 155D, two of the core courses (Public Policy Studies 301, 302, 303D or equivalent, or Statistical Science 101), and consent of director Instructor: Staff. One course.

490S. Capstone Seminars in Special Topics in Public Policy. SS Selected topics for courses offering capstone experiences or advanced research. Instructor consent required. Instructor: Staff. One course.

493A. Duke in DC Research Project. R An independent policy research project will build on the DC internship experience. Project might take the form of an academic term paper, a literature review or other component of a senior honors thesis, a website, or a significant consulting project for the government agency or organization hosting your internship. Class meets once weekly, starting with orientation to policy research then progressing to individual or group projects, and including a final presentation. You will identify a research question, devise an approach to address it, and complete a paper or other tangible research product. The project can be coordinated with thesis-writing for Public Policy Studies and other majors. Instructor: Cook-Deegan. One course.

494. Honors Project: Research Independent Study. R Individual research in field of special interest under supervision of a faculty member leading to completion of an honors thesis in Public Policy Studies. First semester requires substantive paper that outlines thesis. Second semester results in paper containing significant analysis and interpretation of the topic. Open only to students seeking honors via research independent study route. Consent of instructor and honors project director required. Instructor: Cook-Deegan. One course.

495S. Honors Seminar. R, SS, W Special research topics. Consent of the honors seminar instructor and director of undergraduate studies required. Instructor: Staff. One course.

496S. Honors Seminar. R, SS, W Continuation of Public Policy Studies 495S. Consent of the honors seminar instructor and director of undergraduate studies required. Prerequisite: Public Policy Studies 495S. Instructor: Staff. One course.

497S. Senior Seminar Special Topics. For special topics courses that are targeted toward upper-level students and capstone experiences. Instructor: Staff. One course.

501S. American Grand Strategy. CZ, R, SS, W C-L: see Political Science 562S; also C-L: History 567S

502S. Contemporary United States Foreign Policy. EI, R, SS Focus on challenges and opportunities for American foreign policy in this global age including the impact of interests, ideals and values. Draws on both the scholarly literature and policy analyses. Addresses big picture questions about America's role in the world as well as major current foreign policy issues that raise considerations of power, security, prosperity and ethics. Open to undergraduates with permission of instructor and priority to Public Policy Studies and Political Science majors, and to graduate students. Instructor: Jentleson. C-L: Political Science 543

503S. United States Policy in the Middle East. CCI, SS From World War II to the present with a focus on current policy options. Instructor: Kuniholm. C-L: History 509S, International Comparative Studies

504. Counterterrorism Law and Policy. EI, R, SS This course explores the novel legal and policy issues resulting from the United States' response to 9/11 attacks and the threat posed by modern terrorist organizations. Topics include preventative/preventive war; detention, interrogation, and prosecution of suspect terrorists; domestic surveillance; and government secrecy and public access to information. Instructor: Schanzer, Silliman. C-L: Political Science 543

505S. National Security Decision Making. EI, SS Course explores the delicate art of national security decision-making through deeper understanding of national security apparatus, analysis of elements of national power (examination of historical examples of application), and application of analysis to assess merits of various approaches to national security decision-making. Taught at UNC. Instructor: Nichols.

506. Politics of United States Foreign Policy. EI, R, SS Focus on politics of U.S. foreign policy; which institutions and actors within the American political system play what roles and have how much influence in making U.S. foreign policy. Fundamental questions about nature and practice of democracy as manifested in politics and policy processes in making US foreign policy. Scope is both historical and contemporary. Approach combines theory and policy analysis. Complements Pub Pol 502S, Contemporary U.S. Foreign Policy, which focuses more on foreign policy strategy. Instructor: Jentleson. C-L: Political Science 547, International Comparative Studies 506

507S. Intelligence for National Security. EI, SS Addresses complex US intelligence enterprise that has been established to support our national security priorities. First, students review and discuss current structure of national intelligence apparatus. Case studies are used to evaluate effectiveness and design of intelligence agencies and their
accompanying capabilities. Finally, students conduct independent research on select intelligence agencies and organizations. Instructor consent required. Instructor: Nichols.

513S. International Democratization. EI, R, SS Focus on critical analysis of international efforts to improve governance, build democracy and increase respect for human rights through a series of methods or tools: international law, sanctions, aid, conditionality, and a vast array of activities broadly labeled democracy promotion, including election assistance and civil society development. Class requires a high level of discussion and preparation for each meeting. Emphasis on student application of reading material to a particular country. Instructor: Kelley. C-L: Political Science 647S

515S. Assisting Development. R, SS, W Examines evolution of international development theory and practice since early 1950s. Investigates how different solutions advanced to deal with poverty have fared. Different streams of academic and policy literature, including economics, political science, and sociology, are consulted with a view to understanding what could have been done in the past and what should be done at the present time. Examines alternative formulations weekly in seminar format. Individual research papers (60% of grade) which analyze past and present development practices in a country of their choice, or examine trends within a particular sector (e.g., agriculture, population, gender relations, the environment). Instructor: Krishna. C-L: Political Science 546S, International Comparative Studies 514S

525S. Poverty Policy After Welfare Reform. EI, SS Will examine evidence on the effects of the 1996 welfare reform and study the piecemeal anti-poverty programs that have risen in place of traditional welfare. Will discuss how future poverty policies might address concerns that have risen in prominence since welfare reform, such as men as a neglected constituency and the challenges for low-income workers posed by technology and globalization. Familiarity with microeconomic principles will be helpful. Instructor: Ananat.

526S. Race and American Politics. CCI, SS C-L: see Political Science 525S; also C-L: African and African American Studies 544S

527S. Poverty, Inequality, and Public Policy in the U S. SS, W Examines causes and consequences of poverty and inequality in the United States; reviews major social policies used to combat poverty's ill effects. Acquaint students with definition and extent of poverty and inequality, examine poverty's "causes", including family structure and low wage employment, discuss effects of poverty on family and child well-being, and analyze the primary poverty policies employed by the United States, including Temporary Aid to Needy Families, Food Stamps, Medicaid, and WIC. Lecture and class discussion, drawing on material from a variety of disciplines. Instructor: Gibson-Davis.

528. History of Poverty in the United States. CCI, CZ, SS C-L: see Study of Ethics 561; also C-L: History 546

529S. Race and Ethnicity. CCI, EI, SS Explores in depth policies of redress for intergroup disparities or inequality across countries. Examination of policies that attempt to systematically correct differences across racial/ethnic groups in income, wealth, health, rates of incarceration, political participation, and educational attainment, e.g. affirmative action, land redistribution, parental school choice, and income redistribution measures in a number of countries including India, the United States, Brazil, Malaysia, Chile, and South Africa. Address question of why intergroup differences in outcomes should be viewed as a social problem. Instructor: Darity. C-L: African and African American Studies 551S, International Comparative Studies 529S

530S. Gender, Identity, and Public Policy. R, SS The role of women and women's organizations as advocates for, and targets of, public policymaking. The grounding of women's collective action claims in understandings of women's "sameness as" and "difference from" men, and the implications of those frames for women's citizenship. Gender differences in individual civic engagement and in the styles and priorities of male and female elected officials. The historic evolution of women's organizational engagement in gender-specific and general-purpose public policies. The impact of globalization on women. The oppression and emancipation of women in traditional societies. The legitimacy crises facing maternal, second wave, and third wave feminism. Instructor: Goss. C-L: Political Science 521S, Women's Studies 515S

531S. Philanthropy: The Power of Money. SS Seminar style course designed to deepen understanding of philanthropy and its role in American society. Course will cover Philanthropy's history, cultural origins, and influence on social policy. Students will learn how foundations work and issues they face to maintain legitimacy and efficacy. Not an introductory class. Permission required. Some experience in social sector required. Instructor: Staff.

532S. Introductory Demographic Measures and Concepts. SS C-L: see Global Health 530S
542S. Schooling and Social Stratification. CCI, SS This course will examine educational policies in a comparative, cross-national fashion with a focus on the implications for the construction of social hierarchy and inequality. Instructor: Darity. C-L: African and African American Studies 549S, Education 542S, Child Policy Research

544S. Schools and Social Policy. R, SS Overview and selected current policy issues related to K-12 education. Includes small-group research projects that require data analysis, literature searches, and interviews with education policy makers. Consent of instructor required. Instructor: Ladd. C-L: Child Policy Research

558S. Understanding Ethical Crisis in Organizations. EI, R, SS C-L: see Study of Ethics 562S; also C-L: Political Science 502S, Sociology 542S

559S. Philanthropy, Voluntarism, and Not-for-Profit Management. EI, SS An examination of the role and functioning of the not-for-profit sector in relation to both the public sector and the private for-profit sector in dealing with significant social problems. Also taught as Law 585. Instructor: Fleishman.


561. 9/11: Causes, Response & Strategy. EI, SS, W Examination of the origin and ideology of al-Qaeda and affiliated organizations, the events that led to the 9/11 attacks, and the public policy response in terms of use of force, preventive intelligence and law enforcement policies, and homeland security. Comparative examination of the efficacy and ethics of alternative counterterrorism policies. Instructor: Schanzer. C-L: Political Science 544, International Comparative Studies 561

562S. Monuments and Memory: Public Policy and Remembrance of Racial Histories. ALP, CCI, EI, SS Processes of memorialization of various dimensions of racial pasts, via statuarics, naming of parks and buildings, films (both documentary and fiction), novels, historical works. In depth treatment of political and economic basis for determining what events or persons are remembered and how they are remembered. Interdisciplinary course encompassing literary studies, memory studies, history, political science, anthropology, and economics. Instructor: Darity. C-L: African and African American Studies 541S

563S. Making Social Policy. R, SS Examines the policymaking process, the role of different sectors in policymaking, policymakers' use of research and communicating with policymakers. Focus on social policy. Includes experiential and written work as well as visits from policymakers and to policymaking "events." Instructor: Owen. C-L: Child Policy 634S, Sociology 634S, Child Policy Research

574. Economic Evaluation of Sustainable Development. EI, SS Examines how one could rationally defend a choice of 'sustainable development' policy. Applies cost-benefit thinking in environment-natural-resources and development contexts. Presents microeconomic concepts emphasizing logic and principles more than mechanics. Intertemporal equity is a focus and equity-efficiency tradeoffs are a theme. Microeconomics prerequisite not required. Instructor: Pfaff. C-L: Environment 572

575D. Resource and Environmental Economics and Policy. C-L: see Environment 520D; also C-L: Economics 530D

575L. Resource and Environmental Economics. C-L: see Environment 520L; also C-L: Economics 530L

576. Resource & Environmental Economics I. SS C-L: see Energy 520; also C-L: Economics 530, Marine Science and Conservation

577. Environmental Politics. SS C-L: see Environment 577; also C-L: International Comparative Studies 577, Energy and the Environment

578. Land Use Principles and Policy. SS C-L: see Environment 550

579S. Collective Action, Environment, and Development. SS Examines the conditions under which collective or participatory decisions may raise welfare in defined ways. Presents the growing empirical evidence for an environment and development setting including common property issues (tragedy of the commons and competing
models). Identifies what evidence exists for sharing norms on a background of self-interested strategies. Definitions of and reactions to equity and/or its absence are a focus. Providing scientific information for policy is another. Experimental and behavioral economics are frequently applied. Instructor: Pfaff. C-L: Environment 579S


581S. International Environmental Regimes. EI, SS, STS C-L: see Political Science 545S; also C-L: International Comparative Studies 521S

582. Global Environmental Health: Economics and Policy. SS, STS C-L: see Environment 538; also C-L: Global Health 538

583S. Energy and U.S. National Security. CCI, EI, SS, W Examines link between reliable, affordable, and sustainable sources of energy and U.S. national security. Includes ethical considerations related to energy resources and wealth distribution, analysis through case study of top foreign oil suppliers to U.S., as well as newer "unconventional" sources of energy such as shale gas and renewables. Extensive use of guest experts from U.S., local and foreign governments as well as industry. Specific skills include thinking like a U.S. diplomat (cross-cultural perspective), writing concise policy memos, and delivering a compelling, succinct oral presentation. Final project will require policy recommendation on an assigned energy security topic. Instructor: Kelly. C-L: Political Science 663S, Environment 583S, Energy and the Environment

584. Resource & Environmental Economics II. SS Variable credit. C-L: see Environment 521; also C-L: Economics 531

585. Climate Change Economics. C-L: see Environment 640

590. Advanced Topics in Public Policy. SS Selected topics. Instructor: Staff.

590S. Advanced Topics in Public Policy. SS Selected topics. Seminar version of Public Policy Studies 590. Instructor: Staff.

595S. Regulation of Vice and Substance Abuse. R, SS, W The traditional vices of drinking, smoking, gambling, and the recreational use of drugs. Evaluation of government policy on these activities. The intellectual framework for evaluation drawn from economics, although readings refer to law, psychology, philosophy, and statistics. Instructor: Cook.

596. Evaluation of Public Expenditures. SS Basic development of cost benefit analysis from alternative points of view, for example, equity debt, and economy as a whole. Techniques include: construction of cash flows, alternative investment rules, inflation adjustments, optimal timing and duration of projects, private and social pricing. Adjustments for economic distortions, foreign exchange adjustments, risk and income distribution examined in the context of present value rules. Examples and cases from both developed and developing countries. Instructor: Conrad. C-L: Economics 521, Environment 532

597S. Seminar in Applied Project Evaluation. R, SS Initiate, develop, and perform a project evaluation. Range of topics include measuring the social cost of deforestation, the B1 Bomber, a child nutrition program, the local arts program. Prerequisite: Economics 285 or Public Policy Studies 596. Instructor: Conrad. C-L: Economics 522S


601S. Urban Policy. QS, R, SS, W Overview of basic political, sociological, and economic models of urbanization coupled with application of these models to modern urban problems, including concentrated poverty, traffic congestion and mass transit, crime, land use and environmental quality, housing affordability, and fiscal crises.
Special emphasis on historical evolution of cities. Students write a major project focusing on the problems facing one American city, and propose solutions to those problems. Instructor: Staff.

602S. Law, Economics, and Organizations. SS Overview of field of law and economics. Economics of information, contract theory, economic analysis of law, and New Institutional Economics. Consequences of failure of law and institutions; alternative mechanisms to sustain markets and transactions. Instructor consent required. Instructor: Staff. C-L: Economics 502S

603S. Microeconomics of International Development Policy. SS Microeconomic foundations of international development policy using tools of microeconomics to study behavior of individuals, households, and firms in developing countries. Topics may include household and intrahousehold modeling; market participation; agrarian contracts; credit and microfinance; nutrition and health; poverty traps; etc. Public Policy Studies 303D prerequisite or instructor approval. Instructor: Staff. C-L: Economics 503S

604. Using Data to Analyze and Evaluate Public Policy. QS, SS This course reviews the basic methods of inferring the causal impact of public policy initiatives. Topics include randomized controlled trials, instrumental variable analysis, regression discontinuity designs, difference-in-difference "natural experiments," and propensity score/nearest neighbor matching methods. Assignments include analysis using Stata software; final project entails proposing a quantitative study focused on causal inference. Either Statistical Science 101 or Public Policy 812 required; further coursework in multiple regression preferred. Consent of instructor required. Instructor: Ananat.

605. International Trade and Policy. SS Focus on economics of trade and trade policy. Includes theoretical models explaining patterns of trade, economic gains from trade, and distribution effects (winner and losers), as well as the economic effects of trade barriers, major agencies and institutions affecting trade, preferential trading arrangements, outsourcing and offshoring, multinationals, and labor and environmental issues. (No finance.) Prerequisite: Public Policy Studies 303D or Economics 201D. Instructor: Krupp. C-L: Economics 505

606. Macroeconomic Policy and International Finance. SS Survey of macroeconomic theory and analysis of policies designed to reduce unemployment, stimulate economic growth, and stabilize prices. Conventional monetary and fiscal instruments, employment policies, and new policies designed to combat inflation. Instructor: Staff. C-L: Economics 506

607. Applying Economic Analysis for Environmental and Public Health Project Evaluation. R, SS C-L: see Global Health 531; also C-L: Environment 563

608S. Economics of the Family. SS Examines ways extended families function as economic institution. Primarily empirical, but also draws on relevant microeconomic theory. No formal prerequisites, but students should have experience with intermediate microeconomics and econometrics/statistics. Instructor: Hamoudi. C-L: Child Policy Research

609S. The Regulatory Process. R, SS, STS Study of theories in economics, political science, and law to examine the structure, conduct, and performance of U.S. regulatory agencies. Emphasis on why decisions are delegated to agencies, the degree to which regulators behave strategically, and the impact of regulatory actions on society. Focus on political and economic roots of scientific and technological debates in regulatory policy. Required research paper on origins and effectiveness of a particular regulation. Instructor: Staff. C-L: Political Science 617S

610S. Analysis for Strategic Design of Policy and Regulation. QS, SS Applies tools from welfare economics, information economics, and mechanism design in order to analyze public policy problems in the context of asymmetric information and strategic behavior. Applications include: financial regulation, private and social insurance, corruption and accountability, provision of public goods, and others. Requires previous exposure to intermediate microeconomics (including basic game theory), and reasonable comfort with the mathematics of constrained optimization. Instructor: Hamoudi.

630S. Political Economy of Growth, Stabilization and Distribution. R, SS One course. C-L: see Political Science 645S; also C-L: Economics 548S

633. Topics in Population, Health, and Policy. SS, STS Substantive findings and policies/policy debates around selected topics in the field of population and health in industrialized and developing societies. Demographic models used to examine selected current population and health topics through framing, defining and evaluating key concepts. Topics include: end of population growth; relations between population, development and environment;
health of populations; population aging; potentials for mortality increases; HIV/AIDS epidemic and resurgence of infectious diseases. Readings from disciplines of demography, sociology and public health. Topics Course. Instructor: Merli. C-L: Sociology 534, Global Health 550

634. Ethics and Policy in Genomics. EI, R, SS C-L: see Genome Sciences and Policy 612; also C-L: Computational Biology and Bioinformatics 612


636. Global Health and Health Systems in Africa. SS C-L: see Global Health 671


638. Global Health Ethics: Interdisciplinary Perspectives. EI, SS C-L: see Global Health 540

639S. Public Health Research Methods and Issues. CCI, R, SS Focus on prevention of diseases and health problems; funding, policy, and management decision making. Overview of public health interventions and outcomes in United States, Europe, and less industrialized nations. Emphasis on understanding the social construction of race and ethnicity and the impact of socioeconomic variables such as race, ethnicity, gender, income and education on health. Public health perspective applied to such topics as: HIV/AIDS; teen pregnancy; cocaine use during pregnancy; infant mortality and low birth weight; violence; major causes of mortality in less industrialized countries; and role of public health in state and national health reform. Instructor: Whetten. C-L: Global Health

640S. Value for Money in Health Care: Rationing in Theory and Practice. SS, STS Determining which health interventions and programs are "worth it." Resource allocation and priority setting in practice. Analytical topics of cost benefit and cost effectiveness. Prerequisite: Economics 101 or 201D. Instructor: Staff.

641S. Cancer in Our Lives: Film, Narrative, Fiction, History and Politics. EI, SS, STS Cancer and cancer research viewed through history, narrative, film, fiction. Covers how cancer affects the lives of individuals and families, how cancer research has changed, the politics of cancer research, and the academic-industry-government ecosystem that gives rise to new cancer diagnostics and treatments. Intended for undergrads from humanities, social sciences or sciences and grad or professional students. Heavily discussion-based. Instructor: Cook-Deegan. One course. C-L: Genome Sciences and Policy 641S

642S. Designing Innovation for Global Health: From Philanthropy to People. EI, SS, STS Explores the introduction, adaptation, and globalization across borders of health technologies, with emphasis on resource-limited settings. Students will critically examine how policy can influence and funding can enable (or not) their innovation and access in low- and middle-income countries. Topics include policies to minimize inequity, systems for sharing and owning knowledge, approaches to innovative financing, and ethical issues. Instructor: So.


644S. Poverty, Inequality, and Health. EI, R, SS Impact of poverty and socioeconomic inequality on the health of individuals and populations. Attention given to both United States and non-United States populations. Topics include the conceptualization and measurement of poverty and socioeconomic inequality; socioeconomic gradients in health; globalization and health; socioeconomic deprivation across the life-course and health in adulthood; and public policy responses in the United States and elsewhere to growing health inequities in the age of globalization. Prerequisite: An introductory course in statistics. Seniors and graduate students only. Instructor: Staff. C-L: African and African American Studies 548S

645S. Global Inequality Research Seminar. ALP, CCI, R, SS One course. C-L: see African and African American Studies 642S; also C-L: Economics 541S, Sociology 642S, Political Science 642S

674. Media and Democracy. CCI, SS Examines the relationship between mass media and democracy in the United States, other developed democracies, and societies in transition. Seeks to explain how the media cover politics and public policy, examining the nature of media institutions, the economics of news production and consumption, and the strategic interplay of politicians, journalists, editors, and other actors who influence the content of news.
Instructor: Staff. C-L: Visual and Media Studies 563, Information Science and Information Studies, Policy Journalism and Media

675S. Advanced Magazine Journalism. R, SS, W C-L: see Policy Journalism and Media Studies 675S; also C-L: Policy Journalism and Media

676. Media and Social Change. CCI, R, SS, STS C-L: see Policy Journalism and Media Studies 676; also C-L: Political Science 619, Russian 516, International Comparative Studies, Information Science and Information Studies, Policy Journalism and Media Studies

677S. Federal programs: Using the paper trail to track promises and follow the money. R, SS Follows a federal spending or regulatory program from inception through implementation. Research of primary records, including state and local governments, and standard federal sources of primary documents, to compare performance with expectations. GIS and other visualization techniques to analyze program implementation. Website creation to detail program performance. Instructor: Staff.

The Major

The public policy studies major is an interdisciplinary social science program designed to provide students with the skills, analytical perspectives, and substantive knowledge needed to deal effectively with major contemporary social problems. The course of study familiarizes the student with the kind of contribution each of several disciplines (political science, economics, social psychology, applied mathematics, history, and ethics) can make to one's understanding of a broad range of contemporary issues such as environmental policy, child and family policy, health policy, and international issues such as trade and conflict resolution. Opportunities are provided, both in the classroom and through field experiences, for students to integrate this material and apply it to the analysis of specific public policy issues.

Students majoring in public policy participate in a variety of learning experiences including seminars, lecture and discussion classes, individual study, policy workshops, and a required internship (see below). In addition, students are urged to participate actively in programs sponsored by the Sanford School of Public Policy to supplement material covered in class.

Major Requirements. Public Policy Studies 155D, 301, 302; Public Policy Studies 303D or Economics 201D; Public Policy Studies 304 (with Public Policy Studies 303D or Economics 201D as a prerequisite); one history course; Statistical Science 101; plus four Public Policy Studies 200/300 or 500-600-level elective courses, one of which must be a 500/600-level course. The required history course must include a public policy component. History classes taught by public policy faculty or other history department classes designated by the public policy director of undergraduate studies may be used to satisfy this requirement. No more than two transfer (including study abroad) credits may be counted toward the major requirements. Note that Public Policy Studies 450AS Glasgow Seminar in Public Policy is classified as a Duke course rather than a transfer course. A satisfactory policy-oriented internship, approved by the department, and enrollment in Public Policy Studies 120, a noncredit, Satisfactory/Unsatisfactory internship course, is required.

Internship Program

The public policy studies internship program provides students with an opportunity to develop a basic understanding of one or more policy areas, to apply that understanding in an internship, and to return to the classroom to build on that knowledge and experience. A Handbook for Public Policy Studies Undergraduate Internships, outlining all specific internship requirements, is available through the department.

Prior to beginning the internship, students must take all of the following courses: Public Policy Studies 155D, 301, 302D, 303D (or Economics 201D in place of 303D) and Statistical Science 101. All of these courses are listed as prerequisites for Public Policy Studies 120. Since most students will conduct their internships in the summer between their junior and senior years, this means all these core courses and prerequisites should be completed by the end of the junior year. Students failing to complete these prerequisites by the end of their junior year will have to complete a term-time internship during their senior year or (if they graduate late) in the summer after the senior year. The internship application process takes place during the fall and spring semesters prior to the internship under the guidance, assistance, and approval of the Public Policy Studies Internship Office. Students whose internships are not preapproved by the internship office run the risk of not receiving credit for their internships. Upon completion of the internship, students are required to submit an analytical memo and a self-evaluation form.
Public policy studies majors are strongly encouraged to take advanced follow-up coursework that builds upon the knowledge gained from their internship experiences.

Departmental Graduation with Distinction

For graduation with departmental distinction, students are required to complete an honors seminar or independent study project and produce an honors research project. To be awarded Distinction in Public Policy, a student must receive no less than an A- on the research paper as determined by the honors program director and to have at least a 3.40 average in the following subset of public policy studies courses: Public Policy Studies 155D, 301, 302D, 303D (or 304 if the student takes Economics 201D instead of 303D). If a student is judged to have done a clearly superior research project, as evidenced by a grade of A or A+ as determined by the honors program director, and if the 3.40 or higher average in the above subset of courses is attained, Highest Distinction in Public Policy is awarded. The proposed program of research must be approved in advance by the director of undergraduate studies. More details on the honors program are provided in the Handbook for Public Policy Majors, available from the office of the director of undergraduate studies.

Religious Studies

Professor Morgan, Chair; Professor Goodacre, Director of Undergraduate Studies; Professors Chaves, Goldman, Goodacre, C. Meyers, E. Meyers, Morgan, Patton, Peters, and Van Rompay; Associate Professors, Jaffe, Lieber, and Prasad; Assistant Professors Hassan and Kim. Instructor Need; Affiliated faculty: Professors Aers (English), Wharton (art history and visual studies), Beckwith (English), and Surin (literature); Associate Professor Hacohen (history); Visiting Assistant Professors Freeman (history) and Dubois; Visiting Research Professor Kadivar

A major or minor is available in this department.

Study in the Department of Religious Studies arises from the recognition that religion, although it takes many forms, is a constitutive element of human existence individually and collectively. The study of religion involves a variety of perspectives and methodologies. The major religious traditions of the world—Christianity, Islam, Judaism, Buddhism, Hinduism, Confucianism, and Taoism—are studied in the ways they manifest themselves in our present-day societies and in their historical depth, examining their origins and sacred texts (often in the original languages) as well as their historical developments, rituals, artifacts, practices, and transformations over time. Beyond the study of individual religious traditions, the core notions of religion itself are also explored. Courses numbered from 100 through 399 include survey or general courses and also courses on more specific aspects of religion or religious traditions.

All courses numbered 100 through 499, with the exception of those courses specially designated, are open to all undergraduates. Courses numbered 500 through 699 are open to upper-class students with the consent of the instructor.

Courses in Religious Studies (RELIGION)

80S. Special Topics in Writing. Various topics with diverse readings and intensive writing. Instructor: Staff. One course.

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

101. Introduction to Religious Studies. CCI, CZ, EI Introduction to leading themes and concepts in the study of religions from the ancient world to the present. Course is divided into two parts: 1) what is religion? and 2) how is religion studied? A variety of religious traditions are examined as well as various theories and definitions of religion. Includes exploration of key ways in which different religions understand such social problems as violence and ideological conflict. Instructor: Staff. One course.


107. Introductory Sanskrit Language and Literature. FL One course. C-L: see SANSKRIT 101
108. Introductory Sanskrit Language and Literature. FL One course. C-L: see SANSKRIT 102

110. Hinduism. CCI, CZ, EI An exploration of the beliefs, ethics, everyday and ceremonial practices, philosophies, mythologies, and movements that are part of the aggregately-named religion of Hinduism. Instructor: Prasad or staff. One course.

120. Buddhism. CCI, CZ, EI Introduction to Buddhist texts, beliefs, rituals, and ethics in the past and present. Instructor: Jaffe or staff. One course.

130. Taoism and Chinese Religion. CCI, CZ, EI Introduction to Taoism, its texts, practices, and ethical implications in history and modern times in mainland China and Taiwan. Instructor: Staff. One course. C-L: Study of Ethics

140. Judaism. CCI, CZ Introduction to Judaic civilization from its origins to modern times. Instructor: Goldman, Lieber, or staff. One course. C-L: Jewish Studies 140, Women's Studies

140S. Judaism. CCI, CZ Seminar version of Religion 140. One course. C-L: Jewish Studies 140S, Women's Studies

141. Judaism Through Film. ALP, CCI, CZ, EI, W An overview of major themes in Jewish practice, belief, identity, and history as presented through the medium of film. Emphasis will be on contemporary Judaism in Europe, America, and the Middle East. Instructor: Lieber. One course. C-L: Jewish Studies 141


150. Christianity. CCI, CZ, EI Introduction to Christian doctrine, ritual, social organization and ethics in the past and present. Instructor: Van Rompay or staff. One course.

151. Christian Theological Debates in their Historical and Cultural Contexts. CCI, CZ, EI Study of the major theological concepts of Christianity, in an attempt to understand when and why these concepts became part of the Christian legacy. We will study the theology of the Bible, the proclamations of the councils, the authoritative decisions of the churches, and the writings of the most influential Christian authors, up to our own day. For each of the focal points we will consider the historical and cultural contexts, and listen to the various participants in the debates, winners and losers. The course aims to clarify the main topics that are shared by all Christians as well as the topics that have led to division of Christianity in the past and to ongoing debate in the present. Instructor: Van Rompay or staff. One course.


160. Islam. CCI, CZ, EI Introduction to Islamic theology, practice, social institutions, and ethics in the past and present. Instructor: Staff. One course. C-L: Islamic Studies

165FS. Muslim Women across the Ages. CCI, CZ, SS, W Explores diverse realities of Muslim women's lives, from origins of Islam to present, through autobiographical and biographical accounts situated in their social, economic, political, and cultural contexts, representing multifarious facets of Muslim women's lived experiences. Women encountered through textual and audiovisual materials represent a wide range, including scholars, mystics, merchants, philanthropists, poets, slavegirls, feminists, and Islamists. Topics course. Instructor: Hassan. One course. C-L: Islamic Studies

175. Religions of Asia. CCI, CZ, EI Problems and methods in the study of religion, followed by a survey of the historical development, beliefs, practices, ethics, and contemporary significance of the Islamic religion and religions of south and east Asia. Instructor: Staff. One course. C-L: International Comparative Studies 108

176. Japanese Religions: Buddhas, Kami, and other Deities. CCI, CZ, EI The various strands of Japanese religious life from prehistoric times until the present. Kami worship; primary denominations of Japanese Buddhism; Japanese Christianity; Confucianism; and the New Religious. The ethical, social, and political implications of these strands. Instructor: Jaffe. One course.

178. World Religions in American Life. CCI, CZ Introduction to world religions through exploration of their manifestations in the United States, with the goal of understanding both religion and American life more accurately. Instructor: Morgan or staff. One course.
180. Gods: Religion in the Public Square. CCI, CZ, EI How media and public frame religions in America; role and manifestation of religions in public life; student engagement with prominent invited guests; special attention to controversies; topics include private and public domains of religion, media representation different faiths, and religious diversity. Instructor: Morgan or staff. One course.

190A. Duke-Administered Study Abroad: Special Topics in Religion. Topics differ by section. Instructor: Staff. One course.

190FS. Focus Program Seminars: Special Topics. CZ Topics vary from semester to semester. Open only to students in the Focus Program. Instructor: Staff. One course.

190S. Special Topics Seminar. CZ Topics and instructors to be announced. Instructor: Staff. One course.

209. Intermediate Sanskrit. FL One course. C-L: see SANSKRIT 203

210. Religion in China. CCI, CZ Chinese religious traditions (for example, Taoist, Buddhist, Confucian, and popular) and their interrelationships from the Neolithic to the present. Mutual influences between religion and Chinese social, cultural, and political history. Instructor: Staff. One course. C-L: History 222

211S. Religion and Culture in Korea. CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 176S


215. Greek and Roman Religion. CCI, CZ One course. C-L: see Classical Studies 264

219S. Muslim Women Across the Ages. CCI, CZ, SS, W One course. C-L: see History 225S; also C-L: Women's Studies 209S, International Comparative Studies 365S, Islamic Studies

220. Religions of India. CCI, CZ Major religious traditions of the subcontinent: Hinduism, Buddhism, Jainism, and Islam. Instructor: Prasad or staff. One course.

224. Sacred Space in South Asia. CCI, CZ Hindu, Jaina and Buddhist traditions, about notions of "sacred space" in South Asia, particularly India, and the South Asia diaspora: temple architecture, pilgrimage, festival and daily ritual, tourism, oral and written literatures, popular media, and performance. Topics include sacredness of the human body, domestic altars, temple complexes, religious processions, festivals and historic monuments. The contested social contexts and the politics of mapping and marking sacred sites. Instructor: Prasad. One course.

225. Religion and Social Transformation in South Asia. CCI, EI, SS One course. C-L: see Cultural Anthropology 405; also C-L: Islamic Studies

228. The Turks: From Ottoman Empire to European Union. ALP, CCI, CZ, EI, R One course. C-L: see Turkish 308; also C-L: History 212, Asian & Middle Eastern Studies 287, Islamic Studies

231. Classical Judaism, Sectarianism, and Early Christianity. CCI, CZ The emergence of ancient Judaism from late biblical times with the christianization of the Roman Empire by Constantine the Great. The variety of Judaism explored through the literature of the Dead Sea Scrolls, the New Testament, and paganism. The impact of Greco-Roman (Hellenistic) culture on all these traditions. Instructor: Staff. One course. C-L: Jewish Studies 331

232. Prophecy and Prophets: Then and Now. CCI, CZ Historical and comparative exploration of the activities, roles, and claims of humans, in selected ancient and modern societies, to whom the label prophet or a similar title (diviner, shaman, mystic, etc.) has been applied. Critically examines features that are constant and variable among groups that accept the authority of certain individuals to function as mediators between a natural and a supernatural realm. Includes biblical, ancient Near Eastern, Greek, Islamic, Native American, and several modern examples of intermediation (prophecy) and intermediaries (prophets). Instructor: Peters. One course.


233SA. Community Media and Social Change in India. CCI, EI, SS, STS How civil society in India is challenging hegemony of mainstream media, providing democratized alternatives to the concentration of media
power in a few global conglomerates. Inquiry into ways civil society organizations negotiate religion and secular impulses for social change. Key aspects of grassroots media technologies: contextualization in religion and culture, community participation and ownership and non-profit management. Focus on participatory video and nascent community radio movement through case studies, media theory, and field-level interactions. Offered as part of Duke INtense Global Program in Hyderabad. Instructor: Prasad. One course.


237. Religion in American Life. CZ, EI A historical survey, with emphasis on the ways that religious experiences, beliefs, and traditions have found expression in religious communities and institutions, and in American public life. Instructor: Goldman, Morgan, or staff. One course. C-L: Visual and Media Studies 233, Study of Ethics

240. West African Rootholds in Dance. ALP, CCI, CZ One course. C-L: see Dance 335L; also C-L: African and African American Studies 220

241. Dance and Dance Theater of Asia. ALP, CCI, CZ One course. C-L: see Dance 356; also C-L: Theater Studies 233

242. Kundalini Yoga and Sikh Dharma. ALP, CCI, CZ One course. C-L: see Dance 357L

243. History and Practice of the Dance and Dance-theatre of India. ALP, CCI, CZ One course. C-L: see Dance 355; also C-L: Theater Studies 234, Asian & Middle Eastern Studies 154

244. Dance and Religion in Asia and Africa. ALP, CCI, CZ One course. C-L: see Dance 367; also C-L: African and African American Studies 222, International Comparative Studies 214

245. Music in East Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 214; also C-L: Music 234

246. Music in South Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 254; also C-L: Music 235, Cultural Anthropology 259

247. T'ai Chi and Chinese Thought. CCI, CZ The philosophy, cosmology, and other aspects of traditional Chinese thought embodied in the martial art of T'ai Chi. Course conducted through readings and lectures as well as actual movement praxis. Comparisons between Western bio-medical notions of the body and those implied by T'ai Chi and other facets of Chinese thought and practice, such as Chinese medicine. Instructor: Staff. One course. C-L: Dance 255

250. Archaeology and Art of the Biblical World. ALP, CCI, CZ, EI The material culture of ancient Palestine as it relates to the Hebrew Bible, the New Testament, and early Judaism. Instructor: Staff. One course. C-L: Jewish Studies 253

252. Pilgrimage and Tourism. ALP, CCI, CZ, EI, W One course. C-L: see Visual and Media Studies 336

253. Medieval Christianity in Film and Fiction. ALP, CCI, CZ, EI Exploration of modern popular fictional representations of Christianity in the Middle Ages, including novels and films. Comparison with original medieval sources to understand relationship between present-day interpretations and actual medieval practice, and what this reveals about both cultures. Of particular concern: ethical issues concerning Christianity and violence, wealth, power and notions of democracy and modernity. Instructor: Dubois. One course. C-L: History 244, Medieval and Renaissance Studies 354

254. Dante's Divine Comedy: Hell, Purgatory and Paradise. ALP, CCI, CZ, EI One course. C-L: see Italian 481; also C-L: Medieval and Renaissance Studies 450, History 253, Literature 245, International Comparative Studies

255. Mystical Literature. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 322; also C-L: International Comparative Studies 323, Islamic Studies

267. Representing the Holocaust. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 343; also C-L: Jewish Studies 267

268. Religion and Film. ALP, CCI, CZ, EI A study of the relationship between motion pictures and religion. Focus on the comparative portrayal of organized religions; expressions of religious life; and religious topics, such as God, evil and morality, in both Western and non-Western films in which contemporary artists and intellectuals explore the challenges of modernity. Instructor: Staff. One course. C-L: Documentary Studies, Study of Ethics, Arts of the Moving Image

269S. Fragmented Memories: Polish and Polish Jewish Culture Through Film. ALP, CCI, CZ, EI One course. C-L: see Polish 308S; also C-L: Jewish Studies 269S


270S. Civic Engagement: Reflection and Transformation. CCI, CZ, EI, SS Course provides an extended reflection on students' civic engagement experience. Explores meaning of transformation commonly seen as underlying civic engagement. Examines critical questions like who or what is transformed, and when. Considers how transformation is related to negotiation of goals and challenges, to gaining insight into politics and histories of place and person, and to understanding and expressing ethical co-citizenship. Course designed interactively with students over the first two weeks, includes interdisciplinary readings that range from poetry and autobiography to politics and policy. Draws on varied documentary media and guest lectures. Instructor consent required. Instructor: Prasad. One course. C-L: Public Policy Studies 255S, Study of Ethics 360S

271. Women in the Biblical Tradition: Image and Role. CCI, CZ, EI Women in ancient Israel, early Christianity, and early Judaism in their contexts in the Near Eastern and Greco-Roman worlds, with attention to the relation between textual depictions and social reality and to the ethical issues raised by the continuing authority of biblical texts for matters of gender. Sources include the Bible, images from art, and archaeological remains. Instructor: Staff. One course. C-L: Jewish Studies 271, Women's Studies

272. Gender and Morality: Indian Perspectives. ALP, CCI, CZ, EI Explores articulations of morality in literary, philosophical, and everyday contexts of India and the Indian diaspora, with focus on gender. Relationships between ideological depictions of women across varied contexts and women's social lives. Gendered visions underlying personhood, duty, sexuality, family, community, and lifestyle. Readings from Hindu ethics, epic narrative, ethnography, fiction and poetry. Instructor: Prasad. One course. C-L: Women's Studies 245, Study of Ethics

273. Gender in Religion in the United States. CCI, CZ Women's religious experience in America, from the lives of early American 'good wives' to the work of Catholic nuns in the nineteenth century and the spirituality of Jewish feminists in modern America, concluding with a discussion of contemporary issues, for example, feminist theology, sexuality, and admission of women to pastoral leadership. Instructor: Staff. One course. C-L: Women's Studies

274FS. Religion & Politics: The Middle East Today. CCI, CZ, EI, SS Explore how religious beliefs and practices shape identities and politics at the individual, local, national and global levels; examine the complexities of the three Abrahamic religions, Judaism, Christianity, and Islam in their diversities as well as other religious traditions such as Baha'i and Zoroastrianism; examine how theological differences shape political conflicts and conversely, how entrenched political conflicts shape religious beliefs of their respective communities. Open only to students in FOCUS Program. Instructor: Goldman. One course. C-L: Islamic Studies

274S. Religion and Politics. CCI, EI, SS One course. C-L: see Public Policy Studies 229S; also C-L: Political Science 379S
275S. Poetry, Desire & Religion. ALP, CCI, CZ, W Studies the use of love poetry genres to transform theological traditions in India, Islam, Judaism, and Christianity circa 600-1500 CE; studies ongoing exploration of intersections of the sacred, desire, and expressive language in post-Enlightenment poetry; explores poetry and, more generally, the arts as a performative mode by which a theological relation is posed and enacted in one's life; introduces students to basic problems, readings, and ideas related to language, hermeneutics and desire; specific authors include: Mirabi, Kabir, Rumi, San Juan de la Cruz, Dickinson, Rilke, H.D., and Celan. Instructor: Need. One course. C-L: Literature 244S

276. Religion and Race. CCI, CZ, SS Discussion of various ways in which "race" has been defined and constructed in recent centuries using categories from biology, sociology, philosophy, genetics, anthropology, etc. Examines how religious traditions and practitioners have actively sought both to eliminate race and have been complicit in maintaining and defending it. Special focus on Judaism, Christianity, and Islam in the modern period. Instructor: Peters. One course. C-L: African and African American Studies 276, International Comparative Studies 294

277. Ethics in South Asia. ALP, CCI, CZ, EI Explores through anthropological and literary approaches, how ethics is articulated in religious texts and epics, in everyday contexts, and in the performative arts in South Asia. Examines ethical thinking reflected in conceptualization and expressions of personhood, duty, sexuality, family, and community. Explores issues such as the imagination and negotiation of moral authority; the constitution, assessment, and transmission of values; the role of colonialism; and the moral magnetism of epic traditions. Uses wide range of interdisciplinary material to help explore the practice of ethics in South Asia. Instructor: Prasad. One course. C-L: Study of Ethics

281. American Apocalypse: Beat Generation Spirituality. ALP, CZ, EI, W Places Beat Generation spirituality in its contexts by study of sources and texts that influenced individual figures, specifically, the reading, world view, and practice of Kerouac, Snyder, Ginsberg, Burroughs, and di Prima; identifies the Asian and Native American texts and translations available to Americans in the post-war era and outlines Western influences (Thoreau, Spengler, Skinner, Reich, Nietzsche), reading these in relation to key mythemes of American identity and destiny in the post-War era. Instructor: Need. One course. C-L: Literature 281

281A. The Cognitive Science of Religion and Morality. CZ, EI, R, W One course. C-L: see Philosophy 232A; also C-L: International Comparative Studies 224A, Turkish 232A

282AS. Science, Ethics, and Society. CZ, EI Two courses. C-L: see Philosophy 385AS; also C-L: Public Policy Studies 258S

283. History and Culture of Iran. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 223; also C-L: History 248


286. Medicine and Religion in American Society. CZ, EI, STS Religious, social, and cultural understandings of pain and suffering, disease, mental illness, sexuality and sexualities, abortion, and euthanasia. Close reading and interpretation of historical, scientific, and philosophical texts as well as various media and art forms. Instructor: Staff. One course.

287. Religion and Science: Biology, Minds, and Souls. CCI, CZ, STS The diverse interactions of religion and science from the Renaissance to the present. The profound transformation of premodern science by eighteenth-century revolutions and nineteenth-century discoveries; in turn, the transformation of society, including religion, by modern science. Some consideration of physics and astronomy, but major focus on the impact of Darwinian anti-theology and modern biology, especially animal studies, on "natural theology" and traditional arguments from design. Thinkers to be considered include Francis Bacon, Montaigne, Spinoza, Thomas Huxley, Albert Einstein, and E. O. Wilson. Topics include evolution, human consciousness, human identity, and the human-animal boundary. Instructor: Staff. One course. C-L: Marine Science and Conservation

289. Religion and Ritual. ALP, CCI, CZ, EI Introduces students to ritual as a key dimension of religion and religious ethics, and exposes students to a range of ritual and performance theories and cases drawn from the world’s religions. Explores place and function of large scale and private ritual in embodied and enacted ethics and as a means of redressing social violence according to a given notion of the “good”. Ritual theories are taken from sociological, anthropological, performance and religious studies, including the work of Eliade, Ricoeur, V. Turner, T. Turner,
Douglas, Geertz, and Bell. Rituals considered are drawn from Native American, Zen and Tibetan Buddhist, Christian, Muslim, Jewish, and Hindu contexts. Instructor: Need. One course. C-L: Theater Studies 301

290. Special Topics in Religion. Topics vary from semester to semester. Instructor: Staff. One course.

290S. Special Topics in Religion. Seminar version of Religion 290. Instructor: Staff. One course.

291. Independent Study. Individual guided readings in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. For freshmen and sophomores with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

292. Independent Study. See Religion 291. For freshmen and sophomores with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

293. Research Independent Study. R Individual research and readings in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. For freshmen and sophomores with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

294. Research Independent Study. R See Religion 293. For freshmen and sophomores with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


311. Hindu Arts of Devotion. ALP, CCI, CZ, EI Studies Hindu devotional arts in historical and cultural contexts from the 7th century. Looks at how these arts from literature and visual arts to performance and material culture invented new and also deployed old modes of artistic production and circulation to express temporal and spatial sacredness, political dissent, and existential predicaments. Scrutinizes the critical role of devotional arts in defining and reflecting tides of Hindu ethical thought and values of daily living. Course seeks to understand the connections evolved between contemporary lived ethical practice, patronage, social communities, and artistic technologies. Instructor: Prasad. One course.

320S. Transnational Buddhism in Asia and America. CCI, CZ An examination of Buddhism in Asia, Europe, and the United States from the mid-nineteenth century to the present. Emphasis on global exchanges that resulted in the emergence of Buddhism in the United States and Europe and the transformation of Buddhism in Asia. Instructor: Jaffe or staff. One course.

321S. Buddhist Ethics. CCI, CZ, EI, W Survey of various Buddhist understandings of ethics, both classical and contemporary. How different Buddhist communities have responded to such ethical problems as the existence of evil, war, injustice, and suffering as well as contemporary Buddhist debates over abortion, ethnic fratricide, human rights, environmental problems, economic justice, and cloning. Instructor: Jaffe or staff. One course. C-L: Study of Ethics, Marine Science and Conservation

322. Mahayana Buddhism. CCI, CZ Special features of the doctrine and practice of Buddhism in Tibet, China, Korea, and Japan, with an account of their origins in the Indian subcontinent. Instructor: Jaffe or staff. One course. C-L: Asian & Middle Eastern Studies 306

323S. Buddhist Meditation: Cultivation Practices and Psychology. CCI, CZ, EI Buddhist paths and techniques of self-transformation in premodern and modern Buddhist cultures. Conceptions of the psychophysical person and goals of Buddhist practice assumed by these meditative techniques. Reinterpretation and modification of traditional meditation practices in contemporary Buddhist societies. Students who took this course as an 89S First Year Seminar are not eligible to enroll. Instructor: Jaffe or Kim. One course.

325S. Modern Korean Buddhism in the Global Context. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 376S

326S. Zen Masters, Soldiers, and Artists. CCI, CZ, EI Throughout Buddhist history, the monastic community has had the responsibility of maintaining the Buddha's teachings, values, and practices. Thus, in order to understand the Buddhist tradition, it is crucial to having a good grasp of the place of Buddhist monasticism. The course is divided into two parts. The first is dedicated to examining the origin, structure, and development Buddhist monasticism, starting with the life of its founder, and focusing on Buddhism's internal ethical debates on the purpose of monasticism, monastic conduct, etc. We then compare the normative view of monasticism with the lives of monks and nuns. We look at how monastics have been artists, scholars, court advisors, shamans, and doctors, among others, and how Buddhist monastic institutions have responded to acts of state, war, challenges from other religions, and modernity. Instructor: Kim. One course.

327S. Tibetan Buddhism: Culture, Ethics, Philosophy and Practice. CCI, CZ, EI, W Introduces students to history, practice, culture, and ethics of Tibetan Buddhism; contents include overview of Indian Buddhist practice and ethics; historical overview of Tibetan Buddhism with a focus on connections between the construction of Buddhist ideal types (lama and yogin) and political power; Tibetan Buddhist Philosophy; Buddhist transformation of ethical, social and cultural forms, including the shaman/king and gift exchange patterns, and analysis of the function of lineage within the construction of Tibetan polities and social order; readings include textbook surveys, biography and philosophical texts and poetry. Instructor: Need. One course. C-L: Asian & Middle Eastern Studies 386S

328S. Buddhism and Sexuality. CCI, CZ, EI Critical examination of the relation of religion and sexuality with special attention to Buddhism. Discusses religious interpretations of sex, sexuality, and gender; the codification and normalization of these rules through texts, symbols, and practices; and recent challenges to these interpretations. Topics include homosexuality, same-sex marriage, abortion, contraception, gender equality, clerical marriage, married clerics' wives, and clerical sexual abuse. Draws on religious theory, gender theory, and critical theory. Places Buddhism in conversation with Jewish, Christian, and Islamic traditions. Extensive class discussion. No prerequisites. Instructor: Kim. One course. C-L: Asian & Middle Eastern Studies 286S, International Comparative Studies 389S, Women's Studies

329S. Taoism and Mysticism. CCI, CZ Explores the mystical tradition that runs through the Taoist school of Chinese thought and practice from ancient times to the present, concentrating on early Taoist texts and their commentaries (from ca. 400 BCE-ca. 700 CE.) in English-language translation. The discovery in recent decades of previously unknown texts and new versions of received texts now makes possible the delineation of a coherent history of early Taoist practices of self-cultivation, mystical transcendence, and the application of mystical insights to daily life and even to government, as well as cosmological, ontological, epistemological and other facets of associated modes of thought. Instructor: Staff. One course.

331. Ethics in the Hebrew Bible/Old Testament. ALP, CCI, CZ, EI, W An introduction to ethics in the Hebrew Bible/Old Testament, addressing moral and ethical dilemmas within the varied sources of the Hebrew Bible/Old Testament, the diversity of views and opinions within the text, and passages often regarded as problematic for modern readers. The use of the biblical text as a resource for the construction of pre-modern and modern Jewish and Christian ethics will also be explored. Instructor: Lieber. One course. C-L: Jewish Studies 330, Study of Ethics 330

332S. The Book of Psalms: Reading Biblical Poetry Then and Now. ALP, CCI, CZ, EI, W An introduction to the biblical book of Psalms and traditional (Jewish and Christian) and contemporary methods of reading and interpreting these poems. Literary, feminist, liturgical, and midrashic modes of reading will be particularly examined. Issues of translation as a mode of interpretation will be central. Instructor: Lieber. One course. C-L: Jewish Studies 332S

335. Jewish Mysticism. ALP, CCI, CZ, EI, W The main historical stages, personalities, texts, ethical doctrines, social teachings, and metaphysical doctrines from rabbinic to modern times. Topics include the significance of context and cross-cultural influence in shaping mystical traditions of a minority population living in Christian, Muslim, and secular environments and ways in which mysticism has served to empower and marginalize women. Readings emphasize primary sources (Hebrew Bible, Rabbinic writings, medieval mystical works) in translation and consider them both as literary works and elements of religious ritual. Instructor: Goldman or Lieber. One course. C-L: Jewish Studies 335, Medieval and Renaissance Studies 351, Ethics Courses Offered Through Other Departments
340. Jewish History, 1492 to the Present. CCI, CZ, EI, SS One course. C-L: see History 251; also C-L: Jewish Studies 251, International Comparative Studies 253, Ethics Courses Offered Through Other Departments

341. Jewish Ethics. CCI, CZ, EI, W Survey of Jewish ethics from antiquity to modern times, with focus on both general methods and specific case studies. How different traditional Jewish sources and communities respond to ethical challenges such as the death penalty, abortion, cloning, the environment, and economic justice, especially in the U.S. Responses from a variety of Jewish perspectives (Reform, Orthodox, and Conservative.) Instructor: Lieber. One course. C-L: Jewish Studies 341, Study of Ethics 341, Study of Ethics

342. The Holocaust. CCI, CZ, EI, STS One course. C-L: see History 297; also C-L: Jewish Studies 342, Political Science 262

345. Contemporary Judaism. CCI, CZ, EI Modern Jewish thought from Mendelssohn to the present, with particular reference to the dynamics of emancipation, antisemitism, religious reform, Zionism, the rise of natural religion with its emphasis on the supremacy of ethics, and feminism. Instructor: Goldman or staff. One course. C-L: Jewish Studies 345, International Comparative Studies 310

347S. Women in Judaism. CCI, CZ, EI, W How women have understood, experienced, and shaped Judaism from the Greco-Roman period to the present day. Discussion topics include: women's traditional religious roles and status; the ways in which women themselves have understood and expressed their Jewish self-identity and religious experiences over the centuries; and the transformation of Jewish women's roles, expectations, and opportunities in the modern world, especially in the U.S. Instructor: Lieber. One course. C-L: Jewish Studies 347S

349S. Zionism: Jewish and Christian Aspects. CCI, CZ, EI, SS Examines various trends and ideologies within Zionism, with emphasis on the movement's religious aspects. Study of various forms of Zionism, both Christian and Jewish, in the context of the constantly shifting Christian-Jewish relationship. Introduction to the origins of political Zionism, with focus on the manner in which religious ideas influenced both Zionism and the State of Israel. Instructor: Goldman. One course. C-L: Jewish Studies 350S, Asian & Middle Eastern Studies 350S

350S. Non-Canonical Gospels. ALP, CZ, EI Historical-critical study of early non-canonical Christian Gospels, with special reference to the Gospel of Thomas, the Gospel of Peter, the Protevangelium of James, the Infancy Gospel of Thomas, Papyrus Egerton 2, Gospel of Mary, Gospel of Judas, Gospel of Philip, Dialogue of the Savior and Secret Mark; their relationship to other early Christian texts, their view of Jesus, their place in early Christianity; questions of authority, canon, canonical-bias, and concepts of heresy and orthodoxy. Instructor: Goodacre. One course.

351. The Historical Jesus. CCI, CZ, EI An investigation of what can be known about Jesus of Nazareth, his teaching about the kingdom of God and ethical behavior, his symbolic acts, and his cures. Principal attention given to the first three gospels, secondary attention to comparative material from the Jewish and Greco-Roman worlds. Instructor: Goodacre or staff. One course. C-L: Classical Studies 322, Study of Ethics

352. The Life and Letters of Paul. CCI, CZ, EI Paul's biography and character, the social and physical circumstances of his work, his thought, and its relationship to ancient Jewish and Hellenistic ethics and beliefs. Instructor: Goodacre or staff. One course. C-L: Study of Ethics

353. Ethical Issues in Early Christianity. CCI, CZ, EI Investigation of two major transitions in the early Christian movement and their impact on the formulation of Christian ethics: Christianity's transition from a sect within Judaism to a Greco-Roman religious movement whose constituency came largely from the "pagan" world, and its transition from a sect in danger of persecution to a religion favored and supported by Roman imperial authorities. How these transitions are reflected in early Christian attitudes toward, and practices concerning, poverty and wealth, war and military service, marriage and sexuality, capital punishment, slavery, and other issues. Instructor: Staff. One course.

354. Medieval Christendom, Conflict. CCI, CZ, EI One course. C-L: see History 242; also C-L: Medieval and Renaissance Studies 257

355. History of the Christian Church. CCI, CZ, EI Crucial events, issues, structures, and writings that have shaped the Christian community and influenced Western civilization from the time of the early church to the present. Special attention to ethical themes such as human destiny, the "good life," reform and renewal that have been permanent elements in Christian history. Instructor: Staff. One course. C-L: History 243, Ethics Courses Offered Through Other Departments
356. **Roman Catholic Tradition. CZ** History of the tradition from early days through the reforms of Vatican II with emphasis on the experiences of American Catholics, concluding with a discussion of current concerns about economic justice, gender equality, sexuality, and the post-Vatican II crisis of authority. One course. C-L: History 380

357. **Protestant Traditions. CZ, EI** Survey of history and thought of Protestant Christianity. Emphasis on interaction of religion and society as well as theological and ethical beliefs. Instructor: Staff. One course. C-L: History 258

358. **The Reformation of the Sixteenth Century. CCI, CZ, EI** A survey of the changes in sixteenth-century European society, with particular reference to the continent, which grew out of the movement for religious reform and socio-political renewal. Focus on new developments in theology and religion and their relationship to society in such issues as the definition of a "good society," just war, and social justice. Instructor: Staff. One course. C-L: History 259, Medieval and Renaissance Studies 284, Ethics Courses Offered Through Other Departments

359S. **Classics of the Christian Theological Tradition. CCI, CZ, EI** Centered on reading and discussion of extracts from important and influential Christian theological writings, which have become "classics" in the Christian tradition. While selections will span the whole of Christian history, more than half will be from the 19th and 20th centuries. Non-English texts will be read in the best existing modern English translations. Gain knowledge in these classical texts and acquire the necessary skills to properly understand, to historically contextualize, and to critically evaluate them. Instructor: Van Rompay. One course.


368. **The Theology and Fiction of C. S. Lewis. ALP, CZ, EI** A study of texts of cultural criticism, fantasy fiction, and theological and moral argument by C. S. Lewis, their dependence on the cultural situation in which they were deployed, and the reasons for their continuing force and wide appeal. Instructor: Staff. One course. C-L: Study of Ethics

370FS. **Qur'an Over Time. CCI, CZ, EI** Same as Religion 370S but open to students only in the Focus Program. Instructor: Staff. One course. C-L: Islamic Studies

370S. **Understanding the Qur'an. CCI, CZ, EI** Qur'an as central text of Islamic ritual and belief, national reflection, and transnational exchange for nearly all Muslims. Will examine question of translatability as well as issues of interpretation from non-Muslim, secular or non-theological perspectives. Possible usefulness of analogies to literary critical study of Bible. The Internet as a resource for exploring multiple interpretations by Muslims and non-Muslims. Instructor: Staff. One course. C-L: Asian & Middle Eastern Studies 226S, Islamic Studies

372. **Islamic Awakening: Revival and Reform. CCI, CZ** One course. C-L: see Asian & Middle Eastern Studies 325; also C-L: Islamic Studies, Policy Journalism and Media Studies

372FS. **Islamic Awakening: Revival and Reform. CCI, CZ** One course. C-L: see Asian & Middle Eastern Studies 225FS

373. **Islamic Mysticism: Perso-Indian (Eastern) Traditions. CCI, CZ, EI** Teachings, texts, and institutions of Sufism as it expanded from Iraq and Iran to India and Indonesia, from twelfth to the twenty-first century. C-L: International Comparative Studies. Instructor: Staff. One course. C-L: International Comparative Studies 380, Study of Ethics, Islamic Studies

374S. **Muslim Philosophy and Theology, an introduction. CZ, EI** Philosophy and theology as the foundation of Shari'a law; Islamic philosophy as a part of medieval philosophy under the influence of Plato, Aristotle and Plotinus. Impact on western philosophers such as Thomas Aquinas; major concepts, issues of Islamic philosophy and translation of two trends: from Greek to Arabic, from Arabic to western languages. Brief discussion on mysticism, ethics and politics. Instructor: Kadivar. One course. C-L: Study of Ethics 235S, Islamic Studies

375. **Islamic Civilization I. CCI, CZ, EI** First part of two-course sequence providing an extensive survey of Muslim peoples and institutions. The Middle Eastern origins and cultural attainments of medieval Islam. Instructor: Hassan or staff. One course. C-L: Cultural Anthropology 256, History 210, Medieval and Renaissance Studies 268, Asian & Middle Eastern Studies 327, Ethics Courses Offered Through Other Departments, Information Science and Information Studies, Islamic Studies
376. Islamic Civilization II. CCI, CZ, EI Continuation of Religion 375. Instructor: Hassan or staff. One course. C-L: Cultural Anthropology 257, History 211, Medieval and Renaissance Studies 269, International Comparative Studies, Ethics Courses Offered Through Other Departments, Islamic Studies

377S. Religion and Politics in Post-Revolutionary Iran. CCI, CZ, EI Examines ethical crises of Islamic regime: Did Islamic Republic promote ethics or decline morality? Analyzes tensions between secularism, democracy and theocracy; semi-democracy and semi-dictatorship; Shi'i doctrine of imamate and the theory of guardianship of the jurist; I.R.I. Constitution; the doctrine of justice versus the privileges of the ruling political order; the role of Shari'a in law making; controversial religious issues in reformist discourses; women's rights; religious and ethnical minorities; identity, diversity and power; traditionalists, reformists and fundamentalists; the administration of two supreme leaders and six presidents; Shi'a authorities and revolutionary guards. Instructor: Kadivar. One course. C-L: Asian & Middle Eastern Studies 288S

378. Islam in Central Eurasia. CCI, CZ, SS One course. C-L: see Russian 370; also C-L: History 209, International Comparative Studies 370, Islamic Studies

379S. Islamic Media. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 329S; also C-L: International Comparative Studies 331S, Arts of the Moving Image 342S, Visual and Media Studies 342S

380. Muslim World: Transformations and Continuities. CCI, SS One course. C-L: see Cultural Anthropology 250; also C-L: International Comparative Studies 170, Women's Studies


388S. Muslim Ethics and Islamic Law: Issues and Debates. CCI, CZ, EI Premodern judicial arrangements and the contestations surrounding their modern incarnations. Topics include bioethics, gender and family law, war and peace, environmental issues, and political ethics. Instructor: Staff. One course. C-L: Asian & Middle Eastern Studies 206S, Study of Ethics 345S, Study of Ethics, Islamic Studies


390S. Junior-Senior Seminars. CZ Topics and instructors to be announced. Instructor: Staff. One course.

391. Independent Study. See Religion 291. For juniors and seniors with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

392. Independent Study. See Religion 291. For juniors and seniors with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

393. Research Independent Study. R See Religion 293. For juniors and seniors with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

394. Research Independent Study. R See Religion 293. For juniors and seniors with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

410S. Capstone Seminar: Religion, Race, and Citizenship in Modern Europe. CCI, CZ, R, SS, W One course. C-L: see History 475S

415S. Capstone Seminar: Sex, Celibacy, and Purity in the Middle Ages. CCI, CZ, EI, R One course. C-L: see History 459S; also C-L: Medieval and Renaissance Studies 426S

450S. Human Rights in Islam. CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 450S; also C-L: International Comparative Studies 450S

490S. Junior-Senior Seminars. CZ Topics and instructors to be announced. Instructor: Staff. One course.
493. **Honors Research. R, W** Course credit contingent upon successful completion of Religion 494. Consent of the director of undergraduate studies required. Instructor: Staff. One course.

494. **Honors Research. R, W** Continuation of, and required for credit for, Religion 493. Prerequisite: Religion 493. Consent of the director of undergraduate studies required. Instructor: Staff. One course.

526A. **Religion and Civil Society in the Arab World. CCI, CZ, EI** One course. C-L: see Asian & Middle Eastern Studies 526A

550. **Archaeology of Palestine in Hellenistic-Roman Times. CCI, CZ, STS** The study of material and epigraphic remains as they relate to Judaism in Hellenistic-Roman times, with special emphasis on Jewish art. Instructor: Staff. One course. C-L: Jewish Studies 550


560S. **Reading Heidegger. ALP, CCI, CZ, EI** One course. C-L: see Asian & Middle Eastern Studies 540S; also C-L: Literature 543S


607. **Hebrew Prose Narrative. FL** Focus on the grammar, syntax, and prose style of classical Hebrew composition; a comparative reading of modern and precritical Jewish and Christian commentary. Readings spanning the spectrum from the early Hebrew prose of Genesis and I and II Samuel to the late compositions of Chronicles and Ezra-Nehemiah. One year of classical Hebrew required. Consent of instructor required for undergraduates. Also taught as Old Testament 860. Instructor: Chapman, Davis, Peters, or Portier-Young. One course. C-L: Jewish Studies 607

608. **Classical Hebrew Poetry: An Introduction. FL** The problem of defining and understanding what is "poetic" in classical Hebrew. Theories of Hebrew poetry from Lowth to Kugel and O’Connor illustrated with readings from Psalms, Isaiah, Job, and Jeremiah. One year of classical Hebrew required. Consent of instructor required. Also taught as Religion 608. Prerequisites: Old Testament 115, 116. Instructor: Chapman, Davis, Peters, or Portier-Young. One course. C-L: Jewish Studies 608

609. **Rabbinic Hebrew. FL** Interpretive study of late Hebrew, with readings from the Mishnah and Jewish liturgy. Consent of instructor required for undergraduates. Instructor: Staff. One course. C-L: Jewish Studies 609


611. **Studies in Apocrypha and Pseudepigrapha. CCI, CZ** Selected documents of the Apocrypha and Pseudepigrapha examined exegetically and theologically in their relation to postexilic Judaism. Instructor: Staff. One course.

612. **Language and Literature of Dead Sea Scrolls.** A study in interpretation. Prerequisite: A knowledge of Hebrew. Instructor: Staff. One course.

613S. **Introduction to Jewish Studies.** One course. C-L: see Jewish Studies 601S; also C-L: History 601S


630-11. Exegesis of the Greek New Testament II: The Synoptic Gospels. Concentration on the "classical" methods of studying the first three gospels: source criticism, form criticism, and redaction criticism. Some attention to textual criticism. Students expected to become proficient in using the Greek synopsis. Prerequisite: two years of Greek or the equivalent. Consent of instructor required. Instructor: Goodacre. One course.


631. Biblical Interpretation in Early Christianity. CZ, EI How early Christian writers of the second—mid-fifth centuries made meaning of the Scriptures in their own, postbiblical environments. Focus on the new historical, religious, and theological situations that required new readings of scriptural texts, the role of heresy and the ascetic movement in the development of biblical interpretation and canon development, and special problems that arose around these issues. Instructor: Staff. One course.

632. Origen. CZ, EI The systematic and apologetic writings of an important Alexandrian thinker and exegete of the third century. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 662


634. Early Christian Asceticism. CZ, EI The development of asceticism and monasticism in the first six centuries of Christianity. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 655, Study of Sexualities, Women's Studies

650. Theological Anthropology: Critical Modernists. CZ This seminar will look at theological anthropology in the work of 20th century theologians who develop the tradition of Schleiermacher, a group known as critical revisionists (or revisionist modernists). After recognizing Schleiermacher's contribution, the course will treat theological anthropology in selected contemporary figures such as Paul Tillich, David Tracy, Gordon Kaufman, and Edward Farley. Prerequisite: XTIANTHE 32 or permission of instructor. Instructor: Mary M. Fulkerson. One course.

659. Freedom and Law. Lecture course will explore the centrality of freedom and law to doctrine of God as well as to the understanding of the human being and unfold their complex interrelationship in the traditions of theology and philosophy. Also taught as Christian Theology 285. Instructor: Huetter. One course.

660. Justice, Law, and Commerce in Islam. CZ, EI History and schools of Islamic jurisprudence; Islamic legal reasoning; approaches to ethics and procedural justice, the ethical regulation of commerce, including a detailed study of pertinent issues in Islamic law. Also taught as Law 568. Instructor: Staff. One course. C-L: African and African American Studies 575, Medieval and Renaissance Studies 659, International Comparative Studies, Islamic Studies

662S. Muslim Networks Across Time and Space. CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 629S; also C-L: Islamic Studies

663. Islam and Modernism. CCI Cultural, religious, and ideological forces that shape Muslim responses to modernism. Instructor: Staff. One course. C-L: International Comparative Studies, Islamic Studies

664. The Religion and History of Islam. CCI, CZ, R Investigation of the historical study of Islam: historiography as a discipline, the historical study of Islam in the Western world, Muslim views of Islamic history. Required critical essays and major research paper. Instructor: Staff. One course. C-L: International Comparative Studies, Islamic Studies

680S. Buddhist Thought and Practice. CCI, EI A historical introduction to Buddhist thought and practice, with special attention to their interrelationship in the living religion. Instructor: Jaffe. One course. C-L: International Comparative Studies

690S. Special Topics in Religion. CZ Subject varies from semester to semester. Instructor: Staff. One course.

The Major

Major Requirements. Ten courses. Religion 101 is required. At least six courses must be numbered 200 or above. One course must be a religious studies independent study taken in the junior or senior year, a small group learning experience/seminar taken during the junior or senior year, or a religious studies honors project. The student will select, from a list of appropriate courses, at least one course apiece for each of three different religious traditions. In addition, the student, also in consultation with his or her advisor and with the advisor's approval, will choose a set of four courses that constitute a thematic or methodological focus on a particular aspect of religion. Only two
approved study abroad courses can count toward the major. Only one Duke Divinity School course can count toward the major, and that course cannot be equivalent to a course offered by the religious studies. Students interested in taking Duke Divinity School courses should consult the director of undergraduate studies regarding credit toward the religious studies major.

**Departmental Graduation with Distinction**

The religious studies department has a program for Graduation with Distinction (see this bulletin under that heading). This program is intended for the outstanding religious studies major whose grade point average is at least 3.5 in religious studies (and 3.3 overall) and who has demonstrated the desire and talent to pursue independent research. The student, under the supervision of an advisor, will produce an honors thesis of exceptional quality. The main advisor is normally a faculty member in the department already familiar with the student’s work.

**The Minor**

The religious studies minor offers students specializing in another department or program the opportunity to enrich their studies by engaging in the consideration of religion.

**Minor Requirements.** A minimum of five religious studies courses, at least one of which must be numbered 200 or above. Minors are encouraged to take Religion 101. Only one approved study abroad course can count toward the minor. Only one Duke Divinity School course can count toward the minor, and that course cannot be equivalent to a course offered by the religious studies. Students who wish to take Duke Divinity School courses should consult the director of undergraduate studies regarding credit toward the religious studies minor.

**Foreign Languages**

To prepare for graduate or professional study of religion, the department recommends that students complete at least four courses in college-level study, or the equivalent, of a modern foreign language. Master of arts and doctor of philosophy programs often require examination in one or two modern foreign languages. Those planning to study religious traditions whose documents are in a language other than English should begin appropriate language study as part of their undergraduate preparation.

**Romance Studies**

Professor Rosa, Chair; Professor Jenson, Director of Undergraduate Studies Professor of the Practice Tufts, Director of French Language Program; Assistant Professor of the Practice Fellin, Director of the Italian Language Program; Assistant Professor of the Practice Paredes, Director of the Spanish Language Program; Professors Aravamudan, Bell, Dainotto, Dubois, Finucci, Greer, Hardt, Jameson, Jenson, Longino, Mignolo, Moi, Solterer; Associate Professors Gabara, Rodríguez-García, Rosa, Sieburth, Viegio; Assistant Professors, Aidoo, Eisner, Furtado, Milian, Salior; Professors Emeriti Damasceno, Fein, Garci-Gómez, Hull, Kaplan, Keineg, Orr, Osuna, Stewart, and Thomas; Research Professors Dorfman, Garrèta

A major (in French, Italian, Spanish or Romance studies) or a minor is available in this department.

Prerequisites for all courses numbered 100 or above not taught in English:

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<tr>
<th>Courses</th>
<th>SAT II: French: score of 640+</th>
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<tr>
<td>French 204, 212 or equivalent</td>
<td>Italian: score of 640+</td>
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<tr>
<td>Italian 204, 212, 213, or equivalent</td>
<td>Spanish: score of 660+</td>
</tr>
<tr>
<td>Portuguese 203 or 204, or consent of instructor</td>
<td>Spanish literature exam: score of 4 or 5</td>
</tr>
<tr>
<td>Spanish 204, 212, or equivalent</td>
<td>French, Italian or Spanish language exam: score of 5</td>
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Students may submit AP scores for credit as well as placement in French, Italian, or Spanish. Credit is awarded as follows:

- 4 or 5 on AP Literature = credit for 204/placement at 300 level
- 5 on former AP Language = credit for 204/placement at 300 level
- 5 on new AP Language and Culture = credit for 204/placement at 300 level
4 on new AP Language and Culture = placement in 204

Students who by reason of foreign residence have advanced proficiency in French, Italian, Portuguese, or Spanish must be placed by the director of undergraduate studies.

Courses in Romance Studies (ROMST)

190A. Duke-Administered Study Abroad: Special Topics in Romance Studies. Topics differ by section. Instructor: Staff. One course.

190FS. Topics in Romance Studies. ALP, CCI Topics vary each semester offered. Open only to students in the Focus Program. Instructor consent required. Instructor: Staff. One course.

201. Europe in Theory. ALP, CCI, CZ, R Exploration of the idea of Europe as a political, moral, and cultural identity. Examines the construction of such identity throughout history, ending with today's European Union, at a moment in which integration of "Eastern" countries such as Turkey or Russia remains a hotly debated issue. Consistent attention devoted to literary, cinematic and artistic works which attempt to imagine a European Culture, as well as the evolution of aesthetics, and literary and art history. Instructor: Dainotto or staff. One course. C-L: French 201, Italian 201, Literature 273

201P. Europe in Theory--Preceptorial. A preceptorial, in Italian or French, requiring concurrent enrollment in Romance Studies 201. Further information available from instructor. Instructor: Dainotto, Solterer or staff.

203. Machiavellian Persuasion: Rhetoric from Plato's Cave to Political 'Spin'. ALP, CCI, CZ Investigation of how rhetoric constructs social experience. Mechanisms of rhetorical persuasion in major literary texts (Dante, Cervantes, Rousseau, Garcia-Marquez) and memorable cultural moments (Haitian Revolution, fascism, Vichy France, Latin American dictatorships) in global Romance studies traditions. The neuroscience, anthropology, and economics of tropes. Instructor: Eisner, Jenson, or staff. One course.

204. Soccer Politics/La Politique du Football. CCI, CZ, EI, SS Explores global history of soccer with focus on Europe, Africa, and Latin America. Examines development and spread of the game, institutions such as FIFA, biographies of legendary players, and economics of the sport. Examines philosophical and ethical issues raised by soccer, and ways the sport condenses, channels, and at times transforms politics. Materials include works of history, anthropology, literature, journalism, memoirs, documentary films, and footage of classic games. Students will contribute to Soccer Politics blog and pages. Students enrolled under foreign language offerings will do reading, writing, research, and discussion groups in language. Instructor: Dubois and Mbembe. One course. C-L: History 266, French 362, International Comparative Studies 204

205. World Masterpieces: Made in Italy. ALP, CCI, CZ, R Introduction to a range of literary, artistic, musical, and cinematic masterpieces produced in Italy, including contributions of guest lecturers from multiple areas of expertise. From epic journeys of Virgil and Dante and tales of human love, deceit, and wit in Boccaccio's Decameron through Machiavelli's The Prince and works by Michelangelo, Monteverdi, Galileo, Primo Levi, and Roberto Saviano, students will engage in close readings and develop skills of literary and formal analysis, while situating works in historical and cultural contexts and examining the rich debates they have stimulated. Preceptorial in Italian available for students desiring additional work and discussion in Italian. Instructor: Eisner. One course. C-L: Italian 225

220. Trauma and Global Mental Health in Haiti. ALP, CCI, CZ One course. C-L: see Global Health 323

235SL. Capoeira: Practice and Culture. ALP, CCI, SS, W One course. C-L: see Dance 235SL; also C-L: Cultural Anthropology 221SL, African and African American Studies 221SL

291-1. Independent Study. Individual study in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and Director of Undergraduate Studies required. In English. Instructor: staff. Half course.

321. The Modern Caribbean after Emancipation. CCI, CZ One course. C-L: see History 321; also C-L: African and African American Studies 240, Cultural Anthropology 322, International Comparative Studies 319

345. Representing Haiti. CCI, CZ, R, STS Merges cultural study of representations of Haiti with initiatives in multimodal expression of research. Themes addressed: humanitarianism; NGOs; HIV; “boat people” and other tropes of migration; the “restavèk” or child domestic worker; hip hop; Haiti and hemispheric partnerships; Haiti and the Left; Haiti and the Right; the “failed state” in contemporary global politics; postcoloniality before postcolonialism; Haiti and language; religious identities. Research projects may include development of the Haiti Lab’s Second Life “Haiti Island;” development of a virtual Creole language learning space; gps mapping; or collection of research data through cell phone technology. Instructor: Jenson/Szabo. One course. C-L: Information Science and Information Studies 215, Visual and Media Studies 251

360. Secularization and Modernity: Cross-Disciplinary Readings 1750-1914. ALP, CCI, CZ, EI, R One course. C-L: see English 285; also C-L: Sociology 348, Political Science 374, German 376, Literature 243

390. Special Topics in Romance Studies. A comparative study of languages, literatures, and/or cultures related to Romance Studies. Instructor: Staff. One course.

391. Independent Study. Individual study in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and Director of Undergraduate Studies required. In English. Instructor: staff. One course.

393. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open only to qualified students by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

395T. FHI Humanities Lab Tutorial. R Tutorial in English for participants in FHI Labs. Discussion group for up to five students. Instructor: Jenson. One course.

490. Topics in Romance Studies. ALP, CZ A comparative study of languages, literatures, and/or cultures related to Romance Studies. Instructor: Staff. One course.

490S. Topics in Romance Studies. ALP, CZ A comparative study of languages, literatures, and/or cultures related to Romance Studies. Instructor: Staff. One course.

495. Honors Thesis. R Preparation and writing of research paper for departmental distinction. Consent of both the instructor and the director of undergraduate studies required. See section on honors in Bulletin. Instructor: Staff. One course.

501S. Methods and Theories of Romance Studies. ALP, CCI, R Provides students in any PhD track of the department of Romance Studies with fundamental training in both general literary theory and in the specific methods of romance criticism. Instructor: Staff. One course. C-L: Literature 540S

509S. Issues in Second Language Acquisition. FL, R, SS Advanced applied linguistics course examining different areas of interests in the field of second language acquisition (SLA). Overview of main research areas in the field. Topics include: Language Testing, Action Research in SLA, Communicative Language Teaching, the role of classroom instruction in SLA, or the relationship between SLA research and foreign language learning. Students expected to become conversant with the research literature in the area and the different methodologies used in SLA research, carry out a classroom-based quantitative and/or qualitative research project, and produce a research paper that might be submitted to relevant conferences. Topics vary each year. Consent of instructor required. Instructor: Staff. One course.

520S. Translation Studies and Workshop. ALP, CCI, CZ, W One course. C-L: see Theater Studies 530S; also C-L: Asian & Middle Eastern Studies 502S
521S. Anthropology and History. SS One course. C-L: see Cultural Anthropology 501S; also C-L: History 572S
530. Imagining Community in Boccaccio and Christine de Pizan. ALP, CCI, CZ This comparative seminar explores the controversial and complex works of Boccaccio and Christine de Pizan. Boccaccio, illegitimate, impoverished son of a Florentine banker, and Christine de Pizan, an Italian woman isolated at court in Paris during a civil war both use literary form to construct communities--local, linguistic, national, intellectual, gendered, universal. This seminar attempts a different conception of literary community beyond national types and hierarchies offering students opportunities to explore their works and modern critical debates about them. All works available in translation. Readings in original languages and preceptorial meetings for majors and graduate students. Instructor: Eisner or Solterer. C-L: French 531, Italian 531
590. Topics in Romance Studies. Topics to be announced. Instructor: Staff. One course.
590S. Seminar in Romance Studies. CCI Topics to be announced. Instructor: Staff. One course.
690. Topics in Romance Studies. Topics to be announced. Instructor: staff. One course.
690S. Seminar in Romance Studies: Special Topics. ALP, CCI Topics to be announced. Instructor: Staff. One course.

Courses in Creole (CREOLE)
101. Elementary Creole I. FL An introduction to the essential elements of Haitian Creole or Kreyòl language and aspects of Haitian culture. The first of the two-semester sequence of elementary Haitian Creole or Kreyòl, the course provides practice in understanding, speaking, reading, and writing the language, culturally contextualized through units on health care, Haitian women’s rights issues, and unpaid child servants (restavèk). Students will acquire enough vocabulary and idioms to be able to interact with Haitians. Taught in Haitian Creole. No pre-requisite. Staff: Jenson and staff. One course.
102. Elementary Creole II. FL Second course in the two-semester sequence on elementary Haitian Creole provides essential elements of Creole language and aspects of Haitian culture. Course is designed to help students develop speaking, listening, reading, and writing skills in Haitian Creole. Students will be exposed to different aspects of Haitian culture through films, storytelling, games, music, and proverbs. Pre-requisite: Creole I, or French 199, Haitian Creole for the Recovery in Haiti, or a comparable level of previous Creole language experience, such as Duke Engage experience in Haiti or familial background in Creole. Taught in Haitian Creole. Staff: Jenson and staff. One course.
203. Intermediate Creole. FL First semester of intermediate Haitian Creole or Kreyòl. This course moves beyond “survival skills” in Creole to more complex social interactions and expressions of analysis and opinion. Intermediate skills in understanding, speaking, writing, reading will be contextualized within a broad range of issues such as rural life in Haiti, religion, frenchedified Creole vs popular Creole, through texts, poems, and excerpts taken from novels in Haitian Creole. Students will learn to carefully follow contemporary events and debates in Haitian culture using internet resources in Creole. Pre-requisite: Creole 1 and Creole 2, or French 199 and Creole 2. Taught in Haitian Creole. Staff: Jenson and staff. One course.
393. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open only to qualified students by consent of instructor and director of undergraduate studies. Instructor: Jenson or staff. One course.

Courses in French (FRENCH)
89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.
89S-1. First-Year Seminar in French. FL Seminar for first-year undergraduates with the desire and ability to take courses in literature, history, culture, art, cinema, or drama in French at the 300-level, equivalent in all respects to a 300-level course in French. Completely satisfies the foreign language requirement and counts toward a major or minor in French. Topics vary. Prerequisite: SAT II score of 640 or above, AP Language score of 5. Native speakers or students who did high school work in French encouraged to enroll. Instructor: Staff. One course.
101. **Elementary French 1. FL** Introduction to the essential elements of French language and aspects of French/Francophone cultures. Open to students who have never studied French before, or to those who have not studied French more than two years in high school. Practice in understanding, speaking, reading, and writing the language. Includes computer, video, and audio labs. Five class meetings a week. Instructors: Tufts and staff. One course.

102. **Elementary French 2. FL** Continues work on the essential elements of French language and aspects of culture. Aural comprehension, speaking, reading, and writing activities receive equal attention. Requires work in the language and computer laboratory. Classes conducted in French. Open only to students who have a SAT II French score no higher than 420-480, or who have studied French for no more than three years in high school. Practice in understanding, speaking, readings, and writing French, and an introduction to some aspects of French/francophone cultures. Computer, video, and audio laboratory work required. Eight class hours a week. Instructor: Tufts and staff. One course.

111. **Intensive Elementary French. FL** Covers the basic elementary French language curriculum (French 101-102) in one semester. Not open to students who have studied French for more than two years pre-college. Practice in understanding, speaking, reading, and writing French, and an introduction to some aspects of French/francophone cultures. Computer, video, and audio laboratory work required. Eight class hours a week. Instructors: Tufts and staff. Two courses.

201. **Europe in Theory. ALP, CCI, CZ, R** Exploration of the idea of Europe as a political, moral, and cultural identity. Examines the construction of such identity throughout history, ending with today's European Union, at a moment in which integration of "Eastern" countries such as Turkey or Russia remains a hotly debated issue. Consistent attention devoted to literary, cinematic and artistic works which attempt to imagine a European Culture, as well as the evolution of aesthetics, and literary and art history. Instructor: Dainotto or staff. One course. C-L: Romance Studies 201, Italian 201, Literature 273

203. **Intermediate French Language and Culture. CZ, FL** The first half of the two-semester program of intermediate French. Review of basic grammar; introduction to second language reading as a process; emphasis on understanding the cultural implication of written and visual texts; guided writing practice. Resources include audiotapes, computer tutorials, and videotapes. Prerequisite: French 102 or 111 at Duke, or SAT II score of 490-580, or AP Language Test score of 3 in French. Instructors: Tufts and staff. One course.

204. **Advanced Intermediate French Language and Culture. CZ, FL** The second half of the two-semester program of intermediate French. Focus on building higher proficiency levels in all four skills. Intensive grammar review and daily reading and in-class discussion of texts of varying lengths and styles which increase in difficulty as the semester progresses. Guided essay writing on topics related to the readings and discussion. Prerequisite: French 203 at Duke, or SAT II score of 590-630, or an AP Language Test score of 4. Instructors: Tufts and staff. One course.

212. **Intensive Intermediate French Language and Culture. FL** Covers the intermediate French language curriculum (French 203, 204) in one semester. Increased attention to grammatical variety and accuracy; guided writing practice; development of second language reading skill with increasing emphasis on critical analysis of cultural and literary texts. Resources include audiotapes, computer tutorials, videotapes, and French language websites. Six class hours a week. Prerequisite: French 101-102 or 111 at Duke, or SAT II score of 490-580, or AP Language Test score of 3 in French, or consent of director of language program. Instructors: Tufts and staff. Two courses.


301. **Advanced French Language/Writing Workshop. CCI, FL, W** Development of competence in written expression in French, with special emphasis on stylistic variations, lexical nuances, and complex grammatical structures. Practice of different forms of French rhetoric and different styles in creative, argumentative, and analytical writings through literary, journalistic, historical, and philosophical texts. Revision and rewriting, with focus on in-class analysis and critique and individual conferences. Prerequisite: French 204, or AP Language Test score of 5, or equivalent. Instructors: Tufts and staff. One course.

302S. **Cultural and Literary Perspectives. CCI, FL, W** Designed to give students leaving intermediate French the reading and writing skills necessary to enter 100-level courses in French studies. Cultural and literary texts introducing students to contemporary French thought, and to how cultural practices, globalization, and immigration influence the formation of a French identity. Topics include stereotypes, family life, cuisine, youth culture, sports, language, media, and politics. Prerequisites: French 204, SAT French score of 640 or above, AP French Language 5, or equivalent. Instructor: Tufts and staff. One course.
303S. French for Current Affairs. CCI, FL Contemporary culture/civilization course on changes/controversies in France today. Sources from French media (press and TV). Current cultural, social, economic, political issues. Includes political institutions, media, religion, immigration, health and educational systems, foreign policy, France in the European Union. Equal emphasis on written/oral skills. Instructor: Tufts and staff. One course.

304. French Composition and Translation. CCI, FL Advanced Translation and Stylistics. Cultural and social difference between French and English patterns in written and oral expression. Extensive practice in translation of different types of texts. Equivalencies between French and English. Prerequisite: French 301 or equivalent or consent of instructor. Instructor: Staff. One course. C-L: Linguistics 304

306S. Approaches to French Literature and Theory. ALP, CCI, FL, W An initiation to French literature and thought. Introduces a wide range of critical and theoretical tools to study literature and its uses. This seminar explores how most urgent political and philosophical issues of the ages can be read through and unravelled within literary texts. Authors studied may include Montaigne, Montesquieu, Racine, Diderot, Balzac, Baudelaire, Flaubert, Sartre, Césaire, Duras, Fanon, Peref and Glissant. Instructor: Saliot. One course. C-L: Visual and Media Studies 333S

303. Business and Culture in the Francophone World. CCI, FL Analyzes current socio-economic and cross-cultural issues to increase understanding of global marketplace. Focus on oral and written communication, business and economic practices, labor issues, case studies, and product marketing in the Francophone world. Prerequisites: French 204, SAT French score of 640 or above, AP French Language 5, or equivalent. Instructor: Reisinger. One course.

304S. Contemporary Ideas. CCI, CZ, FL Readings and discussion of French works which have provoked political or intellectual thought in recent years. For freshmen and sophomores only. Instructor: Staff. One course. C-L: International Comparative Studies

305S. Global Displacement: Voix Francophones. CCI, CZ, EI, FL, SS Builds advanced language skills in context of migration and resettlement issues focused on Central and West African Francophone refugees in North America. Examine current laws, processes, practices, reasons for seeking refugee status, integration into host countries, challenges of cultural orientation. Discuss questions of testimony or narrative, including ethical considerations, with close attention to politics of listening to and speaking for other communities. Texts include UNHCR documents, documentary films, interviews, literary narratives. Community-based component (20 hours) engages students with refugee community in Durham. Conducted in French. Prerequisite: French 204 or equivalent. Instructor: Reisinger. One course. C-L: International Comparative Studies 332S, Global Health 325S

307S. French for Freshmen and Sophomores. ALP, CCI, FL A literary, cross-cultural critique focusing on specific topics to be announced. Open only to freshmen and sophomores. May be repeated. Instructor: Staff. One course.

308SA. Made in Quebec: Marketing and Cultural Identity. CCI, FL, R, SS Develop intercultural competencies focusing on regional, linguistic, and cultural factors contributing to Québec's unique markets. Readings from texts and authentic cultural documents (policy, business journals, newspapers, audio and video reports). Active learning and teamwork-based projects to enhance critical thinking will form the basis of coursework. Assignments include a company portfolio, case study, and digital marketing project. Part of the Duke in Montreal Program. Instructor: Reisinger. One course. C-L: Canadian Studies 328SA, Canadian Studies, Markets and Management Studies

309S. French Phonetics. FL Theory and practice of French pronunciation, corrective phonetics, intonation, accentuation, syllabification, elision and liaison. Focus on areas of speech production in French that are generally the most difficult for native speakers of English. Comprehension, dictation, and recitation exercises; interactive video and audio activities; self-assessment tasks; and end-of-term individual improvement grade. Instructor: Tufts. One course. C-L: Linguistics 302S


311S. The French Short Story. ALP, CCI, FL The history of short fiction focusing on exemplary texts from various historical periods, beginning with the Middle Ages. Instructor: Solterer. One course.


337. French Scientists Write. ALP, CCI, FL Texts by pioneering French scientists in various historical periods: Descartes, Diderot, Claude Bernard, Henri Poincaré, François Jacob. No science prerequisites; not a technical course, but an exploration of the elegance and clarity of best scientific writing in France. Instructor: Bell. One course.

339S. The Pleasure of Reading. ALP, CCI, FL Developing a level of reading proficiency in French comparable to one's native language. Reading a variety of genres including works by French and francophone authors from mid-nineteenth to the twentieth-first century. Prerequisite: French 204 or equivalent. Instructor: Tufts or staff. One course.

340A. Sociology of Culture. CCI, CZ, FL Exploration of the imprecise notion of popular and mass culture--globally as the interpretation of behavior, and locally, regionally, or nationally as the collective expression and rituals of a group: for example, hip hop, soccer, or business culture. Study of who produces culture, how it is disseminated, what are cultural practices today, and the relationship between political and cultural practices (Taught in Duke in France). Instructor: Staff. One course.


343A. Advanced Expression. CCI, FL Intensive practice in speaking and writing. Offered only in the Duke in France Program. Instructor: Staff. One course.

345A. Aspects of Contemporary French Culture. CCI, CZ, FL Cultural questions that are associated with contemporary France. French urbanism, mentalities, habits, and social rituals as they appear to be different from American practices. Topics to be announced. Offered only as part of the summer program in Paris. Instructor: Staff. One course. C-L: International Comparative Studies

346AS. Aspects of French Literature. ALP, CCI, FL Concentration on single authors, genres, movements, or themes. Topics to be announced. Offered only as part of summer program in Paris. Instructor: Staff. One course.

347A. Topics in French Literature and/or Culture Abroad. ALP, CCI, CZ Topics to be announced. Taught in English. Instructor: Staff. One course.

360S. French Literature and/or Culture (in English). ALP, CCI, CZ Topics to be announced. Taught in English. Instructor: Staff. One course.

361. The French Love Story. ALP, CCI A history of the representation and social structuring of affective relationships in France, through close analysis of French novels and theory. Examine signification of love in the life, image and identity of the French from French perspective(s). Readings from classical texts (Plato), literary criticism (Rougmont and Girard), psychoanalysis (Freud, Lacan), and contemporary theory (Barthes); and the novels of Mme de LaFayette, Constant, Flaubert, Proust, Colette, and Duras. In English. Instructor: Longino. One course. C-L: Women's Studies 208, Literature 262

362. Soccer Politics/La Politique du Football. CCI, CZ, EI, SS Explores global history of soccer with focus on Europe, Africa, and Latin America. Examines development and spread of the game, institutions such as FIFA, biographies of legendary players, and economics of the sport. Examines philosophical and ethical issues raised by soccer, and ways the sport condenses, channels, and at times transforms politics. Materials include works of history, anthropology, literature, journalism, memoirs, documentary films, and footage of classic games. Students will contribute to Soccer Politics blog and pages. Students enrolled under foreign language offerings will do reading, writing, research, and discussion groups in language. Instructor: Dubois and Mbembe. One course. C-L: Romance Studies 204, History 266, International Comparative Studies 204

365. Paris: Capital of the Nineteenth Century. ALP, CCI, CZ, FL In the nineteenth century, Paris was recognized as a center of science, culture, and social thought, emblematic of the role the city was to play in new market economies where urban centers became the source of new ideas. This course will attempt to define what was special about Paris: how it was represented during the period, how it was transformed, and gained leadership in artistic and literary creation. Much of the course will be project based, with students contributing to curated, online presentations focusing on different aspects of Parisian life from urban architecture to public health, from new literary movements to new artistic movements, from fashion to food. Taught in French. Instructor: Bell. One course.

390. Topics in French Literature and Culture. ALP, CCI, FL Specific literary or cultural French or Francophone topics to be announced. May be repeated. Instructor: Staff. One course.

390A. Topics in French Literature and Culture. Topics to be announced. (Offered only in the Duke-in-France Program.) Instructor: Staff. One course.

390A-1. Topics in French and/or Francophone Culture Abroad. Topics may vary. Instructor: Staff. One course.

390S. Topics in French Literature and Culture. ALP, CCI, FL Seminar on specific literary or cultural French or Francophone topics to be announced. May be repeated. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

394. Research Independent Study. R See French 393. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

410S. Contemporary French Fiction. ALP, CCI, FL Novels published in France during the past decade. Fashions, fads, new trends, succès de scandale, and prize winners. Instructor: Staff. One course.

413. World War II and French Film. CCI, CZ, EI, FL Film scripts, memoirs, novels, political and social history, and cinematic technique that inform the viewing of French films on World War II. Possible films to be viewed: Clément's Jeux interdits, Malle's Au revoir les enfants and Lacombe Lucien, Miller's L'accompagnatrice, Yanne's Boulevard des hirondelles, and Lanzmann's Shoah. Instructor: Staff. One course. C-L: Arts of the Moving Image 261, History 295, Visual and Media Studies 310

414. Comics and Culture: Images of Modern France in the Making. ALP, CCI, FL An investigation of the French comic strip over the last century from a historical, sociological, and technical perspective. Topics include political satire, Nazi propaganda, regional and national stereotypes, the role of women, and the influence of cinema and television. Readings include original works, interviews, critical articles, and related historical cultural, and technical studies. Instructor: Tufts. One course. C-L: Visual and Media Studies 311


416. Contemporary Culture Wars. CCI, CZ, EI, FL Fiction, film, and essays that deal with the problems in French and immigrant culture: integration, religion and international relations. Instructor: Staff. One course. C-L: Visual and Media Studies 313

417S. Francophone Literature. ALP, CCI, FL Modern literature in French from French-speaking Africa and the French Caribbean. Topics include tradition and modernity; colonization, cultural assimilation, and the search for


421. Les Educations Sentimentales. ALP, CCI, FL The theme of growing up and falling in love for the first time in modern French literature, beginning with bildungsroman of the early twentieth century and ending with work from the AIDS era. Instructor: Staff. One course.

424S. French Literary History and Theory. ALP, CCI, FL Major writers and genres of French literary tradition from Middle Ages to the present; problem of establishing reliable texts; varieties and purposes of literary research. Capstone course principally for French majors. Instructor: Staff. One course.

428. Sexuality and Gender Studies. ALP, CCI, EI, FL Differences redefined and questioned in terms of the relationship between sexual identity, social ethos, and ethical conventions. Works may be by women or men writers, critics, sociologists, and thinkers from France and francophone countries and including historical points of view. Instructor: Staff. One course. C-L: Women's Studies

480D. Global France. ALP, CCI, CZ, EI Explores connections between France's imperial history in Africa, Asia and the Americas and contemporary cultural/political debates about citizenship, integration and belonging in France from 17th century to present. Analyzes ethical dilemmas posed by colonialism. Includes novels (e.g., works by Dumas, Camus, Cesaire, Fanon, Djebar, Chamoiseau), films, music, historical documents, cultural/literary criticism, social/political theory, legal documents and writings on government policy. Weekly lecture in English and two discussion sections: one in English, one in French. French section will do reading and written work in French. Prerequisite: one 300-level French course to enroll in French section. Instructor: DuBois. One course. C-L: History 274D, Cultural Anthropology 274D, International Comparative Studies 480D

481D. Flaubert's Brain: Neurohumanities. ALP, CCI, STS Consideration of 'realist' fiction of Gustave Flaubert from social and cognitive neuroscience perspective. Investigation of implications of Flaubert's illustration of cognitive, affective, and somatic experiences of his characters, and his own experience, e.g. lapses of consciousness, convulsions, heightened emotions. Use of digital resources to chart emerging discourses and patterns in documentation of neuropathology, while attempting to define unique properties of fiction as literary "technology", e.g. by consideration of realist mimesis as analogous to mapping and other technologies documenting brain function/dysfunction. Lecture in English, with discussion sections in English or French. Instructor: Jenson. One course. C-L: Literature 246D, Neuroscience 241D

490-1. Topics in Literature and Neuroscience. ALP Focus on the intersection of literature, culture and neuroscience. Topics vary. Taught in English with French preceptorial available. Instructor: Jenson or staff. One course. C-L: Neuroscience 290-1

490A. Advanced Topics in French and/or Francophone Literature/Culture Abroad. Topics may vary. Instructor: Staff. One course.

490S. Special Topics in French Literature. ALP, CCI, FL A cross-cultural analysis focusing on specific literary or cultural French or Francophone topics to be announced. Open to juniors and seniors. May be repeated. Instructor: Staff. One course.

493. Research Independent Study. R See French 393. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

494. Research Independent Study. R See French 393. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

495. Honors Thesis. R Preparation and writing of research paper for "departmental distinction." Consent of both the instructor and the director of undergraduate studies required. See section on honors in Bulletin. Instructor: Staff. One course.

506. Contemporary French Extreme Fiction. ALP, CCI, FL Contemporary innovations and new models of narration at beginning of the twenty-first century. May include the autoportrait (Leiris, Perec, Roubaud), the
documentary (Bon, Kuperman, Bergougnoix, Houellebecq), and the minimalist school (Chevillard, Echenoz, Deville, Lenoir). Instructor: Staff. One course.

510. Citizen Godard. ALP, CCI, W This course explores the complex interactions of poetics and politics in the films of Jean-Luc Godard, from the French New Wave, through the experimental phase of the Dziga Vertov group, to the recent Histoire(s) du cinéma and Film socialisme. Drawing on a wide range of literary and philosophical texts (Merleau-Ponty, Althusser, Deleuze, Rancière), this seminar situates Godard's work within its intellectual and political contexts, investigating how developments in French culture and thought since 1950 have been reflected in - and sometimes anticipated by - Godard's films. In English with preceptorial available in French. Instructor: Saliot. One course. C-L: Arts of the Moving Image 642, Visual and Media Studies 552, Literature 510

510P. Citizen Godard Preceptorial. A preceptorial, in French, requiring recurrent enrollment in French 210. Further information available from instructor.


530. Medieval Fictions. ALP, CCI, FL Premodern Times: A User's Manual. Introduction to the earliest languages, literatures, and cultures in France and across Europe. Topics include orality and literacy, the experience of allegory, fictionality, the modern uses of the past. Major writers include the inventor of romance, Chrétien de Troyes, Provencal troubadours and trouvères, Guillaume de Machaut, the first professional writer, Christine de Pizan and Alain Chartier. Instructor: Solterer. 3 units. One course. C-L: Medieval and Renaissance Studies 642, Literature 541

531. Imagining Community in Boccaccio and Christine de Pizan. ALP, CCI, CZ This comparative seminar explores the controversial and complex works of Boccaccio and Christine de Pizan. Boccaccio, illegitimate, impoverished son of a Florentine banker, and Christine de Pizan, an Italian woman isolated at court in Paris during a civil war both use literary form to construct communities--local, linguistic, national, intellectual, gendered, universal. This seminar attempts a different conception of literary community beyond national types and hierarchies offering students opportunities to explore their works and modern critical debates about them. All works available in translation. Readings in original languages and preceptorial meetings for majors and graduate students. Instructor: Eisner or Solterer. C-L: Romance Studies 530, Italian 531

556. Modern Literature and History. ALP, CCI, CZ, FL The interaction of history and literature in a particular period, for example: the occupation of France, the French Revolution. Problems of interpretation, historical memory, social identity, and narrative. Instructor: Staff. One course. C-L: History 587

571. French Symbolism. ALP, EI, FL Poetry and literary theories of Baudelaire, Rimbaud, Mallarmé. Writings of Laforgue, Lautréamont, Huysmans, Louys, and others as they define new aesthetical and ethical values in the framework of the Symbolist and the Decadent intellectual movements. Instructor: Staff. One course.

572. Paradigms of Modern Thought. ALP, FL, R An introduction to contemporary French philosophy and thought with a focus on identity and difference, truth and falsehood in enunciation, globalization and nationalism. Research work in French. Instructor: Staff. One course.

590. Topics in Early Modern Studies. ALP, FL, R Pursuits of knowledge and the shaping of the individual. Literature of travel, science, sexuality, meditation, worldliness, theater, politics by well-known and lesser-known authors of seventeenth-century France. Genres may include fables, letters, memoirs, sermons, treatises, novels, plays. Instructor: Longino. One course. C-L: Medieval and Renaissance Studies 590-1

590S. Seminar in French Literature. ALP, CCI, FL Cross-cultural analysis of literary and cultural topics focusing on specific objects of inquiry. May be repeated. Instructor: Staff. One course.

690-1. Topics in French Literature of the Eighteenth Century. ALP, FL Close study of a particular author, genre, or interpretive category of Enlightenment literature. Instructor: Staff. One course.

690-2. Topics in French Literature of the Modern Era. ALP, CCI Close study of a particular author, genre, or interpretive category of the twentieth century. May include issues such as authorship, translation, reception or critical theory. Instructor: Staff. One course.
690S-2. Topics in French Literature of the Modern Era. ALP, CCI Close study of a particular author, genre, or interpretive category of the 20th century. May include issues such as authorship, translation, reception or critical theory. Instructor: Staff. One course.

Courses in Italian (ITALIAN)

101. Elementary Italian 1. FL Introduction to the basic elements of Italian language and culture. Equal attention to aural comprehension, speaking, reading, and writing. Conducted in Italian. Not open to students with prior knowledge of Italian. Four class meetings a week. Instructor: Fellin and staff. One course.

101A. Italian for Beginners. FL Practice in understanding, speaking, reading, and writing. (Taught in Duke-administered programs in Italy.) Placement tests administered to returning students intending to continue in Italian language studies. Instructor: Staff. One course.

102. Elementary Italian 2. FL Italian 102 develops and expands elements acquired in Italian 101: aural comprehension, speaking, reading, and writing. Conducted in Italian. Four class meetings a week. Prerequisite: Italian 101 or placement through the Director of the Italian Language Program. Instructor: Fellin and staff. One course.

111. Intensive Elementary Italian. FL Covers the basic elementary curriculum Italian 101 and 102 in one semester. Listening, speaking, reading, writing, and cultural exploration activities receive equal attention. Meets five times a week, eight contact hours. Instructor: Fellin or staff. Two courses.

112. Accelerated Elementary Italian. FL Covers the elementary Italian Language curriculum (Italian 101-102) in one semester. Development of understanding, speaking, reading, and writing skills. Introduction to aspects of Italian life and culture. Four class meetings a week. Instructors: Fellin and staff. One course.

190FS. Focus Topics in Italian Literature and Culture. ALP, CCI, CZ Topics on single authors, genres, movements, or themes across centuries. Taught in English. Topics course. Open only to students in the Focus program. Instructor: Finucci. One course.

201. Europe in Theory. ALP, CCI, CZ, R Exploration of the idea of Europe as a political, moral, and cultural identity. Examines the construction of such identity throughout history, ending with today's European Union, at a moment in which integration of "Eastern" countries such as Turkey or Russia remains a hotly debated issue. Consistent attention devoted to literary, cinematic and artistic works which attempt to imagine a European Culture, as well as the evolution of aesthetics, and literary and art history. Instructor: Dainotto or staff. One course. C-L: Romance Studies 201, French 201, Literature 273

203. Intermediate Italian. CZ, FL Content-based approach focusing on aspects of Italian culture and contemporary society. Focus on the development of second language reading skills; review of grammar; practice in understanding, speaking and writing. Literary and cultural texts taken from a variety of media. Instructors: Fellin and staff. One course.

204. Advanced Intermediate Italian. ALP, CZ, FL Further development of the elements practiced in Italian 101-203. Increased attention to grammatical accuracy and vocabulary development; guided writing practice and development of second language reading skills. Prepares students for 300 level Italian courses. Includes analysis of cultural and literary texts. One course.

212. Intensive Intermediate Italian. CZ, FL Covers the basic elementary curriculum (Italian 101 and 102) in one semester. Listening, speaking, reading, writing, and cultural exploration activities receive equal attention. Meets five times a week, eight contact hours. Instructor: Fellin or staff. Two courses.

213. Accelerated Intermediate Italian. CZ, FL Covers the intermediate Italian Language curriculum (Italian 203 and 204)in one semester. Attention to vocabulary development and grammatical accuracy. Writing practice and development of reading skills with emphasis on analysis of cultural and literary texts. Prepares students to enroll in courses at the 300 level. Four class meetings a week. Prerequisite: Italian 113 or consent of the Italian Language Director. Instructor: Fellin and staff. One course.

225. World Masterpieces: Made in Italy. ALP, CCI, CZ, R Introduction to a range of literary, artistic, musical, and cinematic masterpieces produced in Italy, including contributions of guest lecturers from multiple areas of expertise. From epic journeys of Virgil and Dante and tales of human love, deceit, and wit in Boccaccio's Decameron through Machiavelli's The Prince and works by Michelangelo, Monteverdi, Galileo, Primo Levi, and Roberto Saviano, students will engage in close readings and develop skills of literary and formal analysis, while situating
works in historical and cultural contexts and examining the rich debates they have stimulated. Preceptorial in Italian available for students desiring additional work and discussion in Italian. Instructor: Eisner. One course. C-L: Romance Studies 205

258. Renaissance Architecture in Italy: Brunelleschi to Michelangelo. ALP, CZ One course. C-L: see Art History 258; also C-L: Medieval and Renaissance Studies 227

261. Michelangelo in Context. ALP, CCI, CZ One course. C-L: see Art History 259; also C-L: Medieval and Renaissance Studies 233

286S. Opera. ALP, CCI One course. C-L: see Music 242S

301. Writing Workshop in Italian. CCI, FL, W Development of composition tasks related to expository and other forms of writing. Focus on grammatical skills, conventions, and rhetorical techniques for organizing information. Substantial work on the development of writing strategies (vocabulary, editing, revising, and rewriting) through several short papers and a final long paper. Prerequisite: Italian 204, 212, or 213, or consent of the Italian Language Program Director. Instructor: Fellin and staff. One course.


322S. Italian Popular Culture. ALP, CCI, FL The formation of Italian popular culture in different historical periods. Emphasis varies; attention paid to serial novels, detective fiction, films, prints, paintings, and popular music. May include older forms of popular culture such as the romances of chivalry, the ‘commedia dell’arte,’ carnivals, and melodrama. Instructor: Dainotto or Finucci. One course.

323S. Italian Poetry. ALP, CCI, FL An introduction to major poets, movements, and techniques of the Italian lyrical tradition. May include different historical periods. Instructor: Dainotto, Eisner, or Hardt. One course.

327S. Seminar in Italian for Freshmen and Sophomores. ALP, CCI, FL Topics in Italian literature and culture to be announced. Open only to freshmen and sophomores. Prerequisite: Italian 204 or equivalent. Instructor: Staff. One course.

331S. Introduction to Italian Civilization. CCI, CZ, FL The institutions and culture of Italy throughout the centuries. Instructor: Dainotto, Fellin, Finucci, or Hardt. One course.


335. Major Italian Authors. ALP, CCI, CZ, FL Textual studies of the most important authors of the Italian literary tradition. Authors may vary. At times the course devoted to single author: Dante, Boccaccio, Pirandello; or, two or three authors studies together in the context of the culture of their time or of their influence on subsequent centuries or authors: Petrarch and Petrarchist phenomenon of the sixteenth century, Morante and the historical novel, Machiavelli and Vico. Not open to students who have taken this course as Italian 165S. Instructor: Finucci and staff. One course.

337. Italian Short Fiction. ALP, CCI, FL Novellas and short stories drawn from different periods of Italian literature. Instructors: Dainotto, Eisner, Hardt, or Finucci. One course.

340A. Aspects of Italian Literature. ALP, CCI Concentration on single authors, periods, genres, regions, or themes. (Taught in Italy.) Instructor: Staff. One course. C-L: International Comparative Studies

350. History of the Italian Language. CCI, CZ, FL, SS Origins and evolution of the Italian language from Latin to contemporary varieties. Diachronic linguistic analysis set in the political, social, and ideological contexts that influenced the development of Italy’s national language. Analysis of texts that reflect changes in language usage and attitudes toward language. Instructor: Fellin. One course.
351. Italian Visions of America: From Columbus to September 11. ALP, CCI, FL Introduction to Italian works, ranging from poetry to music, from philosophy to movies, that have shaped the image and contours of what today is known as "America." Instructor: Dainotto. One course.

356A. Topics in Italian Literature and Culture. ALP, FL Topics to be announced. Offered to students enrolled in Duke approved courses in Italy. Instructor: Staff. One course.

380. Italian Cinema. ALP, CCI Introduction course to Italian cinema including silent films, Neorealism, fascist productions, Commedia all’italiana and experimentalism. Reading and discussions in English. Instructor: Dainotto and staff. One course. C-L: Literature 215, Arts of the Moving Image 254, Visual and Media Studies 308, Theater Studies 276


381. Renaissance Cultures. ALP, CCI, CZ One course. C-L: see Medieval and Renaissance Studies 152; also C-L: Art History 152, History 116

381P. Aspects of Renaissance Culture--Preceptorial. A preceptorial in Italian, requiring concurrent enrollment in Italian 381, Medieval Renaissance Studies 152, History 255, or Art History 257. Further information available from instructor. Consent of instructor required. Instructor: Finucci and staff.

382. Italian Women Writers. ALP, EI Ethical, social, and political issues raised in representative works by women of the medieval and early modern periods. Topics include: marginalization of women writers in the literary canon, critical perceptions and self-perception of women authors, and beliefs about women in both the social and cultural space. Instructor: Finucci. One course. C-L: Medieval and Renaissance Studies 344, Women’s Studies 282

382P. Italian Women Writers: Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 382. Further information available from instructor. Instructor: Dainotto, Finucci, or Hardt.

383. Cities and City Life in Italy. ALP, CCI, CZ Aspects of social, literary, and cultural history of the Italian cities Venice, Florence, Rome, or Milan, as anchors of larger geographical areas, cities in a specific historical period, or famed artistic centers. Taught in English. Not open to students who have previously taken this course as Italian 128. Instructor: Finucci and staff. One course. C-L: History 237

383P. City and City Life in Italy, Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 383. Further information available from instructor. Instructor: Finucci.

384. European Art 1900-1945. ALP, CCI, CZ One course. C-L: see Art History 280; also C-L: International Comparative Studies, Women's Studies

386. Art in Renaissance Italy. ALP, CCI, CZ One course. C-L: see Art History 255; also C-L: Medieval and Renaissance Studies 225

387. The Italian American Experience. CCI, CZ, R, SS Interdisciplinary approach to study of different forces that have shaped Italian American identity and culture in the United States. The Italian American presence in the U.S., and its contributions and representations in American society; exposure to historical, anthropological, linguistic and cultural studies. Students will develop a final research project focused on Italian American communities in the Triangle or elsewhere. Classes will be conducted in English with a preceptorial in Italian for majors and minors. Instructor: Fellin. One course.

390. Topics in Italian Civilization. CCI, CZ A cross-cultural study of Italy through history, culture, people, and institutions. Topics may vary each semester. Instructor: Staff. One course. C-L: International Comparative Studies

390P. Topics in Italian Civilization: Preceptorial. Preceptorial attached to Italian 390. Please see instructor for more information. Instructor: Staff.

390SA. Topics in Italian Studies. A cross-cultural study of Italy through history, culture, people, and institutions. Topics may vary each semester. For Study Abroad and Duke Intense Global students only. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation
of a previously approved topic. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

394. Research Independent Study. R See Italian 393. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

481. Dante's Divine Comedy: Hell, Purgatory and Paradise. ALP, CCI, CZ, EI A voyage through the three otherworldly places of Dante's philosophical poem (Hell, Purgatory, Paradise) whose transformation of human actions into an ordered ethical system continues to captivate readers. Instructor: Eisner. One course. C-L: Medieval and Renaissance Studies 450, Religion 262, History 253, Literature 245, International Comparative Studies


484S. Italians Abroad, Foreigners in Italy: Seeing and Being Seen (DS2). ALP, CCI, CZ Focus on issues of identity, nationality, race, and origin, narratives of discovery, the Italian "Orient," colonial and post-colonial experiences, ethnicity and cultural assimilation in the early modern period. Taught in English. Instructor: Finucci. One course. C-L: Medieval and Renaissance Studies 470S, International Comparative Studies

484SP. Italians Abroad, Foreigners in Italy: Seeing and Being Seen -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 484S. Further information available from instructor. Instructor: Finucci.

485S. The Italian Theater. ALP, CCI Introduction to the Italian theatrical tradition. Content varies; the course may be taught by topic, it may concentrate on a specific period, or it may focus on a major author. Taught in English. Instructor: Dainotto or Finucci. One course. C-L: Theater Studies 228S

485SP. The Italian Theatre -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 485S. Further information available from instructor. Instructor: Dainotto, Finucci.

490A. Topics in Italian Literature and Culture Abroad. Topics to be announced. Offered to students enrolled in Duke Study Abroad in Italy. Instructor: Staff. One course.

490S. Advanced Topics in Italian Literature and Culture. ALP, CCI Topics may include: the Enlightenment, romanticism, modernism, avant-garde. Taught in English. Instructor: Dainotto, Eisner, Finucci, or Hardt. One course.

490SP. Topics in Modern Literature and Culture, Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 490S. Further information available from instructor. Instructor: Eisner, Dainotto, Finucci, or Hardt.

493. Research Independent Study. R See Italian 393. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

494. Research Independent Study. R See Italian 393. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

495. Honors Thesis. R Preparation and writing of research paper for "departmental distinction." Consent of both the instructor and the director of undergraduate studies required. See section on honors in Bulletin. Instructor: Staff. One course.

531. Imagining Community in Boccaccio and Christine de Pizan. ALP, CCI, CZ This comparative seminar explores the controversial and complex works of Boccaccio and Christine de Pizan. Boccaccio, illegitimate, impoverished son of a Florentine banker, and Christine de Pizan, an Italian woman isolated at court in Paris during a civil war
both use literary form to construct communities—local, linguistic, national, intellectual, gendered, universal. This seminar attempts a different conception of literary community beyond national types and hierarchies offering students opportunities to explore their works and modern critical debates about them. All works available in translation. Readings in original languages and preceptorial meetings for majors and graduate students. Instructor: Eisner or Solterer. C-L: Romance Studies 530, French 531

581S. Italian Linguistics. ALP, CCI, SS An interdisciplinary study of selected topics, such as history of linguistic theories and language ideologies. Language state formation and citizenship in Italy. Language and power, language and identity. Taught in English. Instructor: Fellin. One course.


583S. Dante Studies. ALP, CCI, CZ Focus on a particular aspect of Dante's work. Taught in English. Instructor: Eisner. One course. C-L: Medieval and Renaissance Studies 615S

583SP. Dante Studies: Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 583S. Further information available from instructor: Instructor: Eisner.

585S. Topics in Sexuality and Gender Studies. ALP, CCI The study of identity and difference and the representation of bodies, genders, and desires through developments in medicine and anatomy. May include different historical periods. Readings from public to private documents, literary texts, playscripts, medical treatises, and pamphlets. Taught in English. Instructor: Finucci and staff. 3 units. One course. C-L: Women's Studies 519S

585SP. Topics in Sexuality and Gender Studies: Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 585S. Further information available from instructor. Instructor: Finucci and staff.

586S. Literary Guide to Italy. ALP, CCI, CZ A journey of Italy through literary, cinematic, and musical texts through Italy's sights and customs, as well as the place of Italy, both the real and imagined, in the aesthetics of the Grand Tour. Taught in English. Instructor: Dainotto. One course. C-L: Literature 542S, German 586S, Arts of the Moving Image 640S

586SP. Literary Guide to Italy: Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 586S. Further information available from instructor. Instructor: Dainotto.

587S. Cinema and Literature in Italy. ALP, CCI A study of the relation between literature and film in Italy. Topics include: cinematic versions of novels, influence of literature and literary figures on the construction of an Italian cinematic imagination, effects of cinema on literature, women's fiction and the woman's picture, neorealism. Taught in English. Not open to students who have taken this course as Italian 170S. Instructor: Dainotto, Finucci, or Hardt. One course. C-L: Arts of the Moving Image

587SP. Cinema and Literature in Italy: Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 587S. Further information available from instructor. Instructor: Dainotto, Finucci, or Hardt.

588S. Antonio Gramsci and the Marxist Legacy. CCI, CZ, SS Gramsci's reinterpretation of Marxism in the context of fascist Italy. The uses of Gramsci's key concepts--subaltern, hegemony, dominance, popular culture, Americanism, Southern question--in other cultural/historical contexts, such as Indian subaltern historiography, British cultural studies or American literary studies. Taught in English. Instructor: Dainotto. One course. C-L: Literature 572S

588SP. Antonio Gramsci: Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 588S. Further information available from instructor. Instructor: Dainotto.

590S. Topics in Italian Studies. CCI, CZ Specific aspects of Italian history, civilization, culture, and institutions. Topics may vary. Taught in English. Instructor: Dainotto, Eisner, Finucci, Hardt. One course.


590SP. Topics in Italian Studies -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 590S. Further information available from instructor. Instructor: Dainotto, Eisner, Finucci, Hardt.

Courses in Portuguese (PORTUGUE)

89S. First Year Seminar in Portuguese. Topics vary each semester offered. Prior to the drop/add period, this course is restricted to first-year students who have not fulfilled their seminar requirement. Instructor: Staff. One course.

101. Elementary Portuguese I. FL Introduces the basic elements of the language and includes an exposure to some aspects of Portuguese-speaking cultures. Aural comprehension, speaking, reading, and writing skills receive equal attention. Conducted in Portuguese, using a communicative approach. Five class meetings a week. Instructors: Silva. One course.

102. Elementary Portuguese II. FL Builds on the elements of language acquired in Elementary Portuguese 101; enrollment in Portuguese 102 presupposes acquisition of the contents covered in Portuguese 101. Speaking, reading, and writing skills emphasized; exposure to some aspects of Portuguese-speaking cultures an important component. Conducted entirely in Portuguese, using a communicative approach. Five class meetings a week. Prerequisite: Portuguese 101 or consent of instructor. Instructors: Silva. One course.

112. Accelerated Elementary Portuguese. FL Covers the elementary Portuguese language curriculum (Portuguese 101 and 102) in one semester. Designed for highly motivated undergraduate and graduate students as well as fluent speakers of another Romance language. Most grammar and textbook work is done outside of class, freeing class time for more communicative activities. Conversation sessions provide intensive work on grammar focused through discussion on issues raised in films, news media, readings, music. Meets five times a week. Instructor: Silva. One course.

203. Intermediate Portuguese. CZ, FL Intensive language review of reading, writing, and oral practice, with increased attention to grammatical variety and accuracy. Cultural component emphasized through short readings, videos, music. Prerequisite: successful completion of Portuguese 102, 111, or consent of instructor. Instructor: Silva or staff. One course.

203A. Intensive Brazilian Portuguese. CCI, CZ, FL Four week immersion course in Portuguese language and Brazilian culture, offered only in Duke in Brazil. Elementary language pre-requisite required. Covers intermediate language curriculum, developing aural comprehension, speaking, reading and writing skills. Provides grammar practice and development of effective strategies for oral communication in conjunction with intensive cultural program activities. Includes strong civics, social, cultural, and environmental components geared to NGOs that engage with these issues. Classes meet five days per week for four hours with additional required extracurricular activities. Instructor consent required. Instructor: Silva. One course.

204. Advanced Intermediate Portuguese. CZ, FL An advanced grammar review complemented by oral practice, composition, videos, and selected literary readings. Guided essay writing on topics related to the readings and videos. Second part of an intermediate sequence; suggested as preparation for 300-level courses. Prerequisites: Portuguese 203 or consent of instructor. Instructor: Silva. One course.

260. Afro-Brazilian Culture and History. CCI, CZ, R One course. C-L: see History 327; also C-L: African and African American Studies 209, Latin American Studies

301S. Advanced Colloquial Portuguese. CCI, FL, W Advanced conversation and composition through the study of colloquial Portuguese as a catalyst of popular culture; extensive comparisons of popular culture; extensive comparisons of popular sayings, expressions, and proverbs; emphasis on oral communication. Contemporaries short texts, "telenovelas," video, music, and Internet sources. Highlights differences between Portuguese as spoken in Portugal and Brazilian Portuguese (syntax, vocabulary, spelling); transmits a sense of African, Azorian, and Asian Portuguese, and United States Portuguese communities. Prerequisites: Portuguese 203 or consent of instructor. Instructor: Damasceno or staff. One course.

334S. Introduction to Brazilian Literature. ALP, CCI, FL, W Major writers and movements of Brazilian literature from the period of discovery to present, using short texts, novels, plays, short stories. Includes early letters of discovery, Machado de Assis, Mario de Andrade, Clarice Lispector. Instructor: Damasceno or Staff. One course. C-L: Latin American Studies
340A. Conversational Brazilian Portuguese Abroad. ALP, CCI, CZ, FL, W Grammar review based on weekly essays and conversational units directly related to experiences and excursions of Duke in Brazil. Prerequisites: Portuguese 111 or equivalent, or consent of director. Instructor: Damasceno and staff. One course.

360S. Geographies of the Erotic: Brazilian Literature in Translation. ALP, CCI, CZ, EI Whether exoticized or debated as a problematic portrayal of national identity within Brazilian culture, the 'Brazilian body' (not just female), becomes a focal point for discussing questions of race, ethnicity, gender, class-poverty and regional identities. Beginning with documents of 'discovery,' this course maps Brazilian literature in context of these issues, questioning what is erotic and from what view point. Ethical implications of the eroticized image are a central concern of seminar readings and discussions. Taught in English. Instructor: Damasceno. One course. C-L: Latin American Studies 360S, Women's Studies

390S. Topics in Lusophone Literature and Culture. ALP, CCI Seminar exploring topics of cultural formation in the Portuguese-speaking world that emphasize autochthonous cultural theory. Examples include: Brazilian popular culture, Literatures of Resistance, Lusophone Africa and Independence, Portugal Post-Salazar. Level of Portuguese required varies with semester topic; students should consult instructor. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

394. Research Independent Study. R See Portuguese 393. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

410S. Cidanania, Cultura, e Participacao/Citizenship, Culture, and Participation. ALP, CCI, CZ, EI, R Taught in Portuguese, with texts in Portuguese and English, the course integrates visiting lectures and readings with experience and on-site research into popular culture, cultural activism and social movements. Begins with readings and discussion of concepts and history of citizenship and cultural activism in Brazil, then centers on specific issues or movements. (ex: social entrepreneurship and peripheral cultures; AIDS education; performing arts and favela activism). One course. C-L: African and African American Studies 425S

490. Topics in Lusophone Literature and Culture. ALP, CCI Exploration of topics of cultural formation in the Portuguese-speaking world that emphasize autochthonous cultural theory. Examples include: Brazilian popular culture, Literatures of Resistance, Lusophone Africa and Independence, Portugal Post-Salazar. Level of Portuguese required varies with semester topic; students should consult instructor. Instructor: Staff. One course.

490S. Topics in Lusophone Literature and Culture. ALP, CCI Seminar exploring topics of cultural formation in the Portuguese-speaking world that emphasize autochthonous cultural theory. Examples include: Brazilian popular culture, Literatures of Resistance, Lusophone Africa and Independence, Portugal Post-Salazar. Level of Portuguese required varies with semester topic; students should consult instructor. Instructor: Staff. One course.

490S-1. Performing Brazil: Issues of Performative Cultures. ALP, CCI, FL, W Special topics course involving debates regarding the concept of Brazil as a performative culture: issues of race, gender, and sexual identity as portrayed in cinema, theater, dance, and television; issues of regional and class identity in the media. Topics vary according to term. Instructor: Damasceno. One course.

493. Research Independent Study. R See Portuguese 393. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

494. Research Independent Study. R See Portuguese 393. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

497T. Portuguese Tutorial. FL Tutorial in Portuguese. Discussion group for up to five students. Topics vary by semester. Instructor: Staff. One course.


512S. Transatlantic Cultures: Narratives of Discovery, Empire, Decolonization, and Europeanization. FL, R Explores, through literature, film, and theoretical readings, basic themes of Portuguese culture. Focuses on narratives of discovery, empire, decolonization, the admixture of cultures, and concerns of contemporary Portugal within the
European Union. Questions of Portuguese identity during the epoch of discovery and expansion; the Portuguese presence in Asia, Africa, and Brazil; the role of postcolonial Portugal and Lusophone culture within the European context. Taught in Portuguese, translations of readings available. Prerequisite: 300-level Portuguese course or consent of instructor. Instructors: Furtado, Aidoo, and staff. One course.

590. Topics in Lusophone Literature and Culture. ALP, CCI Exploration of topics of cultural formation in the Portuguese-speaking world that emphasize autochthonous cultural theory. Examples include: Brazilian popular culture, Literatures of Resistance, Lusophone Africa and Independence, Portugal Post-Salazar. Level of Portuguese required varies with semester topic; students should consult instructor. Instructor: Staff. One course.

590S. Topics in Lusophone Literature and Culture. ALP, CCI, R Exploration of topics of cultural formation in the Portuguese-speaking world that emphasize autochthonous cultural theory. Examples include: Brazilian popular culture, Literatures of Resistance, Lusophone Africa and Independence, Portugal Post-Salazar. A graduate-level course open to juniors and seniors. Level of Portuguese required varies with semester topic; students should consult instructor. Prerequisite: 300-level Portuguese course or consent of instructor. Instructors: Furtado, Aidoo, and staff. One course.

Courses in Quechua (QUECHUA)

113A. Beginning Quechua. FL Introduction through immersion to the history and structure of Quechua. (Taught in the Duke in the Andes Program only.) Instructor: Staff. One course.

Courses in Spanish (SPANISH)

89S. First-Year Seminar in Spanish. FL Seminar for first-year undergraduates with the desire and ability to take courses in literature, history, culture, art, cinema, or drama in Spanish at the 300-level. Topics vary each semester offered. For students thinking about majoring or minoring in the language, counts towards both. Prerequisite: SAT II score 660 or above, AP Language score of 5, or Literature score of 4 or 5. Heritage speakers or students who did high school work in Spanish encouraged to enroll after consulting with instructor. Instructor: Staff. One course.

92A. Culture and Language in Costa Rica. CZ Everyday culture in Costa Rica with attention to environmental topics and issues. (Offered only in the Duke Organization of Tropical Studies Undergraduate Program in Costa Rica). Instructor: Staff. One course.

101. Elementary Spanish 1. FL Introduces the basic elements of the language and includes exposure to aspects of Spanish-speaking cultures. Equal attention to aural comprehension, speaking, reading, and writing skills conducted entirely in Spanish using a task-based approach. Five class meetings a week. Not open for credit to students who have had three or more years of Spanish in high school. Prerequisite: No previous college study of Spanish, or no more than three years of high school Spanish, or appropriate language placement score. Instructor: staff. One course.

102. Elementary Spanish 2. FL This course builds on the elements of the language acquired in Elementary Spanish 101; enrollment in Spanish 102 presupposes acquisition of the contents covered in Spanish 101. Speaking, reading, and writing skills emphasized; exposure to Spanish-speaking cultures. Classes conducted entirely in Spanish, using a task-based approach. Five class meetings a week. Prerequisite: Spanish 101 or appropriate placement test score. Instructors: Paredes and staff. One course.

111. Intensive Elementary Spanish. FL Covers the basic elementary language curriculum (Spanish 101 and 102) in one semester. Aural comprehension, speaking, reading and writing skills. Exposure to Spanish-speaking cultures. Taught in Spanish, using a task-based approach. Not open to students who have had one year (or more) of Spanish in high school. Eight class meetings a week. Instructor: staff. Two courses.

140A. Duke in Alicante: Intensive Elementary Institute. FL Covers the basic elementary language curriculum (Spanish 101 & 102) in one summer session in Alicante, Spain. Equal attention to aural comprehension, speaking, reading, and writing skills conducted entirely in Spanish using a task-based approach. Includes exposure to aspects of Spanish-speaking cultures. 4 hours a day of classroom instruction (M-TH); required extracurricular activities. For more information see the Global Education Office website. Instructor: Staff. Two courses.


594 Romance Studies

190FS. Focus Topics in Spanish and Latin American Literature and Culture. ALP Topics on single authors, genres, movements, or themes. Taught in English. Topics course. Open only to students in the Focus program. Instructor: Paredes, staff. One course.

203. Intermediate Spanish. CZ, FL This course builds on the elements of the language acquired in the elementary sequence; enrollment in this course presupposes acquisition of Spanish 101 and 102 contents. Continued development of the four language skills: listening, speaking, reading and writing. Expanding range and complexity of grammar usage and vocabulary. Exposure to Spanish-speaking cultures. Prerequisite: Spanish 102 or 111, or appropriate placement test score. Instructors: Paredes and staff. One course.

204. Advanced Intermediate Spanish. CZ, FL This course builds on the elements of the language acquired in Spanish 101 through 203. Further development of the four language skills: listening, speaking, reading and writing. Expanding range and sophistication of grammar usage and vocabulary. Exposure to Spanish-speaking cultures. Work with comprehension and production of texts of greater extension and complexity. Prepares students for 300-level Spanish courses. Prerequisite: Spanish 203, or appropriate placement test score. Instructors: Paredes and staff. One course.

212. Intensive Intermediate Spanish. CZ, FL Covers the intermediate Spanish language curriculum (Spanish 203 and 204) in one semester. Builds on the elements of the language acquired in the elementary sequence; enrollment in this course presupposes acquisition of Spanish 1 and 2 contents. Further development of the four language skills: listening, speaking, reading, and writing. Expanding range and sophistication of grammar usage and vocabulary. Exposure to Spanish-speaking cultures. Increasing ability to structure ideas in speaking and writing. Work with comprehension and production of texts of greater extension. Prepares students for 300-level Spanish courses. Eight class meetings a week. Instructor: Paredes and Staff. Two courses.

240A. Duke in Alicante: Intensive Intermediate Institute. CZ, FL Covers intermediate Spanish language curriculum (Spanish 203, 204) in one summer session in Alicante, Spain. Builds on elements of language acquired in Spanish 101 and 102. Further development of listening, speaking, reading, writing skills. Expanding range and sophistication of grammar usage and vocabulary. Exposure to Spanish-speaking cultures. Work with comprehension and production of complex texts. Focus on ability to structure ideas in speaking and writing. Prepares students for 300-level Spanish courses. 4 hours/day classroom instruction (M-Th); required extracurricular activities. Prerequisite: Spanish 102 or 111. For more information see Global Education Office website. Instructor: Parades and staff. Two courses.


301. Advanced Spanish Writing. CCI, FL, W Development of academic writing skills in Spanish with a focus on techniques for organizing information, editing, revising, and increasing level of sophistication and accuracy of vocabulary and grammar. Substantial work on the development of writing strategies through several short papers and a final long paper. This course is strongly recommended before enrollment in Spanish 331S and higher courses. Instructors: Paredes and staff. One course.

302. Advanced Spanish Grammar. CCI, FL Intended to foster students' reflection about Spanish grammar and to consolidate students' knowledge of the system of rules underlying the Spanish languages. Special attention given to grammar in oral and written communication. Not open to students who have previously taken both Spanish 301 and 303. Prerequisite: Spanish 204 or appropriate placement test score. Instructors: Paredes and staff. One course.

303. Introduction to Cultural Studies. CCI, FL Introduction to ideologies and political debates that shape the cultural configuration of Hispanic communities both within and outside the US Borders. The main goal is to explore and examine critically how particular discourses (within different genres and media) relate to politics, art, culture, and society. Articles, literary texts, films, web sites, etc. will serve as resources. As students engage with cultural studies, it is expected that they achieve discursive complexity and linguistic accuracy through vocabulary development, group and individual presentations, video recordings, writing projects and debates. Pre-requisite: Spanish 204 or equivalent.Instructors: Paredes and staff. One course. C-L: Latino/a Studies in the Global South
304. Fundamentals of Spanish Linguistics. FL, SS A comprehensive overview of the field of linguistics as it relates to Spanish. Starting from the question What does it mean to know Spanish?, the course reviews the areas of phonology, morphology, syntax, pragmatics, semantics, applied linguistics, and sociolinguistics. The main goal is to develop students' skills in analyzing data, forming and testing hypotheses, and arguing for the correctness of solutions. Individual topics investigated by students. Prerequisite: Spanish 301 or 302 or consent of instructor. Instructor: Staff. One course. C-L: Linguistics 303

305. Spanish for Heritage Speakers. CCI, CZ, FL, W Designed for students who are heritage speakers, educated almost exclusively in English, with little exposure to Spanish in an academic setting. Linguistic work contextualized through three major fields: arts (music, literature, cinema, painting, sculpting); society (Latinos & language in the US, traditions, immigration related topics); and mass media (television, radio, newspapers, new technologies). Instructor: Munne and staff. One course. C-L: Latino/a Studies in the Global South 305

306. Health, Culture, and the Latino Community. CCI, FL Exploration of health issues in the Spanish-speaking world shaped by social, cultural, political, ethnic, and economic determinants. Topics: cultural competency, community beliefs, medical practices and policies, preventive medicine, mental health. Projects include presentations, writing, research, and conversations with local and global contacts. Evaluation on knowledge of content, oral and written proficiency in Spanish. One 300-level Spanish course recommended prior to enrolling. Prerequisite: Spanish 204 or equivalent. Instructor: Staff. One course. C-L: Latino/a Studies in the Global South 306, Global Health 326

306A. Language, Culture, and Health in Costa Rica. CCI, FL Builds proficiency in oral and written Spanish through exploration of language, culture, and issues related to health in Costa Rica. Learning through personal observations and classroom discussions based on readings and guest speakers. Interaction with community in interviews and visits to local organizations and health providers to further knowledge on issues that impact community life. Assessment based on language and content of written and oral projects. Prerequisite: Spanish 204 or equivalent. Taught in Duke-in-Costa Rica summer program. Instructor: Clifford, Fernandez, Staff. One course. C-L: Global Health 326A

307S. Issues of Education and Immigration. CCI, FL Community-based interaction with Durham Public Schools. Topics: Latino/a identity, access to education for immigrants, academic performance, assimilation, general pressures of family and peers, bilingualism, configurations of ethno-racial consciousness. Required 20 hours outside of class with assigned community partners. Assessment on knowledge of content, oral and written Spanish, and participation in service. Recommended students take 300-level Spanish course prior to enrolling. Pre-requisite: Spanish 204 or equivalent. Instructor: Paredes and Staff. One course. C-L: Education 307S, Latino/a Studies in the Global South 307S

308S. Latino/a Voices in Duke, Durham, and Beyond. CCI, CZ, FL, W Construction of Latino/a identity(ies) and formation of community voices through the lens of cultural, political, and social issues at local and national level. Assessment on knowledge of content, oral and written Spanish. May include service-learning component. Recommended students take 300-level Spanish course prior to enrolling. Instructor: Staff. One course. C-L: Latino/a Studies in the Global South 308S

310. Advanced Spanish-English and English-Spanish Translation. ALP, CCI, FL Exploration of theories of translation utilizing texts exemplifying key cultural topics and linguistic concerns. Students will practice translation from Spanish to English and English to Spanish applying translation principles and negotiating translation of cultural references. Products created individually or in collaboration include ads, poems, newspaper articles and editorials, subtitles and dubbing for film clips, a pamphlet, phone recording, or web page as a community project, and a blog reflecting on the translation process wherein students may apply theoretical readings. Prerequisites: a 300-level Spanish course, bilingual or nearly bilingual proficiency in Spanish. Instructor: Simmermeyer, Munne. One course. C-L: Latino/a Studies in the Global South 310

311. Intensive Summer Spanish: Food Production and Consumption in NC and Peru. CCI, CZ, FL Intensive summer course builds on elements acquired in Spanish 203 while engaging in multidisciplinary examination of food production/consumption in NC and Peru. Further development of language skills in context of comparative exploration of impacts of globalization on modes of preparation, distribution, marketing of food and how these exchanges affect perceptions of economic, political, social, cultural processes. Focus on Peruvian cuisine with excursions to restaurants, farms, markets in NC. Students engage in collaborative and individual research, presenting findings in
Spanish. Instructor consent required. Prerequisite: Spanish 203. Not open to students who have taken Spanish 204 or 303. Instructor: Simmermeyer, Villalba. Two courses.

312. Community-Based Research with Spanish-Speakers. CCI, FL, SS Course partners with Duke faculty to assist them in implementing research projects in the Spanish-speaking community. Students will volunteer a minimum of 20 hours as interpreters, survey takers, assisting in home visits, etc. as needed. Exploration of topics related to research study such as education or health to contextualize CBR. Students will also focus on research methods, cultural competency, and linguistic skills necessary to interact with Latino/a community. Students assessed on knowledge of content, oral and written Spanish, and participation in service. Pre-requisite: Spanish 204 or equivalent. Prior 300 level coursework recommended. Service Learning. Instructor: Clifford or staff. One course.

313. Bridging Cultures: Latino Lives and Experiences in NC. CCI, FL, SS Exploration of key issues surrounding Latino communities in Durham and beyond, focusing on issues of culture and immigration, health, education, economy. Assigned projects and activities will emphasize bidirectional learning and cultural understanding and facilitate opportunities for building bridges to local communities. Includes a minimum of 14 hours of community engagement with a local organization. Assessment based on knowledge of content, oral and written Spanish, and community engagement. Pre-requisite: Spanish 204 or equivalent. Previous 300-level course recommended. Instructor: Fernandez or Staff. One course.

327S. Spanish for Freshmen and Sophomores. ALP, CCI, FL Selected readings on topics concerning the different national literatures of Spain and Latin America. Open only to freshman and sophomores. Prerequisite: Spanish 204 or placement/achievement score of 630 or above. Instructor: Staff. One course.

331S. Introduction to Literature, Film, and Popular Culture. ALP, FL, W Introduction to a wide variety of texts from both Spain and Latin America, with emphasis on how they can mean different things to different readers. Course develops student skills in reading, writing, and speaking, and emphasizes personal approaches to readings. Prerequisite: Spanish 204, or appropriate AP, SAT II, or placement test score. Strongly recommended students take Spanish 301 before enrolling in this course. Students who have taken more than one course above 331S may not take this course. Instructor: Sieburth and staff. One course.

332. Introduction to Spanish Literature I. ALP, CCI, FL Major writers of the Spanish literary tradition and the historical contexts from which they emerged: Middle Ages through the seventeenth century. Poetry, fiction, theater and essay and historical readings and film. Includes attention to Judaic and Islamic civilizations and expression in medieval Spain. Prerequisite: Spanish 301, 331S, or AP Spanish Literature score of 5. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies

333. Introduction to Spanish Literature II. ALP, CCI, FL A survey of major writers and movements of the Spanish literary tradition in the eighteenth, nineteenth, and twentieth centuries. Prerequisite: Spanish 301, 331S, or AP Spanish Literature score of 5. Instructor: Staff. One course.

333A. Literature and the Arts in Modern Spain. ALP, CZ, FL (Taught in Spain.) Instructor: Staff. One course. C-L: International Comparative Studies

334. Introduction to Spanish-American Literature. ALP, CCI, FL A survey of major writers and movements from the periods of discovery to conquest, colonial rule, and early independence. Includes works by native Indian, "mestizo", and women writers. Prerequisite: Spanish 301, 331S, or AP Spanish Literature score of 5. Instructor: Staff. One course. C-L: Latin American Studies

335. Introduction to Spanish-American Literature. ALP, CCI, FL A survey from Independence to the Contemporary period. Prerequisite: Spanish 301, 331S, or AP Spanish Language score of 5 or AP Spanish Literature score of 4 or 5. Instructor: Staff. One course. C-L: International Comparative Studies, Latin American Studies

340A. Communication Skills. CCI, FL Develops communication skills through oral expression. Exercises include role playing of every day situations, discussing newspaper articles and literary texts, having debates on controversial current issues, films etc. Grammatical correction emphasized as well as appropriate cultural levels of expression and colloquial phrases. Written language objectives; four compositions during the semester. (Taught in Spain and Ecuador, in Duke-in-Madrid and Duke-in-the Andes study abroad programs.) Instructor: Staff. One course.

350D. Introduction to Modern Latin American Art and Visual Culture. ALP, CCI, CZ One course. C-L: see Art History 250D
360. Art in Spain During the Golden Age. ALP One course. C-L: see Art History 256

361. Latin-American Literature in Translation. ALP, CCI Fictional and poetic works of the last thirty years that have made an impact on world literature. Critical reflection on political and ethical issues. Taught in English. Instructor: Dorfman. One course. C-L: International Comparative Studies 335, Literature 376, Latin American Studies

361. Latin American Literature in Translation. ALP, CCI One course. C-L: see Literature 375; also C-L: International Comparative Studies 339

364. The Art and Cultural History of Flamenco. ALP, CCI, CZ One course. C-L: see Dance 365L

390-3. Special Topics in Latin American Studies. A problem-oriented course integrating approaches from different disciplines. Topics and disciplines vary from year to year. For juniors and seniors. Required capstone course for students seeking the certificate in Latin American Studies. Instructor: Staff. One course.

390-4. Topics in Hispanic Civilization. CCI, CZ, FL A humanistic, cross-cultural study of Spain or Spanish America through history, culture, people, and institutions. Topics may vary. Instructor: Staff. One course. C-L: International Comparative Studies


390S-5. Topics in Spanish Linguistics. CCI, FL Topics vary each semester. Specific themes related to social linguistics. Involves students' collecting and analyzing linguistic data, framing, and testing hypotheses. Instructor: Staff. One course. C-L: Linguistics 390S-01

393. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

394. Research Independent Study. R See Spanish 393. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

410. Spanish Literature of the Renaissance and the Baroque. ALP, CCI, FL Selected works of sixteenth and seventeenth centuries in Spain with attention to their reflection of social, religious and political currents of the age, including: Pan-European cultural influences in the Renaissance, the effects of the New World encounter, the construction of identity through repression of Judaic and Islamic traditions, the relationship between tightened religious, social and political controls and the Baroque. Prerequisite: Spanish 332, 333, 334 or 335. Instructor: Greer or staff. One course. C-L: Medieval and Renaissance Studies 458, Information Science and Information Studies 251

411. Golden Age Literature: Cervantes. ALP, CCI, CZ, FL Includes reading either selected works by Cervantes (dramas, novellas, and part of Don Quixote) or the Quixote in its entirety. Attention to the Roman and/or Arab conquests of Spain, Spanish relations with Algeria, England, Italy, and the Americas, the obsession with "limpieza de sangre" and the fate of Spain's "morisco" population. Prerequisite: Spanish 332, 333, 334 or 335. Instructor: Greer. One course. C-L: Medieval and Renaissance Studies 459

412D. Mayas, Aztecs and Incas: The World According to the Indigenous People of Latin America. CZ, EI, R The basic philosophical architecture of the three great civilizations of America; Maya, Aztec and Inca civilizations. Links the current indigenous revival in the Andes (Bolivia and Ecuador) and in the South of Mexico and Guatemala with the survival of their historical legacies. Instructor: Mignolo. One course. C-L: International Comparative Studies 460D, Cultural Anthropology 367D, Latino/a Studies in the Global South 412D, History 412D


430. Literature of Contemporary Spain. ALP, CCI, FL A cultural critique of contemporary Spain (1936 to present) through different literary genres (novel, theater, poetry) with emphasis on gender, class, and historical nationalities. Includes Catalan, Galician, and Basque authors in Spanish translation. Prerequisite: Spanish 332, 333, 334, or 335. Instructor: Staff. One course. C-L: International Comparative Studies
431S. The Spanish Civil War: History, Literature, and Popular Culture. ALP, CZ, EI, FL, R The Spanish Civil War of 1936-39 through literary and historical readings, art, music, and film. Special attention given to values held by supporters of each side, and how they put them into practice during and after the war. Consideration of international volunteers who fought in Spain for their own deeply-held values. Research paper and presentation required. Taught in Spanish. Prerequisite: Spanish 331S or higher, or permission of instructor. Instructor: Sieburth. One course. C-L: History 273S

432S. Hispanic Literature and Popular Culture. ALP, CCI, FL Works of Spanish and Latin American fiction that parody or rewrite popular culture genres such as serial novels, detective stories, or Hollywood films. Authors include Cervantes, Galdós, Borges, Marsi, and Puig. Taught in Spanish. Prerequisite: Spanish 332, 333, 334, or 335. Instructor: Sieburth. One course. C-L: International Comparative Studies, Latin American Studies


434S. Nineteenth- and Twentieth-Century Spanish Literature. ALP, CCI, FL Literary, cultural critique on a specific genre or theme to be announced. Emphasis on issues of gender, class, psychoanalysis, and/or popular culture. Prerequisite: Spanish 332, 333, 334, or 335. Instructor: Sieburth. One course.

435S. Mexicana Through from North and South: Writing, Art, Film. ALP, CCI, FL Fiction, art, and theory by Mexican women from both sides of the U.S./Mexico border, 1950 to the present. Considers affective and political relationships revealed in narratives of belonging and exclusion, and new thinking about gender, race, and history. Poses questions about nations and nationalism, perceptions and performances of the body, and the social and political promise of expressive culture. Emphasis on visual culture including photography, performance, posters, new media, video and film. Instructor: Gabara. One course. C-L: Visual and Media Studies 316S

437S. Spanish Avant-Gardes/Kino-Texts. ALP, CCI, EI, FL Examines ways in which Spanish avant-garde groups participated in trans-national experiments in film, writing, and related creative expressions in 1920s and 1930s economic and political crises across the world. Critical viewings and readings of works by select number of authors from the period. Focuses specifically on visual and textual culture, discussions and assignments emphasizing gender, class, and race representations and appropriations in relation to international geopolitical scenarios. Instructor: Adrian. One course. C-L: Literature 272S

438S. Revolution in the Novel/Novel of Revolution. ALP, CCI, EI, FL Exploration of Spanish novel from 1962 to 1987, a period of exceptional development highlighting ‘radical artifice’ including use of parody, multiple narrators, subplots and time schemes, as well as countless self-reflexive devices. Collectively representing a ‘revolution in the novel’, these works also provide complex and sophisticated commentaries on vexed contemporary questions concerning the direction of Spanish politics and society spanning the years of late Francoism and the transition to democracy, reflecting both ‘revolutionary’ and ‘counter-revolutionary’ trends—including the unfinished revolution of women’s emancipation addressed through key works by women authors of the period. Instructor: Rodriguez-Garcia. One course.


440AS. Literature and the Performing Arts II. ALP, CCI, FL Selected literary works of the nineteenth and twentieth centuries that have been rendered in film or are presently on stage in Madrid. Attendance at performance of the films or plays. Instructor: Staff. One course.


441AS. Spain Circa 1898: The Crisis of the Bourgeois Order. ALP, CCI, CZ, EI, FL Literary overview of the ideological, aesthetic, and political crisis in nineteenth-twentieth century Spain. Essays, novels, and poetry studied as cultural discourses, ideological constructions, and historiographic nomenclature, "Generacion del 98," which defined

Romance Studies 599

481D. Women Writers of the Renaissance: Spain and England. ALP, CCI, CZ Readings in the work of major women writers of the Spanish and English Renaissance: Zayas, Wroth, Navarre, and their literary contexts, Cervantes, Boccaccio, Sidney. Course includes in-depth examination of ideals and conflicts of English and Spanish culture, as well as consideration of the intersection in their writing between Christian (Protestant and Catholic) and Muslim civilizations. Instructor: Greer. One course. C-L: English 433, Medieval and Renaissance Studies 475D

490A. Spain: Special Topics Abroad. A special topics course on various aspects of Spanish art, cinema, painting, drama, and literature. Topics to be announced. (Taught in Duke-in-Madrid program). Instructor: Staff. One course.

490A-1. Topics in Spanish and/or Latin American Literature Abroad. Transfer credit for literature courses taught in non-Duke programs abroad. Special topics course. Instructor: Staff. One course.


490S. Spanish Literature. ALP, CCI, FL Various aspects of the literatures of Spain and Spanish-America with a cross-cultural perspective. Specific topics to be announced. Prerequisite: Spanish 332, 333, 334 or 335. Instructor: Staff. One course.

490S-2. Special Topics in U.S. Latina/o Literatures and Cultural Studies. ALP, CCI Special topics in United States Latina/o literatures and cultural studies. Topics to be announced. Open to juniors and seniors. Counts towards the Spanish major, but can only be counted once towards the core course requirement; subsequent courses would count as related courses. Counts only once for the minor. Taught in both Spanish and English. Prerequisite: At least one course numbered 110-139 and taught in Spanish (excluding 120's courses taught in English), or consent of instructor. Instructor: Mignolo, Milian, Viego, or staff. One course. C-L: Latino/a Studies in the Global South 490S, Latin American Studies

493. Research Independent Study. R See Spanish 393. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

494. Research Independent Study. R See Spanish 393. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

495AS. Honors Seminar. CCI, FL, R Basic training in research methodologies for students preparing to write an honors thesis on a Spanish or Latin American topic. Student presentations weekly on research topics and submission of substantial drafts of honors thesis proposals. (Taught in Madrid.) Consent of instructor required. Prerequisite: Two 300-level Spanish courses. Instructor: Staff. One course.

496. Honors Thesis. R Directed research and writing of honors thesis. Open only to qualified seniors pursuing the Graduation with Distinction track by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.


512S. Topics in Spanish Linguistics. FL, R, SS In-depth analysis of one area of Spanish linguistics. Topics may include Spanish phonology, Spanish syntax, discourse analysis, applied linguistics, or Spanish pragmatics. Small research projects with a hands-on approach required. Instructor: Staff. One course. C-L: Linguistics 512S

530. Emigrants and Immigrants: Spain in the Sixties and Now. ALP, CCI, FL A study of the cultural processes generated by two significant migratory movements in Spain: one in Catalonia in the 1960s and early 1970s, composed mostly of impoverished peasants coming from southern Spain; and the more recent global wave composed of Latin American, African, and Filipino immigrants to the affluent post-industrial areas. The seminar will use literary and cinematic texts, and testimonial narratives. Instructor: Staff. One course. C-L: International Comparative Studies

590S. Seminar in Spanish Literature. ALP, FL Topics to be announced. Instructor: Staff. One course.
The Major

Majors are offered in French studies, Italian studies, Spanish, and romance studies, and several different tracks are offered, as described below. The range of courses offered may be taken toward fulfillment of the following general education curriculum requirements: ALP, CZ, SS, CCI, EI, FL, STS, R, W, where indicated in the individual course entries. Majors are constituted of core courses and related courses. Core courses are departmental offerings taught in the language of the major. Related courses may be taken outside the department and not in the language of the major.

Brazilian and Global Portuguese Studies Major Requirements

Students majoring in Brazilian and Global Portuguese studies will acquire competency in spoken and written Portuguese, as well as familiarity with the literature and culture of Brazil and Portuguese-speaking regions. A total of ten courses, at least eight of which must be at the 300-level or above. (Courses below the 300-level are restricted to Portuguese 203 or 203A, and 204, and to pre-approved Brazil-themed Thompson Writing Program courses). Six of the ten courses must be taught in Portuguese, or have a Portuguese preceptorial (P) component (taught in Portuguese). The four remaining courses may be taught in English, such as courses in the English-language offerings of romance studies, or cross-listed courses with at least fifty percent of Brazilian or lusophone content offered by other departments or programs such as history, African and African American studies, arts of the moving image, cultural anthropology, English, international comparative area studies, literature, music, political science, religious studies, and theater studies. Duke-approved courses taught in Portuguese in study abroad programs may also count towards this major concentration. Consult with the undergraduate major advisor concerning approval of related courses.

French Studies Major Requirements

Students majoring in French will acquire a considerable degree of competence in the written and spoken language as well as knowledge of the literature and culture of France and the French-speaking world. The department offers a wide array of courses in language, literature, and culture, and strongly encourages interdisciplinary work in French through courses emphasizing the relation between literature, the arts, history, and society. A major in French is an excellent portal to a variety of careers in the humanities, the economic world, government, and science, and to a lifetime of global awareness and cultural reflection. An honors thesis option is available, including the possibility for theses interweaving two fields for students pursuing double or second majors. Students interested in majoring in French should consult the director of undergraduate studies.

The French studies major requires a total of ten courses. At least eight French courses must be taken at the 300 level or above. Depending on placement, French 203 and/or French 204 may count toward the requirement; for students entering with 300 level proficiency, all ten French courses will be at the 300 level or above.

Of these advanced-proficiency courses:

- Students may take up to two romance studies courses with French-related content or nondepartmental courses with French-related content.
- Students must take at least two French courses numbered 400 or above.
- Students must also take at least one 500-600 level French course or complete a thesis.

Italian Studies Major Requirements

The Italian studies major offers two concentrations: Italian studies and Italian and European studies. Students majoring in Italian develop language skills in their social and cultural contexts. The combination of linguistic and cultural competency is excellent preparation for a variety of professional careers in business, government, the humanities, and science. Double (second) majors are encouraged and supported. Numerous opportunities are available, including programs of study abroad, work study, interdisciplinary programs, and Fulbright. Students interested in majoring in Italian should consult the director of undergraduate studies.

Italian Studies: A total of ten courses, at least eight of which must be at the 300 level or above. (Courses below the 300 level are restricted to Italian 213, Italian 203, and Italian 204). Six of the ten courses must be taught in Italian, or have an Italian preceptorial (P) component (taught in Italian) and include three of the four core courses:

1. For transfer students, consult with the director of the language program for equivalent transfer credits.
2. 500-600 level courses will be constructed with the undergraduate experience in mind and students are warmly welcome to take more than one 500-600 level course. Such courses also present an excellent opportunity for undergraduates to work with a graduate student peer cohort.
3. French majors are encouraged to write a senior thesis, and to consider interdisciplinary topics capable of linking French studies to their additional fields of academic interest.
Italian 303S; Italian 332; Italian 333; Italian 335; and one course at the 500-600 level. The four remaining courses may be taught in English, such as courses in romance studies, or cross-listed courses with Italian content offered by other departments or programs such as art history, cultural anthropology, English, arts of the moving image, history, international comparative area studies, literature, medieval and renaissance studies, music, philosophy, political science, religion, and theater studies. Duke-approved courses taught in Italian in study abroad programs may also count toward this major concentration.

**Italian and European Studies:** An interdisciplinary concentration requiring a total of ten courses, at least eight of which must be at the 300 level or above. (Courses below the 300 level are restricted to Italian 213, Italian 203, and Italian 204). Five of the ten courses must be taught in Italian, or with an Italian preceptorial (P) component (taught in Italian), and include at least two core courses (Italian 303S, 332, 333, 335). Five related courses on any Italian and/or European topic may be taken in or outside the department and not in the language of the major (consult the undergraduate major advisor for approval of related courses). Duke-approved courses taught in Italian in study abroad programs may also count toward this major concentration.

**Spanish, Latin American & Latino/a Studies Major Requirements**

A total of ten courses at the 300 level and above, at least seven of which must be from departmental offerings. These seven core courses must include any two survey courses (332, 333, 334, 335) and at least three courses above 400, one of which should be at the 500-600 level. The remaining courses must be on peninsular, Latin American or Latino-related topics and may be taken either in the department or in other departments. Brazilian or Lusophone literature or culture courses taught in Portuguese at or above the 300 level, offered by the department, may be substituted for some of these remaining courses. Overall, a total of seven courses must be taught in Spanish. Consult the undergraduate major advisor concerning approved related courses.

**Romance Studies Major Requirements**

The romance studies major at Duke involves advanced study in two of the department’s language/culture sections in an international and experiential learning mode. This major consists of foreign language study at the major level, departmental FL courses only, within two departmental fields, such as two continental fields, for example peninsular Spanish and Italian; two fields encompassing the diversity of cultures and engagement in the “developing” and the “developed” worlds, such Creole and French; or in geographically proximate postcolonial spaces such as lusophone (Portuguese-speaking) and francophone Africa, or Spanish and Portuguese-speaking environments in South America. The course requirements are paired with international/experiential learning requirements.

**Course Requirements**

- Five major-level departmental FL courses, in each of the two fields of study (see the descriptions of the single-language majors). The entry-level course for credit in the romance studies major is the same as the entry level course for the minor in each of the French, Italian, and Spanish fields, i.e.:
  - French 204
  - Italian 203
  - Spanish 301

Students with unusual depth of study in Creole or Portuguese may petition the romance studies faculty to unite one of the above sequences of five FL departmental courses with a combination of three courses and a required thesis (involving two semesters of independent study courses) in Creole or Portuguese. The romance studies major in French, Italian, or Spanish and Creole or Portuguese therefore requires unusual initiative and experience in the field of either Creole or Portuguese. Petitions to undertake this option must include a one-page abstract of the project, a bibliography, and the names of three committee members who have consented to serve on the thesis committee.

**International/Experiential Learning Requirements for the Romance Studies Major:**

To ensure breadth and depth of learning and linguistic/cultural immersion, any student completing the Romance Studies major must also complete two of the following international and/or experiential learning experiences related to their fields of romance study. Each of these must be approved by the DUS:

- study abroad (up to two programs may be counted);
- an appropriate DukeEngage or another Duke service and/or experiential learning program;
- research experience related to the romance language/culture field in a humanities lab, a fellowship, a research independent study, research assistantship, professional research environment, etc.;
- an honor’s thesis uniting the two fields; or
• a certificate in a related field with content directly related to that of the fields of language/culture study.

Departmental Graduation with Distinction

Qualified students may apply for Graduation with Distinction. The application deadline is preregistration for the fall semester of the senior year. Students must find an appropriate faculty advisor to oversee the honors project. The thesis may be written in the language best suited to its likely audience, but students pursuing graduate study in a romance studies field must write the thesis in the language of the area of study. Further information may be obtained from the director of undergraduate studies or the assistant to the director.

The Minor

Minors are offered in Brazilian and Global Portuguese, French, Italian, and Spanish studies.

Brazilian and Global Portuguese Studies:

Requirements: A total of six courses from departmental Brazilian and Global Portuguese Studies offerings, three of which must be taught in Portuguese or include a preceptorial (P) component. Up to two courses in Portuguese below the 300 level may be counted (Portuguese 203, Portuguese 203A, Portuguese 204). Duke-approved courses taught in Portuguese in study abroad programs may also count towards this minor concentration.

French Studies

Requirements: The French studies minor requires a total of five courses from departmental French offerings, at least four of which are at the 300 level or above. French 204 may count toward this requirement depending on placement.

Italian Studies

Requirements: A total of six courses from departmental Italian offerings, three of which must be taught in Italian or include a preceptorial (P) component, and must include at least one of the four core courses: Italian 303S, 332, 333, 335. Two courses in Italian below the 300 level may be counted (restricted to Italian 203, 204, and 213). Duke-approved courses taught in Italian in study abroad programs may also count toward this minor concentration. Majors and minors are also encouraged to take advantage of 500-600 level course offerings.

Spanish Studies

Requirements: A total of five courses from departmental Spanish offerings numbered 300 or above. Courses for the minor must include one survey course (Spanish 332, 333, 334, 335) and at least two courses at the 400 level or above. All five courses must be taught in Spanish (but Spanish 490S-2 may substitute for one of the five FL courses).

Study Abroad

Students are strongly urged to study abroad since this is the best way to achieve language proficiency and to acquire knowledge of a country's culture. Courses taken abroad count toward the core and/or related courses as follows:

Department-Administered Programs

• Duke-in-France. Major: All courses may be counted toward the major. A maximum of three courses per semester may be counted toward the core-course requirement. Minor: A maximum of two courses per semester may be counted.

• Duke-in-Madrid. Major: All courses may be counted toward the major. Credit distribution may vary according to students’ needs, with a maximum of three courses counting toward the core course requirement. For students remaining a second semester, two additional courses may be counted as core courses; the rest may be counted as related courses. Minor: a maximum of two courses may be counted.

• Duke-in-the-Andes. Major: All courses may be counted toward the major. A maximum of three courses may be counted toward the core-course requirement; others may be counted as related courses. Minor: A maximum of two courses may be counted.

Duke-Administered Semester Programs (Office of Study Abroad)

• Duke-Administered Semester Programs in English (Duke-in-Florence; Duke-in-Venice). Major: a maximum of three courses per semester may be counted as related courses. Minor: A maximum of one course may be counted toward the core-course requirement.
Non-Duke-Administered Semester Programs

- **Major:** A maximum of two courses per semester may be counted toward the core-course requirement. **Minor:** One course per semester may be counted.

Non-Duke-Administered Semester Programs in Italy (taught in Italian)

- **Major:** A maximum of two courses per semester may count toward the core-course requirement and a maximum of one may count as a related course. **Minor:** A maximum of two courses per semester may count.

Duke-Administered Summer Programs (Office of Study Abroad)

- **Duke-Administered Summer Programs in the Language**
  - **Duke-in-Barcelona; Duke-in-Spain.** **Major:** Two courses may be counted toward the core-course requirement. **Minor:** Two courses may be counted.
  - **Duke-in-Paris.** **Major:** Two courses may be counted toward the core-course requirement. **Minor:** Two courses may be counted.
  - **Duke-in-Brazil.** **Major:** Two courses may be counted.
  - **Duke-in-Mexico.** Intensive Elementary & Intermediate Spanish
  - **Duke-in-Montréal.** **Major:** One course may be counted toward the core-course requirement. **Minor:** One course may be counted.

- **Duke-Administered Summer Programs in English (Duke-in-Venice).** **Major or Minor:** One course may be counted toward the core-course requirement.

Non-Duke-Administered Summer Programs

- **Major:** One course may be counted toward the core-course requirement. **Minor:** One course may be counted.

Russian

For courses in Russian, see Slavic and Eurasian studies on page 606.

Study of Sexualities

Professor O’Rand, Interim Director

The program in the study of sexualities offers an interdisciplinary course of study that introduces students to critical analyses of the various expressions of sexuality in societies around the world, both past and present. Such expressions encompass a wide range from heterosexuality to homosexuality and include other erotic desires, sexual relationships, and gender roles. Critical analyses concern how sexuality is formed, defined, and regulated by biological and social forces.

Courses in Study of Sexualities (SXL)

89S. First Year Seminar. New concepts and themes in the Study of Sexualities. Topics vary each semester. Instructor: Staff. One course.

115. Introduction to the History of Women, Gender, and Sexuality. CCI, CZ, EI, SS One course. C-L: see History 115; also C-L: Women's Studies 115

199S. Introduction to Study of Sexualities (DS4). CZ Topics include homosexuality and theory, history, law, religion, education, the arts and literature, the military, and the health sciences. Instructor: Staff. One course. C-L: Women's Studies 202S

210. Medieval Bodies: Sex & Food. CCI, CZ, EI One course. C-L: see History 246; also C-L: Medieval and Renaissance Studies 256, Women's Studies 219

225. Women in Film. ALP, CCI One course. C-L: Arts of the Moving Image 216, Women's Studies 227, Literature 219

229. Sexuality and Society. CCI, EI, R, SS One course. C-L: see Sociology 349

233. Traffic in Women: Cultural Perspectives on Prostitution in Modern China. ALP, CCI, SS One course. C-L: see Asian & Middle Eastern Studies 333; also C-L: Cultural Anthropology 334, Women's Studies 233, Arts of the Moving Image 270

235S. Clinical Issues for the LGBTQ Community (A). CCI, SS An introduction to LGBTQ issues in the mental-health field and other people-focused professions, e.g. medicine, education, and law. An examination of the historical treatment of the LGBTQ population in psychological practice, the evolution of mental-health care for members of the LGBTQ community, and the psychological effects of social norms on LGBTQ individuals, couples, and families, including non-pathologizing, heterosexual bias, genderism, self-identification, coming out, multiple-minority identities, parenting, and couple dynamics. Instructor: Long. One course. C-L: Women's Studies 235S, Psychology 316S

264S. Race, Gender, and Sexuality. CCI, SS One course. C-L: see Women's Studies 364S; also C-L: African and African American Studies 242S

268. Gender, Sexuality, and Human Rights. CCI, EI, SS One course. C-L: see Women's Studies 368

268S. Gender, Sexuality, and Human Rights. CCI, EI, SS One course. C-L: see Women's Studies 368S

278. Sex/Gender - Nature/Nurture: Intersections of Biology and Society. NS, STS One course. C-L: see Women's Studies 278; also C-L: Cultural Anthropology 278, Neuroscience 278, Psychology 226

290. Selected Topics. SS Lecture version of Study of Sexualities 290S. Topics vary each semester offered. Instructor: Staff. One course.

290S. Seminars in Selected Topics. Topics vary each semester offered. Instructor: Staff. One course.

295S. Sex Work: The Politics of Sexual Labor. CCI, SS One course. C-L: see Women's Studies 295S; also C-L: Literature 295S, Sociology 295S

310S. Freud and Sexuality. CCI, R, SS One course. C-L: see Women's Studies 372S; also C-L: Literature 260S, Psychology 322S


373. American Sexualities. CCI, CZ, EI, SS One course. C-L: see History 373

377. Global History of Sexuality. CCI, CZ, EI, SS One course. C-L: see History 377

413S. Capstone Seminar: Modern Sex: Sexuality and Modernity in the Americas. CCI, CZ, R, SS One course. C-L: see History 452S

432S. Gender, Sex and Citizenship. CCI, EI, SS One course. C-L: see Cultural Anthropology 432S; also C-L: Women's Studies 432S, International Comparative Studies 428S

470S. Queer Theory. ALP, CCI, SS One course. C-L: see Women's Studies 370S; also C-L: Literature 475S, Marxism and Society

**Program Courses Offered Through Other Departments**

- **Arts of the Moving Image**
  - 2208. Sexualities in Film and Video (DS4)

- **Cultural Anthropology**
  - 271. Gender and Culture
  - 429. Gender and Sexuality in Latin America

- **Dance**
  - 368. Gender in Dance and Theatre

- **International Comparative Studies**
  - 203. Gender and Culture
  - 426. Gender and Sexuality in Latin America

- **Literature**
  - 315S. Sexualities in Film and Video (DS4)
  - 365S. Feminist Classics

- **Medieval and Renaissance Studies**
  - 655. Early Christian Asceticism

- **Political Science**
  - 306S. Politics and the Libido
Two majors and three minors are available in this department.

The Department of Slavic and Eurasian Studies has a strong commitment to increase the language proficiency of its students regardless of their level at matriculation, to facilitate deep knowledge of the cultural context of each language represented, to help students develop their own scholarly interests and research abilities, and to acquaint students with trends in literary, linguistic, and cultural theory. Areas of specialization include nineteenth and twentieth century Russian and Soviet literature, Turkish and Polish language and literature, semiotics, gender studies, film and media studies, legal and business Russian language, translation, Slavic linguistics, contemporary Russian, Polish, and Turkish literature, scientific and scholarly Russian language, stylistics, and Russian, Polish, and Turkish cultural history. Languages taught include Russian, Turkish, Polish, and Romanian. Other Slavic languages occasionally taught include Ukrainian and Hungarian.

Resources for study include a state-of-the-art language laboratory with video facilities and a humanities computing facility, reception of daily Russian television programming, and an exchange program with St. Petersburg University. The department also hosts a Focus seminar and maintains a cooperative relationship with the Duke linguistics program, the program in literature, women’s studies, cultural anthropology, and the Center for Slavic, Eurasian and East European Studies, as well as with related programs at The University of North Carolina at Chapel Hill.

Courses in Slavic and Eurasian Studies (SES)


190A. Duke Administered Study Abroad: Special Topics in Slavic and Eurasian Studies. Topics vary each semester. Instructor: Staff. One course.

205FS. Language and the Law. CZ, EI, SS Ways in which law regulates language and speech, with particular emphasis on offensive speech. Theory and practice of freedom of speech and its limitations; how the legal system treats obscenity, profanity and “indecent” speech, defamation, and hate speech. Emphasis on why these forms of speech are considered offensive, with reference to sociological, anthropological, and political explanations for restrictions on offensive speech. Studies language as property in form of copyright, trademark, and trade secrets law. Comparative approach, considering how different societies have dealt with these difficult issues. Instructor: Newcity. One course. C-L: Linguistics 205FS

209FS. Geopolitics & Globalization: From Bosnia to Afghanistan. ALP, CCI, CZ Study of countries on the geographical periphery of the commonly defined Middle East: Bosnia, Turkey, Armenia, Chechnya, Iran, and Afghanistan. All of these countries have deep Middle Eastern ties and traditions, sizeable communities with Middle Eastern origins and connections, and recent histories of cultural and ethnic conflict and violence. Exploration of how
the Middle Eastern components and histories in these conflicts have been distorted and obscured as the conflicts have been depicted through the lenses of U.S. or Soviet/Russian geopolitical interests. Instructor: Goknar. One course. C-L: Turkish 209FS, Islamic Studies

215FS. The Politics of Language. SS Examines the political role of language in societies as diverse as China, India, the former Soviet Union, the UK and the US. Looks at how state and non-state actors influence citizens’ language practices, and their beliefs about language. Drawing on political theory, sociology and sociolinguistics, we look at how language policies reflect and produce sociopolitical realities. Topics covered include migration, citizenship, nationalism and decolonization. Open to students in the Focus Program only. Instructor: Price. One course. C-L: Political Science 185FS, Linguistics 213FS, International Comparative Studies 228FS

240S. Around the Bloc: Cold War Culture in the USSR and Eastern Europe. CCI, CZ, EI, SS Drawing on oral and written history, memoirs, film, fiction, and essays in anthropology and sociology, we’ll resist the black/white readings imposed by the Iron Curtain and explore the dreams, fears, ethical concerns, cultural trends, and lifestyles of Cold War baby boomers in the USSR, Poland, Czechoslovakia, and Romania. Highlighted topics include: the privileges and discontents of postwar youth, the atomic age and its mutations, adventures in socialist consumer culture, gender politics and real life, making art about the socialist state of the absurd. All texts in English translation, films screened with English subtitles. Instructor: Holmgren. One course. C-L: Literature 241S, Arts of the Moving Image 240S, Cultural Anthropology 259S

279FS. Turkey: Muslim and Modern. CCI, CZ, SS Turkish history from the 18th century to the present. Turkey as strategic ally of the US; candidate for membership in European Union; first Muslim country to adopt democracy, secularism, and Westernization, and as political, cultural, and economic model for other Muslim countries. Focus on Turkish people’s encounter with modernity as Muslims; questions about contradictions and promises of Muslim and modern experience; informed consideration of Islam’s encounter with the West. No prerequisites. No knowledge of Turkish required. Instructor: Tuna. One course. C-L: Turkish 279FS, History 239FS, Islamic Studies

279S. Turkey: Muslim and Modern. CCI, CZ, SS Turkish history from the 18th century to the present. Turkey as strategic ally of the US; candidate for membership in European Union; first Muslim country to adopt democracy, secularism, and Westernization, and as political, cultural, and economic model for other Muslim countries. Focus on Turkish people’s encounter with modernity as Muslims; questions about contradictions and promises of Muslim and modern experience; informed consideration of Islam’s encounter with the West. No prerequisites. No knowledge of Turkish required. Instructor: Tuna. One course. C-L: Turkish 279S, History 239S

286S. Borderland and Battleground: A journey Through Twentieth-Century Eastern Europe. ALP, CCI, CZ Explores through history, film, fiction, and memoirs the "extreme" political experience, hybrid ethnic identities, and stunning art and testimony of twentieth-century Central and Eastern European cultures, including Poland, Czechoslovakia, Hungary, Romania, and Yugoslavia. Traces the emergence of new nation states in the region at the end of World War I, the rise of Nazism and Stalinism, the devastating experience of World War II, and the absurdist mix of politics and daily life in Eastern Europe from 1945 until the fall of the Berlin Wall. Graduate level version of SES 186; undergraduates may enroll only with permission of instructor. Instructor: Holmgren. One course. C-L: Literature 296S

288S. Trauma and Nostalgia: East European Film in the 21st Century. ALP, CCI, CZ, EI Examines the major thematic focus of East European filmmakers in the 21st century: their efforts to reconstruct and reassess the experience of the Cold War (1945-1989) and the Yugoslav wars (1991-1995). These films from the Czech Republic, Hungary, Poland, Romania, Croatia, and Serbia include ironic/sentimental tales of Cold War childhood, thrillers about sleeping with the enemy (political informers), and psychological dramas centering on political trauma, resistance, and compromise. All films shown with English subtitles. No prerequisites. Instructor: Holmgren. One course. C-L: Polish 288S, Literature 216S, Arts of the Moving Image 268S, International Comparative Studies 288S

290. Special Topics in Slavic and Eurasian Studies. Subject varies from semester to semester. Instructor: Staff. One course.

320. Sports, Economics and Politics in Russia and Eastern Europe. CCI, CZ, SS Sports as a manifestation of political ideology and international conflict in the communist countries. How sports has responded to the upheaval following the fall of communism, the break-up of Yugoslavia and the USSR, the influence of oligarchs and organized
crime, establishing new national identities. This course will use sports as a window into the transformation of Eastern European societies. Instructor: Newcity. One course. C-L: Public Policy Studies 218

342A. Between Europe and Asia: The Geopolitics of Istanbul From Occupation To Globalization. CCI, CZ, EI Istanbul as a site of historical, political and cultural interaction between Europe and Turkey. Approach framed by two important geopolitical events separated by nearly a century: first, the Allied occupation of Istanbul after WWI, which gave rise to the modern Middle East, and second, Turkey's accession to the European Union, a contested transnational process that officially began in 2005. Examination of issues arising from Turkey's separation from Europe as a Muslim country and its potential reintegration as a functioning democracy. Offered only in the Duke-in-Turkey study abroad program. Instructor: Goknar. One course. C-L: Turkish 342A, Asian & Middle Eastern Studies 389A

343SA. Culture and Politics in Turkey and the Middle East. CCI, CZ, EI Examination of cultural identity and politics in Turkey and modern Middle East. Using Istanbul as a classroom, considers how representations of the Middle East are contested and gendered, analyzing such icons as "veiled women" and "terrorist men" and political implications of such representations. Topics include emergence of new social movements and paradoxes of secularism, Islamism, globalization, and neoliberalism in various settings. Offered only in the Duke in Turkey program. Instructor: Göknar, Gökariksel. One course. C-L: Turkish 343SA, Asian & Middle Eastern Studies 303SA, Political Science 213SA

345S. Orhan Pamuk and World Literature. ALP, CCI, CZ, EI Studies the novels and non-fiction of Nobel Laureate Orhan Pamuk as an introduction into ethics and politics of World Literature. Addresses social consequences of Pamuk's role as an intellectual-author who mediates between the national tradition and an international canon. Political implications of Sufism, cultural revolution, Orientalism, and post-colonialism. Secondary focus on cosmopolitan Islam and the Ottoman Empire. No prerequisites; taught in English. Instructor: Göknar. One course. C-L: Turkish 345S, Asian & Middle Eastern Studies 382S, Literature 276S, International Comparative Studies 345S, Islamic Studies

356. Imperial Russia 1700-1917. CCI, CZ, SS Russian imperial history from Peter the Great to Bolshevik Revolution: 1700-1917. Focus on formation and governance of multiethnic and multiconfessional Russian empire. Traces expansion of land-locked city state (Muscovy) into world power ruling from Eastern Europe to Alaska. Questions implications of Russia's world-power status. Examines institutions of governance that created this empire and held its various ethnic, religious and ideological groups together for centuries. Readings of English translations of works of Russian literature and historiographic analyses aimed at developing a sound grounding in Russian imperial history and culture. Instructor: Tuna. One course. C-L: Russian 356, History 275

370. Islam in Central Eurasia. CCI, CZ, SS History of Central Eurasian Muslims. Focus on diversity and cultural vivacity. Examines early appearance of Islam in the region, the evolution of Muslim religious and cultural institutions under governance of Chingissid, Timurid, Russian and Chinese empires, the encounter of Central Eurasian Muslims with European modernity and their experience during Soviet and Chinese socialist experiments. Instructor: Tuna. One course. C-L: History 209, Religion 378, Russian 370, International Comparative Studies 370, Islamic Studies

372S. The Frontiers and Minorities of the Tsarist and Soviet Empires. CCI, CZ, EI, SS Introduces multiconfessional, multilingual, multicultural composition of Russian & Soviet empires with questions concerning minorities in an imperial context. Learn about construction, interaction, and manipulation of cultures and identities. Balance Tsarist & Soviet efforts to modernize and Russify minorities, such as Ashkenazi Jews, Poles, & Turkic Muslims, against negotiated transformation and cultural resilience of minorities. Recognizes cultural diversity in an imperial setting and provides better appreciation of Russian and Eurasian realities and other multicultural contexts such as America. No Russian required. Instructor: Tuna. One course. C-L: History 280S, International Comparative Studies 372S, Russian 385S

373S. Between Moscow, Beijing and Delhi: Narratives of Europe and Asia. CCI, CZ, R, SS Exercise in reconstructing Eurasian history from the 13th century Mongol invasions to post-Soviet era through critical reading of eyewitness accounts--travel notes and memoirs. Reflects on political, religious, and cultural evolution, expansion, and rivalry as well as cross-cultural and trans-regional exchange. Instructor: Tuna. One course. C-L: History 216S, International Comparative Studies 373S, Islamic Studies
382. Putin's Russia: The History of Economic and Political Consolidation. CCI, CZ, EI, SS One course. C-L: see History 283; also C-L: Political Science 220

385. Language and Society. CCI, SS One course. C-L: see English 395; also C-L: Linguistics 451, Cultural Anthropology 212, International Comparative Studies 395

386S. Borderland and Battleground: A Journey Through Twentieth-Century Eastern Europe. ALP, CCI, CZ Explores through history, film, fiction, and memoirs the "extreme" political experience, hybrid ethnic identities, and stunning art and testimony of twentieth-century Central and Eastern European cultures, including Poland, Czechoslovakia, Hungary, Rumania, and Yugoslavia. Traces the emergence of new nation states in the region at the end of World War I, the rise of Nazism and Stalinism, the devastating experience of World War II, and the absurdist mix of politics and daily life in Eastern Europe from 1945 until the fall of the Berlin Wall. All course texts in translation. Instructor: Holmgren. One course.

396S. Language in Immigrant America. ALP, CCI, R One course. C-L: see English 396S; also C-L: Cultural Anthropology 397S, Linguistics 396S, International Comparative Studies 396S

420S. Capstone Seminar: Russia-USSR-Russia: History of Communism. CCI, CZ, EI, R, SS One course. C-L: see History 467S; also C-L: Political Science 445S

423S. City Stops Between Europe and Asia: From Prague to Kabul. CCI, CZ, SS Explores the multi-layered histories and identities of cities positioned on imperial routes extending from Europe's eastern borders into Central Asia--Prague, Warsaw, Kazan, Istanbul, Bukhara/Tashkent, Kabul. Examines how these urban spaces bear the political, religious, cultural, and linguistic imprints of overlapping empires--Mongol, Ottoman, Hapsburg, Russian, and Soviet. No prerequisites. All readings in English translation and films screened with English subtitles. Open to all students; also serves as capstone for SES majors. One course. C-L: International Comparative Studies 423S

433S. Soviet Life through the Camera's Lens. ALP, CCI, CZ, FL An in-depth look at images and representations of Soviet life through Soviet and Russian film. Film texts include films shown in theatres, television films and forbidden films/films with a very limited distribution. Emphasis on the period from the mid-1970s through 1991. Course taught in Russian. Prerequisite: Russian 301S or equivalent or consent of instructor. Instructor: Maksimova. One course. C-L: Russian 433S, Visual and Media Studies 435S


484S. Language and Politics: Eurasian Perspectives. CCI, SS One course. C-L: see Linguistics 471S; also C-L: Sociology 471S, Public Policy Studies 208S

490. Special Topics in Slavic and Eurasian Studies. Subject varies from semester to semester. Instructor: Staff. One course.

490S. Special Topics in Slavic and Eurasian Studies. Subject varies every semester. Instructor: Staff. One course.

491. Independent Study. Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Instructor consent required. Instructor: Staff. One course.

564. Russian and Slavic Linguistics. SS Emphasis on synchronic linguistic theory focusing on East Slavic and Russian, but including diachronic approaches, and West and South Slavic languages. Focus on phonological, morphological, semantic and syntactic structures of Contemporary Standard Russian and modern Slavic languages. Instructor: Andrews. One course. C-L: Russian 564, Linguistics 564

Balto-Finnic

Courses in Balto-Finnic (BALTFIN)

Polish

Courses in Polish (POLISH)

101. Elementary Polish. FL Introduction to understanding, speaking, reading, and writing Polish. No preliminary knowledge of Polish necessary. Instructor: Staff. One course.


203. Intermediate Polish. FL Intensive classroom and laboratory practice in spoken and written patterns. Readings in contemporary literature. Prerequisites: Polish 101 and 102, or consent of instructor. Instructor: Staff. One course.

204. Intermediate Polish. FL Continuation of Polish 203. Prerequisite: Polish 203 or consent of instructor. Instructor: Staff. One course.

288S. Trauma and Nostalgia: East European Film in the 21st Century. ALP, CCI, CZ, EI Examines the major thematic focus of East European filmmakers in the 21st century: their efforts to reconstruct and reassess the experience of the Cold War (1945-1989) and the Yugoslav wars (1991-1995). These films from the Czech Republic, Hungary, Poland, Romania, Croatia, and Serbia include ironic/sentimental tales of Cold War childhood, thrillers about sleeping with the enemy (political informers), and psychological dramas centering on political trauma, resistance, and compromise. All films shown with English subtitles. No prerequisites. Instructor: Holmgren. One course. C-L: Literature 216S, Arts of the Moving Image 268S, Slavic and Eurasian Studies 288S, International Comparative Studies 288S

301S. Contemporary Polish Composition and Readings. CCI, FL Advanced grammar and syntax with intense composition component. Analytical readings in the original. Prerequisite: Polish 203 and 204, or equivalent. Instructor: Staff. One course.

302S. Contemporary Polish Composition and Readings. CCI, FL Continuation of Polish 301S. Prerequisite: Polish 301S. Instructor: Staff. One course.

305S. Studies in Polish Literature. ALP, CCI Selected Polish writers and works in their literary and historical contexts. Taught in English. Instructor: Holmgren. One course.

306. Polish Culture from 1795 to the present. ALP, CCI, CZ, FL Polish culture and history explored largely through works of literature, especially poetry, historical readings, and several post-1945 films with based on seminal works of Polish literature or dealing with important historical events. Readings and films in Polish. Focus on Polish struggles for independence and full autonomy (the latter in the communist period 1945-1989), the growth of the modern Polish nation, the role of the Catholic Church, ethnic issues (in particular the Jews in Polish culture), gender issues, the changing self-image of Poles, dissident and Solidarity movement, and current events in post-communist Poland as a member of the European Union. Instructor: Hueckel. One course.

307S. National Dramas and Cabaret Nights: Theater in Modern Polish Culture. ALP, CCI, CZ Explores the vital functions of the theater established during Poland's foreign occupation (1795-1918) and continuing throughout the 20th century -- as a showcase for the nation, expression of political protest, a temple of spiritually transformative art, and a refuge of topical, satirical entertainment. Highlighted topics include the important national dramas of Mickiewicz and Wyspiański; absurdist satires by Witkacy, Gombrowicz, and Mrozek; pre-war cabarets and postwar alternative experimental theater; and Grotowski's revolutionary theories about theater, the dramatic text, and the player/audience relationship. Instructor: Holmgren. One course. C-L: Theater Studies 324S

308S. Fragmented Memories: Polish and Polish Jewish Culture Through Film. ALP, CCI, CZ, EI Analyzes, compares, and assesses representations of Polish Christians and Polish Jews -- their life experiences, interactions, shared and separate fates -- in documentaries and fiction films made in Poland from the 1930s to the present day. Includes films by Wajda, Polanski, Munk, Kieslowski; also a 2008 documentary about pre-World War II Christian-Jewish relations in Poland by Jolanta Dylewska. All films screened with English subtitles. Instructor: Holmgren. One course. C-L: Religion 269S, Jewish Studies 269S

Romanian

Courses in Romanian (ROMANIAN)

111. Intensive Romanian Language and Culture. FL Introduction to Romanian comprehension, speaking, writing, reading, and cultural acquisition. Instructor: Staff. Two courses.

203. Intermediate Romanian Language and Culture. FL Focus on the study of Romanian phonetics, grammar, discourse, textual analysis, and writing. Prerequisite: Romanian 111 or consent of instructor. Instructor: Staff. One course.

212. Intensive Intermediate Romanian. FL Intensive study of Romanian at the intermediate level. Equivalent of two semesters. Prerequisite: Romanian 111 Instructor: Staff. Two courses.

Russian

Courses in Russian (RUSSIAN)

89S. First-Year Seminar. CCI Topics vary each semester offered but are restricted to the study of literature, linguistics, and culture in the Slavic world. Instructor: Staff. One course.

101. Elementary Russian I. FL Introduction to understanding, speaking, reading, and writing. Study of contemporary Russian language and important elements of Russian culture. Instructor: Van Tuyl. One course.

102. Elementary Russian II. FL Continuation of Russian 101. Introduction to understanding, speaking, reading, and writing. Study of contemporary Russian language and important elements of Russian culture. Second half of Russian 101, 102. Prerequisite: Russian 101. One course.

111. Intensive Russian. FL Intensive study of contemporary Russian language and important elements of Russian culture. Instructor: Andrews or Maksimova. Two courses.

112. Accelerated Russian Language and Culture I. FL Accelerated study of contemporary Russian language and important elements of Russian culture. Intended for students with no previous knowledge of Russian interested in achieving significant proficiency in speaking, reading, writing, and comprehension based on cultural constructs in one semester of study. Includes significant use of technology to enhance learning. Instructor: Staff. One course.

120FS. Grief Work: End of Life Care in Russia and America. CCI, CZ, EI Examines policy issues in end of life care by considering personal and societal ethical issues. Cross-cultural analysis of end of life care addressing ethical issues in comparative perspective of diverse populations: how do different cultural attitudes to dying, death, and health affect end of life care? Ethical issues about access to health care, whether/how long to keep people alive on machines, and how these decisions are made. Open only to students in FOCUS Program. Instructor: Gheith. One course.

190S. Special Topics in Russian Culture. Special Topics in Russian Culture. Topics vary each semester. Instructor: Staff. One course.

203. Intermediate Russian I. FL Intensive classroom and laboratory practice in spoken and written patterns. Reading in contemporary literature. Prerequisite: Russian 101 and 102, or two years of high school Russian. Instructor: Apollonio. One course.

204. Intermediate Russian II. FL Intensive classroom and laboratory practice in spoken and written patterns. Reading in contemporary literature. Prerequisite: Russian 101, 102 and 203 or equivalent. Instructor: Apollonio. One course.

207AS. Intermediate Russian Language and Culture. CZ, FL Intensive classroom practice in phonetics, conversation, and grammar. Focus on literature and films, with museum and theater performance component. (Taught in St. Petersburg in Russian and English depending on placement.) Prerequisite: Russian 102 or equivalent. Instructor: Staff. One course.

208AS. Intermediate Russian Language and Culture. CZ, FL Continuation of Russian 207AS. (Taught in St. Petersburg in Russian and English depending on placement.) Prerequisite: Russian 207AS or equivalent. Instructor: Staff. One course.

210FS. Islam and Orthodoxy. CCI, CZ Same as Russian 210S; open only to students in the Focus Program. Instructor: Staff. One course. C-L: Islamic Studies
210S. Dervishes, Saints and Other Holy Fools. CCI, CZ Introduction to the history, distinctive doctrines, institutions, controversies, and influences of Orthodox Christianity and Islam in Russia, Central Asia and the Caucasus, including issues related to identity formation, ideology and difference in religious discourse. Particular attention will be paid to the relationship of religious identity to other identity terms (tribal, clan, nation, state), to the different subjectivities made possible by differing ideologies and world views, and to the instrumental and ethical dimensions of identity claims, religious functions of monasticism and Sufi brotherhood, and explorations of the influence of both Orthodoxy and Islam on arts and literature. Instructor: Need. One course. C-L: Islamic Studies

211FS. The Empire's Western Front: Russian and Polish Cultures. ALP, CCI, CZ Same as Russian 211S; open only to students in the Focus Program. Instructor: Holmgren. One course.

211S. The Empire's Western Front: Russian and Polish Cultures. ALP, CCI, CZ Exploration through literature and film of the relationship between Russian and Polish cultures in the nineteenth and twentieth centuries when imperial Russia/Soviet Union figured as Poland's problematic "east," and subject state of Poland figured as Russia's problematic "west." Nineteenth century anti-tsarist uprisings, 1920 Soviet-Polish campaign, Poland's postwar sovietization, rise of Solidarity, construction of their respective national identity vis-a-vis an other imagined as foe or friend in fiction, drama, film, memoirs. Includes works by Pushkin and Dostoevsky; films by Andrzej Wajda. One course.

212. Intensive Intermediate Russian. FL Russian 203 and 204 combined. Two meetings daily, as well as daily computer and language laboratory work. Instructor: Staff. Two courses.

213. Accelerated Russian Language and Culture II. FL Continuation of Russian 112. Prerequisite: Russian 101, 112 or 111. Instructor: Andrews, Van Tuyl, and staff. One course.

214FS. Law and Globalization in Emerging Markets. CCI, SS Same as Russian 214S; open only to students in the Focus Program. Instructor: Newcity. One course. C-L: International Comparative Studies 277FS, Public Policy Studies 214FS

214S. Law and Globalization in Emerging Markets. CCI, SS The processes of law and economic reform in Eurasia and how they are shaped by external influences and domestic factors: effect of membership in the World Trade Organization, the European Union, the Council of Europe, NATO, and other such organizations; strategies followed to establish the rule of law and constitutionalism, protection of property ownership, human rights. One course. C-L: Public Policy Studies 214S

216FS. Neuroscience and Human Language. NS, SS One course. C-L: see Linguistics 216FS; also C-L: Neuroscience 116FS

216S. Neuroscience and Human Language. NS, SS One course. C-L: see Linguistics 216S; also C-L: Neuroscience 116S

217. Russian Art and Politics: 1800-Present. ALP, CCI, CZ Historical and contemporary engagement of visual culture-painting, sculpture, architecture, graphic arts, film, photography-with the political sphere in Russia from the early nineteenth century to the present. Interactions between artists, art critics, censors, government authorities, and the public indicating how visual culture both responded to demands from the political sphere and shaped the political discourse of the day. Instructor: Kachurin. One course. C-L: Art History 287

217FS. Russian Art and Politics. ALP, CCI, CZ Same as Russian 217, but open only to students in the FOCUS program. Instructor: Kachurin. One course. C-L: Art History 287FS

218S. The Diaghilev Ballet: 1909-1929. ALP, CCI, CZ, R, W One course. C-L: see Dance 326S; also C-L: Music 341S

221A. Russian Language Studies in St. Petersburg. CCI, FL Russian grammar, composition and textual analysis taught only in St. Petersburg for students participating in the semester program. Explicit analysis of historical and contemporary cultural representations and texts in language, literature and the verbal arts. Instructor: Staff. One course.

222A. Language, Culture, and Myth: The Slavic Proverb. ALP, CCI The sources of the Slavic proverb, the proverb as microtext of national stereotypes, and its function in modern literature and culture. West, South and East Slavic proverbs contrasted with other Indo-European language families. Theoretical aspects include explications of
the relationship of language and culture and problems of translation. Taught in English or Russian. Readings in Russian with excerpts from other Slavic languages. Taught in St. Petersburg, Russia. Instructor: Staff. One course.

223A. Contemporary Russian Media. CCI, EI, FL, SS Same as Russian 135 but taught only in St. Petersburg. Taught in Russian. Prerequisite: Russian 204 or equivalent. Instructor: Staff. One course. C-L: Visual and Media Studies 320A, International Comparative Studies, Arts of the Moving Image

224S. Russian Phonetics. CCI, FL Analysis of contemporary standard Russian literary pronunciation, phonology, and intonational structures. Prerequisite: Russian 204 or consent of instructor. Instructor: Staff. One course.


301S. Contemporary Russian Composition and Readings. CCI, FL Advanced grammar and syntax with intense composition component. Analytical readings in the original. Prerequisite: Russian 203 and 204, or equivalent. Instructor: Staff. One course.

302S. Contemporary Russian Composition and Readings. CCI, FL Continuation of Russian 301S. Prerequisite: Russian 301S. Instructor: Staff. One course.

307AS. Studies in the Russian Language and Culture. ALP, CCI, CZ, FL Analytical readings including grammatical and textual analysis. Additional work in phonetics and conversation. Literature, films, museums, and theater performances central for analysis and written assignments. (Taught in St. Petersburg in Russian.) Prerequisite: Russian 204 or equivalent. Instructor: Staff. One course. C-L: International Comparative Studies

308AS. Studies in the Russian Language and Culture. CCI, CZ, FL Continuation of Russian 307AS. Prerequisite: Russian 307AS or equivalent. Instructor: Staff. One course. C-L: International Comparative Studies

310. The Russian Fairy Tale and Its Cultural Legacy. ALP, CCI, CZ Introduction to Russia's extraordinary fairy tales and their rich legacy in modern Russian literature, music, visual and performing arts, and handicrafts. Reflects on the genesis of the the Russian fairy tale; samples thematic groups of tales (e.g., the "foolish" third son, stepmother-stepdaughter tales); reads tales as expressions of folk belief, works of oral art, explorations of the human psyche and human relations, and stylized reflections of their sociopolitical context. Also traces how certain tales have been reworked into other art forms. All texts in English translation. Instructor: Holmgren. One course.

311. The Quest for Identity: Russian Literature and Culture, 1800-1855. ALP, CCI, W Examines how Russian writers and artists distinguished imperial Russia's modern political, social, and cultural identity under "Western eyes." Topics include search for "truly Russian" models, topics, and styles; domestic debate between "Westernizing" and "Slavophile" camps; emergence of women writers; relations between urban and provincial cultures; connections between national identity formation and empire building. Course texts may include fiction, memoirs, and drama by Pushkin, Durova, Gogol, Lermontov, and Pavlova; social commentary by Belinsky and Herzen; works of fine art and folk culture. Instructor: staff. One course. C-L: International Comparative Studies 281, Religion 265

312. The Struggle for Justice and Faith: Russian Literature and Culture, 1855-1900. ALP, CCI, W Considers how Russian writers, artists and activists addressed 19th-century Russia's cursed questions of "who is to blame" and "what is to be done": specifically, how to reform an increasingly reactionary autocracy; how to bear witness for an impoverished underclass; what roles women should play in culture and politics; how to resist or improve on a soulless West; how to justify the existence of God in an unjust world. Course texts may include fiction and memoirs by Turgenev, Tolstoy, Dostoevsky, Kovalyskaya, Figner; works of fine art, drama, and opera. Instructor: staff. One course. C-L: International Comparative Studies

313. The Russian Novel. ALP, CCI, R Close reading of Tolstoy's Anna Karenina, Dostoevsky's Possessed, Andrey Bely's Petersburg, Bulgakov's Master and Margarita, Nabokov's The Gift, and Makine's Memoirs of My Russian Summers. Discussions will focus on these representative writers' changing perceptions of, and responses to social and ethical issues and of creativity, itself, as the genre evolved in the modern times between the 1870s and now. Final research paper required and can include in-depth discussion of one of the works or the comparison of one or more aspects of several texts. Taught in English. Instructor: Mickiewicz. One course.
314. The Devil in Russian Literature. ALP, CCI The symbolic and metaphorical system that surrounds the image of the Fiend; the figure of the Devil in his various manifestations through Russian folklore, culture, and literature. Taught in English. Instructor: Staff. One course.

315. Women and Russian Literature. ALP, CCI Issues of gender and society in women's writing in Russian from the eighteenth to the twentieth centuries. Both autobiographical writings and prose fiction. Discussions of whether Russian women's writings constitute a tradition and what role these works have played in Russian literature and culture. Taught in English. Instructor: Gheith. One course. C-L: Women's Studies, International Comparative Studies

316. Russian Short Fiction. ALP, CCI The history, development, and shifts of Russian short fiction in the nineteenth and twentieth centuries. Authors include Dostoevsky, Vovchok, Leskov, Chekhov, Gippius, and Zoshchenko. Topics include gender, genre, and national identity in historical/cultural context. Taught in English. Instructor: Gheith. One course. C-L: International Comparative Studies

320S. End of Life in Russia and U.S. CCI, EI, SS Brief history of hospice movement in US and Russia. Examine key moments in end of life issues in each country; focus on social attitudes to death and dying and their effects on end of life care. Sources include memoirs, fiction, theoretical works, and policy documents. Service learning course; includes work at sites such as the Unicorn Bereavement Center, a skilled nursing facility, or the state's attorney's office. Instructor: Gheith. One course. C-L: Global Health 322S, International Comparative Studies 321S

321. The New Russia: Reflections of Post-Soviet Reality in Literature and Film. ALP, CCI, EI Examination of fiction and film in the post-Soviet period. Topics include: crime and social breakdown in the 1990s and 2000s; transformations of classic character types (anti-hero, virgin-whore, swindler-rogue); religious and ethical quests; taboo-breaking themes. Works by authors Sorokin, Grishkovets, Pelevin, Petrushevskaia, Sadur, Shishkin, Minaev, Tolstaya, Akunin, Ulitskaya and filmmakers Bodrov, Rogozhin, Bekmambetov, Khlebnikov/Popogrebsky, Balabanov, and Sokurov. Readings and class discussions in English. Instructor: Apollonio. One course.

322S. Women in Contemporary Russian Society. ALP, CCI, CZ, R Explores the political, social, economic, and domestic challenges facing women in post-soviet Russia and analyzes Russian women's collective and individual responses through activism, organization, journalism, and the arts. Specific topics include women in official/oppositional politics, women and the market, women's health and physical welfare. Instructor: Holmgren. One course. C-L: Public Policy Studies 215S, Women's Studies, International Comparative Studies


324S. Chekhov for Writers. ALP, CCI, W Anton Chekhov as teacher and guide for students of the English and North American short story. Critical analysis combined with writing practicum in a workshop-format seminar. Topics addressed include the role of imitation and parody in the writing process; problems of translation; plagiarism and its limits; critical and scholarly approaches to the short story in the English and Russian traditions; literature across cultural and linguistic boundaries; dramatic versus narrative modes. Writing practicum in: literary criticism; creative imitation; close reading; comparative analysis; translation practice or analysis. Readings of works by Chekhov, Oates, Chandler, Mansfield, Malcolm and others. Instructors: Apollonio. One course.

325. Tolstoy and the Russian Experience. ALP, CCI, CZ, EI Historical approach to Tolstoy's depictions of major societal and ethical issues (e.g., war, peace, marriage, death, religion, relationships). Culture of salons, print culture, censorship, and changing political climate. Central questions on the relationship of fiction and history: uses of fiction for understanding history and dangers of such an approach. Readings include selected fiction of Tolstoy, excerpts from journals and letters, and critical and historical accounts of nineteenth-century Russia. Instructor: Gheith. One course. C-L: History 277

326. Tolstoy and Dostoevsky. ALP, CCI Selected representative short works and most of the major novels of Leo Tolstoy and Fyodor Dostoevsky. The great issues and their vivid dramatization will be considered in the light of the author's irreconcilable approaches to the human condition, culture, artistic goals, and narrative technique. Not open to students who have taken this course as 89S or have taken Russian 175 or 323. Instructor: Staff. One course.


330. Beat Generation/Russian New Wave: Cultural Dissent in the Cold War. ALP, CCI, CZ, EI, W Exploration of identity formation and cultural dissent in US and Soviet Union during Cold War through lens of Beat Generation and New Wave literature and film; explores cultural dissent in relation to both a given culture context but also considers how such dissent is read and appropriated in comparative contexts; introduces students to key figures/features of respective movements, placing these in historical context; figures include: Kerouac, Burroughs, Ginsberg, Snyder, R. Frank, Aksyonov, Bitov, Akhadmulina, Voznesensky, Visotsky, Tarkovsky and Yevtushenko. Instructor: Need or Gheith. One course. C-L: English 378, Literature 331


356. Imperial Russia 1700-1917. CCI, CZ, SS Russian imperial history from Peter the Great to Bolshevik Revolution: 1700-1917. Focus on formation and governance of multiethnic and multiconfessional Russian empire. Traces expansion of land-locked city state (Muscovy) into world power ruling from Eastern Europe to Alaska. Questions implications of Russia’s world-power status. Examines institutions of governance that created this empire and held its various ethnic, religious and ideological groups together for centuries. Readings of English translations of works of Russian literature and historiographic analyses aimed at developing a sound grounding in Russian imperial history and culture. Instructor: Tuna. One course. C-L: Slavic and Eurasian Studies 356, History 275

361. Language Technologies and Culture Acquisition. R, SS, STS Acquisition and application of sophisticated information technologies for developing models of language systems and culture. (Computer technologies include PDF, Unicode, Linux operating systems digitizing, XML, HTML, metatagging.) Examination of the controversies concerning the use of technologies in the study and acquisition of languages and culture. Focus on the impact of such technologies on the educational systems of the United States and Europe. Team taught (Linguistics and Computer Sciences specialist.). One course. C-L: Linguistics 361, Information Science and Information Studies
362. **Languages of the World.** CCI, SS One course. C-L: see Linguistics 202; also C-L: Cultural Anthropology 202, International Comparative Studies 210

363. **Theory and Practice of Translation.** CCI, FL Detailed study of the American, European and Slavic scholarly literature on translation combined with close analysis of existing literary and journalistic translations and a program of practical translation projects from English to Russian and Russian to English. Instructor: Apollonio. One course.


370. **Islam in Central Eurasia.** CCI, CZ, SS History of Central Eurasian Muslims. Focus on diversity and cultural vivacity. Examines early appearance of Islam in the region, the evolution of Muslim religious and cultural institutions under governance of Chingissid, Timurid, Russian and Chinese empires, the encounter of Central Eurasian Muslims with European modernity and their experience during Soviet and Chinese socialist experiments. Instructor: Tuna. One course. C-L: Slavic and Eurasian Studies 370, History 209, Religion 378, International Comparative Studies 370, Islamic Studies

371. **Russian Fiction and Film.** ALP, CCI Russia's turbulent history recounted through its literature and film. Short works by Russia's most famous authors (Dostoevsky, Tolstoy, Chekhov) as well as the writings of lesser-known, but equally important writers (Teffi, Vladimov); comparison of these written works with films made of the stories. Exploration of the main trends of Russian culture through its literature and film; focus on the differences between film and written narratives. Instructor: Gheith. One course.

371FS. **Dimensions of Memory: Russian Fiction and Film.** ALP, CCI This course is for Focus students only. Russia's turbulent history and role of memory in society recounted through its literature and film, including terrific recent film. Short works by Russia's most famous authors (Dostoevsky, Tolstoy, Chekhov) as well as the writings of lesser-known, important writers; comparison of written works with films made of the stories. Exploration of the main trends of Russian culture through its literature and film; focus on differences between film and written narrative and on visual art in recent film. Taught in English. Instructor: Gheith. One course.

372. **Studies in Contemporary Russian Culture and Cognition.** CCI, CZ, SS In-depth exposure to theories of culture and cognition with special attention to the study of Russian culture and Russian contributions to cognitive science and linguistics. Instructor: Andrews. One course.

373S. **Russian Language and Culture through Film.** CCI, FL, SS, STS Study of Russian cultural paradigms and constructs of self and other as demonstrated in Russian and Soviet films, primarily from 1960s to the present. Special attention given to the analysis of linguistic constructs and their cultural semantic content as well as comparative analyses of Soviet and Russian culture and Russian and European/American culture. Film and computer technology, as well as access to these technologies and their implementation, are a central part of the cultural context. Prerequisite: Russian 301S or equivalent or consent of instructor. Instructor: Maksimova. One course. C-L: Visual and Media Studies 317S

374S. **Russian Language and Culture through Film II.** ALP, CCI, FL, SS, STS Continuation of Russian 373S. Analysis of Russian cultural paradigms and linguistic issues through contemporary Russian and Soviet film. Film and computer technology, as well as access to these technologies and their implementation, are a central part of the cultural context. Prerequisite: Russian 301S or equivalent, or consent of instructor. Instructors: Maksimova. One course. C-L: Visual and Media Studies 319S

375. **Russian Language and Culture through Theatre.** ALP, CCI, FL, SS Study of Russian cultural paradigms and constructs of self and other as demonstrated in Russian and Soviet theatre (texts and performance), primarily from the 1920s to the present. Special attention given to the analysis of cultural, linguistic, and semantic constructs as well as comparative analyses of Soviet and Russian culture and Russian and European/American culture. Prerequisite: Russian 301S or equivalent or consent of instructor. Instructors: Maksimova, McAuliffe, and Viktorov. One course.

375S. **Painting Russia Red: Early Soviet Culture, 1917-1934.** ALP, CCI, CZ Through film, drama, fiction, memoir, and eyewitness accounts examines how citizens lived and artists responded to the bold, often traumatic experimentation of the early Soviet state. Topics include the impact of the Bolshevik and Stalinist revolutions on the
public and private spheres, individual identity, and cultural production; the fashioning and refashioning of gender roles; the cultivation of modern urban life; and the consequences of the Soviet campaign to master nature. Instructor: staff. One course. C-L: Art History 282S

376. Russian Language and Culture through Music. ALP, CCI, FL, SS Study of Russian cultural paradigms and constructs of self and other as demonstrated in Russian and Soviet folk, popular, and classical music (texts and performance), primarily twentieth century to the present. Special attention given to the analysis of cultural, linguistic, and semantic constructs as well as comparative analyses of Russian and Russian culture and Russian and European/American culture. Prerequisite: Russian 301S or equivalent or consent of instructor. Instructors: Andrews and Mickiewicz. One course.


380S. Russian Culture in the Era of Terror: A Reexamination. ALP, CCI, CZ, R Readings from various sources, such as recently published diaries and literary works; film and other critical and historical material. The ‘era of the great terror’ (1934-39) seen through cultural production, its reception through everyday life narratives and contemporary ideology critique. Taught in English. Instructor: Gheith. One course. C-L: International Comparative Studies

381. Russian Revolutionary Cinema. CCI, CZ One course. C-L: see History 281; also C-L: Arts of the Moving Image 264, Marxism and Society


383. The Actress: Celebrity and the Woman. ALP, CCI, CZ Explores through fiction, film, autobiographies, and biographies the significance and influence of the actress (on stage and screen) from eighteenth century to present day. Highlighted topics: actress’s self-image and perception of her art; relationship between her public profession and private life; how she reflects/sets contemporary standards for beauty and lifestyle; how she provokes public debate over women’s “appropriate” sexual, familial, professional, and public roles; her function as symbol/role model for her gender, race, nation. Includes Sarah Bernhardt’s memoirs, Chekhov’s The Seagull, Susan Sontag’s In America, films All About Eve and Mommie Dearest. Taught in English. Instructor: Holmgren. One course. C-L: Women’s Studies 260, Theater Studies 323, International Comparative Studies 383

384. Movies of the World/The World of Movies. ALP, CCI, STS One course. C-L: see Literature 313; also C-L: German 363, Arts of the Moving Image 248, Islamic Studies

385S. The Frontiers and Minorities of the Tsarist and Soviet Empires. CCI, CZ, EI, SS Introduces multiconfessional, multilingual, multicultural composition of Russian & Soviet empires with questions concerning minorities in an imperial context. Learn about construction, interaction, and manipulation of cultures and identities. Balance Tsarist & Soviet efforts to modernize and Russify minorities, such as Ashkenazi Jews, Poles, & Turkic Muslims, against negotiated transformation and cultural resilience of minorities. Recognizes cultural diversity in an imperial setting and provides better appreciation of Russian and Eurasian realities and other multicultural contexts such as America. No Russian required. Instructor: Tuna. One course. C-L: Slavic and Eurasian Studies 372S, History 280S, International Comparative Studies 372S
388S. Back in the U.S.S.R.: Everyday Soviet Culture, 1956-1989. ALP, CCI, CZ Draws on film, fiction, songs, oral histories, and anthropological studies to explore the cultural expressions, lifestyles, ethical values, and sociopolitical concerns of postwar/Cold War generations of Soviet citizens. Highlighted topics: youth culture, the new consumerism, coping with the Stalinist legacy, politically dissident art and actions, the retreat into private life and nature, the rise of nationalisms. Instructor: Holmgren. One course. C-L: Cultural Anthropology 388S

390. Special Topics in Russian Culture. Special topics in Russian culture. Topics vary each semester. Instructor: Staff. One course.

399. Global Russia. CCI, CZ, EI, SS Globalization of Russian culture as manifested in popular and academic cultural forms, including political ideologies, media and artistic texts, film, theater and television, markets, educational and legal institutions, historical and contemporary social movements. Examination of ethical issues in context of such topics as the relationship between church and state; the evolution of a totalitarian government into a democratic state; reproductive rights; the struggle against corruption in education, finance, police force; the role of censorship; views of citizenship, patriotism, valor, and treason; historical perspectives on prison camps, abuses of psychiatry. Instructor: Andrews. One course. C-L: Cultural Anthropology 399, Public Policy Studies 223, International Comparative Studies

401. Advanced Russian. CCI, FL Intensive exposure to Russian word formation with an emphasis on the students' refinement of oral and written language skills. Development of discourse strategies and writing style through textual analysis, compositions and essays. Taught in Russian. Prerequisite: Russian 302S or consent of instructor. Instructor: Maksimova. One course. C-L: International Comparative Studies

402. Advanced Russian: Readings, Translation, and Syntax. CCI, FL Intensive reading and conversation with emphasis on the analysis of twentieth century Russian literary and culture texts. Russian media, including television and films. Prerequisite: Russian 401 or consent of instructor. Instructor: Maksimova. One course.

433S. Soviet Life through the Camera's Lens. ALP, CCI, CZ, FL An in-depth look at images and representations of Soviet life through Soviet and Russian film. Film texts include films shown in theatres, television films and forbidden films/films with a very limited distribution. Emphasis on the period from the mid-1970s through 1991. Course taught in Russian. Prerequisite: Russian 301S or equivalent or consent of instructor. Instructor: Maksimova. One course. C-L: Slavic and Eurasian Studies 433S, Visual and Media Studies 435S

439S. Neuroscience and Multilingualism. NS, R, STS One course. C-L: see Linguistics 473S

490. Special Topics in Russian and American Culture. CCI Addresses the broad, interdisciplinary issue of identity and otherness while studying specifically what happens when the cultures of Russia and the United States come into contact. Taught in English. Instructor: Van Tuyl. One course. C-L: International Comparative Studies

490S. Special Topics in Russian and American Culture. Seminar version of Russian 490. Instructor: Staff. One course.

493. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


495S. Senior Honors Seminar. R, W Introduction to methods of research and writing, including selection of thesis topics, preliminary research and organization, and writing of the thesis. In-depth analysis of Russian or other Slavic language texts required. Consent of the instructor or director of undergraduate studies required. Instructor: Staff. One course.

496S. Senior Honors Seminar. R, W Continuation of Russian 495S. Consent of the director of undergraduate studies required. Instructor: Staff. One course.

505. Semiotics of Culture. ALP, CCI, CZ, R The theory of literature, arts, ethnicity, modernity, and culture from a cross-cultural perspective. Texts include The theory of literature, arts, ethnicity, modernity, and culture from a cross-cultural perspective. Texts include the critical works of Lotman and the Tartu School, Bakhtin, Eco, Kristeva,
Voloshinov, Medvedev, Barthes, Todorov, Jakobson, Ivanov, and Sebeok, as well as authentic culture texts from Slavic and European traditions. Research project required. Instructor: Andrews. One course. C-L: Linguistics 505


507. Stylistic and Compositional Elements of Scholarly Russian. CCI, FL. Intensive study of Russian scholarly and scientific texts from a variety of disciplines, including biology, business, anthropology, economics, law, history, mathematics, physics, political sciences, sociology, psychology, linguistics, and literary criticism. Mastery of stylistic and discourse strategies. Analysis of cultural patterning in textual construction in the humanities, social and natural sciences. Taught in Russian. Prerequisite: Russian 204 or consent of instructor. Instructor: Maksimova. One course.

508. Legal and Business Russian. CCI, CZ, EI, FL. Analysis of Russian language and culture in the area of legal studies and conducting business in or with Russia and other Commonwealth of Independent States countries. Primary materials include legal codes, law journals, contracts, advertising, financial documents, redactions of the Soviet and Russian constitutions (1905-present). Specific attention given to the analysis of evolution of property and ownership legislation, the workings of the legislative, executive and judicial branches of the Russian Federation government and contrastive analysis of Soviet, Russian (and where relevant Western) systems of jurisprudence. Taught in Russian. Prerequisite: Russian 302S or equivalent. Instructor: Andrews or Maksimova. One course.

509. Theory and Methods of Comparative Linguistics. CCI, R, SS. Diachronic and synchronic approaches to the study of comparative linguistics in phonology, morphology, morphophonemics, syntax, and lexical categories in the context of the world's languages. Both Indo-European and non-Indo-European languages. Topics include theories of reconstruction, languages in contact, abductive processes, questions of linguistic typology and cultural-based approaches to the analytical study of human languages. Research project required. Instructor: Andrews. One course.

510. Cognitive and Neurolinguistics. NS, R, SS. One course. C-L: see Linguistics 501; also C-L: Neuroscience 501S

511. The Struggle for Justice and Faith: Russian Literature and Culture, 1855-1900. ALP, CCI. Considers how Russian writers, artists, and activists addressed 19th-century Russia's cursed questions of "who is to blame" and "what is to be done": specifically, how to reform an increasingly reactionary autocracy; how to bear witness for an impoverished underclass; what roles women should play in culture and politics; how to resist or improve on a soulless West; how to justify the existence of God in an unjust world. Course texts may include fiction and memoirs by Turgenev, Tolstoy, Dostoevsky, Kovalevskaia, Figner; works of fine art, drama, and opera. Instructor: staff. One course.

512. Women and Russian Literature. ALP, CCI, FL. Issues of gender and society in women's writing in Russian from the eighteenth to the twentieth centuries. Both autobiographical writings and prose fiction. Discussions of whether Russian women's writings constitute a tradition and what role these works have played in Russian literature and culture. Taught in English. Readings in Russian. Instructor: Gheith. One course. C-L: Women's Studies, International Comparative Studies

513. The Russian Novel. ALP, CCI, R. Close reading of Tolstoy's Anna Karenina, Dostoevsky's Possessed, Andrey Bely's Petersburg, Bulgakov's Master and Margarita, Nabokov's The Gift, and Makine's Memoirs of My Russian Summers. Discussions will focus on these representative writers' changing perceptions of, and responses to social and ethical issues and of creativity, itself, as the genre evolved in the modern times between the 1870s and now. Final research paper required and can include in-depth discussion of one of the works or the comparison of one or more aspects of several texts. Taught in English. Readings in Russian. Instructor: Mickiewicz. One course.

514. Russian Modernism. ALP, CCI. Russian culture between the 1890s and the 1920s, including visual, musical, literary arts, and developments ranging from Neo-Christian mysticism, cosmism, synthesis of the arts, and revolutionary activism. Focus on literary-philosophical thought of that period. Taught in English. Instructor: Mickiewicz. One course.

515S. The Russian Intelligentsia and the Origins of the Revolution. CZ, R. One course. C-L: see History 535S; also C-L: International Comparative Studies
516. **Media and Social Change.** CCI, R, SS, STS One course. C-L: see Policy Journalism and Media Studies 676; also C-L: Political Science 619, Public Policy Studies 676, International Comparative Studies, Information Science and Information Studies, Policy Journalism and Media Studies

517. **Russian Poetry.** Focus on nineteenth and twentieth centuries, including the Golden Age and the Silver Age. Authors include Pushkin, Lermontov, Bely, Blok, Akhmatova, Tsvetaeva, Mandelshtam, Pasternak, and Mayakovski. Taught in English or Russian, according to students' Russian language proficiency. Russian texts. Instructor: Van Tuyl. One course.


525. **Tolstoy and the Russian Experience.** ALP, CCI, CZ, EI Historical approach to Tolstoy's depictions of major societal and ethical issues (e.g., war, peace, marriage, death, religion, relationships). Culture of salons, print culture, censorship, and changing political climate. Central questions on the relationship of fiction and history: uses of fiction for understanding history and dangers of such an approach. Readings include selected fiction of Tolstoy, excerpts from journals and letters, and critical and historical accounts of nineteenth-century Russia. Similar to Russian 325 but requires additional assignments. Instructor: Apollonio or Gheith. One course.

526. **Tolstoy.** ALP, EI Introduction to life, works, and criticism, including Tolstoy's philosophical and ethical discourse. Readings include: *War and Peace*, *Anna Karenina*, the shorter fiction, dramatic works and essays. Taught in English. Readings in Russian. Instructor: Van Tuyl. One course.

527S. **Chekhov.** ALP, CCI Drama and prose works. Readings in Russian. Instructor: Apollonio. One course.

528S. **Bunin: Mystery of the Russian Soul and Metaphysical Memory.** ALP, CCI, FL, R Same as Russian 328S, but includes additional assignments. Taught in Russian. Intensive critical component. Instructor: Maksimova. One course.

529S. **Zamyatin.** ALP, CCI, FL, R The novel *We*, short fiction, plays, and critical essays. In-depth textual analysis and study of Russian, American, and European criticism on Zamyatin, including his role in science fiction and anti-utopian literature in Russia and the West. Readings in Russian and English. Final research project required. Instructor: Andrews or Maksimova. One course.


551. **Russian Stylistics and Conversation.** ALP, CCI, FL, W Refinement of stylistic control and range in spoken and written Russian through intensive textual analysis, including literary (prose and poetry) texts, popular and scholarly journals, and film. Emphasis on fluent discursive skills, as well as development of expository prose style and rhetorical strategies. Taught in Russian. Prerequisite: Russian 401 and 402, or consent of instructor. Instructor: Maksimova. One course.

552. **Russian Stylistics and Conversation.** ALP, CCI, FL, W Continuation of Russian 551. Prerequisite: Russian 401 and 402, or consent of instructor. Instructor: Maksimova. Variable credit.

561S. **Soviet Art after Stalin 1956-1991.** ALP, CCI, CZ Dissident art, graphic design, fine arts and architecture in context of Cold War and decline of totalitarianism. Themes include Soviet artists and the west, and representation of women in times of flux. Open to juniors and seniors and graduate students who must follow a more comprehensive reading program and complete upper level assignments. Instructor: Kachurin. One course. C-L: Art History 544S

563. **Theory and Practice of Translation.** CCI, FL Detailed study of the American, European, and Slavic scholarly literature on translation combined with close analysis of existing literary and journalistic translations and a program of practical translation exercises and projects from English to Russian and Russian to English. Prerequisite: three years of Russian language study or consent of instructor. Instructor: Apollonio. One course.
564. **Russian and Slavic Linguistics. SS** Emphasis on synchronic linguistic theory focusing on East Slavic and Russian, but including diachronic approaches, and West and South Slavic languages. Focus on phonological, morphological, semantic and syntactic structures of Contemporary Standard Russian and modern Slavic languages. Instructor: Andrews. One course. C-L: Linguistics 564, Slavic and Eurasian Studies 564


619S. **The Empire's Western Front: Russian and Polish Cultures. ALP, CCI, CZ** Exploration through literature and film of the relationship between Russian and Polish cultures in the nineteenth and twentieth centuries when imperial Russia/Soviet Union figured as Poland's problematic "east," and subject state of Poland figured as Russia's problematic "west." Nineteenth century anti-tsarist uprisings, 1920 Soviet-Polish campaign, Poland's postwar sovietization, rise of Solidarity, construction of their respective national identity vis-a-vis an other imagined as foe or friend in fiction, drama, film, memoirs. Includes works by Pushkin and Dostoevsky; films by Andrzej Wajda. One course.

690S. **Special Topics. CCI** Seminars in advanced topics, designed for seniors and graduate students. Instructor: Staff. One course.

**Serbian and Croatian**

**Courses in Serbian and Croatian (SERBCRO)**

490AS. **Duke-Administered Study Abroad: Advanced Special Topics in Serbian and Croatian.** Topics differ by section. Instructor: Staff. One course.

**Turkish**

**Courses in Turkish (TURKISH)**

101. **Elementary Turkish. FL** Introduction to understanding, speaking, reading, and writing Turkish. Instructor: Staff. One course.

102. **Elementary Turkish. FL** Introduction to understanding, speaking, reading, and writing Turkish. Second half of Turkish 101, 102. Prerequisite: Turkish 101. Instructor: Staff. One course.

112. **Accelerated Turkish Language and Culture I. FL** Accelerated study of contemporary Turkish language and culture. Intended for students with no previous knowledge of Turkish: speaking, reading, writing, grammar and listening comprehension, and appropriate use of cultural constructs. Instructor: Goknar. One course. C-L: Islamic Studies

203. **Intermediate Turkish. FL** Classroom and laboratory practice in spoken and written patterns. Readings in contemporary literature. Prerequisites: Turkish 101 and 102, 14, or consent of instructor. Instructor: Staff. One course.

203T. **Intermediate Turkish Tutorial. FL** Classroom and laboratory practice in spoken and written patterns. Readings in contemporary literature. Prerequisites: Turkish 101, 102, 112, or consent of instructor. Instructor: Staff. One course.

204. **Intermediate Turkish. FL** Classroom and laboratory practice in spoken and written Turkish in various cultural contexts. Readings/viewings in a variety of original source material from newspapers to films. Prerequisites: Turkish 203 or equivalent. Instructor: Goknar. One course.

208FS. **The Turks: From Ottoman Empire to European Union. ALP, CCI, CZ** Readings in history, cultural studies, and literature to examine transformation in Ottoman identity during rise and decline of empire. Topics include Islam, art and architecture, historiography, and ethnicity. Social and political forces that led to Ottoman successes and failure, including religious tolerance, military power, and Capitulations. Interdisciplinary focus. Taught in English. Open only to students in the Focus Program. Instructor: Goknar. One course.

209FS. **Geopolitics & Globalization: From Bosnia to Afghanistan. ALP, CCI, CZ** Study of countries on the geographical periphery of the commonly defined Middle East: Bosnia, Turkey, Armenia, Chechnya, Iran, and
Afghanistan. All of these countries have deep Middle Eastern ties and traditions, sizeable communities with Middle Eastern origins and connections, and recent histories of cultural and ethnic conflict and violence. Exploration of how the Middle Eastern components and histories in these conflicts have been distorted and obscured as the conflicts have been depicted through the lenses of U.S. or Soviet/Russian geopolitical interests. Instructor: Goknar. One course. C-L: Slavic and Eurasian Studies 209FS, Islamic Studies

213. Accelerated Turkish Language and Culture II. CZ, FL Continuation of Turkish 112. Intermediate level of proficiency in five areas, grammar, speaking, listening comprehension, reading and writing. Language taught embedded in cultural constructs. Prerequisite: Turkish 112 or equivalent. Instructor: Goknar. One course. C-L: Islamic Studies


279FS. Turkey: Muslim and Modern. CCI, CZ, SS Turkish history from the 18th century to the present. Turkey as strategic ally of the US; candidate for membership in European Union; first Muslim country to adopt democracy, secularism, and Westernization, and as political, cultural, and economic model for other Muslim countries. Focus on Turkish people's encounter with modernity as Muslims; questions about contradictions and promises of Muslim and modern experience; informed consideration of Islam's encounter with the West. No prerequisites. No knowledge of Turkish required. Instructor: Tuna. One course. C-L: Slavic and Eurasian Studies 279FS, History 239FS, Islamic Studies

279S. Turkey: Muslim and Modern. CCI, CZ, SS Turkish history from the 18th century to the present. Turkey as strategic ally of the US; candidate for membership in European Union; first Muslim country to adopt democracy, secularism, and Westernization, and as political, cultural, and economic model for other Muslim countries. Focus on Turkish people's encounter with modernity as Muslims; questions about contradictions and promises of Muslim and modern experience; informed consideration of Islam's encounter with the West. No prerequisites. No knowledge of Turkish required. Instructor: Tuna. One course. C-L: Slavic and Eurasian Studies 279S, History 239S


301S. Contemporary Turkish Composition and Readings. CCI, FL Advanced grammar and syntax with intense composition component. Analytical readings in the original. Prerequisite: Turkish 70 or equivalent. Instructor: Staff. One course.

302S. Contemporary Turkish Composition and Readings. CCI, FL Continuation of Turkish 301S. Prerequisite: Turkish 301S. Instructor: Staff. One course.

305S. The Middle East through Historical Literature. ALP, CCI, CZ The Middle East as seen through historical fiction, travelogues, and memoir (and some film). Relationships between history and literature and identity. Secondary readings in imperialism, nationalism, violence, gender, and colonialism. One course. C-L: Asian & Middle Eastern Studies 387S, Islamic Studies

307S. The City of Two Continents: Istanbul in Literature and Film. ALP, CCI, CZ, EI Presents Istanbul, a city located in both Europe and Asia, as a site of political identities in conflict. Overview of contemporary literature and film set in Istanbul. Studies ethical implications of textual and visual representations of various people and groups interacting in urban spaces. Addresses the reasons for Turkey's love-hate relationship with the Ottoman past and Europe. Historical background, modernity, identity, Islam, and cosmopolitanism. Knowledge of Turkish not required. Instructor: Goknar. One course. C-L: Slavic and Eurasian Studies 307S, Islamic Studies

308. The Turks: From Ottoman Empire to European Union. ALP, CCI, CZ, EI, R Readings in cultural history and literature to examine transformations in Turkish identity from the Ottoman era to EU accession. Discussion of the "gazi thesis", the "sultanate of women", religious tolerance (millets), conversion, modernity and nationalism. Secondary topics include Sufism, Islam, gender, and historiography. Interdisciplinary focus. Taught in English. Instructor: Goknar. One course. C-L: Religion 228, History 212, Asian & Middle Eastern Studies 287, Islamic Studies

342A. Between Europe and Asia: The Geopolitics of Istanbul From Occupation To Globalization. CCI, CZ, EI Istanbul as a site of historical, political and cultural interaction between Europe and Turkey. Approach framed by
two important geopolitical events separated by nearly a century: first, the Allied occupation of Istanbul after WWI, which gave rise to the modern Middle East, and second, Turkey's accession to the European Union, a contested transnational process that officially began in 2005. Examination of issues arising from Turkey's separation from Europe as a Muslim country and its potential reintegration as a functioning democracy. Offered only in the Duke-in-Turkey study abroad program. Instructor: Goknar. One course. C-L: Asian & Middle Eastern Studies 389A, Slavic and Eurasian Studies 342A

343SA. Culture and Politics in Turkey and the Middle East. CCI, CZ, EI Examination of cultural identity and politics in Turkey and modern Middle East. Using Istanbul as a classroom, considers how representations of the Middle East are contested and gendered, analyzing such icons as "veiled women" and "terrorist men" and political implications of such representations. Topics include emergence of new social movements and paradoxes of secularism, Islamism, globalization, and neoliberalism in various settings. Offered only in the Duke in Turkey program. Instructor: Göknar, Gökariksel. One course. C-L: Asian & Middle Eastern Studies 303SA, Slavic and Eurasian Studies 343SA, Political Science 213SA

345S. Orhan Pamuk and World Literature. ALP, CCI, CZ, EI Studies the novels and non-fiction of Nobel Laureate Orhan Pamuk as an introduction into ethics and politics of World Literature. Addresses social consequences of Pamuk's role as an intellectual-author who mediates between the national tradition and an international canon. Political implications of Sufism, cultural revolution, Orientalism, and post-colonialism. Secondary focus on cosmopolitan Islam and the Ottoman Empire. No prerequisites; taught in English. Instructor: Göknar. One course. C-L: Slavic and Eurasian Studies 345S, Asian & Middle Eastern Studies 382S, Literature 276S, International Comparative Studies 345S, Islamic Studies

371S. Tracing Muslim Identities in Eurasia. ALP, CCI, CZ Historical representations of Muslim people and communities in Eurasia through travelogues, fiction, memoir, and film in ethnically and religiously contested regions of Central Asia, the Ottoman Empire/Turkey, and the Balkans. Instructor: Goknar. One course. C-L: Asian & Middle Eastern Studies 289S, Islamic Studies

433. The New Middle East. CCI, EI, SS One course. C-L: see Cultural Anthropology 433; also C-L: Asian & Middle Eastern Studies 419

607S. The City of Two Continents: Istanbul in Literature and Film. ALP, CCI, CZ, EI Presents Istanbul, a city located in both Europe and Asia, as a site of political identities in conflict. Overview of contemporary literature and film set in Istanbul. Studies ethical implications of textual and visual representations of various people and groups interacting in urban spaces. Addresses the reasons for Turkey's love-hate relationship with the Ottoman past and Europe. Historical background, modernity, identity, Islam, and cosmopolitanism. Open to graduate students who must follow a comprehensive reading program and complete graduate-level assignments. Knowledge of Turkish not required. Instructor: Göknar. One course. C-L: Islamic Studies

608. The Turks: From Ottoman Empire to European Union. CCI, R Reading and assessment of new scholarship on Ottoman culture, society, politics, and state. Supplemented by critical texts on historiography, identity, gender, religion, and orientalism. Topics include "gazi thesis," secular and Islamic law, "Kadi justice," everyday life, and role of women. Final research project with interdisciplinary focus. Instructor: Goknar. One course. C-L: Islamic Studies

645S. Orhan Pamuk and World Literature. ALP, CCI, CZ, EI Studies the novels and non-fiction of Nobel Laureate Orhan Pamuk as an introduction into ethics and politics of World Literature. Addresses social consequences of Pamuk's role as an intellectual-author who mediates between the national tradition and an international canon. Political implications of Sufism, cultural revolution, Orientalism, and post-colonialism. Secondary focus on cosmopolitan Islam and the Ottoman Empire. Open to graduate students who must follow a comprehensive reading program and complete graduate-level assignments. No prerequisites; taught in English. Instructor: Göknar. One course.

690S. Special Topics. Seminars in advanced topics, designed for seniors and graduate students. Instructor: Staff. One course.
Ukrainian

Courses in Ukrainian (UKRAIN)


Uzbek

Courses in Uzbek (UZBEK)

112. Accelerated Uzbek Language and Culture I. FL Accelerated study of contemporary Uzbek language and culture designed to get students to intermediate level in one semester. No previous knowledge of Uzbek required. Focus on speaking, reading, writing, grammar and listening comprehension, as well as appropriate use of cultural constructs. Instructor: Staff. One course.

213. Accelerated Uzbek Language and Culture II. CZ, FL Continuation of UZBEK 112. Accelerated intermediate level course designed to get students towards advanced level in one semester. Focus on speaking, reading, writing, grammar and listening comprehension. Language taught embedded in cultural contexts. Prerequisite: Uzbek 112 or equivalent. Instructor: Staff. One course.

301S. Contemporary Uzbek Composition and Readings I. CCI, FL Advanced grammar and syntax with intensive composition component. Analytical readings in the original. Prerequisite: Uzbek 213. Instructor: Staff. One course.

302S. Contemporary Uzbek Composition and Readings II. CCI, FL Continuation of Uzbek 301S. Prerequisite: Uzbek 301S. Instructor: Staff. One course.

The Russian Major

Major Requirements. The Russian major requires a minimum of ten Russian courses in the department, eight of which must be at the 200 level or above. All majors must take the following courses: Russian 203, 204, 301S, 302S, 401, 402 or equivalent. Each major is additionally required to take four courses, of which at least three are primarily focus on works of Russian culture (oral and written poetry and prose, drama, music, film, visual arts). The department urges students to consider coursework that would include at least one 500 level course.

The Slavic and Eurasian Studies Major

The Slavic and Eurasian studies major is designed to enable students to gain knowledge about Slavic and Eurasian languages and cultures as well as the interrelated histories and contemporary interactions between these cultures.

Major Requirements. To earn a major in Slavic and Eurasian studies, students must complete ten courses, eight of which must be at the 200 level or above. Required courses are one approved introductory course to the major (including, but not restricted to, Russian 350, Russian 370, Slavic and Eurasian Studies 373S, Slavic and Eurasian Studies 386S); one capstone seminar (Slavic and Eurasian Studies 423S) in their junior or senior year, which includes a significant research component; four language courses above the 102 level for Polish and Turkish (through 302S) or four language courses above the 203-204 level for Russian; and four content (elective) courses on Slavic and Eurasian studies with no more than two of these on an exclusively Slavic topic. All 300-level and above courses with the designators Polish, Turkish, and Uzbek may count toward the major. The Department of Slavic and Eurasian Studies also offers Romanian and Persian on a regular basis, and Georgian on a semiregular basis. These languages can be counted as fulfilling the language requirement with prior approval from the director of undergraduate studies. To determine if specific courses meet requirements for the major, students should consult with the director of undergraduate studies in the Slavic and Eurasian studies department.

Students are encouraged to study abroad in a country that is related to the geographical area covered by the major.

The Slavic and Eurasian studies department regularly offers a Focus cluster, “Between Europe and Asia: Explorations in Culture, Law, and Cognitive Science,” in the fall semester and two Focus seminars from this cluster may count toward the Slavic and Eurasian Studies major.
Departmental Graduation with Distinction
The department offers work leading to Graduation with Distinction. See the section on honors in this bulletin and the departmental director of undergraduate studies.

The Minor
Minors are offered in Russian culture and language, Russian literature in translation, and Turkish language and culture.

Russian Culture and Language
Requirements: Five courses at the 200 level or above. Two of these courses must be in the Russian language.

Russian Literature in Translation
Requirements: Five courses, three of which must be at the 200 level or above.

Turkish Language and Culture
Requirements: Five courses at the 200 level or above. Two of these courses must be in the Turkish language.

Polish Language and Culture
Requirements: Five courses at the 200 level or above. Two of these courses must be in the Polish language.

Sociology
Professor Bonilla-Silva, Chair; Associate Professor of the Practice Bach, Director of Undergraduate Studies; Professors Bonilla-Silva, Burton, Chaves, George, Gereffi, Gao, Harris, Keister, Land, Moody, O'Rand, Smith-Lovin, Spenner; Associate Professors Healy, Read, Vaisey. Assistant Professors Streib and Yang. Professors Emeriti Lin, Lynch, Maddox, McPherson, Preiss, Simpson, Smith, Tiryakian, and Wilson; Professor of the Practice Merkx; Associate Professor of the Practice Bach; Secondary Appointments and Affiliated Faculty: Professors Cook (public policy), Frankenberg (public policy), James (public policy), Lewin (Fuqua), O'Barr (cultural anthropology), Yi (medicine); Associate Professors Baker (cultural anthropology), Crichlow (African and African American studies), Cummings (Fuqua), Gold (psychiatry and aging center) Hasso (women's studies), Merli (public policy); Research Professors Stallard and Yashin; Associate Research Professor Shanahan (ethics); Visiting Professors Jones and Reeves; Visiting Assistant Professor Hovsepian; Visiting Lecturers Grody and Nordgren

A major or a minor is available in this department.
Sociology combines an appreciation of human beings’ capacity for self-realization with a scientific understanding of the causes and consequences of their social behavior. Each course aims to develop both the analytical and critical skills necessary for understanding and evaluating social institutions and social change. Emphasis is upon contemporary research and the use of sociological data in tackling social problems. Active involvement in the learning process is fostered through seminars, independent study, honors work, and internships.

Courses in Sociology (SOCIOL)
89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.
108. Introduction to Canada (B). SS One course. C-L: see Canadian Studies 101; also C-L: History 128
110D. Sociological Inquiry. CCI, EI, SS Introduction to social networks, groups, organizations and institutions with a focus on the contemporary US. The impact of technology on social interaction and cultural change. Investigation of cultural and social construction of individual characteristics (e.g., race, gender) as well as of scientific and professional standards. Ethical controversies surrounding health care, education, income inequality, and related topics. Course will help prepare students for the social and behavioral science portion of the MCAT exam. Instructor: Vaisey. One course.
111. Contemporary Social Problems. CCI, SS Comparative analysis of social problems across historical periods, nations, and social groups by gender, race/ethnicity, social class, and culture. Major topics: deviant behavior, social conflict and inequality, human progress and social change. Emphasis on research issues, especially how and to what degree the understanding of social problems is a direct result of the inductive processes used to define social problems.
and the research methods and procedures used to investigate them. Instructor: Bach or Land. One course. C-L: Child Policy Research


176FS. Identity, Action, and Emotion. CCI, R, SS Uses mathematical models to describe how people import cultural meanings into social interactions. Explains how people maintain identities in role relationships and group interactions. Explores a theory of how people perform normal institutional roles, respond to odd situations, and try to feel good about themselves. Uses computer simulations to model self, identity and emotional processes. Involves reading academic literature, collecting evidence, giving research presentations, and writing a research proposal. Teaches how to think scientifically about routine and unexpected parts of everyday life. Instructor: Smith-Lovin. One course.

177FS. Muslims in the West: Middle East Diasporas. CCI, SS Course will explore Muslim migration and assimilation from the Middle East to the West, primarily to the United States. Explore and compare cultural assimilation of Muslims in the UK and the US as well as how these countries and their Muslim communities respond and relate to events in the Middle East. Instructor: Read. One course.

178FS. Refugees, Rights, and Resettlement. CCI, EI, SS 35 million refugees and internally displaced persons in the world. A comparative historical overview of international refugee policy and law dealing with this growing population. Students will grapple with the ethical challenges posed by humanitarian intervention on behalf of refugees and the often unintended consequences of such policies. Students examine case studies to determine how different models for dealing with refugee resettlement affect the life chances of refugees. Service learning course. Students will work with refugees from Bhutan, Burma and Iraq recently resettled in Durham. Instructor consent required. Instructor: Shanahan. One course. C-L: Study of Ethics 199FS

179FS. The Entrepreneurial Path. SS Overview of the important elements of entrepreneurship, including the players involved, social structures, business processes, and economic issues. Topics covered include the historical evolution of entrepreneurship, review of the key players that make entrepreneurship flourish (venture capitalists, incubators, etc.), the social and psychological characteristics of entrepreneurs, the fundamental business elements of entrepreneurship, including analyzing markets, creating a business plan, understanding strategy, and financial issues associated with start-ups. Instructor: Jones. One course.

180S. Society, the Self, and the Natural World. CCI, EI, SS Exploration of changing and/or contrasting perceptions, studying how our perceptions are conditioned by the times we live in and reigning assumptions of our societies. Three course components taught by faculty in each discipline including: exploration of perceptions of the self through the arts, the changing role of women in society; and examination of science and society conflicts. Open only to Baldwin Scholars. Consent of instructor required. Instructor: Lisker. One course.

182FS. Biology and Society. R, SS, STS How societies emerge and develop. Diverse evolutionary theories, such as sociobiology, the evolution of cooperation, the demographic imperative, technological determinism and genetic determinism, that have been used to explain the origins and changes of social structures like the family, the state, and the world system. Student research into traditional and contemporary global societies. Open only to students enrolled in the Focus Program. Instructor: O’Rand. One course.

186FS. Gender, Poverty, and Health. EI, SS Examines interconnections among gender, poverty, and health (considers how race and ethnicity may intersect with these as well). Adopts global perspective with focus on US and the global south (low and middle income countries). Discusses frameworks for understanding health as well as in depth case studies of particular health areas. Major focus on HIV/AIDS, but other health issues addressed include: drug use, violence, work-related health, and reproduction. Addresses the social basis of health science and considers the policy implications of all of these issues. Open only to students in the Focus Program. Instructor: Blankenship. One course. C-L: Global Health 160FS
188FS. Population, Modernization, and Culture Wars. CCI, R, SS Focus on conducting quantitative research on variations in values and beliefs across societies. Values examined include individual autonomy, self-expression, gender equality, democracy and beliefs attached to major religions. Group and individual research projects utilize the World Values Surveys linked to economic and demographic indicators. Open to Focus students only. Instructor: O’Rand. One course.

195. Comparative Approaches to Global Issues. CCI, CZ, SS, W One course. C-L: see International Comparative Studies 195; also C-L: Cultural Anthropology 195, History 103, Political Science 110, Women's Studies 195, Marxism and Society

201. Sport As Performance. ALP, CCI, EI, SS One course. C-L: see Theater Studies 201; also C-L: Cultural Anthropology 209, International Comparative Studies 247

204. Race, Ethnicity and Citizenship. CCI, SS One course. C-L: see Political Science 204; also C-L: African and African American Studies 280

210. A-E. Comparative Sociology: Selected Areas. CCI, SS Comparative studies of selected areas of the world, considering differences and similarities in culture and communication, family, law and social control, urban forms and the organization of work. Areas vary each semester offered and are designated by letter. A. Africa B. Asia C. Europe D. Latin America E. Cross-Regional Instructor: Staff. One course. C-L: International Comparative Studies, Markets and Management Studies

211. Wealth, Power, and Inequality. CCI, SS The nature, forms, and socioeconomic bases of inequality. Age, gender, race, ethnicity, class, region, and family as dimensions of inequality. Variations in the structure of inequality over time and across nations. How educational institutions, economic development, work institutions, and state welfare programs affect the shape of inequality. Social inequality and social mobility. Instructor: Keister or O’Rand. One course. C-L: Women’s Studies

212. Gender, Poverty, and Health. SS One course. C-L: see Global Health 212

214. Cybernetworks and the Global Village. CCI, CZ, SS, STS Development and trends in internets as they affect the formation and organization of emerging social structures. Trends in both new, transnational social orders and segmenting of existing social orders. Multiple societies and the extent to which inequality in access to and participation in the cybernetworks reflects cultural, social, economic, and political implications. Emphasis on special research designs, methodologies (network analysis), and data sources necessary for research on cybernetworks. Prerequisite: internet experience. Instructor: Staff. One course. C-L: Information Science and Information Studies, Markets and Management Studies, Policy Journalism and Media

215. Environment as Community. SS Examination of linkages in both directions between community (family, neighborhood) and responsible environmental behavior. Includes on-site collaboration with a local neighborhood having explicit environmental goals. Application of basic qualitative research methods, including participant observation, personal interview, and content analysis. Instructor: Clark. One course. C-L: Environment 221

216S. Partnering and Parenting: An Interdisciplinary Approach to the Study of Human Relationships. CCI, EI, NS, SS, STS One course. C-L: see Evolutionary Anthropology 240S; also C-L: Study of Ethics 272S

217. Childhood in Social Perspective. SS, STS Social forces that have altered the role of children in society, with attention to changes in the population, labor force, community, family and kinship, schools, laws, government, and recreational and religious organizations. Focus on the United States, with some cross-cultural comparisons. Primary emphasis on how changes in the world of childhood have emerged as offshoots of scientific and technological innovations related to population dynamics, scientific and professional upgrading of work skills, narrowing of social and geographical distances, and legal and government responses to these changes. Analysis of data using quantitative methods. Instructor: Staff. One course. C-L: Child Policy Research


219. Juvenile Delinquency. CCI, EI, SS The concept and measurement of delinquency and status offending; trends and patterns in the delinquency rate. Theoretical models used to explain the onset of delinquent behavior; environmental and individual correlates of delinquency such as gender, race, and social class; influence of families, delin-
quent subcultures, gangs, schools, and drugs; history of juvenile justice and the philosophy and practice of today's juvenile justice system; legal and ethical issues such as major court decisions on juveniles' rights, the use of detention, and transfer to adult court; models of sentencing, juvenile incarceration, and community treatment programs and their efficacy. Instructor: Land or staff. One course. C-L: Child Policy Research

220. Causes of Crime. EI, SS The field of criminology and its most basic concepts: the definition of crime, the component areas of criminology, the history of criminology, criminological research methods, and the ethical issues that confront the field. The nature, extent, and patterns of crime, including victimization. Evaluation of criminological theories, including: biological, psychological, sociological, and cultural deviance theories; criminal behavior including violent crime, property crime, white-collar and organized crime, public order crimes, sex offenses, and substance abuse; the justice process, including police, courts, and corrections; the policy implications of criminological research. Instructor: Land or staff. One course.

221. Eastern Europe in Transition: Markets, Media, and the Mafia. CCI, CZ, SS One course. C-L: see Russian 350; also C-L: Visual and Media Studies 318, Policy Journalism and Media Studies

222. Punishment and Society. CCI, EI, SS The history, philosophy, and procedures of punishment and treatment. The development of the penal system; the structure and operation of "total institutions" such as prisons and hospitals; the various sanctions. The issues and problems confronting both inmates and staff in contemporary prisons and concerns related to the imprisonment of women; the rights of prisoners and crime victims, the release of offenders and their return to society; current punishment and treatment of those defined as criminals within the context of what goal is intended; comparison of punishment and treatment procedures or programs in different parts of the world with the United States. Instructor: Staff. One course.

224. Human Development (D). CCI, EI, R, SS One course. C-L: see Human Development 224; also C-L: Psychology 235

226. The Challenges of Development. CCI, EI, SS Diverse perspectives on economic development and theories concerning the role of transnational corporations and international financial institutions (for example, World Bank) in developing nations, assessed with the aid of sociological and economic data. Comparison of different countries and world regions in terms of their historical trajectories, development strategies and current challenges in economic and social development, broadly conceived in terms of material circumstances, political economies, and quality of life. Instructor: Gereffi or staff. One course. C-L: International Comparative Studies, Latin American Studies, Markets and Management Studies, Marxism and Society

227. The Latino Population in the United States. CCI, SS Focuses on the economic and sociological aspects of Hispanic immigration and assimilation in the United States. Topics include: construction of Hispanic identity, the history of US Hispanic immigration, Hispanic family patterns and household structure, Hispanic educational attainment, Hispanic incorporation into the US labor force, earnings and economic well-being among Hispanic-origin groups, assimilation and the second generation. Instructor: Staff. One course.

228S. Visual Research and the American Dream. ALP, R, SS One course. C-L: see Documentary Studies 221S; also C-L: Visual and Media Studies 217S

229. Gender, Work, and Organizations. CCI, SS Research and theories on gender issues in the work organization. The socio-historical causes of gender segregation in the workplace and the contemporary consequences for wages and occupational status. Organizational and governmental work and family policies. Case studies of specific work organizations with gender-related problems are utilized in group projects and presentations. C-L: Markets and Management Studies. Instructor: Bach or staff. One course. C-L: Women's Studies 241, Markets and Management Studies

250. Medical Sociology. EI, SS Interface between sociology and health-related issues. Analysis of macro, mezzo, and micro perspectives as they apply to health and illness. Examination of the social and cultural context in which health care in the United States is delivered, particularly in terms of racial and age disparities, as well as disparities in rural and urban healthcare settings. Objective and subjective experience of health and illness, political, economic and environmental issues, including engagement with ethical issues around end of life care, physician assisted suicide, health rights versus health privileges. Exposure to these areas takes place theoretically in class, as well as in real-world settings: course includes service learning component, in which students spend 20 hours during the semester volunteering in a health-based care facility. Instructor: Gold. One course.
260. Psychosocial Aspects of Human Development (D). CCI, EI, SS One course. C-L: see Human Development 260; also C-L: Psychology 236, Ethics Courses Offered Through Other Departments

262. Adulthood and Aging. EI, SS Sociological and psychological perspectives on aging, from adolescence through old age and death; demography of human aging; social problems caused by increased longevity; policy issues. Instructor: Gold and George. One course.

263. Aging and Health. EI, SS, W Illness and health care utilization among the elderly, comparison to other populations, gender and race differences, medicare and medicaid, individual adjustment to aging and illness, social support for sick elderly, the decision to institutionalize, policy debate over euthanasia. Required participation in service learning. Instructor: George or Gold. One course.


288S. Writing in Sociology. SS, W Introduction to writing in sociology. Topics include scenes and genres of sociological writing, reading sociology research, working with sources, making sociological claims, designing figures and tables, counterarguments and concessions, citations, style. Instructor: Moskovitz. One course.


290S. Seminar in Special Topics. Instructor: Staff. One course.

291. Independent Study for Nonmajors. Individual research and reading in a field of special interest, under the supervision of faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to qualified juniors and seniors. Consent of instructor and Director of Markets and Management Studies. Does not count toward the Sociology major. Instructor: Staff. One course.

293. Research Independent Study for Non-Majors. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper containing significant analysis and interpretation of a previously approved topic. Open to qualified juniors and seniors. Consent of instructor and Director of Markets and Management Studies. Does not count toward the Sociology major. Instructor: Staff. One course.

295S. Sex Work: The Politics of Sexual Labor. CCI, SS One course. C-L: see Women's Studies 295S; also C-L: Study of Sexualities 295S, Literature 295S

316. Comparative Race and Ethnic Studies. CCI, EI, R, SS The social, legal and cultural construction of racial and ethnic hierarchies in a comparative international context with the United States and the United Kingdom of central analytical concern. Racial formation and racial segregation in specific historical and national contexts including the normative case of the Anglo-Saxon core in the United States and how its dominance has led to patterns of ethnic antagonism and discrimination; the historical context of racial stereotypes and their representation in various mediums. Social justice movements and public policies designed to challenge racial and ethnic domination including controversial topics such as “positive discrimination” (United Kingdom) and Affirmative Action (United States/South Africa). May include comparative case studies from India, South Africa, Brazil, and continental Europe. Instructor: Bonilla-Silva. One course. C-L: African and African American Studies 246, Latino/a Studies in the Global South, Marxism and Society

322. Social Movements in Age of Globalization. CCI, CZ, EI, SS One course. C-L: see Literature 332; also C-L: Political Science 313

331. Women at Work: Gendered Experience of Corporate Life. CCI, SS, STS One course. C-L: see Women's Studies 221


333. Quantitative Analysis of Sociological Data. QS, SS Introduction to quantitative analysis in sociological research, including principles of research design and the use of empirical evidence, particularly from social surveys.
Descriptive and inferential statistics, contingency table analysis, and regression analysis. Emphasis on analysis of data, interpretation and presentation of results. Not open to students who have taken another 100-level (or above) statistics course. Course restricted to first and second Sociology majors. Instructor: Staff. One course.

338. **Theory and Society.** CCI, SS, W Selective survey of major classical and modern social theorists from the Enlightenment to the present. Attention to theories seeking to follow models of the natural sciences and those seeking a more critical and interpretive understanding of modern society. Sociological theory in relation to other modern currents, such as conservatism, socialism, existentialism, anti-colonialism, feminism, post-modernism. Instructor: Healy, Merkx, or Moody. One course.

340. **Taboo Markets.** EI, SS One course. C-L: see Study of Ethics 280; also C-L: International Comparative Studies 280

341. **The United States and the Asian Pacific Region.** CCI, CZ, R, SS Asian Pacific region is major engine of economic growth in the 21st century likely causing major shift of power and wealth in the world. Study relationships between US and various Asian Pacific nations from the end of World War II to present. Focus on impact of wars, technological development and economic development. Examine differences in various issues such as trade, human rights, environment, territory disputes between US and a variety of Asian Pacific nations. Instructor: Gao. One course. C-L: Markets and Management Studies

342D. **Organizations and Global Competitiveness.** CCI, R, SS, STS Competition among national economies as understood in the context of social factors such as ethnicity, kinship, gender, and education, with a special emphasis on how technological change is reshaping the political, social, and economic bases of international competitiveness. Global industries in various regions of the world. Two research papers required, at least one of which involves the analysis of international trade data. Instructor: Gereffi. One course. C-L: International Comparative Studies, Markets and Management Studies

343. **Displacements: Migration and Human Trafficking.** ALP, CCI, EI, R, SS One course. C-L: see African and African American Studies 343; also C-L: Latin American Studies 343, Cultural Anthropology 342

344. **Technology and Organizational Environments.** CCI, R, SS, STS How organizations (governments, private corporations, and non-profit organizations) are affected by the social, technological, and cultural environments in which they operate. Emphasis on how United States and Japanese cultures generate different modes of organization and differing environmental facilitators and obstacles. Competitive strategies (for example, mergers and takeovers) and the impact of technology on organizational structures (for example, the rapid diffusion of information technology). Research paper required, using either quantitative evidence or a case study approach. Instructor: Gao or staff. One course. C-L: Markets and Management Studies

345. **Nations, Regions, and the Global Economy.** CCI, R, SS The changing configuration of global capitalism, with emphasis on comparing global regions of North America, Latin America, Europe, Africa, and Asia. The internal dynamics of these regions, including the development strategies of selected nations, interregional comparisons (for example, regional divisions of labor, state-society relationships, the nature of their business systems, quality of life issues). Research paper required. Instructor: Gereffi or Hovsepian. One course. C-L: International Comparative Studies, Islamic Studies, Markets and Management Studies

348. **Secularization and Modernity: Cross-Disciplinary Readings 1750-1914.** ALP, CCI, CZ, EI, R One course. C-L: see English 285; also C-L: Political Science 374, German 376, Romance Studies 360, Literature 243

349. **Sexuality and Society.** CCI, EI, R, SS Sociocultural factors affecting sexual behavior. Changing beliefs about sex; how sexual knowledge is socially learned and sexual identities formed; the relation between power and sex; control over sexual expression. Required participation in service learning. Instructor: Bach or staff. One course. C-L: Study of Sexualities 229, Women's Studies

350. **The Changing American Family.** CCI, R, SS The American family, its composition, functions, organization and perceived importance in the lives of people and in society. Changes -- especially the separation of marriage, childbearing, and child rearing -- examined with a view toward understanding the social forces behind them and the personal and social problems that arise in conjunction with the changes. Comparisons across social classes and ethnic and racial groups at different historic periods to show variations in their susceptibility to forces of change. Instructor: Burton or staff. One course. C-L: Women's Studies, Child Policy Research
351. Sociology of Religion. CCI, R, SS Classic social scientific answers to questions such as: the nature and origin of religion; its fate in modern societies. How social context shapes religious belief and practice, and how religion influences people, institutions, and societies. Attention paid to continuity and change in American religion. Instructor: Chaves. One course. C-L: Religion 285

352S. Sociology through Photography. ALP, SS One course. C-L: see Documentary Studies 227S; also C-L: Visual and Media Studies 218S

353. Sport and Society. EI, R, SS Sport roles and sport institutions examined using the sociological perspective to help explain different patterns of involvement in sport, the social forces that have created sports organizations, and the consequences of sports participation. The ethical consequences of the modern pressures on athletes in schools and colleges and the commercialism of professional sport. Research paper required. Instructor: Staff. One course.


355. Organizations and Management. SS, STS Dimensions and aspects of modern organizations and concepts and tools for analyzing them. Special attention to the impact of changing social and technological environments on the evolution of organizational structures and strategies and on issues related to business ethics. The structure and operation of organizations; how organizations are managed by analyzing processes of organizational decision making; business case studies as illustrative of the concepts and the analytical tools. Instructor: Healy or Keister. One course. C-L: Women's Studies, Markets and Management Studies

356. Global Contexts of Science and Technology. CCI, R, SS, STS National variations in the structure of scientific systems, and their consequences for the production and application of scientific knowledge. Particular attention to how these differences are shaped by cultural values and social institutions based on those values (politics, economics, education). Focus on recent developments in the biomedical sciences, such as genetic engineering and bio-ecology, and how they are incorporated into the scientific agendas of different cultures. Requires research paper addressing cross-cultural comparisons in the context of a selected scientific principle or technological development. Instructor: O’Rand. One course. C-L: Information Science and Information Studies, Markets and Management Studies

357. Organizations and Management in Global Capital Markets: an Ethical Perspective. EI, R, SS, STS Analysis of financial, political and social consequences of business decisions made by financial institutions. How managers and corporations assess, envision and manage interactions with general, local, internal and natural environments within the current organizational structures of business, with focus on ethical perspectives. Examples and case studies of current decisions made by financial institutions will enhance critical thinking and reasoning to evaluate the process and consequences of these decisions. Offered only in the Duke in New York spring semester program. Instructor: Veraldi. One course. C-L: Markets and Management Studies

358. Markets and Marketing. CCI, R, SS, STS Markets as systems of social exchange: their organization and development with special reference to the role of technological change in market evolution in various parts of the industrialized world. Sociological analysis of contemporary marketing including cross-national comparisons and the role of internet technologies; researching and preparing a marketing plan. Coverage of marketing includes attention to issues of values and ethics. Instructor: Spenner or Reeves. One course. C-L: Markets and Management Studies


361. Social Determinants of U.S. Health Disparities. SS Introduction to how social factors influence health and well-being, with a particular focus on contemporary U.S. society. Topics include obesity, aging, socioeconomic disadvantage, access to health insurance, public health systems, the role of the media, and racial/ethnic and gender inequalities. The course will provide descriptive assessments of health inequalities and analytic examinations of the
mechanisms through which social factors affect health. Instructor: Read or staff. One course. C-L: Global Health 340, Global Health


366. Politics and Markets in the Global Economy. SS Comparison of the politics and markets of countries and regions throughout the global economy. Exploration of sociological theories of markets and market formation and sociological theories of states and state formation studied through prominent debates and literatures in political sociology and economic sociology, as well as some material in the sociology of inequality and globalization. Instructor: Brady. One course.

371. Comparative Health Care Systems. CCI, EI, SS One course. C-L: see Public Policy Studies 335; also C-L: Political Science 355, Canadian Studies, International Comparative Studies, Study of Ethics, Global Health


373. Social Conflict and Social Movements. CCI, EI, R, SS Theories and current research in the United States and Europe on a variety of social movements and cycles of social protest, such as student movements, civil rights, liberation movements, secession movements in Western and non-Western countries, ethnic nationalism, fundamentalism, the women's movement, and the environmental movement. The values of social movements that are in opposition to the prevalent norms and institutions of society. Research paper required. Instructor: Staff. One course.


390. Special Topics in Sociology. Topics vary each semester. Instructor: Staff. One course.

390S. Seminar in Special Topics. Instructor: Staff. One course.

391. Independent Study. Directed reading or individual projects under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


430S. Women and the Professions. EI, R, SS, W One course. C-L: see Education 430S; also C-L: Ethics Courses Offered Through Other Departments

471S. Language and Politics: Eurasian Perspectives. CCI, SS One course. C-L: see Linguistics 471S; also C-L: Slavic and Eurasian Studies 484S, Public Policy Studies 208S


480S. Sociology of the Middle East. CCI, SS Sociological themes with reference to the transnational Arab Middle East that include culture, the family, social inequality, gender, socialization, development and underdevelopment, labor, migration and citizenship, political Islam, and social change. The issue of the Palestinians, often made central in the discourse on the Middle East. Instructor: Hovsepian. One course. C-L: Islamic Studies
482S. Gender, Labor, and Globalization. CCI, R, SS Construction of gender influences, the incorporation of women into the global workforce, relocation of production under globalization influence, interconnections between work and gender. Instructor: Hovsepian. One course. C-L: Islamic Studies

490. Special Topics in Sociology. One course.

490S. Seminar In Special Topics. Instructor: Staff. One course.

490S-1. Research Seminar: Special Topics. R, SS Directed research on a particular theme in a collaborative workshop using basic skills to assist in designing, carrying out, and writing up original research. A substantive paper with significant analysis and interpretation required. Themes vary semester to semester. Instructor: Staff. One course.

495S. Sociology Honors Seminar I. R, SS Honors seminar for senior sociology major. Intensive research experience including topic selection, research design, data collection and analysis resulting in substantial, original paper. Research guidance and support provided by instructor and faculty advisor. Consent of instructor required. Instructor: Staff. One course.

496S. Sociology Honors Seminar II. SS, W Continuation of Sociology 495S. Consent of instructor required. Instructor: Staff. One course.

499S. Sociology Internship. EI, R Open only to sociology majors and minors. Requires eight hours per week working in a local business or community organization; specific internship placement arranged with instructor to meet student's interest. Students reflect on their experiences in Blackboard posts and seminar discussions. Topics include sociological issues related to organizations, work, diversity and inequality. Research paper required. Instructor: Bach or staff. One course.

534. Topics in Population, Health, and Policy. SS, STS One course. C-L: see Public Policy Studies 633; also C-L: Global Health 550

541. The United States and the Asian Pacific Region. CCI, CZ, R, SS Asian Pacific region is major engine of economic growth in the 21st century likely causing major shift of power and wealth in the world. Study relationships between US and various Asian Pacific nations from the end of World War II to present. Focus on impact of wars, technological development and economic development. Examine differences in various issues such as trade, human rights, environment, territory disputes between US and a variety of Asian Pacific nations. Same as Sociology 341, with additional work required. Instructor: Gao. Variable credit.

542S. Understanding Ethical Crisis in Organizations. EI, R, SS One course. C-L: see Study of Ethics 562S; also C-L: Political Science 502S, Public Policy Studies 558S

554S. Poverty and the Visual. ALP, CCI, CZ One course. C-L: see Visual and Media Studies 570S

590. Special Topics in Sociology. Substantive, theoretical, or methodological topics vary by semester. Instructor: Staff. One course.

594S. Cultural (Con)Fusions of Asians and Africans. CCI, CZ, SS One course. C-L: see African and African American Studies 594S; also C-L: Cultural Anthropology 594S, Latin American Studies 594S


636S. Experimental Communities. ALP, CCI, CZ, EI One course. C-L: see Visual Arts 554S

641S. Proseminar in Medical Sociology (Special Topics). SS Selected topics in medical sociology: social structure and health; social behavior and health; organization and financing of health care; medical sociology (for example, social epidemiology, stress and coping, health and aging). Instructor: Burton, George, Gold, or Moody. One course.

642S. Global Inequality Research Seminar. ALP, CCI, R, SS One course. C-L: see African and African American Studies 642S; also C-L: Economics 541S, Political Science 642S, Public Policy Studies 645S

645S. Citizen and Subject in a Neoliberal Age. CCI, EI, SS One course. C-L: see African and African American Studies 641S; also C-L: Cultural Anthropology 641S

650S. Global Responses to the Rise of China. CCI, SS Issues on the impact of globalization on jobs and wages in advanced industrialized countries, the trend of regionalization in international political economy, the new strategies adopted by both advanced industrialized countries and developing countries under the WTO framework, South-
North relationship in the era of globalization, the impact of outsourcing through globalization production networks on developing countries, comparative analysis of inequality, and other issues faced by developing countries today. Instructor: Gao. One course. C-L: Economics 550S

651S. Social Change, Markets, and Economy in China. CCI, SS Introduction to recent economic, social, and institutional changes in China, with focus on recent (post 1980) periods. Up-to-date descriptive reviews, empirical data, and discussions on historical background, current status, and future perspectives. Instructor: Yi. One course. C-L: Economics 542S


690. Special Topics in Sociology. Substantive, theoretical, or methodological topics vary by semester. Instructor: Staff. One course.

690S. Seminar in Selected Topics. Substantive, theoretical, or methodological topics. Instructor: Staff. One course.

The Major

Prerequisite. Sociology 110D, 111, or an equivalent course with the consent of the director of undergraduate studies.

Major Requirements. Nine courses at or above the 200 level, including Sociology 332, Sociology 333, Sociology 338, and a course involving a major research project (i.e., Sociology Honors Program, 495S and 496S, Sociology Research Seminar, 481S, 482S, 483S, 484S, 490S-1, a Research Independent Study Course, Sociology 393, or Sociology Internship Seminar, 499S). Students may substitute any 100-level or above statistics course for Sociology 333 with the consent of the director of undergraduate studies. No advanced placement credits and no more than two transfer credits may count toward the major.

A Handbook for Sociology Majors, available in the office of the director of undergraduate studies, describes areas of concentration, the honors program, and the Sociology Union. It also describes the departmental advising system and the interests of the faculty.

The Minor

Requirements: Five courses, four of which must be at or above the 200 level. Only one transfer credit and no Advanced Placement credits may count toward the minor.

Spanish

For courses in Spanish, see romance studies on page 577.

Statistical Science

Professor Clyde, Chair; Professor of the Practice Stangl, Associate Chair and Director of Undergraduate Studies; Professor West, Director of Graduate Studies; Professors Berger, Clark, Dunson, Gelfand, Winkler, Reiter and Wolpert; Associate Professors Hartemink, Hauser, Mattingly, Mukherjee, and Schmidler; Assistant Professors Heller, Li, Ma, and Tokdar; Professors Emeriti Burdick and Sacks; Professor of the Practice Banks; Assistant Professors of the Practice Cetinkaya-Rundel, Associate Research Professor Iversen; Adjunct Professor Bayarri, Chan, Englehardt and Smith, Visiting Assistant Professor Lopiano, Rundel, Monod, Windle

A major or a minor is available in this department.

The Department of Statistical Science coordinates teaching and research in the statistical sciences at Duke University. In its teaching and research, the department’s faculty members emphasize modern statistical methods involving computationally intensive stochastic modeling, coupled with interdisciplinary applications in many fields. The department also offers courses in basic statistical methods and advanced mathematical statistics.

Courses in Statistical Science (STA)


30. Basic Statistics and Quantitative Literacy. QS Statistical concepts involved in making inferences, decisions, and predictions from data. Emphasis on applications, not formal technique. Prerequisite: Must have taken placement
test and placed in Statistical Science 30. Not open to students who have Statistical Science 20 or 100-level statistical science course. Instructor: Staff. One course.

89S. First-Year Seminar. QS Topics vary each semester offered. Instructor: Staff. One course.

101. Data Analysis and Statistical Inference. QS, R, STS Introduction to statistics as a science of understanding and analyzing data. Major themes include data collection, exploratory analysis, inference, and modeling. Focus on principles underlying quantitative research in social sciences, humanities, and public policy. Research projects teach the process of scientific discovery and synthesis and critical evaluation of research and statistical arguments. Readings give perspective on why in 1950, Samuel Wilks said “Statistical thinking will one day be as necessary a qualification for efficient citizenship as the ability to read and write.” Prerequisites: placement exam. Not open to students with credit for Statistical Science 102 or above. Instructor: Cetinkaya-Rundel or Stangl. One course. C-L: Information Science and Information Studies

101-1. Data Analysis and Statistical Inference for Bass Connections. QS, R, STS Introduction to statistics as a science of understanding and analyzing data. Major themes include data collection, exploratory analysis, inference, and modeling. Focus on principles underlying quantitative research in Bass Connection theme areas. Prerequisites: Mathematics 21 or AP Statistics Credit. Open only to first year students. Not open to students with Statistical Science credit above Statistical Science 30. Instructor: Cetinkaya-Rundel or Stangl. One course.

102. Introductory Biostatistics. QS, R, STS Reading and interpretation of statistical analysis from life and health sciences. Topics include: basic concepts and tools of probability, estimation, inference, decisions analysis, and modeling. Emphasizes role of biostatistics in modern society. Prerequisites: placement test; freshmen standing for Biomedical Engineering students. Not open to students who have credit for another 100-level Statistical Science course. Instructor: Schmidler or Stangl. One course.

104. Data Analysis and Statistical Inference - Online. QS, R, STS Introduction to statistics as a science of understanding and analyzing data. Major themes include data collection, exploratory analysis, inference, and modeling. Focus on principles underlying quantitative research in social sciences, humanities, and public policy. Research projects teach process of scientific discovery and synthesis, critical evaluation of research and statistical arguments. Perspective given on Samuel Wilks' quote "Statistical thinking will one day be as necessary a qualification for efficient citizenship as the ability to read and write." Online equivalent to Statistical Science 101. Prereq: Placement exam or Statistical Science 30. Not open to students with credit for Statistical Science 101 or above except Statistical Science 110FS. Instructor: Cetinkaya-Rundel. One course.

110FS. Focus Program - Introductory Special Topics in Statistics. QS This is a seminar course for focus students. Topics vary every semester. Mathematics 21 is a prerequisite. Instructor: Banks. One course.

111. Probability and Statistical Inference. QS Basic laws of probability - random events, independence and dependence, expectations, Bayes theorem. Discrete and continuous random variables, density, and distribution functions. Binomial and normal models for observational data. Introduction to maximum likelihood estimation and Bayesian inference. One- and two-sample mean problems, simple linear regression, multiple linear regression with two explanatory variables. Applications in economics, quantitative social sciences, and natural sciences emphasized. Prerequisites: Mathematics 21 or equivalent. Not open to students who have credit for another 100-level statistical sciences course. Instructor: Heller or Mukherjee. One course. C-L: Information Science and Information Studies

130. Probability and Statistics in Engineering. QS Introduction to probability, independence, conditional independence, and Bayes' theorem. Discrete and continuous, univariate and multivariate distributions. Linear and nonlinear transformations of random variables. Classical and Bayesian inference, decision theory, and comparison of hypotheses. Experimental design, statistical quality control, and other applications in engineering. Not open to students who have taken Statistical Science 250 or 611. Prerequisite: Mathematics 212 or equivalent. Instructor: Li or Mukherjee. One course. C-L: Information Science and Information Studies

211. Statistics in the Courtroom. EI, QS, STS, W Reading and evaluation of statistical analyses from court cases. Conceptual bases for using data and understanding uncertainty when making legal decisions. Includes reading and discussion of legal cases as well as developing statistical arguments as evidence. Prerequisites: Must have Statistical Science 101, Statistical Science 102, Statistical Science 111, Statistical Science 130, or Statistical Science 250. Instructor: Stangl. One course.

230. Probability. QS One course. C-L: see Mathematics 230; also C-L: Information Science and Information Studies

231. Advanced Introduction to Probability. QS One course. C-L: see Mathematics 340

250D. Statistics. QS An introduction to the concepts, theory, and application of statistical inference, including the structure of statistical problems, probability modeling, data analysis and statistical computing, and linear regression. Inference from the viewpoint of Bayesian statistics, with some discussion of sampling theory methods and comparative inference. Applications to problems in various fields. Prerequisites: Mathematics 202 or Mathematics 212 or Mathematics 222 and Statistical Science 230 or Math 340. Instructor: Li, Tokdar, or Wolpert. One course. C-L: Mathematics 342D, Information Science and Information Studies


393. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

470S. Introduction to Statistical Consulting. EI, QS, R, W Immerses students into real world consulting, exposing them to all aspects of research including data collection, modeling, and evaluating results. Through campus-wide consulting program, students work with researchers from various disciplines providing recommendations for statistical methodologies appropriate for their research. Projects examined through lens of research ethics underlying data collection, model assumptions, analysis, reproducibility, and reporting of results. Case studies such as the recent Potti case highlight what can go wrong in interdisciplinary research when researchers are not vigilant of the highest ethical standards. Prerequisites: Statistical Science 360 or Statistical Science 601 or instructor consent. Instructor: Cetinkaya-Rundel or Iversen. One course.
471S. **Computational Data Analysis. QS** Data analysis, exploration, and representation. Scientific modeling and computation. Data mining for large datasets, algebraic decomposition methods, stochastic simulation for temporal models of dynamic processes, graphical and network data, computational methods development. Problems and data drawn from ISDS research projects. Prerequisites: Statistical Science 360, some computer programming expertise. Instructor: Dunson. One course.

490S. **Special Topics in Statistics. QS, R** Special topics not covered in core courses and more advanced topics related to current research directions in statistical science. Consent of instructor required. Instructor: Staff. One course.

493. **Research Independent Study. R** Individual research in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and director of undergraduate studies required. Prerequisite: Statistical Science 360. Instructor: Staff. One course.

497S. **Research Seminar in Statistical Science I. QS, R** Statistical and mathematical underpinnings of methodological research in statistical science. Student presentations of their statistical research in collaboration with, and under the supervision of, a DSS faculty mentor. Offered only in fall semesters. Permission of department required. Instructor: Gelfand, Reiter, or West. One course.

498S. **Research Seminar in Statistical Science II. QS, R, W** Continuation of Statistical Science 497S. Statistical and mathematical underpinnings of methodological research in statistical science. Student presentations of their statistical research in collaboration with, and under the supervision of, a DSS faculty mentor. Consent of department required. Instructor: Gelfand, Reiter, or West. One course.

503. **Choice Theory.** One course. C-L: see Business Administration 913

504. **Statistical Genetics.** One course. C-L: see Computational Biology and Bioinformatics 541; also C-L: Genome Sciences and Policy

521L. **Modern Regression and Predictive Modeling. QS** Exploratory data analysis techniques and visualization of data with interactive graphics. Multiple linear regression and model building, predictive distributions, penalized and Bayesian estimation, model selection and model uncertainty including variable transformations, variable selection, and Bayesian model averaging, diagnostics and model checking, robust estimation, hierarchical models. Instructor consent required. Prerequisites: Statistical Science 210, 230 and 250, or equivalents; Statistical Science 601 (or co-registration). Instructor: Clyde, Dunson and/or Gelfand. One course.

523L. **Programming for Statistical Science. QS** Statistical programming, computation using selected languages and environments (Python, R, Matlab, and/or C/C++) and their interfaces with custom code development for central statistical models. Best practices and software development for reproducible results, selecting topics from: use of markup languages, understanding data structures, design of graphics, object oriented programming, vectorized code, scoping, documenting code, profiling and debugging, building modular code, and version control- all in contexts of specific applied statistical analyses. Designed to complement Statistical Science 601. Instructor consent required. Prereqs: Statistical Science 210, 230 and 250, or equivalents; Statistical Science 601 (or co-registration). Instructor: Chan, Clyde, Iversen. One course.

531. **Advanced Bayesian Inference and Stochastic Modeling. QS** Art and science of building graphical models and stochastic simulation methods for inference and prediction. Mixture models, networks, and other latent variable probability models, i.e. hidden Markov models. Review of discrete and continuous multivariate distributions used in building graphical models, tools of linear algebra and probability calculus. Aspects of Monte Carlo methodology and related dynamical modeling theory. Statistical computing using Matlab or R. Instructor consent required. Prerequisites: Statistical Science 521L, 523L, 601. Instructor: Schmidler or West. One course.

532. **Theory of Statistical Inference.** Core mathematical foundations of classical and Bayesian statistical inference. Theory of point and interval estimation and testing based on efficiency, consistency, sufficiency and robustness. Maximum likelihood, moments and non-parametric methods based on exact or large sample distribution theory; associated EM, asymptotic normality and bootstrap computational techniques. Theoretical aspects of objective Bayesian inference, prediction, and testing. Selected additional topics drawn from, for example, multiparameter testing, contingency tables, multiplicity studies. Instructor consent required. Prerequisites: Statistical Science 521L, 523L, 601. Instructor: Berger, Gelfand, Li, Tokdar. One course.
561D. Probabilistic Machine Learning. QS Introduction to concepts in probabilistic machine learning with a focus on discriminative and hierarchical generative models. Topics include directed and undirected graphical models, kernel methods, exact and approximate parameter estimation methods, and structure learning. Prerequisites: Linear algebra, Statistical Science 250 or Statistical Science 611. Instructor: Heller, Englehardt. One course.

563. Information Theory. One course. C-L: see Electrical and Computer Engineering 587

571. Advanced Probabilistic Machine Learning. QS Advanced concepts in probabilistic machine learning with a focus on discriminative and hierarchical generative models and applications. Topics include nonparametric Bayesian methods, optimization, sparsity, topic models, ranking, social network analysis, and more. Prerequisites: Linear algebra and Statistical Science 250 or Statistical Science 611 required. Statistical Science 561D recommended. Instructor: Heller, Engelhardt. One course.

581. ProSeminar: Becoming a Statistical Scientist. Statistical paradigms and current directions, communication of statistical ideas and arguments, statistical ethics, overview of study designs, building a statistical network, professional societies, developing a web/social media presence, career paths. Instructor consent required. Prerequisites: Statistical Science 531, 532, 523L (or co-registration). Instructor consent required. Instructor: Staff.

582L. DataFest. Students work in teams to solve this year's big data challenge on campus. Engages students with the data analysis process from the definition of research/analysis questions, to in-depth exploratory analysis, to formal modeling and computational developments, to drawing conclusions based on their findings. Students interact with multiple faculty and expert advisors, and develop and present their findings to a panel of professors and professionals. Prerequisites: Statistical Science 531, 532, 523L (or co-registration). Instructor: Çetinkaya-Rundel.

601. Bayesian and Modern Statistical Data Analysis. QS Principles of data analysis and modern statistical modeling. Exploratory data analysis. Introduction to Bayesian inference, prior and posterior distributions, predictive distributions, hierarchical models, model checking and selection, missing data, introduction to stochastic simulation by Markov Chain Monte Carlo using a higher level statistical language such as R or Matlab. Applications drawn from various disciplines. Not open to students with credit for Statistical Science 360. Prerequisite: Statistical Science 210, 230 and 250, or close equivalents. Instructor: Clyde, Dunson, or Reiter. One course.


612. Numerical Analysis. QS, R One course. C-L: see Computer Science 520; also C-L: Mathematics 565

613. Statistical Methods for Computational Biology. One course. C-L: see Computational Biology and Bioinformatics 540

614. Computational Structural Biology. QS, R One course. C-L: see Computer Science 664; also C-L: Computational Biology and Bioinformatics 550

621. Applied Stochastic Processes. QS One course. C-L: see Mathematics 541

622. Statistical Data Mining. QS Introduction to data mining, including multivariate nonparametric regression, classification, and cluster analysis. Topics include the Curse of Dimensionality, the bootstrap, cross-validation, search (especially model selection), smoothing, the backfitting algorithm, and boosting. Emphasis on regression methods (e.g., neural networks, wavelets, the LASSO, and LARS), classifications methods (e.g., CART, Support vector machines, and nearest-neighbor methods), and cluster analysis (e.g., self-organizing maps, D-means clustering, and minimum spanning trees). Theory illustrated through analysis of classical data sets. Prerequisites: Statistical Science 250. Instructor: Banks or Ma. One course. C-L: Computer Science 579

Combining evidence and group decisions. Prerequisite: Statistical Science 732 or consent of instructor. Instructor: Berger or Schmidler. One course.

640. Causal Inference. QS Statistical issues in causality and methods for estimating causal effects. Randomized designs and alternative designs and methods for when randomization is infeasible: matching methods, propensity scores, longitudinal treatments, regression discontinuity, instrumental variables, and principal stratification. Methods are motivated by examples from social sciences, policy and health sciences. Prerequisites: Statistical Science 531, 532, 523L. Instructor: Li. One course.

641. Statistical Learning and Bayesian Nonparametrics. QS Nonparametric Bayesian models and methods for complex data analyses with non-linearity adjustment, flexible borrowing of information, local uncertainty quantification and interaction discovery. Focuses on computationally and theoretically efficient nonparametric regression techniques based on advanced Gaussian process models, with motivating applications in causal inference and big data genomics. Includes several illustrative examples with R codes. Basic coverage of asymptotic theory and MCMC and greedy algorithms. Prerequisites: Statistical Science 531, 532, 523L. Instructor: Tokdar or Dunson. One course.

642. Time Series and Dynamic Models. QS Statistical models for modeling, monitoring, assessing and forecasting time series. Univariate and multivariate dynamic models; state space modeling approaches; Bayesian inference and prediction; computational methods for fast data analysis, learning and prediction; time series decomposition; dynamic model and time series structure assessment. Routine use of statistical software for time series applications. Applied studies motivated by problems and time series data from a range of applied fields including economics, finance, neuroscience, climatology, social networks, and others. Instructor consent required. Prerequisites: Statistical Science 531, 532, 523L. Instructor: West. One course.

643. Modern Design of Experiments. QS Classical and Bayesian design notions and techniques-- experimental units, randomization, treatments, blocking and restrictions to randomization, and utility of designs. Optimal sample size determination for estimation and testing. Factorial and fractional factorial designs, response surface methods, conjoint designs, sequential designs and bandit problems used in on-line advertising. Design and modeling of complex computer experiments. Designs for multiple objectives. Computational algorithms for finding optimal designs. Prerequisites: Statistical Science 531, 532, 523L. Instructors: Berger, Banks, Clyde, or Gelfand. One course.

663L. Statistical Computing and Computation. QS Statistical modeling and machine learning involving large data sets and challenging computation. Data pipelines and data bases, big data tools, sequential algorithms and subsampling methods for massive data sets, efficient programming for multi-core and cluster machines, including topics drawn from GPU programming, cloud computing, Map/Reduce and general tools of distributed computing environments. Intense use of statistical and data manipulation software will be required. Data from areas such as astronomy, genomics, finance, social media, networks, neuroscience. Instructor consent required. Prerequisites: Statistical Science 521L, 523L; Statistical Science 531, 532 (or co-registration). Instructor: Chan. One course.

690. Special Topics in Statistics. Prerequisite: Statistical Science 611 or consent of instructor. Pass/Fail grading only. Instructor: Staff. One course.

690-40. Topics in Probability Theory. QS One course. C-L: see Mathematics 690-40

The Major

The major in statistical science provides students with exposure to modern statistical reasoning and the skills needed to develop, analyze, and utilize statistical techniques for addressing quantitative, data-based problems in the natural and social sciences. The course of study exposes students to a broad range of statistical methods using tools from mathematical and computational sciences. Students who complete the major in statistical science will be well prepared for careers in business, where they must appreciate and accommodate uncertainty in their decision-making, and for further study and embarking on research in science, law, business, or other fields.

As part of the course of study, majors in statistical science complete a research project under the supervision of a faculty member. These projects can involve the analysis of complex data, the development of new methods or theory, or the extension and evaluation of existing techniques. The director of undergraduate studies links majors to a research mentor, who works with students to develop and complete the research project. Students earn credit for their research by taking Statistical Science 497S and Statistical Science 498S.

For the AB Degree

Prerequisites. Mathematics 21 (or 111L), 122 (or 112L), 212, and 221 (or 216)
Major Requirements. Statistical Science 230/Mathematics 230; Statistical Science 250/Mathematics 342; or Statistical Science 611; Statistical Science 210; Statistical Science 360, 497S, and 498S; two additional courses above Statistical Science 250 (excluding 540 and 611). Only one independent study in statistical science can be used toward the major. Up to one statistical course from other departments can be used toward the major, provided the course is preapproved by the director of undergraduate studies.

For the BS Degree

Prerequisites. Mathematics 21 (or 111L), 122 (or 112L), 212, and 221 (or 216)

Major Requirements. Statistical Science 230/Mathematics 230; Statistical Science 250/Mathematics 342, or Statistical Science 611; Statistical Science 210; Statistical Science 360, 497S, and 498S; three additional courses above Statistical Science 250 (excluding 540 and 611). Only one independent study in statistical science can be used toward the major. Up to two statistical courses above Statistical Science 250 from other departments can be used toward the major, provided the courses are preapproved by the director of undergraduate studies. One 300-level or higher course in an applied quantitative area other than statistical science, such as engineering, mathematics, one of the natural sciences, or one of the quantitative social sciences.

The Minor

The minor is designed to provide students in other disciplines with opportunities for exposure and skill development in advanced statistical methods. These are useful for conducting research in applied subjects, and they are appealing to employers and graduate schools seeking students with quantitative skills. The minor is flexible, so that students from most majors can find a path to the minor that serves their needs. The director of undergraduate studies assists students in selecting courses for the minor.

Prerequisites. Mathematics 21 (or 111L) and 122 (or 112L)

Requirements. Five additional courses in statistical science above the 100 level, only one of which can be from Statistical Science 101, 102, 103, 111, or 130. Up to two courses above Statistical Science 250 from other departments can be used toward the minor, provided the courses are pre-approved by the director of undergraduate studies.

Theater Studies

Professor McAuliffe, Chair; Associate Professor of the Practice Hemphill, Director of Undergraduate Studies; Professors Beckwith, Conceison, DeFrantz, Finucci, Holmgren, Moi, Porter, and Stiles; Associate Professor Solterer; Assistant Professors Hadjioannou and Rogers; Professors Emeritus Clum and Randall; Professors of the Practice Bell, McAuliffe, Riddell, and Storer; Associate Professors of the Practice Hemphill, Khalsa, and Noland; Assistant Professor of the Practice O’Berski

A major or a minor is available in this department.

Combining respect for history with immersion in contemporary issues, and intellectual engagement with creative expression, the Department of Theater Studies offers students a variety of opportunities to study and practice theater. The faculty view theater as a form of human expression, shaped by social, economic, technological, personal, and artistic forces.

Courses are designed to give majors a broad background necessary for advanced professional or scholarly work and to offer nonmajors the opportunity to deepen their understanding and appreciation of the theater. Guiding the work of the faculty is the belief that the theater is a collaborative art form that reaches out to other disciplines.

Courses in dramatic literature and the theater arts are complemented by productions of plays, past and present. This combination of academic coursework and production experience is a hallmark of the department’s approach. Its courses and productions are open to all undergraduates.

Courses in Theater Studies (THEATRST)

89S. First-Year Seminar. ALP Topics vary each semester offered. Instructor: Staff. One course.

103S. Communication, Improvisation, and Business. ALP Communication skills and presence for leadership in the business world through empowerment of others. Use of theater techniques (presence, voice, body gesture, text presentation and listening) to teach methods of leadership, action, and self-expression that motivate for results, enhance collaboration, and heighten confidence in oneself and others. Instructor: Staff. One course. C-L: Marine Science and Conservation
104. Let’s Dance! Live Art and Performance. ALP, CCI, CZ One course. C-L: see Dance 165; also C-L: Music 165
115. The Theater Today. ALP Introduction to major areas of research in Theater Studies with focus on specific theoretical and creative issues of contemporary concern in various disciplines of theater study. Instructor: Staff. One course.

145S. Acting. ALP, CCI The fundamentals of acting realism explored through exercises, scene study, and text analysis. Introduction to voice and movement training for the actor. Theory and text analysis studied in their historical context as well as their contemporary relevance. Instructor: Staff. One course.

190A. Duke Administered Study Abroad: Special Topics in Theater Studies. Topics differ by section. Instructor: Staff. One course.

190FS. Focus Program Special Topics. ALP Topics vary semester to semester. Open only to students in the Focus program. Instructor: Staff. One course.

190S-1. Special Topics in Reading Theater. ALP, CCI A series of special topics seminars focusing on close readings of dramatic texts with an eye to their realization in performance. Each seminar will center on a theme and draw from a variety of theatrical works from different periods in history and/or different countries. Topics include drama and theater, drama and gender, drama and ethics, drama and history. Instructor: Staff. One course.

190S-2. Special Topics in Theater Studies. Topics vary. May be repeated for credit. Instructor: Staff. One course.

195FS. The Art of Transformation: A Workshop in Movement and Theater. ALP Movement, theater, music, and writing exercises, focusing on participants as individuals, as members of an ensemble, and within the context of their society. The work of Augusto Boal (Brazilian theater director, writer, and theorist). Theater and movement as tools for direct interaction with the Duke community. Open only to students in the Focus Program. Instructor: Staff. One course. C-L: Dance 195FS

201. Sport As Performance. ALP, CCI, EI, SS Sport as ritual, spectacle, and performance explored through theatre, performance studies, sociology, anthropology, and history. Topics range from professional and collegiate team sports to individual athletic performances, in both domestic and global contexts. The performance aspects and ethics of race, gender, sexuality, and nation in live sport and in the media are examined. Coursework consists of written assignments, short papers, mid-term and final exam. Guest speakers from the worlds of athletics and theatre visit the class during the semester. Instructor: Conceison. One course. C-L: Cultural Anthropology 209, Sociology 201, International Comparative Studies 247

204S. Performance and Social Change. ALP, EI One course. C-L: see Dance 207S; also C-L: International Comparative Studies 227S

207S. Radio: The Theater of the Mind. ALP, CZ The Golden Age of American Radio (1920-1960), explored through the lens of culture, ethics, and technology. An examination, considering race, gender, and class, of the ways in which radio, as both a new and evolving technology, helped to homogenize and diversify America's sense of itself during this era. Includes wide range of radio genres from comedy to drama and music to news. Multimedia course, combining theory and performance; students create radio theater projects for the Web. Instructor: Staff. One course. C-L: Music 222S, Policy Journalism and Media

208. Contemporary Performance. ALP, R One course. C-L: see Dance 208; also C-L: African and African American Studies 229, Art History 229

210. The Great American Musical. ALP Broad-based examination of 20th-century musicals—from origins in minstrel shows, to the evolution of the book musical comedies of the golden age of Broadway, to Hollywood movie musicals, and contemporary re-invention today. Lectures, screenings, and discussions will explore the musical from perspectives on its history, its fundamental generic characteristics, and its emphasis on assimilating ethnic, philosophical and religious differences into a community. (Shows and movies to be studied include Moulin Rouge, Showboat, South Pacific, Chicago, Sweeney Todd, and Gold Diggers of 1933). Instructor: Staff. One course. C-L: Music 243

211. Musical Theater Workshop: Performance. ALP A workshop in honing the skills necessary to perform in a musical. Students required to present one cabaret of numbers from contemporary musicals and a workshop performance of a musical. Consent of instructor required. Instructor: Staff. One course. C-L: Music 218
212. **Musical Theater Workshop: Creation. ALP** A workshop on the creation and presentation of musicals culminating in a workshop presentation of short musicals written by the class. Consent of instructor required. Instructor: Staff. One course. C-L: Music 219


214A. **Internship in New York.** One course. C-L: see English 313A; also C-L: Art History 312A, Visual and Media Studies 296A

214A-1. **Internship in New York.** C-L: see English 313A-1; also C-L: Visual and Media Studies 296A-1

215A. **The Business of City Life.** Half course. C-L: see English 314A

217SA. **The Economics of Art (The Chicago Scene). ALP, CCI** Introduction to Chicago and guests sharing experiences combining arts and entrepreneurship in theater, visual art, film, music, dance, marketing, and comedy. Discussion focuses on their careers and career paths, and relationships among facilities, budgets and missions. Site visits, guest speakers, and internships help assess history and changing mission of arts organizations, evolution of site and impact on creative work, identification of audience(s), response to current economic climate, and organization of staff as a reflection of priorities/values. Includes an internship in arts administration, marketing and development, or performance. Offered through Duke in Chicago Arts and Entrepreneurship summer program. Instructor: McAuliffe. One course. C-L: Visual and Media Studies 221SA, Arts of the Moving Image 217SA, Dance 279SA, Music 217SA, Markets and Management Studies

222. **Shakespeare. ALP, W** One course. C-L: see English 235; also C-L: Medieval and Renaissance Studies 330

223S. **Introduction to German Drama. ALP, CCI, FL** One course. C-L: see German 335S; also C-L: International Comparative Studies

224. **Modernist Classics (DS4). ALP, CCI** One course. C-L: see Literature 350

225S. **Acting French. ALP, CCI, FL** One course. C-L: see French 330S

227. **Drama of Greece and Rome. ALP, CCI, CZ** One course. C-L: see Classical Studies 304; also C-L: Visual and Media Studies 240

228S. **The Italian Theater. ALP, CCI** One course. C-L: see Italian 485S


233. **Dance and Dance Theater of Asia. ALP, CCI, CZ** One course. C-L: see Dance 356; also C-L: Religion 241

234. **History and Practice of the Dance and Dance-theatre of India. ALP, CCI, CZ** One course. C-L: see Dance 355; also C-L: Religion 243, Asian & Middle Eastern Studies 154

235. **Global Performance Art: History/Theory from 1950's to Present. ALP, CCI, CZ, EI** One course. C-L: see Visual and Media Studies 344; also C-L: Information Science and Information Studies 275, Literature 222, Women's Studies 276

236. **Gender in Dance and Theatre. ALP, CCI, CZ** One course. C-L: see Dance 368; also C-L: Women's Studies 212, International Comparative Studies 215, Study of Sexualities

239A. **Theater in London: Text. ALP** Lecture version of Theater Studies 239AS/English 383A. Drama in performance from the Greeks to the present based on performances offered by the Royal Shakespeare Company, Royal National Theatre, and other theaters in London. Twenty plays will be seen and studied. (London summer program.) Instructor: Beckwith. One course. C-L: English 383A

239AS. **Theater in London: Text. ALP, CCI** Drama in performance from the Greeks to the present based on performances offered by the Royal Shakespeare Company, Royal National Theatre, and other theaters in London. Twenty plays will be seen and studied. Satisfies Area I, II, or III requirement for English majors, as determined by instructor. (London summer program.) Instructor: Beckwith. One course. C-L: English 383AS
240A. Theater in London: Performance. ALP Lecture version of Theater Studies 240AS/English 384A. The stages of realization of a play or musical from the script to the production, focusing on productions in London. Aspects of theatrical performance through scene work, discussions, and workshops with British theater practitioners, observation of theater at work, and supervised projects. (London summer program.) One course. C-L: English 384A

240AS. Theater in London: Performance (DS4). ALP, CCI The stages of realization of a play or musical from the script to the production, focusing on productions in London. Aspects of theatrical performance through scene work, discussions, and workshops with British theater practitioners, observation of theater at work, and supervised projects. (London summer program.) Instructor: Beckwith. One course. C-L: English 384AS

241. Cabaret Workshop. ALP, CCI Creation of a cabaret performance (solos and ensemble work) borrowing elements drawn from comedy, drama, music, dance, as well as other contemporary performable art forms, using European Cabaret form at the turn of the twentieth century where social commentary, debate, questioning and provocation prevailed, as a model. Instructor: Beckwith. One course.

242. Improvisation. ALP Using a series of exploratory games and exercises, this class will create an ensemble proficient in creating characters and stories without scripts. The focus will be on truth-telling and developing a form of expression that benefits the actor and non-actor equally. Ideal for anyone who intends to make public speaking and networking a part of their career. Instructor: O'Berski. One course.


246S. Shakespeare Studio. ALP Study in approaches to acting Shakespeare text which focus on the actor's embodiment of text in ways which are organic, physical, and truthful. Use of text as the primary source for the actor's work. Students will have opportunity to act in class exercises and projects. Extensive scenework. Prerequisite: Theater Studies 145S and consent of instructor. Instructor: Staff. One course.

248S. Voice and Speech. ALP Introduction to vocal training techniques which facilitate the healthy use of the voice as an effective tool for communication. Much of the course content based upon the work of Kristin Linklater. Includes concepts developed by other major contemporary theorists/practitioners in voice and speech, phonetics, and the study and practice of stage dialects. Attention paid to the voice and its connections to the body and psyche; techniques for both "freeing" and "shaping" the voice. Emphasis on process-oriented, experimental activities, and collaboration. Prerequisite: Theater Studies 145S or consent of instructor. Instructor: Hemphill. One course. C-L: Marine Science and Conservation

255S. Directing. ALP Establishment of basic skills of information communication from script to stage to audience; analyzing texts from a director's point of view; basic stage articulation of viewpoint; development of skills in mechanics and staging techniques. Emphasis on scripts of poetic realists. Prerequisite: Theater Studies 145S and consent of instructor. Instructor: McAuliffe or Storer. One course. C-L: Arts of the Moving Image

261S. Costume Design. ALP, R The process of designing costumes for the stage beginning with the fundamentals of design and the language of clothing. Reading of plays as basis for analysis and interpretation of text and character, conceptualization of design ideas, and directions for design research. Weekly lab providing experience with and an understanding of costume construction theory and methodology, including the use of costume shop tools and equipment. Instructor: Staff. One course. C-L: Visual Arts 233S

262S. Scene Design. ALP, R Study of theory and methodology of set design for stage through examination of historical and contemporary stage design as well as conceptualization, research, and development of design solutions for assigned plays. Instructor: Staff. One course. C-L: Visual Arts 234S
263S. Lighting Design. ALP, R Introduction to the process and practice of lighting design for the theater. Focus on text analysis, research, design process, instrumentation, control, color, design documents, and realization of designs in the theater. Includes the study of principles and practices, labs in design imagery, and projects in lighting design. Prior experience in theater production required. Instructor: Staff. One course. C-L: Visual Arts 235S, Dance 276S

272. America Dreams, American Movies. ALP A survey course in selected American films that create as well as reflect American national identity. Through lectures, weekly screenings and students' oral reports, we will study a dozen of the best-loved movies in our popular culture, from THE GOLD RUSH, KING KONG, and IT HAPPENED ONE NIGHT to SINGIN' IN THE RAIN, THE GODFATHER and WALL-E. We will examine how these movies, their directors, and their stars, came to define American mythologies in the twentieth century and how they have collected over time iconic resonance. Attention as well to genre, form, technique, and Hollywood's history. Instructor: Malone. One course. C-L: Arts of the Moving Image 212, Visual and Media Studies 355, English 288


275S. Acting For the Camera. ALP Introduction to film and television acting. Consent of instructor required. Instructor: Staff. One course. C-L: Arts of the Moving Image 310S

276. Italian Cinema. ALP, CCI One course. C-L: see Italian 380; also C-L: Literature 215, Arts of the Moving Image 254, Visual and Media Studies 308

277. The Dramatic Monster: Horror on Stage and Screen. ALP The evolving image of the "monster" on stage and screen, from the Victorian melodrama Sweeney Todd to the psychological-horror shocker Audition. Students will give oral reports (with appropriate clips) on horror movies past and present, beginning with the classic silent Cabinet of Dr. Caligari. Focus on how anxieties of different eras give rise to the different nightmares that play themselves out in the darkness of our theaters. Instructor: Bell. One course.

278. Introduction to Film Studies. ALP One course. C-L: see Arts of the Moving Image 201; also C-L: English 181, Literature 110, Visual and Media Studies 289, Documentary Studies 264, Policy Journalism and Media


282S. Transforming Fiction for Stage and Screen. ALP, W Theory and practice of the process of adaptation of serious literary works of fiction to screenplay or play form. Reading and analysis of literary works adapted as screenplays and plays. Project in writing an adaptation. Consent of instructor required. Instructor: Staff. One course. C-L: English 227S, Arts of the Moving Image 302S

282SA. Transforming Fiction for Stage and Screen. ALP, W Theory and practice of the process of adaptation of serious literary works of fiction to screenplay or play form. Reading and analysis of literary works adapted as screenplays and plays. Project in writing an adaptation. Taught in Duke-In-New York Program. Instructor: Malone. One course. C-L: English 272SA, Arts of the Moving Image 302SA

290-1. Special Topics in Dramatic Literature. ALP May be repeated for credit. Instructor: Staff. One course.

290-2. Special Topics in Acting. ALP May be repeated for credit. Instructor: Staff. One course.


290-4. Special Topics in Theater Studies Workshop. ALP Research, study, and exploration of a selected dramatic text or texts, other performance material, and/or particular aspects of performance (historical, cultural, textual, or stylistic). Emphasis on the process of investigating a text - both in theory and in practice. Culminates in performance or presentation. May be repeated for credit. Consent of instructor required. Instructor: Staff. One course.

290-5. Special Topics in Mainstage Production. ALP, CCI, R Students participate in the production of a theatrical text for public performance. Students analyze, research, rehearse, and produce a play under the direction of a member of the Theater Studies faculty or a guest professional. Students may focus on acting, directing, design, dramaturgy, management, or production; specific area of focus will be determined through audition and/or
arrangement with the instructor. Consent of instructor required. May be repeated for credit. Instructor: Staff. One course.

290-6. Special Topics in Film. ALP Topics vary. Instructor: Staff. One course.

290S-1. Special Topics in Dramatic Literature, History, Theory, or Criticism. ALP May be repeated for credit. Instructor: Staff. One course.

290S-2. Special Topics in Acting. ALP May be repeated for credit. Instructor consent required. Instructor: Staff. One course.

290S-4. Special Topics in Theater Studies. Topics vary. May be repeated for credit. Instructor: Staff. One course.

290S-5. Special Topics in Arts Management. ALP Topics in aspects of arts management. May be repeated for credit. Instructor: Staff. One course.

290S-6. Special Topics in Film. ALP Topics Vary. Instructor: Staff. One course.

291. Independent Study. ALP Individual directed study in a field of special interest on a previously approved topic, under the supervision of a faculty member, resulting in an academic or artistic product. Consent of instructor and the director of undergraduate studies required. Instructor: Staff. One course.

301. Religion and Ritual. ALP, CCI, CZ, EI One course. C-L: see Religion 289

310S. Non-Profit Cultural Institutions. EI, SS Non-profit cultural institutions are an integral part of arts communities at all levels: national, regional, local. Through readings, projects and service-learning, students gain overview of non-profit cultural organization formation, management, operational structures, governance challenges, board member responsibilities and situational ethics. Explores historical and present functions and social structures in which nonprofit tax-exempt organizations operate. Investigates how nonprofit cultural institutions have increasingly become a vehicle for fostering creativity in the arts and humanities. Students partner with local non-profit arts/cultural organizations to work on specific projects. Instructor: Ellison. One course. C-L: Economics 247S, Visual and Media Studies 329S

311S. Legal Issues for the Performing Arts. EI, SS An overview of copyright, contract, discrimination, employment, obscenity and other laws relevant to performing arts through readings and discussion of case law, statutes, sample legal documents, news reports and other materials. Includes exposure to legal issues for non-profit boards. Cuts across these legal issues to examine creative works themselves and their interplay with the body of laws. Views legal system in a broader context that examines how our legal system is a useful tool in promoting creation of artistic works. Instructor: Ellison. One course. C-L: Public Policy Studies 363S, Economics 223S, Dance 379S

316SA. stARTup Project. ALP, R This project-based class challenges teams of writers, actors, dancers, visual/media artists, musicians, and managers to come together to devise, workshop, and produce an arts-based event. Students will master the elevator pitch, develop fundraising and publicity/marketing strategies, conduct production meetings, manage a budget, and present the work at the end of the term. Students will study what strategies have led to success for startup arts companies in Chicago. We will make site visits to arts companies. Open only to students in Duke In Chicago Arts & Entrepreneurship summer program. Instructor: McAuliffe. One course. C-L: Visual and Media Studies 315SA, Arts of the Moving Image 316SA, Dance 307SA, Music 316SA, Markets and Management Studies

317. Professional Internship. Supervised work on a professional production; focus may be on acting, design, playwriting, theater administration, or stage management. Written analysis of both the process of producing as well as the final production. Consent of instructor required. Offered only on Satisfactory/Unsatisfactory basis. Half course. Instructor: Staff. Half course.

318. Professional Internship. Same as 317, but for work that extends over a full term. Consent of instructor required. Offered only on Satisfactory/Unsatisfactory basis. Instructor: Staff. One course.

322S. Chekhov. ALP, CCI, W One course. C-L: see Russian 327S; also C-L: International Comparative Studies

323. The Actress: Celebrity and the Woman. ALP, CCI, CZ One course. C-L: see Russian 383; also C-L: Women's Studies 260, International Comparative Studies 383

324S. National Dramas and Cabaret Nights: Theater in Modern Polish Culture. ALP, CCI, CZ One course. C-L: see Polish 307S
334. Shakespeare: Comedies and Romances. ALP One course. C-L: see English 334; also C-L: Medieval and Renaissance Studies 333

336. Shakespeare Before 1600. ALP, EI, R One course. C-L: see English 336; also C-L: Medieval and Renaissance Studies 331

337. Shakespeare After 1600. ALP, EI, R One course. C-L: see English 337; also C-L: Medieval and Renaissance Studies 332

340S. Solo Performance. ALP, W The makings of solo performance. Creation of personal presentation through journal writing, memory exploration, and personal interests. Exploration of text through voice work, storytelling, and choreography of the solo performer through movement, gesture, and props. Previous theater or dance experience plus instructor consent required. Instructor: Hemphill. One course. C-L: Dance 206S


346S. Voice and Body Gesture Theater. ALP Exercises designed for breath control, ear training and the spoken word, with emphasis on the theatrical use of the voice in gestural theater, in order to strengthen, free, and develop the natural range of the voice with the support of the body. Individual and ensemble work. Pre-req: Theatrst 145S or 248S (or consent of Instructor). Instructor: Hemphill. One course.

351S. Directing Chekhov. ALP, CCI, EI Seminar in directing with emphasis on directing actors, demonstration and laboratory exercises, text analysis, and rehearsal techniques. Examination of rehearsal working methods, development of performance choices, exploration of material and process with emphasis on the plays of Chekhov. Explores visual and conceptual material of directing, and problems of working in performance. Includes a video project--students videotape their directing work and accomplish post-production--edit and production of a digital video file. Projects evaluated on basis of composition, visual interest, and narrative force. Pre-req: Theater Studies 145S and consent of instructor. Instructor: McAuliffe. One course. C-L: Russian 351S

364. Performance and Technology: Composition Workshop. ALP, STS One course. C-L: see Dance 308; also C-L: Information Science and Information Studies 376

370S. Moving Image Practice. ALP, STS One course. C-L: see Arts of the Moving Image 301S; also C-L: Visual and Media Studies 261S, Information Science and Information Studies

372. Existentialist Cinema. ALP, CCI, CZ, EI, STS One course. C-L: see German 386; also C-L: Literature 218, Visual and Media Studies 283, Arts of the Moving Image 267, Arts of the Moving Image


390S-1. Special Topics in Directing. ALP Topics vary each semester offered. Instructor: Staff. One course.

390S-2. Special Topics in Dramatic Writing. ALP May be repeated for credit. Instructor: Staff. One course.

390S-3. Special Topics in Design. ALP Topics in aspects of theatrical design. Topics vary each semester offered, may be repeated for credit. Instructor: Staff. One course.

390S-4. Special Topics in Performance Studies. ALP Topics vary by semester. May be repeated for credit. Topics course. Instructor: Staff. One course.

401S. Senior Colloquium. ALP, R Major research project in production (acting, directing), critical writing, dramatic writing, or design. Instructor: McAuliffe. One course.

492T. Tutorial. Tutorial under the supervision of a faculty member for two or more students working on related independent projects. Consent of instructor required. Instructor: Staff. One course.

493-1. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation.
of a previously approved topic. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

495. Senior Distinction Project. Consent of instructor required. Instructor: Staff. One course.

520A. Theater in London: Text. A survey of drama from the Elizabethan period to the present based on performances offered by the Royal Shakespeare Company, Royal National Theatre, and other theaters in London and Stratford-Upon-Avon. Twenty plays will be seen and studied. Instructor consent required. Instructor: Staff. One course. C-L: English 583

530S. Translation Studies and Workshop. ALP, CCI, CZ, W Through reading texts about translation and by doing an independent project translating part of a play, students develop skills in translation theory and practice, culminating in a public staged reading of their work. Each student chooses a different play, in source language of his/her own choice, and translates into English. Readings are seminal texts in translation studies covering topics such as globalization, adaptation, the translator's role, gender in translation, and postcolonialism to explore transmission of text/performance across cultures. Course is for graduate students and undergraduates. Enrollment limited. No previous translation experience required. Instructor: Conceison. One course. C-L: Romance Studies 520S, Asian & Middle Eastern Studies 502S

533S. Performance Studies. ALP Introduction to theatrical transformations of traditional notions of drama into the broader category of performance, and to the performative field that seeks to understand them. Topics include the crossing of formal boundaries, the development of new technical possibilities, the role of uncertainty in the process of making a performance, and the purposes of performance, which range from the social to the spiritual and from the political to the personal. Theoretical readings and performances including works by Wagner, Artaud, Brecht, Benjamin, Chaplin, O'Neill, Stanislavski, Barthes, and Anderson. Instructor: Staff. One course. C-L: Literature 520S

535S. AfroFuturism. ALP One course. C-L: see African and African American Studies 620S; also C-L: Dance 535S, Visual and Media Studies 524S

540A. Theater in London: Performance. Understanding the growth of a play from the script to final production, with focus on shows playing in London. Includes backstage theater tours, scene work, observations, audition workshops with theater practitioners, and supervised projects. Instructor consent required. Instructor: Staff. One course. C-L: English 584

590. Advanced Special Topics in Dramatic Literature (Lecture). ALP Topics vary by semester. Consent of instructor required. Instructor: Staff. One course.

590S-1. Advanced Special Topics in Dramatic Literature (Seminar). ALP Instructor: Clum or Foster. One course.

671S. Thinking Digital Cinema. ALP, STS One course. C-L: see Literature 614S; also C-L: Arts of the Moving Image 614S, Visual and Media Studies 614S

691. Independent Study. Individual directed study on advanced graduate level under supervision of a faculty member resulting in an academic or artistic product. Consent of instructor required. Instructor: Staff. One course.

The Major

The major in theater studies offers students instruction in both 1) the relationship of theater to the cultures that produce and consume it through the study of dramatic literature, history, and theory; and 2) the collaborative theater arts (writing, acting, design, directing, production), with a particular interest in the ways in which these two areas inform each other. While the theater studies major offers students preparation for graduate study, advanced theater training, or entry-level work in theater and related professions, it also offers a basic understanding and appreciation of the literature, history, and practice of theater for a student who desires a liberal arts education.

Major Requirements

- Theater Studies 115 (Theater Today)
- Theater Studies 190S (Reading Theater) or Theater Studies 239S (Theater in London)
- Theater Studies 280S (Dramatic Writing)
- Theater Studies 145S (Acting)
- Theater Studies 255S (Directing)
• One 100-level or above design class
• Theater Studies 401S (Senior Colloquium)
• Three additional 100-level or above courses in theater studies

Students are expected to take three theater studies electives in at least one of the following areas of specialization in order to deepen their knowledge and skills:

• Critical Studies in Theater and Performance: 201 or one 290-5, 390S-4, 533S
• Dramatic Writing: 273S, 290-5, 480S
• Acting: 246S or 248S, 290-5, 345S
• Design: an additional two courses from 261S, 262S, 263S, 390S-3
• Dramaturgy & Directing: one 290-5, 346S, 390S-1

Note: Theater Studies 290-5 (Theater Studies Production) is an integrative experience and can be taken at any time in the student’s undergraduate career.

**Departmental Graduation with Distinction**

Students with at least a B average in their theater studies courses are eligible to apply for a project. They should acquire the policy for Graduation with Distinction in theater studies and an application form from the theater studies office. The student’s proposed project needs the approval of the project supervisor and the director of undergraduate studies. All projects must be approved by registration in the spring semester of the year prior to the project.

A student may pursue a project in writing, directing, design, acting, dramatic literature, theater history, or dramatic theory. All projects must have a research and a substantial written component. They may also have a production component. Distinction projects are granted one course credit in the fall (Theater Studies 495) and the remaining work will be completed in conjunction with Senior Colloquium in the spring.

The student’s written work and production project will be reviewed by a committee (approved by the director of undergraduate studies) composed of the project supervisor, the director of undergraduate studies, and a third faculty member in theater studies or a related field. A meeting of the committee and the student to evaluate the project will be part of the evaluation process. The committee will decide whether the student receives distinction and what level of distinction the student will receive. No special courses are required, though there are prerequisites for distinction projects. See the **Policy for Graduation with Distinction in theater studies for specific prerequisites.**

**The Minor**

One course from the following: Theater Studies 115 (Theater Today), Theater Studies 190S-1 (Reading Theater), or Theater Studies 239AS (Theater in London).

Four additional 100-level or above courses in theater studies.

**Visual Studies**

For courses in visual studies, see art, art history, and visual media studies on page 112.

**Women's Studies**

Professor Khanna (English), Director; Professors Grosz and Rudy; Associate Professors Hasso, Weeks, and Wilson; Assistant Professor Lamm; Assistant Professor of the Practice Rosenberg; Affiliated faculty: Professors Allison (cultural anthropology), Fulkerson (divinity), Holloway (English), Koonz (history), Nelson (cultural anthropology), Piot (cultural anthropology), Silverblatt (cultural anthropology), Wald (English) and Wiegman (Literature); Associate Professors, Lubiano (African and African American Studies), Mottahedeh (literature), Olcott (history), Rojas (Asian and Middle Eastern studies), and Stein (cultural anthropology); Adjunct faculty: Associate Professor Curtain (University of North Carolina) and Assistant Professor Gokariksel (University of North Carolina)

A major and a minor is available in this program.

Women's studies is part of a historical educational enterprise inaugurated by social movement and dedicated to the study of gender, sexuality, and justice as complex social phenomenon. In the field's first decades, feminist scholarship reoriented traditional disciplines toward the study of women and gender and developed new methodologies and critical vocabularies that have made interdisciplinarity a key feature of women's studies as an autonomous field. Today, scholars continue to explore the meaning and impact of gender and sexual identification as
primary—though by no means transhistorical or universal—ways of organizing social life by pursuing an intersectional analysis of gender, race, sexuality, class, and nationality. In the classroom, as in its research, its goal is to transform the university’s organization of knowledge by reaching across the epistemological and methodological divisions of historical, political, economic, representational, technological, and scientific analysis. In the program’s dual emphasis on interdisciplinarity and intersectionality, it offers students new knowledge about identity while equipping them with a wide range of analytical and methodological skills.

The courses listed below are offered by women’s studies or by other academic departments and programs. For a more detailed description of each course, contact the women’s studies office or the appropriate department or program office.

Courses in Women’s Studies (WOMENST)

89S. First Year Seminar in Gender Studies. SS New concepts and themes in gender and feminist studies. Topics may vary each semester. Instructor: Staff. One course.

101. Gender and Everyday Life. CCI, SS Introduction to the way Women's Studies as an interdisciplinary field studies gender in its complex intersection with race, class, and sexuality. The sex/gender distinction; biological determinism, ideology, commodity culture, essentialism and social construction; the sexual division of labor; colonization and post coloniality, imperialism, racialization; and heteronormativity. Instructor: Staff. One course.

115. Introduction to the History of Women, Gender, and Sexuality. CCI, CZ, EI, SS One course. C-L: see History 115; also C-L: Study of Sexualities 115

190A. Duke-Administered Study Abroad: Special Topics in Women's Studies. Topics differ by section. Instructor: Staff. One course.

190FS. Special Topics in Focus. Seminar for students in Focus Program only. Topics vary each semester offered. Instructor: Staff. One course.

190S. Special Topics in Women's Studies. Seminar topics vary, focusing on interdisciplinary work arising from feminist scholarship. Instructor: Staff. One course.

195. Comparative Approaches to Global Issues. CCI, CZ, SS, W One course. C-L: see International Comparative Studies 195; also C-L: Cultural Anthropology 195, History 103, Political Science 110, Sociology 195

199S. Thinking Gender: An Introduction to Feminist Theory. CCI, SS Introduction to foundational concepts in feminist thought on sex and gender. Survey of core concepts in the field of Women's Studies and introduction to the fundamental debates within the history of feminist thinking. Instructor: Staff. One course. C-L: Marxism and Society

202S. Introduction to Study of Sexualities (DS4). CZ One course. C-L: see Study of Sexualities 199S

208. The French Love Story. ALP, CCI One course. C-L: see French 361; also C-L: Literature 262

209S. Muslim Women Across the Ages. CCI, CZ, SS, W One course. C-L: see History 225S; also C-L: International Comparative Studies 365S, Islamic Studies

210S. Gender and Digital Culture. ALP, STS, W One course. C-L: see Information Science and Information Studies 340S; also C-L: Visual and Media Studies 286S

212. Gender in Dance and Theatre. ALP, CCI, CZ One course. C-L: see Dance 368; also C-L: Theater Studies 236, International Comparative Studies 215, Study of Sexualities

214. Contemporary Israeli Cinema. ALP, CCI, EI, W One course. C-L: see Asian & Middle Eastern Studies 241; also C-L: Arts of the Moving Image 257, Literature 217, Jewish Studies 241, Islamic Studies

215. Cyborgs. CCI, SS, STS, W One course. C-L: see Cultural Anthropology 213; also C-L: International Comparative Studies 241, Policy Journalism and Media Studies

217. Gender and Culture. CCI, SS One course. C-L: see Cultural Anthropology 271; also C-L: International Comparative Studies 203, Study of Sexualities

218S. Daily Life in Antiquity. ALP, CCI, CZ One course. C-L: see Classical Studies 268S

219. Medieval Bodies: Sex & Food. CCI, CZ, EI One course. C-L: see History 246; also C-L: Medieval and Renaissance Studies 256, Study of Sexualities 210
221. Women at Work: Gendered Experience of Corporate Life. CCI, SS, STS Analysis of gender, class and race in contemporary business organizations and roles of men and women within them. Management systems, information technology and human resource systems, as artifacts to larger, gendered environment. Instructor: Reeves. One course. C-L: Sociology 331

222. Philosophical Issues in Feminism. CZ, EI One course. C-L: see Philosophy 222

222S. Philosophical Issues in Feminism. One course. C-L: see Philosophy 222S

225. Women and the Political Process. R, SS A systematic analysis of the U.S. political system, electoral politics, platform implications, and leadership trends in the context of women’s role in political life, as voters, leaders, and citizens. Instructor: Staff. One course. C-L: Political Science 203

227. Women in Film. ALP, CCI One course. C-L: Arts of the Moving Image 216, Literature 219, Study of Sexualities 225

230. Women in the Economy. CCI, EI, R, SS One course. C-L: see Economics 348; also C-L: International Comparative Studies 348


233. Traffic in Women: Cultural Perspectives on Prostitution in Modern China. ALP, CCI, SS One course. C-L: see Asian & Middle Eastern Studies 333; also C-L: Cultural Anthropology 334, Study of Sexualities 233, Arts of the Moving Image 270

235S. Clinical Issues for the LGBTQ Community (A). CCI, SS One course. C-L: see Study of Sexualities 235S; also C-L: Psychology 316S

237. African American Women and History. CCI, CZ One course. C-L: see African and African American Studies 310; also C-L: History 349

239. Women, Gender, and Sexuality in U.S. History. CCI, CZ, EI, SS, W One course. C-L: see History 374

239D. Women, Gender, and Sexuality in U.S. History. CCI, CZ, EI, SS, W One course. C-L: see History 374D

241. Gender, Work, and Organizations. CCI, SS One course. C-L: see Sociology 229; also C-L: Markets and Management Studies

245. Gender and Morality: Indian Perspectives. ALP, CCI, CZ, EI One course. C-L: see Religion 272; also C-L: Ethics Courses Offered Through Other Departments


250. Film and the African Diaspora. ALP, CCI, SS One course. C-L: see African and African American Studies 330; also C-L: Visual and Media Studies 228

252S. Popular Fictions. ALP One course. C-L: see Literature 345S; also C-L: English 375S

260. The Actress: Celebrity and the Woman. ALP, CCI, CZ One course. C-L: see Russian 383; also C-L: Theater Studies 323, International Comparative Studies 383


270S. Animals and Ethics: Welfare, Rights, Utilitarianism, and Beyond. CCI, EI, SS The ways humans depend on animals for a variety of products and information, with questions about the morality of specific uses. The origin of the contemporary animal rights movement through the lens of ethical theories, Kantianism, rights approaches, abolition, Peter Singer, and utilitarianism. The role of animal welfare through the nineteenth and twentieth centuries, viewed internationally, including comparison of welfare versus rights agendas. Postmodern and feminist alternatives to existing theories. Animal law and the question of legal standing for animals. Benefits and limits of
environmentalism as a mode of animal advocacy. Instructor: Rudy or Staff. One course. C-L: Public Policy Studies 227S

275. Food, Farming, and Feminism. CCI, EI, SS Viewing "agriculture," "nature," and "consumption" as pressing feminist themes and exploration of various dimensions of the cultural and political ecology/economy of producing, processing, circulating, preparing, and consuming sustenance. Particular focus on the ethical impact of US policy on rural farm communities and developing nations. Instructor: Staff. One course. C-L: Environment 209, Global Health 225

275S. Food, Farming, and Feminism. CCI, EI, SS Viewing "agriculture," "nature," and "consumption" as pressing feminist themes and exploration of various dimensions of the cultural and political ecology/economy of producing, processing, circulating, preparing, and consuming sustenance. Particular focus on the ethical impact of US policy on rural farm communities and developing nations. Instructor: Staff. One course. C-L: Environment 209S, Global Health 225S

276. Global Performance Art: History/Theory from 1950's to Present. ALP, CCI, CZ, EI One course. C-L: see Visual and Media Studies 344; also C-L: Information Science and Information Studies 275, Literature 222, Theater Studies 235

277D. Global Art Since 1945. ALP, CCI, CZ, EI One course. C-L: see Art History 381D; also C-L: International Comparative Studies 219D, Ethics Courses Offered Through Other Departments

278. Sex/Gender - Nature/Nurture: Intersections of Biology and Society. NS, STS Debates about sexuality, sex, and gender hinge on radically different ideas about relative effects of biological forces vs. social forces, or nature vs. nurture. Course changes terms of arguments about sexuality and gender and nature/nurture. Explores how nature/nurture emerged as scientific and popular debate. Evaluates new developments in science and cultural fields that are now reconsidering how biology and environments interact. Showcases debates about how sex and sexuality are formed through interplay of genetic information, hormones, material bodies, and social environments. Instructor: Wilson, Williams. One course. C-L: Cultural Anthropology 278, Neuroscience 278, Psychology 226, Study of Sexualities 278

279. Melodrama East and West. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 211; also C-L: Visual and Media Studies 223

280S. Anthropology of Space. CCI, SS One course. C-L: see Cultural Anthropology 426S; also C-L: Literature 235S, Islamic Studies

282. Italian Women Writers. ALP, EI One course. C-L: see Italian 382; also C-L: Medieval and Renaissance Studies 344

290. Selected Topics in Women's Studies. Topics vary, focusing on interdisciplinary work arising from feminist scholarship. Instructor: Staff. One course.

290A. Selected Topics in Women's Studies. Topics vary, focusing on interdisciplinary work arising from feminist scholarship. Study Abroad. Instructor: Staff. One course.

290S. Selected Topics in Women's Studies. Seminar version of Women's Studies 290. Instructor: Staff. One course.

290SA. Selected Topics in Women's Studies. Topics vary, focusing on interdisciplinary work arising from feminist scholarship. Seminar version of 290A. Study Abroad. Instructor: Staff. One course.

291. Independent Study. Directed reading in a field of special interest under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor and program director required. Instructor: Staff. One course.

293. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to juniors. Consent of instructor and program director required. Instructor: Staff. One course.

295S. Sex Work: The Politics of Sexual Labor. CCI, SS Sex work from the perspective of the labor and the purchase. Controversies over questions of gender and power, consent and coercion, sexual practices and labor

303. Gender, Race, and Ethnicity in Politics and Public Policy. SS One course. C-L: see Political Science 303; also C-L: African and African American Studies 241, Public Policy Studies 235

306S. Women, Fire, and Dangerous Things: Gendered Activism in the American South. CCI, EI, R, SS One course. C-L: see Documentary Studies 362S; also C-L: History 354S

360S. Feminist Activism: Social Movements. CCI, CZ, SS, W Comprehensive introduction to feminist theoretical conceptions of the social, political, economic, and the human. Explores the rise of gender based discourses and social movements in the context of broader considerations of modernity, democracy, and liberal humanism and the value of rights discourse for feminist agendas. Includes a comparative dimension that emphasizes cross cultural and historical analysis. Instructor: Staff. One course.

361. Money, Sex, Power. CCI, CZ, SS Capitalism as a historical force in its relation to gender and race structures. The intellectual history provided by Marxist critiques of capital for the development of a distinct body of feminist materialist thought, including dual systems theory, ideology critique, poststructuralist understandings of language and culture, and the rise of globalization as the latest economic context in which to think about gender, material life and power. Instructor: Staff. One course. C-L: Markets and Management Studies, Marxism and Society

362. Gender and Popular Culture. CCI, SS, W Same as Women's Studies 362S except instruction is provided in lecture format. Instructor: Staff. One course. C-L: Visual and Media Studies 330

362S. Gender and Popular Culture. CCI, SS, W An analytic investigation of ways popular cultural forms produce and reinforce gender relations. Instructor: Staff. One course. C-L: Visual and Media Studies 331S

363S. Interpreting Bodies: Identity and Beyond. CCI, SS How the body has come to define the human in language, law, science, politics and economics. The body's relation to identity and subjectivity. The representation of the body in particular cultural discourses and the social history and dynamic in which that representation has taken place. Instructor: Staff. One course. C-L: International Comparative Studies 360S

364S. Race, Gender, and Sexuality. CCI, SS Gender's relationship to race and sexuality explored through a variety of issues, including health, intimacy, family, the state, economic practices, transnational communities and identities, and social movement. Instructor: Staff. One course. C-L: Study of Sexualities 264S, African and African American Studies 242S

365. Gender and Political Theory. CCI, SS Feminist analyses of and engagements with some of the canonical texts and traditional concepts of Western political theory. Feminist contributions to, challenges to, and revisions of the terms of key conceptual and political debates in political theory. Instructor: Weeks. One course. C-L: Political Science 383, Women's Studies 367

365S. Feminist Classics. ALP, CCI One course. C-L: see Literature 365S; also C-L: Philosophy 274S, English 388S

366S. Nature, Culture, and Gender. CCI, EI, NS, SS Understanding human identity through a consideration of the human animal boundary, feminist primatology, animal welfare, the great ape project. Do women view nature differently than men? Ethics of primate research, primate gender roles, human justice and non-human animals, subjectivity and emotional lives of nonhuman animals, the relationship between gender, nature, and animals, new formulations of "nature/culture," women and animals. Instructor: Staff. One course.

367. Gender and Political Theory. CCI, SS Feminist analyses of and engagements with some of the canonical texts and traditional concepts of Western political theory. Feminist contributions to, challenges to, and revisions of the terms of key conceptual and political debates in political theory. Instructor: Weeks. One course. C-L: Women's Studies 365, Political Science 383

367. Feminist Ethics. CCI, EI, SS Do women experience the world differently than men? An examination of women's experience, women's ways of knowing, ethical systems and feminist critique, patriarchy, dualistic thinking, gender oppression, care ethics, ethical dilemmas. Lecture version of Women's Studies 367S. Instructor: Rudy. One course. C-L: Study of Ethics 204
367S. Feminist Ethics. CCI, EI, SS Do women experience the world differently than men? An examination of women's experience, women's ways of knowing, ethical systems and feminist critique, patriarchy, dualistic thinking, gender oppression, care ethics, ethical dilemmas. Instructor: Rudy. One course. C-L: Study of Ethics 204S

368. Gender, Sexuality, and Human Rights. CCI, EI, SS This course investigates gender and sexual dimensions of human rights, considering key international human rights campaigns and emphasizing the historical and philosophical contexts involved in advocacy for Women's Human Rights and Sexual Rights. Instructor: Staff. One course. C-L: Study of Sexualities 268

368S. Gender, Sexuality, and Human Rights. CCI, EI, SS This course investigates gender and sexual dimensions of human rights, considering key international human rights campaigns and emphasizing the historical and philosophical contexts involved in advocacy for Women's Human Rights and Sexual Rights. May include a service-learning component. Instructor: Staff. One course. C-L: Study of Sexualities 268S

369S. Transnational Feminism. CCI, EI, R, SS Ethico-political strengths and shortcomings of feminism across international borders. Philosophical, political, economic, filmic, and literary formulations of international feminism. Interdisciplinary and multimedia course. Topics include Marxist internationalism and feminism; disciplinary ethnocentrism; international human rights and women's rights; postcolonial feminism; labor, domesticity, and migration; and the idea of 'transnationalism'. One course. C-L: International Comparative Studies 208S

370S. Queer Theory. ALP, CCI, SS A seminar designed specifically for advanced study in sexuality and gender. Contextualizes queer theory as a distinct analytic tradition by paying attention to poststructuralist approaches to subjectivity, sociality, power, and knowledge. This course also serves as the capstone required for the Certificate in the program in the study of sexualities. Instructor: Staff. One course. C-L: Study of Sexualities 470S, Literature 475S, Marxism and Society

371S. Gender, Sexuality, and the Image. ALP, CCI, R, SS, W Image and visual culture in the production and engagement of gender, race, sexuality, and class. Examining the various ways images organize understandings and experiences of gender, sexuality, and their relations via the methodologies of feminist and queer theory. How contemporary feminist art challenges U.S. feminist scholarship working to theorize feminism from within transnational contexts. This course includes a curatorial component, and will be taught in collaboration with Duke University's Nasher Museum. Instructor: Lamm. One course. C-L: Study of Sexualities 371S, Visual and Media Studies 371S

372S. Freud and Sexuality. CCI, R, SS Introduction to central concepts in Sigmund Freud's writings, focusing mainly on his understanding of sexuality, stages of child's development through sexuality including development of the ego or sense of self, operations of the unconscious and genesis of sexual drives in the constitution of male and female subjects. Basic Freudian concepts explained through central feminist questions of sexuality and sexual difference. Instructor: Grosz. One course. C-L: Literature 260S, Study of Sexualities 310S, Psychology 322S

373S. Freud and Feminism: The Unconscious. CCI, R, SS Introduction to Freud's psychoanalytic accounts of the unconscious. How various gaps in consciousness explain symptoms, psychological disorders and dreams. Freud's account of the unconscious and its relevance to theories of subjectivity, feminist theory and antiracist theory, expanding subjectivity to include otherwise marginalized or oppressed social groups. How Freud's writings have been taken up by other leading intellectual figures, including Lacan, Irigaray, Kristeva, Derrida, and Deleuze and Guattari. Instructor: Grosz. One course. C-L: Literature 261S

380S. Feminist Research. CCI, EI, R, SS This interdisciplinary seminar uses feminist and critical scholarship from many disciplines to examine how ways of knowing (epistemology), ways of being (a person's identity and locations), power relations within and between countries, and different historical contexts impact the production, understanding, and circulation of knowledge. Course is designed to allow each student to develop a logical and feasible research question; improve their skills in reading, understanding, and evaluating existing research; and develop a research paper based on secondary sources. Open only to sophomores, juniors and seniors. No 1st year students. Instructor: Hasso. One course. C-L: International Comparative Studies 279S

385S. Women in the Public Sphere: History, Theory and Practice. CCI, SS, W Why and how women who seek to practice leadership in public life operate within broad historical and theoretical contexts. Examine how American women have exercised leadership for social change over the last two centuries. Analyze current debates about gender and leadership in academic literature and the popular press, and discuss the opportunities and challenges facing women today. Explore the relationship between theory and practice by applying theory to current-day issues. This
course serves as the preferred gateway course for The Moxie Project: Women and Leadership for Social Change (DukeEngage - 8 weeks in NYC working with a local or national organization serving women and girls). Instructor: Seidman. One course. C-L: Public Policy Studies 225S

401. Gender and the Law. CCI, EI, SS Examination of issues at the intersection of gender and law through a number of different theoretical lenses. Analyzes policy problems with gender implications from the perspective of formal equality, substantive equality, nonsubordination theory, different voice theory, autonomy, and various poststructural critiques. Engages theory at the level of concrete, easily accessible ethical and policy issues, including such topics as employment equality, pregnancy, domestic violence, rape, reproductive rights, sexual orientation and sexual identity discrimination, family equality, sexual harassment, pornography, education equality, affirmative action, and the justice system. Instructor: Bartlett. One course. C-L: Literature 430, Public Policy Studies 315


429. Gender and Sexuality in Latin America. CCI, CZ, SS One course. C-L: see Cultural Anthropology 429; also C-L: International Comparative Studies 426, Latin American Studies, Marxism and Society, Study of Sexualities

431. Imagining Justice: The U.S. and the Carceral Imagination. ALP, CCI, CZ, EI One course. C-L: see Literature 431; also C-L: African and African American Studies 421

432S. Gender, Sex and Citizenship. CCI, EI, SS One course. C-L: see Cultural Anthropology 432S; also C-L: Study of Sexualities 432S, International Comparative Studies 428S

439. Queer China. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 439; also C-L: Cultural Anthropology 439, Literature 439, Arts of the Moving Image 439, Visual and Media Studies 439

490. Advanced Topics in Women's Studies. SS Lecture version of Women's Studies 490S. Instructor: Staff. One course.

490S. Advanced Topics in Women's Studies. Topics vary, focusing on advanced interdisciplinary work arising from feminist scholarship. Instructor: Staff. One course.

493. Honors Independent Study. R Open to students pursuing distinction. Individual research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to seniors. Consent of instructor and program director required. Instructor: Staff. One course.


499S. Senior Seminar in Women's Studies. CCI, R, W Advanced research course for majors in Women's Studies. Topics vary by semester. Students produce a significant research paper. Consent of instructor required. Instructor: Staff. One course.

501S. History of Sexuality. CCI, CZ, SS One course. C-L: see History 501S

502S. Queer China. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 539S; also C-L: Cultural Anthropology 539S, Literature 539S, Arts of the Moving Image 539S, Visual and Media Studies 539S


509S. Race, Class, and Gender: A Social History of Modern (1750-present) Britain. CCI, CZ, EI, SS One course. C-L: see History 505S; also C-L: African and African American Studies 515S

515S. Gender, Identity, and Public Policy. R, SS One course. C-L: see Public Policy Studies 530S; also C-L: Political Science 521S
519S. Topics in Sexuality and Gender Studies. ALP, CCI One course. C-L: see Italian 585S
581S. Masculinities. CCI, CZ, R, SS One course. C-L: see Cultural Anthropology 540S
590. Topics in Feminist Studies. Lecture version of WOMEN'S Studies 590S. Instructor: Staff. One course.
590S. Selected Topics in Feminist Studies. A seminar in contemporary issues, methodology, and/or selected theoretical questions pertaining to feminist scholarship. Instructor: Staff. One course.
601S. Debates in Women's Studies. This course is designed for Masters and Professional Schools students and for Ph.D. students with little or no background in feminist scholarship. It introduces students to the basic conceptual tools of feminist inquiry by way of an examination of some of the key debates in feminist studies. Instructor: Staff. One course.
611S. Film Feminisms. ALP, CCI, CZ One course. C-L: see Literature 611S; also C-L: Arts of the Moving Image
615S. The #Selfie. CZ, EI, R, STS One course. C-L: see Literature 615S; also C-L: Arts of the Moving Image 615S, Visual and Media Studies 615S, International Comparative Studies 615S

Women's Studies Courses Across Disciplines

The following courses count toward a major or minor when taught by faculty affiliated with women's studies and/or approved by a women's studies faculty advisor. There are additional courses that count toward the major, and students should contact the women's studies office for additional information.

African and African American Studies
216. Culture and Politics in the Caribbean

Art History
280. European Art 1900-1945
288. Dada and Surrealism

Arts of the Moving Image
203. Film Theory

Cultural Anthropology
170. Advertising and Society: Global Perspective (DS4)
204. Self and Society (S)
250. Muslim World: Transformations and Continuities
271. Gender and Culture
272S. Advertising and Masculinity

English
750. Studies in Renaissance Literature

French
428. Sexuality and Gender Studies

History
574. Women, Gender, and Sexuality in U.S. History
800. Colloquia

International Comparative Studies
170. Muslim World: Transformations and Continuities
203. Gender and Culture
273S. Advertising and Masculinity

Italian
384. European Art 1900-1945

Jewish Studies
140. Judaism
140S. Judaism
271. Women in the Biblical Tradition: Image and Role

Linguistics
273S. Advertising and Masculinity

Literature
316. Film Theory
360S. Women Writers
390-6. Special Topics in Gender and Sexuality

Medieval and Renaissance Studies
655. Early Christian Asceticism

Philosophy
222. Philosophical Issues in Feminism
503S. Contemporary Ethical Theories

Political Science
306S. Politics and the Libido
582S. Contemporary Ethical Theories
Portuguese
360S. Geographies of the Erotic: Brazilian Literature in Translation

Psychology
220. The Psychology of Gender (S)
224. Self and Society (S)
658S. Seminar in Emotion (D, S)

Public Policy Studies
259S. Women as Leaders

Religious Studies
140. Judaism
140S. Judaism
271. Women in the Biblical Tradition: Image and Role
273. Gender in Religion in the United States
328S. Buddhism and Sexuality
367. Women and Sexuality in the Christian Tradition
380. Muslim World: Transformations and Continuities
634. Early Christian Asceticism

Russian
315. Women and Russian Literature
322S. Women in Contemporary Russian Society
512. Women and Russian Literature

Sociology
160. Advertising and Society: Global Perspective (DS4)
211. Wealth, Power, and Inequality
218. Sex, Gender, and Society
349. Sexuality and Society
350. The Changing American Family
355. Organizations and Management

Visual and Media Studies
170. Advertising and Society: Global Perspective (DS4)
298. Film Theory

House Courses. Women’s studies regularly sponsors house courses. While house courses do not officially count toward the major or the minor, students are strongly encouraged to consider them as valuable supplements to full-credit courses. Lists of house courses are available in the program office at the beginning of each semester.

The Major
To major in women’s studies, a student must take a minimum of ten courses. Women’s Studies 199S (Thinking Gender: An Introduction to Feminist Theory) and a senior seminar (Women’s Studies 490S) are required, along with four of the following:
360S. Feminism in Historical Context
361. Money, Sex, Power
361S. Money, Sex, Power
362. Gender and Popular Culture
362S. Gender and Popular Culture
363S. Interpreting Bodies: Identity and Beyond
364S. Race, Gender, and Sexuality
365. Gender and Political Theory
366S. Nature, Culture and Gender
367S. Feminist Ethics
368S. Gender, Sexuality and Human Rights
369S. Transnational Feminism
370S. Queer Theory
371S. Gender, Sexuality, and the Image

The remaining four elective courses must be at or above the 200 level and may be chosen from other women’s studies offerings. Students may also petition for credit for courses offered in other departments and programs, with clear documentation of their intellectual value to the overall goals of the major. Students may take no more than two independent study courses, which must be approved by the director of undergraduate studies.

Advising
Each year, faculty affiliated with women’s studies serve as advisors for students majoring in women’s studies. Majors are paired with faculty advisors on the basis of students’ general areas of interest. Students majoring in women’s studies are encouraged to seek out and work with any of the women’s studies faculty in addition to their primary faculty advisor.
Departmental Graduation with Distinction

Qualified students earning a major may be eligible for Graduation with Distinction in women’s studies. More detailed guidelines are available in the program office. Students interested in being considered for distinction should contact the program office no later than the spring of their junior year.

The Minor

For the minor, students complete five courses. Women’s Studies 199S (Thinking Gender: An Introduction to Feminist Theory) is required, along with two courses from the following:

- 360S. Feminism in Historical Context
- 361. Money, Sex, Power
- 362. Gender and Popular Culture
- 362S. Gender and Popular Culture
- 365. Race, Gender, and Sexuality
- 365S. Race, Gender, and Sexuality
- 366. Gender and Political Theory
- 366S. Gender and Political Theory
- 367S. Interpreting Bodies: Identity and Beyond
- 369S. Transnational Feminism
- 370S. Queer Theory
- 371S. Gender, Sexuality, and the Image

In addition, students choose two elective courses at or above the 200 level from other women’s studies offerings. Students may also petition for credit for courses offered in other departments and programs, with clear documentation of their intellectual value to the overall goals of the major. Students may take no more than two independent study courses, which must be approved by the director of undergraduate studies.

In addition to offering courses, and a major and minor representing a focus in women’s studies, the program sponsors lectures, films, discussions, conferences, and work-study opportunities. Additional information on courses, the women’s studies major or minor, and other opportunities in women’s studies is available at the women’s studies office, 210 East Duke Building, or on the website at http://womenstudies.duke.edu.

Writing

Associate Professor Neuschel, Director; Assistant Professor of the Practice Comer, Director of First-Year Writing; Assistant Professor of the Practice Moskovitz, Director of Writing-in-the-Disciplines; Assistant Professor of the Practice Rego, Director of Faculty Development and Assessment; Lecturer Ahern-Dodson, Director of Outreach; Senior Lecturing Fellow Russell, Director of the Writing Studio; Lecturing Fellows Ahlquist, Ansley, Baletti, Berkey, Boyette, Caputo, Chernik, Davis, Eilbaum, Font, Ford, Gatling, Golonka, Jassal, Kaufman, Kelly, Mullenexa, Pinuelas, Pihos, Ramirez, Reilly, Shuster, Smith, Summach, Summers, Tuttle, Ulett, Varma, Wesołowski, Whitt, and Wheeler

The Thompson Writing Program has three components: (1) the First-Year Writing Program (Writing 101), (2) the Writing-in-the-Disciplines Program, and (3) the Writing Studio, a tutorial service for undergraduates.

All undergraduates are required to complete Writing 101 (Academic Writing) in the fall or spring of their first year at Duke. They are also required to take two writing-designated courses in the disciplines. The Thompson Writing Program reviews these Writing-in-the-Disciplines courses and provides support for the faculty teaching them. The Writing Studio offers free tutoring to students working on writing for any course they are taking at Duke.

The various sections of Writing 101 are taught by an interdisciplinary faculty and focus on issues in the sciences, social sciences, or arts and humanities. While specific readings and writing assignments vary with the instructor, the aim of all sections is to introduce students to the practices of critical reading and writing that characterize university study.

Courses in the Thompson Writing Program (WRITING)

70. Introduction to Critical Reading and Writing. Designed for students who seek more time and practice in reading and academic writing skills in order to meet the rigorous intellectual demands of Writing 101. Topics include reading comprehension; recognizing key ideas; creating theses; conducting research; structuring arguments; eliminating errors in grammar, mechanics, and diction; citing sources; and avoiding plagiarism. Recitation component includes small-group workshops and one-on-one tutoring. Writing 70 does not satisfy either the Writing 101 or the WID requirements. Permission of Director of First-Year Writing required. Instructor: Staff. Half course.
75. **Writing Workshop for Non-Native Speakers of English.** Designed to provide additional support for undergraduate non-native speakers of English. Priority is given to first-year students enrolled in Writing 101. Students will become familiar with writing texts that better meet the expectations of American academic audiences. Topics include: strengthening organization, arguments/theses, word choice/usage, academic vocabulary, and grammar; understanding citation conventions, summarizing and paraphrasing, and plagiarism; and improving critical reading skills. Specific writing concerns of enrolled students will be addressed. Does not satisfy the Writing 101, WID, or seminar requirements. Instructor permission required. Instructor: Caputo. Half course.

75T. **Writing Tutorial for Non-Native Speakers of English.** Designed to provide additional support for undergraduate non-native speakers of English. Priority is given to first-year students enrolled in Writing 101. Students will become familiar with writing texts that better meet the expectations of American academic audiences. Topics include: strengthening organization, arguments/theses, word choice/usage, academic vocabulary, and grammar; understanding citation conventions, summarizing and paraphrasing, and plagiarism; and improving critical reading skills. Specific writing concerns of enrolled students will be addressed. Instructor permission required. Half course.

90SK. **US Academic Writing for EFL Students.** An introduction to academic writing culture in the U.S. and an initial platform for English Foreign Language (EFL) students to learn to communicate effectively through their writing in a U.S. academic environment. Writing test administered on site to determine if students should enroll in this course. Instructor consent required. Taught at Duke Kunshan University. Instructor: Staff.

101. **Academic Writing.** Instruction in the complexities of producing sophisticated academic argument, with attention to critical analysis and rhetorical practices. Topics vary by section. Instructor: Staff. One course.

190S. **Special Topics: Writing in the Disciplines.** Topics vary by section. Topics course. Instructor: Staff. One course.

190SA. **Special Topics: Writing in the Disciplines.** Topics vary by section. Topics course. Instructor: Staff. One course.

230SK. **Writing Across Cultures.** CCI, W Writing experience and training through theme-based seminars with a particular emphasis on cross-cultural inquiry and making texts public. Guided practice in intellectual reading and writing of the sort expected in courses across the academy and in civic and professional life beyond the university. Prerequisite: Writing 101 or equivalent. Taught at Duke Kunshan University. Instructor: Staff.

293. **Research Independent Study.** R, W Individual investigation, reading, and writing under the supervision of a faculty member leading to a substantial written document. Prerequisite: Writing 101. Consent of instructor and Director of the Thompson Writing Program required. Instructor: Staff. One course.
Medicine (School)—Graduate (School)
Basic Science Courses Open to Undergraduates

Qualified students in arts and sciences may select courses from the following offered by the graduate departments associated with the School of Medicine.

A major is not offered to undergraduates in any of the departments listed below.

For permission to register for these courses and for further information, see the contacts listed with each department.

Biochemistry

Courses in Biochemistry (BIOCHEM)
Dr. Leonard D. Spicer, Director of Graduate Studies


393. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to first-year students and sophomores with consent of supervising instructor. Instructor: Staff. One course.

401. Applied Biochemistry. NS Utilizes knowledge gained from Introduction to Biochemistry to become more comfortable with its application. Augments current biochemical knowledge by delving into disease mechanisms, media-hyped health crazes, and assessing clinical trials. At conclusion of this class, you should be able to critically assess biochemical statements and validity in all mediums, whether in a class or presented by the media. Prerequisite: Intro to Biochemistry I (Summer or Fall semester) or related biology/chemistry classes with permission of instructor. Instructor: Hamilton. One course.

536. Bioorganic Chemistry. One course. C-L: see Chemistry 536

593. Research Independent Study. R Individual research in a field of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Designed for students interested in either a laboratory or a library project in biochemistry. One course for undergraduate students. One to twelve units for graduate students. Instructor: Staff. Variable credit.

622. Structure of Biological Macromolecules. R Computer graphics intensive study of some of the biological macromolecules whose three-dimensional structures have been determined at high resolution. Emphasis on the patterns and determinants of protein structure. Two-hour discussion session each week along with computer-based lessons and projects. Instructors: D. Richardson and J. Richardson. One course. C-L: Structural Biology and Biophysics 622, Computational Biology and Bioinformatics 622

658. Structural Biochemistry I. Principles of modern structural biology. Protein-nucleic acid recognition, enzymatic reactions, viruses, immunoglobulins, signal transduction, and structure-based drug design described in terms of the atomic properties of biological macromolecules. Discussion of methods of structure determination with particular emphasis on macromolecular X-ray crystallography NMR methods, homology modeling, and bioinformatics. Students use molecular graphics tutorials and Internet databases to view and analyze structures. Prerequisites: organic chemistry and introductory biochemistry. Instructors: Beese and staff. Half course. C-L: Cell and Molecular Biology 658, Cell Biology 658, University Program in Genetics 658, Immunology 658, Structural Biology and Biophysics 658, Computational Biology and Bioinformatics 658
659. **Structural Biochemistry II.** Continuation of Biochemistry 658. Structure/function analysis of proteins as enzymes, multiple ligand binding, protein folding and stability, allosterry, protein-protein interactions. Prerequisites: Biochemistry 658, organic chemistry, physical chemistry, and introductory biochemistry. Instructors: Zhou and staff. Half course. C-L: Cell Biology 659, Immunology 659, Computational Biology and Bioinformatics 659, Structural Biology and Biophysics 659, University Program in Genetics 659


668. **Biochemical Genetics II: From RNA to Protein.** Mechanisms of transcription, splicing, catalytic RNA, RNA editing, mRNA stability and translation. Mini-course, 2nd half semester. Instructors: Been and Staff. Half course. C-L: Cell Biology 668, Immunology 668, University Program in Genetics 668

681. **Physical Biochemistry.** A structure-based introduction to the role of thermodynamic driving forces in biology. An overview of experimental sources of structural and dynamic data, and a review of the fundamental concepts of thermodynamics. Both concepts are combined to achieve a structural and quantitative mechanistic understanding of allosteric regulation, and of coupled ligand binding and conformational change. Statistical thermodynamics is used to develop ensemble models of protein and nucleic acid dynamics. This treatment leads into specific examples and general principles of how to interpret structural and dynamic information toward the purposes of other research. Instructor consent required. Instructor: Oas. One course. C-L: Structural Biology and Biophysics 681

695. **Macromolecular Structure Determination by NMR Spectroscopy and X-ray Crystallography.** Theoretical and experimental principles of nuclear magnetic resonance (NMR) spectroscopy and macromolecular x-ray crystallography. Topics of NMR cover theory, data collection and interpretation of macromolecular NMR experiments, including 1D, 2D, and multidimensional NMR data collection and interpretation, chemical exchange, protein dynamics, residual dipolar couplings, and solution structure determination. Emphasis on crystal symmetry, space group determination, diffraction theory, and a practical understanding of macromolecular crystallization, x-ray intensity data collection, macromolecular structure determination, refinement, and analysis. Prerequisites: Undergraduate physical chemistry, undergraduate biochemistry, and one year of calculus. Instructor consent required. Instructor: Schumacher. One course.

**Cell Biology**

Courses in Cell Biology (CELLBIO)

Sharon Endow, Professor

493. **Research Independent Study.** R Individual Research in a field of special interest under the supervision of a faculty member, the central goal of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor required. Instructor: Staff. One course. C-L: Marine Sciences

503. **Introduction to Physiology.** Modern organ physiology; cellular physiology, organ system physiology including cardiovascular, respiratory, renal gastrointestinal, endocrine, reproductive, muscle and nervous. Mini course. Prerequisite: elementary biology. Instructors: Carbrey and Jakoi. One course.

551. **Cell and Molecular Biology.** One course. C-L: see Cell and Molecular Biology 551

658. **Structural Biochemistry I.** Half course. C-L: see Biochemistry 658; also C-L: Cell and Molecular Biology 658, University Program in Genetics 658, Immunology 658, Structural Biology and Biophysics 658, Computational Biology and Bioinformatics 658

659. **Structural Biochemistry II.** Half course. C-L: see Biochemistry 659; also C-L: Immunology 659, Computational Biology and Bioinformatics 659, Structural Biology and Biophysics 659, University Program in Genetics 659

668. **Biochemical Genetics II: From RNA to Protein.** Half course. C-L: see Biochemistry 668; also C-L: Immunology 668, University Program in Genetics 668
Computational Biology and Bioinformatics

Courses in Computational Biology and Bioinformatics (CBB)
Scott Schmidler, Associate Professor

510S. Computational Biology Seminar. A weekly series of seminars on topics in computational biology presented by invited speakers, Duke faculty and CBB doctoral and certificate students. This course is required for all first and second year CBB students. In addition, all certificate students must register and receive credit for the seminar for four semesters.

511. Journal Club. NS, R A weekly series of discussions led by students that focus on current topics in computational biology. Topics of discussion may come form recent or seminal publications in computational biology or from research interests currently being pursued by students. First and second year CBB doctoral and certificate students are strongly encouraged to attend as well as any student interested in learning more about the new field of computational biology.

520. Genome Tools and Technologies. This course introduces the laboratory and computational methodologies for genetic and protein sequencing, mapping and expression measurement. Instructor: Dietrich. One course. C-L: Genome Sciences and Policy

540. Statistical Methods for Computational Biology. Methods of statistical inference and stochastic modeling with application to functional genomics and computational molecular biology. Topics include: statistical theory underlying sequence analysis and database searching; Markov models; elements of Bayesian and likelihood inference; multivariate high-dimensional regression models, applied linear regress analysis; discrete data models; multivariate data decomposition methods (PCA, clustering, multi-dimensional scaling); software tools for statistical computing. Prerequisites: multivariate calculus, linear algebra and Statistical Science 611. Instructor: Engelhardt, Mukherjee, or Schmidler. One course. C-L: Statistical Science 613

541. Statistical Genetics. Mechanisms, probability models and statistical analysis in examples of classical and population genetics, aimed at covering the basic quantitative concepts and tools for biological scientists. This module will serve as a primer in basic statistics for genomics, also involving computing and computation using standard languages. Instructor: Staff. One course. C-L: Statistical Science 504, Genome Sciences and Policy

550. Computational Structural Biology. QS, R One course. C-L: see Computer Science 664; also C-L: Statistical Science 614

574. Modeling and Engineering Gene Circuits (GE, MC). One course. C-L: see Biomedical Engineering 574

590. Special Topics in Computational Biology. Instructor: Staff. One course.

591. Independent Study. Faculty directed experimental or theoretical research. Instructor: Staff. Variable credit.

658. Structural Biochemistry I. Half course. C-L: see Biochemistry 658; also C-L: Cell and Molecular Biology 658, Cell Biology 658, University Program in Genetics 658, Immunology 658, Structural Biology and Biophysics 658

Cell and Molecular Biology

Courses in Cell and Molecular Biology (CMB)
Meta Kuehn, Director of Graduate Studies

551. Cell and Molecular Biology. This class covers a wealth of cell and molecular biology in a modular format, with modules focusing on either critical discussion of primary literature, developing quantitative/mathematical approaches to the biology, or both. Each module consists of five or six classes. Students select six (non-concurrent) modules; each module contributes to 10% of the final grade. At the end of the class, students develop a research proposal with an assigned faculty coach. All proposals are presented to the class in a 2-day symposium, contributing 40% of the final grade. Undergraduates require permission of coordinator to enroll. Instructors: Lew and Nicchitta. One course. C-L: Cell Biology 551

658. Structural Biochemistry I. Half course. C-L: see Biochemistry 658; also C-L: Cell Biology 658, University Program in Genetics 658, Immunology 658, Structural Biology and Biophysics 658
Immunology

Courses in Immunology (IMMUNOL)
Weiguo Zhang, Director of Undergraduate Studies

493. Research Independent Study. R Individual research and reading of the primary literature in a field of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor required. Instructor: Staff. One course.

494. Research Independent Study. R Individual research and reading of the primary literature in a field of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor required. Instructor: Staff. One course.

544. Principles of Immunology. NS, R An introduction to the molecular and cellular basis of the immune response. Topics include anatomy of the lymphoid system, lymphocyte biology, antigen-antibody interactions, humoral and cellular effector mechanisms, and control of immune responses. Prerequisites: Biology 220 or Biology 201L. Instructor: Zhang. One course. C-L: Biology 515

601. Immunology of Human Diseases. This advanced course will cover the immune aspect of various human diseases including autoimmune diseases, allergy, tumor, inflammation and infectious diseases. The topics are divided into three categories: immunopathogenesis, host immunity against infections and tumor immunology. Prerequisite: Immunology 544. Instructor: He and St.Clair. One course.

658. Structural Biochemistry I. Half course. C-L: see Biochemistry 658; also C-L: Cell and Molecular Biology 658, Cell Biology 658, University Program in Genetics 658, Structural Biology and Biophysics 658, Computational Biology and Bioinformatics 658

659. Structural Biochemistry II. Half course. C-L: see Biochemistry 659; also C-L: Cell Biology 659, Computational Biology and Bioinformatics 659, Structural Biology and Biophysics 659, University Program in Genetics 659

668. Biochemical Genetics II: From RNA to Protein. Half course. C-L: see Biochemistry 668; also C-L: Cell Biology 668, University Program in Genetics 668

Molecular Genetics and Microbiology

Courses in Molecular Genetics and Microbiology (MGM)
Raphael Valdivia, Director of Graduate Studies

293. Research Independent Study I. R Independent Research in a field of special interest under the supervision of a faculty member. Open to sophomores with consent of supervising instructor required. Instructor: Staff. One course.

522. Critical Readings in Genetics and Genomics. One course. C-L: University Program in Genetics 522

552. Virology. Molecular biology of mammalian viruses, with emphasis on mechanisms of replication, virus-host interactions, viral pathogenicity, and the relationship of virus infection to neoplasia. Instructor: Cullen and staff. One course.

582. Microbial Pathogenesis. Modern molecular genetic approaches to understanding the pathogenic bacteria and fungi. Underlying mechanisms of pathogenesis and host-parasite relationships that contribute to the infectious disease process. Instructor: Valdivia and staff. One course.

593. Research Independent Study. R Independent research in Molecular Genetics and Microbiology. Instructor: Staff. One course.
Neurobiology

Courses in Neurobiology (NEUROBIO)
Dr. William Hall, Director of Undergraduate Studies; Beth C. Peloquin, Program Coordinator

193FS. Neurobiology of Mind. NS Introduction to the fundamental principles of brain organization and mechanisms. Open only to students in the Focus Program. Instructor: Hall. One course. C-L: Psychology 193FS, Neuroscience 193FS


393. Research Independent Study. R Individual research and reading of the primary literature in a field of special interest, under the supervision of a faculty member, the major product of which is a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor required. Instructor: Staff. One course.

559. The Biological Basis of Music. Examine how and why we hear what we do, from intra-species communication to music. Consider the biological basis of music, in particular the relationship between music and speech. Comparison between the operating principles of the auditory system with what is presently known about vision. Limited inquiry into the neurobiology of aesthetics. Instructor: Purves. One course. C-L: Philosophy 559, Psychology 580

Pathology

Courses in Pathology (PATHOL)
Dr. Soman Abraham, Director of Graduate Studies


202T. Tutorial in Human Disease. Reading course focusing on a series of books highlighting different areas of medicine. Substantial analytical paper required to be submitted at the end of semester. Consent of instructor required. Instructor: Friedman. One course.

220C. What Does A Pathologist Really Do?. The major objective of this selective is to provide the student with answers to the following questions: a) What are the major areas that comprise the practice of pathology (Laboratory Medicine)? What is Anatomic Pathology? Clinical Pathology (Laboratory Medicine)? What are the recognized sub-specialties in pathology? b) How does the pathologist function as part of the health care team? What role does a pathologist play in clinical decision making? c) If you practice Internal Medicine / Surgery / Pediatrics / Ob-Gyn / Primary Care, what can the pathologist do for you? d) What is the pathologist's role as a teacher? Students will participate in several learning experiences (2-3 days each) that involve working with faculty and residents in various sub-disciplines of pathology [e.g., autopsy, surgical pathology (frozen section diagnostic service, specimen accessioning/gross descriptions service, diagnostic services), hematopathology/flow cytometry, neuropathology, dermatopathology, cytopathology/fine needle aspiration service, molecular diagnostics, cytogenetics, immunopathology/transplantation pathology, transfusion medicine, and others]. The exact set of experiences will depend on student interests, faculty availability, and number of students on the service. In each case, every attempt will be made to give the student the types of experiences that allow for fulfillment of the course objectives. Students will attend selected conferences and seminars and will meet with the course director (or representative) at least twice during the selective. The majority of learning experiences will be in the Department of Pathology at DUMC. A few are located at DVAMC and at the Franklin Park Clinical Laboratories. Enrollment Max. 4. Location: M345 Davison (Duke S.) at 8:30 a.m. Dr. Buckley requests that students be on time. Contact: please email Dr. Buckley at patrick.buckley@duke.edu should you have questions. Patrick Buckley, MD/PhD.

293. Research Independent Study. R Individual research and reading of the primary literature in a field of special interest, under the supervision of a faculty member, the major product of which is a substantive written report or oral presentation containing significant analysis and interpretation of a previously approved topic. Consent of instructor required. Instructor: Staff. One course.
359P. Diagnostic Technologies and Techniques. Medical technologies and techniques used to assess Cellular and Subcellular Pathology are presented. The course consists of lectures and demonstrations on special techniques and technologies used to study the alterations of cellular structure and associated functions that accompany cell injury, e.g.; electron microscopy, fine needle aspiration and bone marrow aspiration biopsy, etc. Credit: 2. Broda and staff.

423C. Autopsy Pathology. The course is intended to introduce students to the autopsy as an investigative tool. Anatomic-clinical correlation is emphasized. Students work directly with one or more members of the pathology department. They first view autopsies and then assist in the performance of autopsies under supervision. They work up these cases with particular attention to correlations with clinical and experimental medicine, help prepare the final autopsy reports, and work essentially at the level of a house officer. Students are expected to write up one full autopsy report for an autopsy they participated in as their final project. For more information, please contact: Meridith Hennessey, M.H.S., at meridith.hennessey@duke.edu. Credit: 4. Enrollment: max 2. Alan Proia, MD/PhD; and Christine Hulette, MD.

448C. Practical Surgical and Cytopathology. This course is intended as an introduction to the practice of diagnostic surgical pathology. Clinical and morphologic aspects of disease are emphasized in rotations through the different specialty services (GI, Gyn path Hemepath, Neuropath, etc.) Students will participate (with residents and staff) in the evaluation of gross specimens, interpretations of glass slides (with ancillary studies), and the preparation of the final report. The course can be tailored to individuals planning a career in pathology or those pursuing other specialties. Rotations through the Fine Needle Aspiration and Exfoliative Cytology services can be scheduled depending on the student's interest. Please contact Dr. Bentley prior to starting rotation (684-6423) or Rex.Bentley@duke.edu. Secondary contact: Bonnie Lynch, 684-2533. Students meet on the first day at Dr. Bentley's office, M216A, Duke South, Green Zone, 2nd floor at 8:45 a.m. Credits: 4. Enrollment: max 2. Rex Bentley, MD and staff.

450C. Medical Microbiology. This is an introduction to medical microbiology (MM) including appropriate use of diagnostic tests and other laboratory resources for patient care and hospital infection control. The student participates in laboratory rounds with the faculty, medical microbiology fellows, and the infectious diseases services. The student has access to appropriate bench experience in all sections (bacteriology, molecular microbiology, mycobacteriology, parasitology, serology, sexually transmitted infections, virology) of the Clinical Microbiology Laboratory. Permission of instructor is required. Credit: 4. Enrollment: max 1. Reller, Alexander, Harrell, Henshaw, and staff.

Pharmacology and Cancer Biology

Courses in Pharmacology and Cancer Biology (PHARM)
Rochelle Schwartz-Bloom, Director of Undergraduate Studies

293. Research Independent Study in Science Education. R Individual research in a field of science education (with reference to pharmacology) at the precollege level, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of study results. Open to (juniors and seniors) with consent of supervising instructor. Prerequisite: Biology 25L; Chemistry 21L or 23L. Instructor: Schwartz-Bloom. One course.

294. Research Independent Study in Science Education. R Continuation of Pharmacology 293. Open to juniors and seniors with consent of supervising instructor. Prerequisites: Biology 25L; Chemistry 21L or 23L; Pharmacology 293. Consent of instructor required. Instructor: Schwartz-Bloom. One course.

350. Pharmacology: Drug Actions and Reactions. NS Mechanisms of drug action, concepts of drug toxicity, resistance, tolerance, and drug interactions. Examples of how drugs affect the autonomic and central nervous systems, the cardiovascular and endocrine systems, and how drugs treat infection and cancer. This course is designed for both science and nonscience majors, but preference will be given to junior biology majors concentrating in pharmacology. Prerequisite: introductory biology (Biology 25L) and chemistry (Chemistry 11L, 12L). Instructor: Schwartz-Bloom. One course. C-L: Neuroscience 350

360. Drugs, Brain, and Behavior (B). NS Mechanisms by which psychoactive drugs act. Changes that occur with chronic use of drugs; drug abuse and dependence. Social and legal implications of psychoactive drugs. Designed for both science and nonscience majors. Emphasis on the reasoning, research designs, and methods for understanding
drug effects. Prerequisite: introductory biology (Biology 25L) and chemistry (Chemistry 11L, 12L). Instructor: Kuhn. One course. C-L: Psychology 274, Neuroscience 360

370S. Pharmacogenomics and Personalized Medicine. NS Introduction to human genetic and genomics and how the topics relate to modern medicine and treatment. Special emphasis placed on principles of human genomics (including human genome organization, complex disease and large scale genomic analysis) and how they relate to the field of translational genomics (bridging human genetics to drug design). Discussion of ethical and societal issues concerning personalized medicine as well as future implications to modern health care. Current journal articles highlighting new genomic treatments will be presented and discussed. Prerequisite: Biology 201L. Instructor: Staff. One course.

393. Research Independent Study. R Individual research in a pharmacology-related area under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of the study results. Open to first-year students and sophomores with consent of supervising instructor. Instructor: Staff. One course.

394. Research Independent Study. R Individual research in a pharmacology-related area under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of the study results. Open to first-year students and sophomores with consent of supervising instructor. Instructor: Staff. One course.

471S. Reward and Addiction (B). NS, W One course. C-L: see Psychology 471S; also C-L: Neuroscience 471S

493. Research Independent Study. R Individual research in a pharmacology-related area under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of the study results. Open to juniors and seniors with consent of supervising instructor. Instructor: Staff. One course.

494. Research Independent Study. R Individual research in a pharmacology-related area under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of the study results. Open to juniors and seniors with consent of supervising instructor. Instructor: Staff. One course.

495. Research Independent Study. R Individual research in a pharmacology-related area under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of the study results. Open to juniors and seniors who have already taken Pharmacology 493 and 494, with consent of supervising instructor. Instructor: Staff. One course.

533. Essentials of Pharmacology and Toxicology. Drug absorption, distribution, excretion, and metabolism. Structure and activity relationships; drug and hormone receptors and target cell responses. Consent of instructor required. Prerequisite: introductory biology; Chemistry 201DL; Mathematics 21 and 122. Instructor: Slotkin and staff. One course. C-L: Neuroscience 533

534. Interdisciplinary Approach to Pharmacology. Several model systems (cancer, immunological disorders, and infectious diseases) will be used to explore the molecular, biochemical, and physiological basis of drug action. Consent of instructor required. Instructors: Rathmell, Wang, or Whorton. One course.

554. Mammalian Toxicology. Principles of toxicity as related to humans. Emphasis on the molecular basis for toxicity of chemical and physical agents. Subjects include metabolism and toxicokinetics, toxicologic evaluation, toxic agents, target organs, toxic effects, environmental toxicity, management of poisoning, epidemiology, risk assessment, and regulatory toxicology. Prerequisite: introductory biology, and Chemistry 201DL, or consent of instructor. Instructor: Abou-Donia and staff. One course.

673S. Computer Models and the Treatment of Psychiatric Disorders. NS, QS One course. C-L: see Psychology 673S; also C-L: Computer Science 673S, Information Science and Information Studies 673S

693. Research Independent Study in Science Education. R Individual research in a field of science education (with reference to pharmacology) at the precollege/college level, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of study results. Open to all qualified seniors and graduate students with consent of supervising instructor. Instructor: Schwartz-Bloom. One course.

694. Research Independent Study in Science Education. R Individual research in a field of science education (with reference to pharmacology) at the precollege/college level, under the supervision of a faculty member, resulting
in a substantive paper or written report containing significant analysis and interpretation of study results. Open to all qualified seniors and graduate students with consent of supervising instructor. Instructor: Schwartz-Bloom. One course.

**Structural Biology and Biophysics**

**Courses in Structural Biology and Biophysics (SBB)**

Harold Erickson, *Director of Graduate Studies*

546S. **Structural Biology and Biophysics Seminar.** Weekly seminars are presented by program students, beyond their first year, faculty members, or guest speakers. (Required of all SBB Students.) Instructor: Oas.

622. **Structure of Biological Macromolecules.** R One course. C-L: see Biochemistry 622; also C-L: Computational Biology and Bioinformatics 622

658. **Structural Biochemistry I.** Half course. C-L: see Biochemistry 658; also C-L: Cell and Molecular Biology 658, Cell Biology 658, University Program in Genetics 658, Immunology 658, Computational Biology and Bioinformatics 658

659. **Structural Biochemistry II.** Half course. C-L: see Biochemistry 659; also C-L: Cell Biology 659, Immunology 659, Computational Biology and Bioinformatics 659, University Program in Genetics 659

681. **Physical Biochemistry.** One course. C-L: see Biochemistry 681

682T. **Advanced Physical Biochemistry.** Transient kinetics, computational methods, multidimensional NMR, x-ray crystallography, thermodynamics of association. Prerequisite: Structural Biology and Biophysics or consent of instructor. Instructor: Oas. One course.

**University Program in Genetics and Genomics**

**Courses in the University Program in Genetics and Genomics (UPGEN)**

Dr. Doug Marchuk, *Director, Duke University Program in Genetics and Genomics*

522. **Critical Readings in Genetics and Genomics.** One course. C-L: Molec Genetics & Microbiology 522

533. **Genetic Epidemiology.** This course will cover traditional genetic epidemiologic methods such as study design, linkage analysis and genetic association. Instructor: Ashley-Koch. One course.

585S. **Ecological Genetics.** Interaction of genetics and ecology and its importance in explaining the evolution, diversity, and distribution of plants and animals. Instructor: Staff. One course.

658. **Structural Biochemistry I.** Half course. C-L: see Biochemistry 658; also C-L: Cell and Molecular Biology 658, Cell Biology 658, Immunology 658, Structural Biology and Biophysics 658, Computational Biology and Bioinformatics 658

659. **Structural Biochemistry II.** Half course. C-L: see Biochemistry 659; also C-L: Cell Biology 659, Immunology 659, Computational Biology and Bioinformatics 659, Structural Biology and Biophysics 659

668. **Biochemical Genetics II: From RNA to Protein.** Half course. C-L: see Biochemistry 668; also C-L: Cell Biology 668, Immunology 668
Pratt School of Engineering

Professor Katsouleas, Dean; Professor of the Practice Franzoni, Associate Dean for Undergraduate Education; Associate Deans Absher and Simmons; Assistant Dean Temiquel-McMillian

Aerospace Engineering

A certificate, but not a major, is available in this program.

The objective of this multidisciplinary program is to educate students in the engineering principles related to the conceptualization, design, analysis, and performance of aerospace vehicles and systems. This certificate program is available only to students enrolled in the Pratt School of Engineering.

Program Requirements

Seven courses must be completed to earn the aerospace engineering certificate. The certificate program focuses on upper class courses. All engineering undergraduates are eligible to participate in the program and qualify for certification. Mechanical engineering is the host department, however there is flexibility for majors in other departments to meet the program standards while maintaining program focus and quality. Two courses already required for the primary major are permitted. All students are required to take the foundation course Aircraft Performance, plus at least one course from the core aerospace electives list (aerospace structures, aerodynamics, compressible flow) plus two supporting technical electives (can include relevant independent study). One upper-level Trinity College course from history or public policy involving the impact of technology on society, or an appropriate economics course. See http://www.mems.duke.edu/undergrad/aerospace-engineering-certificate.

Architectural Engineering

A certificate, but not a major, is available in this program.

The objective of this interdisciplinary program is to provide students with an understanding of the relationships between the design elements of buildings and construction processes. This certificate program is available only to students enrolled in the Pratt School of Engineering.

Program Requirements

1. Required courses:
   - Civil and Environmental Engineering 311 (Architectural Engineering I)
   - Civil and Environmental Engineering 411 (Architectural Engineering II)
   - Civil and Environmental Engineering 422L (Concrete and Composite Structures)
   - Civil and Environmental Engineering 423L (Metallic Structures)
   - Engineering 201L (Mechanics of Solids)
2. One of the following modern/postmodern architectural history courses:
   - Art History 285 (Modern Architecture)
   - Art History 285D (Modern Architecture)
   - Art History 286D (Contemporary Architecture)
3. Two of the following elective courses:
   - Visual Arts 101 (Introduction to Visual Practice)
   - Civil and Environmental Engineering 201L (Uncertainty, Design, and Optimization)
   - Civil and Environmental Engineering 421L (Matrix Structural Analysis)
   - Civil and Environmental Engineering 190/490\(^1\) (Special Topics in Civil Engineering)
   - Civil and Environmental Engineering 429 (Integrated Structural Design)
   - Civil and Environmental Engineering 491/492\(^1\) (Projects in Civil Engineering)
   - Engineering 120L (Introduction to Structural Engineering)
   - Engineering 206 (Engineering Communication)
   - Engineering 357 (Aesthetics, Design, and Culture)

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\(^1\) Topics for Civil and Environmental Engineering 190/390 and 491/492 must be appropriately related to architectural engineering.
Biomedical Engineering

Professor Henriquez, Chair; Professor W. Neu, Director of Undergraduate Studies; Professor of the Practice Malkin, Associate Director of Undergraduate Studies; Professors Barr, Brown, Chilkoti, Dewhirst, Erickson, Grill, Guilak, Henriquez, Izatt, Johnson, Katz, Leong, Lopez, MacFall, Marszalek, Myers, W. Neu, Nicolelis, Ramanujam, Reichert, Samei, Sampson, Sapiro, Setton, Smith, Song, Stamer, Toth, Trahey, Truskey, Vo-Dinh, von Ramm, Warren, Wax, West, Yuan, Zalutsky, and Zauscher; Associate Professors Badea, Bursac, Dobbins, Driehuys, Idriss, Klitzman, Lo, K. Nightingale, Oldham, Sommer, Tornai, Wolf, and You; Assistant Professors DeFrate, Farsiu, Gersbach, Hoffman, and Peterchev; Professors Emeriti Clark, Friedman, McElhaney, and Plonsey; Associate Research Professors Bass, Liu, and R. Nightingale; Assistant Research Professors Lynch, Maccarini, Palmeri, and Satterwhite; Professor of the Practice Malkin; Lecturers Bohs and Bucholz; Instructors Caves, Salinas, and Wallace; Adjunct Professor J. Neu; Adjunct Associate Professor Goldberg; Adjunct Assistant Professor Shang

A major is available in this department.

The biomedical engineering program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. We expect that a few years after graduation, graduates of our program will be on track to become leaders in corporate, professional, and academic communities. In particular, they will:

- advance in their careers in biomedical engineering or related areas of industry, academia, and medicine;
- engage in lifelong learning, for example, by enrolling in graduate or professional degree programs or receiving advanced training for professional advancement;
- utilize their engineering experience in creating new knowledge or enabling technologies for the improvement of human health and health care; and
- understand the social and ethical implications of their work.

Biomedical engineering is the discipline in which the physical, mathematical, and engineering sciences and associated technology are applied to biology and medicine. The program is flexible to match the student's interests; options exist for double majors. Each student selects one of four areas of interest in which to obtain depth in their education. The areas of interest are matched to the laboratories and expertise of the faculty in the department; they are biomechanics and biomaterials, electobiology, imaging and measurement systems; and molecular, cellular, and tissue engineering. Design experience is integrated throughout the curriculum and includes capstone design courses. Many students gain valuable design experience in the course of independent study projects within the research laboratories of the biomedical engineering department.

Electrobiology laboratories use large-scale computer modeling, scientific visualization, and experimental data acquisition and analysis to increase basic understanding of normal and abnormal electrical activity in the brain and heart tissue. Other projects involve the study of the effects of externally applied electric fields and radio frequency energy on activity in excitable tissue.

The ultrasound imaging and transducer laboratories are directed toward new signal and image processing techniques, new system architecture and transducer designs to develop novel imaging methods and improve image quality and spatial resolution. The laboratories are equipped with a variety of state-of-the-art ultrasound imaging instruments, electronics and transducer fabrication tools, acoustic and transducer modeling software as well as video and display hardware.

The biophotonics group develops novel photonics technologies for biological and medical applications. Research areas include optical imaging techniques, advanced spectroscopy methods, plasmonics applications, and new microscopy modalities. Applications span from cell and developmental biology to clinical diagnostics and imaging methods.

The biomechanics laboratories use advanced experimental test facilities, data acquisition technologies, computer simulations and theoretical modeling in the study of cells, tissues, and biological structures. The mechanisms of injury, aging, degeneration, and mechanical signal transduction are studied in a variety of biological systems, including biological fluids, the cervical and lumbar spines, diarthrodial joints, and the heart.

Molecular, cellular and tissue engineering is concerned with the regulation of the external and internal environment of the cell for control of biosynthesis and degradation activities, as well as determination of the factors responsible for differentiation of cells into tissues with varying functional requirements. The groups in this program investigate biomaterials, material property characterizations, surface modifications, cell cultures, and the mechanics

of biofluids, tissues, and cells. Applications include the development of novel biosensors and drug delivery systems, new techniques for enhanced biological transport, and improved techniques for stimulated repair or inhibited degradation of biological tissues.

Instruction in all these areas is offered at the undergraduate as well as graduate and postdoctoral levels, and opportunities for undergraduate student research are available in most of the biomedical engineering laboratories. The courses offered by the Department of Biomedical Engineering are listed below. Some biomedical engineering courses require students to have a suitable laptop computer with wireless capabilities.

Course Designators:
(AC) Satisfies an Area Core Class
(DR) Satisfies the Design requirement
(GE) Satisfies a Biomedical Engineering General Elective
(BB) Satisfies a Biomechanics and Biomaterials Area Elective
(EL) Satisfies an Electrobiotherapy Area Elective
(IM) Satisfies an Imaging and Measurement Systems Area Elective
(MC) Satisfies a Molecular, Cellular and Tissue Engineering Area Elective

Courses in Biomedical Engineering (BME)

90L. Introduction to Biomedical Engineering. This course is designed to introduce students to the study and practice of biomedical engineering. Material will be presented live and via prerecorded videos. Presentations and demonstrations will be made by members of the Biomedical engineering department and alumni. Prerequisite: freshman standing. Satisfactory/Unsatisfactory grading only. Instructor; Henriquez. Half course.

98. Biomedical Device Design (GE). An introduction to the origin and characteristics of biologic signals and the features of biomedical systems and devices, from sensor to display/output. Concepts of analog vs. discrete signals, simple detection schemes, sampling, data reduction, filtering, visualization, and imaging techniques are presented. The course emphasizes team project and system design. Prerequisite: Engineering 103L or equivalent; limited to freshmen. Instructor: Henriquez or K. Nightingale. One course.

102. Introductory Biostatistics. QS, R, STS One course. C-L: see Statistical Science 102; also C-L: Information Science and Information Studies

195FS. Medical Instrumentation in the Developing World (GE). STS Medical devices have revolutionized healthcare in the developed world. Yet, this technology revolution has failed to reach the developing world. Compared to the estimated 1.5 million medical devices introduced in the developed world in the last 50 years, only a few dozen pieces of medical equipment have been specifically designed to be appropriate and affordable for resource poor settings. We will examine and discuss the factors that make the research, design & development, introduction & marketing, maintenance and use of medical devices in resource poor settings uniquely challenging conditions. Focus students only. Instructor: Malkin. One course.

244L. Quantitative Physiology with Biostatistical Applications. An examination of the importance of mass and energy balances, transport processes, mechanics, energetics, and electrical activity in physiological systems. Lectures cover cellular physiology, cardiovascular system, nervous system, muscle physiology, and renal physiology. Labs complement lecture topics and introduce statistical methods related to the measurement and analysis of physiological data. Statistical topics include: descriptive statistics; hypothesis testing; correlation, regression, and goodness of fit; ANOVA and post-hoc tests; power analysis and experimental design. Prerequisite: Engineering 103L Corequisites: Biology 201L and (Mathematics 212 or Mathematics 216 or Mathematics 353). Instructors: Truskey, Ramanujam, Wallace. One course.

253L. Biomedical Electronic Measurements I. Basic principles of electronic instrumentation with biomedical examples. Concepts of analog signal processing, filters, input and output impedances are emphasized. Students are exposed to system design concepts such as amplifier design and various transducers. Laboratories reinforce basic concepts and offer the student design opportunities in groups. Prerequisite: Physics 152L or equivalent; or consent of the instructor. Instructor: Grill, Malkin, K. Nightingale, Sommer, or von Ramm. One course.

255. Safety of Medical Devices (GE). Engineering analysis of the safety of medical devices such as prosthetic heart valves, silicon breast implants, medical imaging, and cardiac pacemakers. Engineering performance standards and US FDA requirements for clinical trials for selected medical devices such as medical diagnostic ultrasound, surgical lasers, and prosthetic heart valves. Students will prepare a mock application for FDA premarket approval to demon-
strate safety of a selected medical device. Prerequisite: sophomore standing. Corequisite: Physics 152L or equivalent. Instructor: S. Smith. One course.

260L. Modeling Cellular and Molecular Systems. An introduction to the application of engineering models to study cellular and molecular processes and develop biotechnological applications. Topics covered include chemical equilibrium and kinetics, solution of differential equations, enzyme kinetics, DNA denaturation and rebinding, the polymerase chain reaction (PCR), repressor binding, gene expression, receptor-mediated endocytosis, and gene delivery to tissues and cells. Selected laboratory experiments apply concepts learned in class. Corequisite: Biomedical Engineering 244L. Prerequisites: Mathematics 212 or 222; Biology 201L; or consent of the instructor. Instructor: Gersbach, Salinas, You, Yuan. One course.

271. Signals and Systems. Convolution, deconvolution, Fourier series, Fourier transform, sampling, and the Laplace transform. Continuous and discrete formulations with emphasis on computational and simulation aspects and selected biomedical examples. Prerequisites: Biomedical Engineering 253L or Electrical and Computer Engineering 110L; Mathematics 216; or consent of the instructor. Instructor: Bucholz, Izatt, W. Neu, or K. Nightingale. One course.

290. Intermediate Topics (GE). Intermediate subjects or selective topics related to programs within biomedical engineering. Consent of instructor required. Instructor: Staff. One course.

290L. Intermediate Topics with Lab (GE). Intermediate subjects or selective topics related to programs within biomedical engineering. The course includes laboratory exercises. Consent of instructor required. Instructor: Staff. One course.

301L. Bioelectricity (AC or GE). The electrophysiology of excitable cells from a quantitative perspective. Topics include the ionic basis of action potentials, the Hodgkin-Huxley model, impulse propagation, source-field relationships, and an introduction to functional electrical stimulation. Prerequisites: Biomedical Engineering 244L; Biomedical Engineering 253L or Electrical and Computer Engineering 110L; Mathematics 353. Instructor: Henriquez, W. Neu, Sommer. One course. C-L: Neuroscience 301L

302L. Fundamentals of Biomaterials and Biomechanics (AC or GE). Principles of materials science and mechanics applicable to orthopedics, cell signaling, medical imaging, implant design, injury prevention and treatment, cardiovascular mechanics, and tissue engineering. Topics include: structure-function relationships of biocomposites; unique properties of biomaterial surfaces; behavior of tissues and materials in physiological environments; mechanics of human movement and physiology; dynamics and vibration; and viscoelastic models. Selected experimental measurements on biomechanical and biomaterial systems. Prerequisites: Biomedical Engineering 244L; Mathematics 353; Engineering 201L; Mechanical Engineering 221L. Instructors: Hoffman and R. Nightingale. One course.

303. Modern Diagnostic Imaging Systems (AC or GE). The underlying concepts and instrumentation of several modern medical imaging modalities. Review of applicable linear systems theory and relevant principles of physics. Modalities studied include X-ray radiography (conventional film-screen imaging and modern electronic imaging), computerized tomography (including the theory of reconstruction), ultrasound, and nuclear magnetic resonance imaging. Prerequisites: Biomedical Engineering 244L; Biomedical Engineering 271 or Electrical and Computer Engineering 280L; junior or senior standing. Graduate students must get permission. Instructor: Bucholz, Smith. One course.

307. Transport Phenomena in Biological Systems (AC or GE, BB). An introduction to the modeling of complex biological systems using principles of transport phenomena and biochemical kinetics. Topics include the conservation of mass and momentum using differential and integral balances; rheology of Newtonian and non-Newtonian fluids; steady and transient diffusion in reacting systems; dimensional analysis; homogeneous versus heterogeneous reaction systems. Biomedical and biotechnological applications are discussed. Prerequisites: Biomedical Engineering 260L; Mathematics 353; or consent of the instructor. Instructor: Katz, Lopez, Truskey, Wallace, or Yuan. One course. C-L: Civil and Environmental Engineering 307, Mechanical Engineering and Materials Science 307

354L. Introduction to Medical Instrumentation. Study of the basic principles of biomedical electronics with emphasis on transducers, instruments, micro-controller and PC based systems for data acquisition and processing. Laboratories focus on measurements and circuit design emphasizing design criteria appropriate for biomedical instrumentation. Prerequisites: Biomedical Engineering 244L; Electrical and Computer Engineering 110L or Biomedical
Engineering 253L; Biomedical Engineering 271 or Electrical and Computer Engineering 280L; or consent of the instructor. Instructor: Malkin, Palmeri, Trahey. One course.

385. Introduction to Business in Technology-Based Companies. R, SS, STS This course covers fundamental business concepts and how they affect technology and engineering functions in a company. Students will learn to look at business problems from multiple dimensions, integrating technical issues with marketing, finance, management and intellectual property. Teams consisting of students from the Pratt School of Engineering and Trinity College of Arts and Sciences (Markets and Management Studies program) will work together to develop and present a business plan for a technical product concept. Students will learn the elements of a business plan and how to pitch a technology-based product concept. Topics covered include marketing of technical products, competitive strategy, market research, financial statements and projections, capital budgeting, venture capital, intellectual property, patent searching, regulatory affairs, and reimbursement. Requirements: junior or senior standing and permission of instructor. Instructor: Boyd. One course. C-L: Markets and Management Studies

394. Projects in Biomedical Engineering (GE). For juniors and seniors who express a desire for such work and who have shown aptitude for research in one area of biomedical engineering. Reserved for Engineering Undergraduate Fellows. Consent of program director required. Instructor: Staff. One course.

427L. Design in Biotechnology (DR). This is a capstone design course for the upper-level undergraduate biomedical engineering students with a focused interest in biomaterials, biomechanics, biomolecular science, and biotechnology. Student teams work with clients in the development and implementation of specific design solutions to meet clients' needs. Formal engineering design principles are emphasized; in addition, intellectual properties, engineering ethics, risk analysis, safety in design and FDA regulations will be discussed. Oral and written reports, and prototype development, testing and demonstration are required. Prerequisites: Biomedical Engineering 302L or 307; senior standing; or consent of the instructor. Instructor: Staff. One course.

432L. Biomechanics and Vehicle Safety Engineering (DR). Design course dealing with contemporary issues in the biomechanics of injury and motor vehicle safety engineering. Covers international standards for safety in vehicle design. Topics also include: airbag and belt systems, structural vehicle components, accident reconstruction, the biomechanics of injury, anthropomorphic test devices, and injury risk assessment metrics. Problem-based approach where students work as teams on a current engineering problem in dummy design or injury mitigation technology. The teams set design specifications, evaluate the designs use finite element analysis and fabricate the final product using rapid prototyping. Prerequisites: Biomedical Engineering 302L; senior standing. Instructor: R. Nightingale. One course.

436L. Biophotonic Instrumentation (DR). Theory and laboratory practice in optics, and in the design of optical instruments for biomedical applications. Section I focuses on basic optics theory and laboratory practice. Section II focuses on deeper understanding of selected biophotonic instruments, including laboratory work. Section III comprises the design component of the course. Student teams are presented with a design challenge and work through the steps of engineering design, culminating in building a prototype solution. Lecture topics include engineering design, intellectual property protection, engineering ethics, and safety. Prerequisites: Biomedical Engineering 354L; senior standing. Instructors: Izatt or Wax. One course.

460L. Devices for People with Disabilities (DR). Design of custom devices to aid disabled individuals. Students will be paired with health care professionals at local hospitals who will supervise the development of projects for specific clients. Formal engineering design principles will be emphasized; overview of assistive technologies, patent issues, engineering ethics. Oral and written reports will be required. Selected projects may be continued as independent study. Course includes a service-learning component involving work in the community. Prerequisites: Biomedical Engineering 354L; senior standing. Instructor: Bohs, Caves, or Goldberg. One course.

462L. Design for the Developing World (DR). Design of custom devices to help the specific and unique needs of developing world hospitals. Formal engineering design principles will be emphasized; overview of developing world conditions, patent issues, engineering ethics. Oral and written reports will be required. Students may elect to personally deliver their projects to a developing world hospital, if selected, in the summer following the course. Prerequisite: Biomedical Engineering 354L; senior standing. Instructor: Malkin. One course.

464L. Medical Instrument Design (DR). General principles of signal acquisition, amplification processing, recording, and display in medical instruments. System design, construction, and evaluation techniques will be
emphasized. Methods of real-time signal processing will be reviewed and implemented in the laboratory. Each student will design, construct, and demonstrate a functional medical instrument and collect and analyze data with that instrument. Formal write-ups and presentations of each project will be required. Prerequisite: Biomedical Engineering 354L; senior standing. Instructors: Wolf, Palmeri. One course.

490L. Special Topics in Biomedical Engineering Design (DR). Design of biomedical devices emphasizing formal engineering design principles, as well as building and testing a prototype. Lecture topics include engineering design, intellectual property protection, engineering ethics, and safety. Oral and written reports are required. Used for new design courses in Biomedical Engineering. Prerequisites: Senior standing and consent of the instructor. Instructor: Staff. One course.

493. Projects in Biomedical Engineering (GE). For juniors and seniors who express a desire for such work and who have shown aptitude for research in one area of biomedical engineering. Consent of instructor required. Instructor: Staff. One course.

494. Projects in Biomedical Engineering (GE). For juniors or seniors who express a desire for such work and who have shown aptitude for research in one area of biomedical engineering. Consent of instructor required. Instructor: Staff. One course.

502. Neural Signal Acquisition (GE, IM, EL). This course will be an exploration of analog and digital signal processing techniques for measuring and characterizing neural signals. The analog portion will cover electrodes, amplifiers, filters and A/D converters for recording neural electrograms and EEGs. The digital portion will cover methods of EEG processing including spike detection and spike sorting. A course pack of relevant literature will be used in lieu of a textbook. Students will be required to write signal-processing algorithms. Prerequisite: Biomedical Engineering 354L. Instructor: Wolf. One course. C-L: Neuroscience 502

503. Computational Neuroengineering (GE, EL). This course introduces students to the fundamentals of computational modeling of neurons and neuronal circuits and the decoding of information from populations of spike trains. Topics include: integrate and fire neurons, spike response models, homogeneous and inhomogeneous Poisson processes, neuronal circuits, Weiner (optimal) adaptive filters, neural networks for classification, population vector coding and decoding. Programming assignments and projects will be carried out using MATLAB. Prerequisites: Biomedical Engineering 301L or equivalent. Instructor: Henriquez. One course. C-L: Neuroscience 503

504. Fundamentals of Electrical Stimulation of the Nervous System (GE, EL). This course presents a quantitative approach to the fundamental principles, mechanisms, and techniques of electrical stimulation required for non-damaging and effective application of electrical stimulation. Consent of instructor required. Instructor: Grill. One course. C-L: Neuroscience 504

506. Measurement and Control of Cardiac Electrical Events (GE, EL, IM). Design of biomedical devices for cardiac application based on a review of theoretical and experimental results from cardiac electrophysiology. Evaluation of the underlying cardiac events using computer simulations. Examination of electrodes, amplifiers, pacemakers, and related computer apparatus. Construction of selected examples. Prerequisites: Biomedical Engineering 301L; 354L or instructor consent. Instructor: Wolf. One course.

510. Bayesian Analysis in Biomedical Engineering (GE, EL). The application of Bayesian statistics to questions in Biomedical Engineering broadly with a focus on electrocardiography. Topics include a brief history of Bayesian math in biology and medicine, use of likelihood functions and prior distributions, the Bayesian outlook toward medical diagnosis, the work of Cornfield, Pipberger, and Dunn on the classification of electrocardiograms, and a Bayesian framework for the cardiac inverse problem. The approaches used for these topics can be adapted to many other Biomedical Engineering situations. Prerequisites: Senior or graduate standing. Instructor: Barr. One course.

511L. Intermediate Bioelectricity (GE, EL). Study of the origins of clinically-relevant electrical signals, such as EEG, ECG, or EMG. Generation of biopotentials by active cells, fibers, and tissues. Transmission of biopotentials to the measuring electrodes through intervening tissues; effects of inhomogeneities and anisotropy. Students develop models of biopotentials and learn numerical and mathematical tools for solving and analyzing these models. Laboratory exercises based on computer simulations, with emphasis on quantitative behavior. Readings from original literature. Prerequisite: Biomedical Engineering 301L or consent of the instructor. Instructor: Barr, Henriquez, or Neu. One course. C-L: Neuroscience 511L
512L. Cardiac Bioelectricity (GE, EL). Electrophysiologically behavior of cardiac muscle. Emphasis on quantitative study of cardiac tissue with respect to propagation and the evaluation of sources. Effect of junctions, inhomogeneities, anisotropy, and presence of unbounded extracellular space. Bidomain models. Study of models of arrhythmia, fibrillation, and defibrillation. Electrocardiographic models and forward simulations. Laboratory exercises based on computer simulation, with emphasis on quantitative behavior and design. Readings from original literature. Prerequisite: Biomedical Engineering 301L or equivalent. Instructor: Barr or Henriquez. One course.


515. Neural Prosthetic Systems (GE, EL, IM). Covers several systems that use electrical stimulation or recording of the nervous system to restore function following disease or injury. For each system, the underlying biophysical basis for the treatment, the technology underlying the treatment, and the associated clinical applications and challenges are examined. Systems to be covered include cochlear implants, spinal cord stimulation of pain, vagus nerve stimulation for movement disorders, sacral root stimulation for bladder dysfunction, and neuromuscular electrical stimulation for restoration of movement. Prerequisites: Biomedical Engineering 301L; Biomedical Engineering 253L or Electrical and Computer Engineering 110L or equivalent; consent of the instructor. Instructor: Grill. One course. C-L: Neuroscience 515

517. Neuronal Control of Movement (GE, EL). Course for graduate and upper-level undergraduate students to provide them with an understanding of the neuronal circuits that move our bodies and with techniques for analysis, simulation, and modification of these circuits by neural engineers. Topics start in the periphery with muscles, the spine, and functional electrical stimulation; then proceed centrally to subcortical circuits, deep brain stimulation, and forward models; and conclude with cerebral cortical networks and population decoding. Students are expected to have background in bioelectricity and Matlab programming. Prerequisites: Biomedical Engineering 301L or consent of the instructor. Instructor: Sommer. One course. C-L: Neuroscience 507

522L. Introduction to Bionanotechnology Engineering (GE,BB,MC). A general overview of nanoscale science/physical concepts will be presented as those concepts tie in with current nanoscience and nanomedicine research. Students will be introduced to the principle that physical scale impacts innate material properties and modulates how a material interacts with its environment. Important concepts such as surface-to-volume ratio, friction, electronic/optical properties, self-assembly (biological and chemical) will be contextually revisited. A number of laboratory modules ("NanoLabs") will guide students through specific aspects of nanomedicine, nanomaterials, and engineering design. Prerequisites: Biomedical Engineering 302L or consent of the instructor. Instructor: Staff. One course.

523. Biomedical Polymers (GE, BB, MC). Course covers applications of polymers in medicine, particularly drug delivery, gene delivery, and tissue engineering. Most recent advances in the field will be discussed. Students' critical understanding of the concepts covered in the class will be evaluated through written and oral presentations. This is course primarily intended for seniors and graduate students. Prerequisites: Biomedical Engineering 302L or Biomedical Engineering 307 or permission of the instructor. Instructor: Leong. One course.

524. Nanotechnology in Medicine (GE, BB, MC). Nanomedicine impacts biomedical sciences by applying nanotechnology to develop devices with nanoscale features for applications in therapeutics, diagnostics, and molecular tools. The course covers the application of nanotechnology to advance drug therapy, gene therapy, immunotherapy, and cell therapy and discusses engineering design and fabrication strategies for practical implementation. Most recent advances in the field will be discussed. Student's critical understanding will be evaluated through written or oral presentations. Prerequisites: Biomedical Engineering 302L or Biomedical Engineering 307 or permission of the instructor. Instructor: Leong. One course.

525. Biomedical Materials and Artificial Organs (GE, BB). Chemical structures, processing methods, evaluation procedures, and regulations for materials used in biomedical applications. Applications include implant materials, components of ex vivo circuits, and cosmetic prostheses. Primary emphasis on polymer-based materials and on optimization of parameters of materials which determine their utility in applications such as artificial kidney.
membranes and artificial arteries. Prerequisites: Mechanical Engineering 221L or graduate standing in Biomedical Engineering or Mechanical Engineering; Biomedical Engineering 302L recommended. Instructor: Reichert. One course. C-L: Mechanical Engineering and Materials Science 518

526. Elasticity (GE, BB). One course. C-L: see Civil and Environmental Engineering 521

527. Cell Mechanics and Mechanotransduction (GE, BB, MC). An examination of the mechanical properties of cells and forces exerted by cells in biological processes of clinical and technological importance, and the processes by which mechanical forces are converted into biochemical signals and activate gene expression. Topics include measurement of mechanical properties of cells, cytoskeleton mechanics, models of cell mechanical properties, cell adhesion, effects of physical forces on cell function, and mechanotransduction. Students critically evaluate current literature and analyze models of cell mechanics and mechanotransduction. Prerequisites: Biomedical Engineering 302L or Biomedical Engineering 307; knowledge of cell biology. Instructor: Hoffman or Truskey. One course.

528. Biofluid Mechanics (GE, BB, MC). Methods and applications of fluid mechanics in biological and biomedical systems including: Governing equations and methods of solutions, (e.g. conservation of mass flow and momentum), the nature of biological fluids, (e.g. non Newtonian rheological behavior), basic problems with broad relevance, (e.g. flow in pipes, lubrication theory), applications to cells and organs in different physiological systems, (e.g. cardiovascular, gastrointestinal, respiratory, reproductive and musculoskeletal systems), applications to diagnosis and therapy, (e.g. drug delivery and devices). Prerequisite: Biomedical Engineering 302L or Biomedical Engineering 307. Instructor: Katz. One course.

529. Theoretical and Applied Polymer Science (GE, BB). One course. C-L: see Mechanical Engineering and Materials Science 514

530. Introduction to Tissue Biomechanics (GE, BB). Introduction to the mechanical behaviors of biological tissues, cells and molecules of the musculoskeletal and cardiovascular systems. Topics to be covered include static force analysis and nonlinear optimization theory; linearly elastic models for stress-strain analysis and solutions to relevant problems in bioelasticity; models of active structures (e.g., muscles); and introductory theory for finite element analysis. Emphasis will be placed on modeling stress-strain relations with relevance to biological tissues, including experimental means to measure stress and strain in these structures. Prerequisites: Engineering 201 or equivalent; Biomedical Engineering 302 or equivalent; Mathematics 353. Instructor: Setton. One course.

531. Intermediate Biomechanics (GE, BB). Introduction to solid and orthopaedic biomechanical analyses of complex tissues and structures. Topics to be covered include: spine biomechanics, elastic modeling of bone, linear and quasi-linear viscoelastic properties of soft tissue (for example, tendon and ligament), and active tissue responses (for example, muscle). Emphasis will be placed on experimental techniques used to evaluate these tissues. Student seminars on topics in applied biomechanics will be included. Prerequisites: Engineering 201L; Mathematics 353. Instructor: Myers or Setton. One course.

532. Principles of Ultrasound Imaging (GE, IM). Propagation, reflection, refraction, and diffraction of acoustic waves in biologic media. Topics include geometric optics, physical optics, attenuation, and image quality parameters such as signal-to-noise ratio, dynamic range, and resolution. Emphasis is placed on the design and analysis of medical ultrasound imaging systems. Prerequisites: Biomedical Engineering 303; Engineering 103L; or instructor consent. Instructor: K. Nightingale or von Ramm. One course.

544. Digital Image Processing (IM or GE). Introduction to the theory and methods for digital image sampling, enhancement, visualization, reconstruction, and analysis with emphasis on medical applications. Course Outline: #1: Introduction, history, and applications of image processing. #2: Spatial domain image enhancement. #3: Fourier domain image enhancement. #4: Image registration. #5: Inverse problems (denoising, deblurring, interpolation, and super-resolution). #6: Wavelets and compressive sensing. #7: Biological image processing. Undergraduate courses on signals and systems, probability and statistics recommended; knowledge of Matlab required. Prerequisites: Consent of the Instructor. Instructor: Farsiu. One course.

545. Acoustics and Hearing (GE, EL, IM). The generation and propagation of acoustic (vibrational) waves and their reception and interpretation by the auditory system. Topics under the heading of generation and propagation include free and forced vibrations of discrete and continuous systems, resonance and damping, and the wave equation and solutions. So that students may understand the reception and interpretation of sound, the anatomy and physiology of the mammalian auditory system are presented; and the mechanics of the middle and inner ears are studied. Prerequisites:
sites: Biomedical Engineering 271 or equivalent; Mathematics 353. Instructor: Collins or Trahey. One course. C-L: Electrical and Computer Engineering 584

550. Modern Microscopy (GE, IM). Overview of novel microscopy techniques that are under development in research laboratories. New techniques are placed in context with basic understanding of image formation in conventional microscopy and laboratory work which applies this knowledge. A group project offers opportunity to examine special topics of interest. Prerequisite: Biomedical Engineering 354 and 303; consent of the instructor. Instructor: Wax. One course.

551L. Biomedical Optical Spectroscopy and Tissue Optics (GE,IM). This course is designed to provide students with a working knowledge of the theoretical and experimental principles underlying the application of optical spectroscopy and tissue optics in biological and biomedical engineering. Topics covered in this course include: Absorption Spectroscopy; Scattering Spectroscopy; Fluorescence Spectroscopy; Tissue Optics; Monte Carlo Modeling; Diffusion Modeling; Spectroscopic System Design and Signal to Noise Analysis; and Molecular Imaging. This course also includes labs for each topic that is covered, journal article review on emerging technologies and a term project. Prerequisite: Physics 152L. Instructors: Izatt, Ramanujam or Wax. One course.

552. Advanced Optics. QS One course. C-L: see Physics 621; also C-L: Electrical and Computer Engineering 541

560. Molecular Basis of Membrane Transport (GE, EI, MC). Transport of substances through cell membranes examined on a molecular level, with applications of physiology, drug delivery, artificial organs and tissue engineering. Topics include organization of the cell membrane, membrane permeability and transport, active transport and control of transport processes. Assignments based on computer simulations, with emphasis on quantitative behavior and design. Prerequisites: Biology 201L or instructor consent, Mathematics 216 or equivalent. Instructor: Neu. One course. C-L: Neuroscience 560

561L. Genome Science and Technology Lab (GE, MC). Hands-on experience on using and developing advanced technology platforms for genomics and proteomics research. Experiments may include nucleic acid amplification and quantification, lab-on-chip, bimolecular separation and detection, DNA sequencing, SNP genotyping, microarrays, and synthetic biology techniques. Laboratory exercises and designing projects are combined with lectures and literature reviews. Prior knowledge in molecular biology and biochemistry is required. Instructor consent required. Instructor: Satterwhite. One course. C-L: Computational Biology and Bioinformatics 561L, Genome Sciences and Policy

562. Biology by Design (GE, MC). This course is an introduction to engineering biological systems with an emphasis on synthetic biology and the application of biological and chemical principles to the design of new biomolecules and cellular pathways. It is taught from the primary scientific literature and highlights contemporary research in this area, including topics such as artificial amino and nucleic acids, gene regulatory systems, directed molecular evolution, recombinant antibodies, novel biosynthesis pathways, cell communication, and the design of minimal organisms. These topics are presented in the context of applications such as drug design, discovery, productions, regenerative medicine, and bioremediation. Prerequisite: Biology 201L. Organic chemistry and/or biochemistry courses are suggested. Instructor: Gersbach. One course.

563. Transport Processes in HIV Transmission and Prevention (GE, BB, MC). Application of transport theory to analyze processes of HIV migration to target cells in the mucosa of the lower female reproductive tract. Analysis of the introduction, transport and bioactivity of molecules that inhibit these HIV-infection processes, including those acting topically (microbicides) and those introduced in a variety of drug delivery vehicles: semi-solid materials (gels, films) and solid materials (intravaginal rings). A succession of mathematical models will describe elements of the fundamental biology of this system and analyze the performance of specific products that act prophylactically against HIV infection. Prerequisite: Biomedical Engineering 307 or instructor consent. Instructor: Katz. One course.

565L. Environmental Molecular Biotechnology (GE, MC). One course. C-L: see Civil and Environmental Engineering 661L

566. Transport Phenomena in Cells and Organs (GE, MC). Applications of the principles of mass and momentum transport to the analysis of selected processes of biomedical and biotechnological interest. Emphasis on the development and critical analysis of models of the particular transport process. Topics include: reaction-diffusion processes, transport in natural and artificial membranes, dynamics of blood flow, pharmacokinetics, receptor-mediated processes and macromolecular transport, normal and neoplastic tissue. Prerequisite: Biomedical Engineering 307 or equivalent. Instructor: Truskey or Yuan. One course.
567. **Biosensors (GE, IM, MC).** Theory and applications of biosensors. Basic principles of interactions between analytes and bioreceptors and various transduction techniques: optical, electrochemical, ion-selective electrode-based, voltametric, conductometric, and mass-sensitive techniques as well as novel nanotechnology-based biosensing systems including nanosensors, plasmonic nanoprobes, quantum dots, carbon nanotubes, molecular beacons, and molecular sentinel systems. Applications in chemical, environmental, biological and medical sensing. Paired with Chemistry 601. Prerequisites: senior or graduate standing in Biomedical Engineering or instructor's consent. Instructor: Vo-Dinh. One course.

568. **Laboratory in Cellular and Biosurface Engineering (GE, MC).** Introduction to common experimental and theoretical methodologies in cellular and biosurface engineering. Experiments may include determination of protein and peptide diffusion coefficients in alginate beads, hybridoma cell culture and antibody production, determination of the strength of cell adhesion, characterization of cell adhesion or protein adsorption by total internal reflection fluorescence, and Newtonian and non-Newtonian rheology. Laboratory exercises are supplemented by lectures on experiment design, data analysis, and interpretation. Prerequisites: Biomedical Engineering 307 or equivalent. Instructor: Truskey. One course.

569. **Cell Transport Mechanisms (GE, MC).** Analysis of the migration of cells through aqueous media. Focus on hydrodynamic analysis of the directed self-propulsion of individual cells, use of random walk concepts to model the nondirected propulsion of individual cells, and development of kinetic theories of the migrations of populations of cells. Physical and chemical characteristics of the cells' environments that influence their motion, including rheologic properties and the presence of chemotactic, stimulatory, or inhibitory factors. Cell systems include mammalian sperm migration through the female reproductive tract, protozoa, and bacteria. Emphasis on mathematical theory. Experimental designs and results. Prerequisites: Biomedical Engineering 307 and consent of instructor. Instructor: Katz. One course.

570L. **Introduction to Biomolecular Engineering (GE, BB, MC).** Techniques of molecular biology through linked lectures and laboratory exercises with emphasis on molecular tools to manipulate and analyze DNA and RNA for specific molecular bioengineering applications. Lectures cover the genetic code, replication, transcription, translation, cloning vectors for E. coli, enzymatic manipulation of DNA, gene cloning, synthetic gene design and assembly, DNA sequencing, polymerase chain reaction, site-directed mutagenesis, overexpression and purification of recombinant proteins. Laboratory exercises, linked to lectures, cover cloning, mutagenesis and recombinant protein expression and purification. Prerequisites: Biology 201L or Biomedical Engineering 260L or graduate standing in Biomedical Engineering. Instructor: Chilkoti. One course.

571L. **Biotechnology and Bioprocess Engineering (GE, BB, MC).** Introduction to the engineering principles of bioprocess engineering. Topics include: introduction to cellular and protein structure and function; modeling of enzyme kinetics, DNA transcription, metabolic pathways, cell and microbial growth and product formation; bioprocess operation, scale-up, and design. Class includes a design project. A modern biotechnology process or product is identified, the specific application and market are described (for example, medical, environmental, agricultural) along with the engineering elements of the technology. Prerequisite: Mechanical Engineering 221L. Instructor: Chilkoti or Reichert. One course.

574. **Modeling and Engineering Gene Circuits (GE, MC).** This course discusses modeling and engineering gene circuits, such as prokaryotic gene expression, cell signaling dynamics, cell-cell communication, pattern formation, stochastic dynamics in cellular networks and its control by feedback or feedforward regulation, and cellular information processing. The theme is the application of modeling to explore “design principles” of cellular networks, and strategies to engineer such networks. Students need to define an appropriate modeling project. At the end of the course, they’re required to write up their results and interpretation in a research-paper style report and give an oral presentation. Prerequisites: Biomedical Engineering 260L or consent of instructor. Instructor: You. One course. C-L: Computational Biology and Bioinformatics 574

577. **Drug Transport Analysis (GE, BB, MC).** Introduction to drug delivery in solid tumors and normal organs (for example, reproductive organs, kidney, skin, eyes). Emphasis on quantitative analysis of drug transport. Specific topics include: physiologically-based pharmacokinetic analysis, microcirculation, network analysis of oxygen transport, transvascular transport, interstitial transport, transport across cell membrane, specific issues in the delivery of cells and genes, drug delivery systems, and targeted drug delivery. Prerequisites: Biomedical Engineering 307; Engineering 103L; or consent of the instructor. Instructor: Yuan. One course.
578. Quantitative Cell and Tissue Engineering (GE, BB, MC). This course will serve as an overview of selected topics and problems in the emerging field of tissue engineering. General topics include cell sourcing and maintenance of differentiated state, culture scaffolds, cell-biomaterials interactions, bioreactor design, and surgical implantation considerations. Specific tissue types to be reviewed include cartilage, skin equivalents, blood vessels, myocardium and heart valves, and bioartificial livers. Prerequisites: Biomedical Engineering 302L or Biomedical Engineering 307 or consent of the instructor. Instructor: Bursac. One course.

590. Special Topics in Biomedical Engineering. Special subjects related to programs within biomedical engineering tailored to fit the requirements of a small group. Consent of instructor required. Instructor: Staff. One course.

590L. Special Topics with Lab. To be used as a “generic” course number for any special topics course with lab sections. Instructor: Staff. One course.

609. Optics and Photonics Seminar Series. One course. C-L: see Electrical and Computer Engineering 549; also C-L: Physics 549

The Major

The major requirements are included in the minimum total of thirty-four courses listed under general requirements. The following specific courses or their approved alternatives must be included: Electrical and Computer Engineering 110L; Engineering 201L; Biomedical Engineering 244L, 260L, 271, 354L; Mechanical Engineering 221L; two Area of Interest core classes: (Biomedical Engineering 301L, 302L, 303, 307); two electives from one selected Area of Interest; two biomedical engineering electives; and one biomedical engineering design course (Biomedical Engineering 427L, 432L, 436L, 460L, 462L, 464L, 490L). The BME Undergraduate Program Handbook (available on the departmental website at www.bme.duke.edu/undergrad/curriculum) provides examples of course sequences that incorporate all general requirements and departmental requirements comprising the accredited biomedical engineering major.

To encourage depth in a specific area of biomedical engineering, students select two Areas of Interest in the junior year. There are four areas of interest: (1) biomechanics and biomaterials (BB), (2) electrobiology (EL), (3) imaging and measurement systems (IM), and (4) molecular, cellular, and tissue engineering (MC). Students must take one core class in each of their two selected areas followed by two electives in one of the selected areas. All biomedical engineering elective courses have one or more of area of interest designations (BB, EL, IM, MC) or a general elective (GE) designation. Any biomedical engineering class with a GE designation may be used to fulfill the two biomedical engineering general electives. Students are encouraged to consult with their advisors when selecting areas of interest and electives.

Students intending to study abroad should plan to travel in the fall semester of their junior year. These students need to take Biomedical Engineering 260L and possibly also Mechanical Engineering 221L before going abroad. This is done by rearranging courses; students should consult with their advisor about course planning. Premed students need to take Chemistry 201L and 202L, Biology 201L, and Biochemistry 301 by the end of the junior year. These students should consult with both their advisor and the Office of Health Professions Advising about course planning. Options for dual majors in electrical and computer engineering, civil engineering, and mechanical engineering as well as areas of interests are described in the BME Undergraduate Program Handbook (available at www.bme.duke.edu/undergrad/curriculum).

Civil and Environmental Engineering

Professor Albertson, Chair; Professor of the Practice Schaad, Associate Chair; Associate Professor of the Practice Nadeau, Director of Undergraduate Studies; Professors Albertson, Barros, Deshusses, Di Giulio, Dolbow, Doyle, Haff, Hinton, Hueckel, Katul, Malin, Marani, Oren, Petroski, Porporato, Richardson, Vengosh, Virgin, and Wiesner; Associate Professors Aquino, Boadu, Ferguson, Gavin, Golden, Gunsch, Hsu-Kim, Kabala, Kasibhatla, Mann, Peirce, and Scovazzi; Assistant Professors Hench, Hunt, Jeuland, Kumar, Meyer, Plata, and Stapleton; Professors Emeriti Medina, Trangenstein, and Wilson; Professor of the Practice Schaad; Associate Professor of the Practice Nadeau; Adjunct Professor Vallero; Instructor Brasier

Two majors are available in this department: civil engineering (CE) and environmental engineering (EnvE). The civil engineering program is accredited by the Engineering Accreditation Commission of the Accreditation Board for
The environmental engineering degree program, launched in Fall 2013, is highly interdisciplinary and brings together topics as diverse as chemistry, the life sciences, economics, fluid mechanics, and public health engineering. The degree responds to the needs of students looking for such an interdisciplinary engineering degree that prepares them to work as environmental engineers, graduate work in environmental engineering, or for advanced study in environmental law, medicine, public health, or global sanitation.

The infrastructure that makes up what we refer to as civilization is, for the most part, the work of civil and environmental engineers. Improving, or even maintaining, the quality of life is ever more challenging as urban problems in the industrialized nations of the world intensify, while rapid urbanization in many developing countries creates other opportunities and obligations for the civil and environmental engineer. The planning, design, construction, and maintenance of necessary facilities, in an era of increasingly scarce monetary and other resources, demand civil and environmental engineers dedicated to work for the public good and prepared to seek more efficient and effective solutions based on current technology. The challenges faced by civil and environmental engineers vary widely in nature, size, and scope, and encompass both the public and private sectors. Examples include high-rise buildings and long-span bridges; concert halls and museums; hazardous waste disposal facilities; orbital structures; water supply and treatment facilities; tunnels; dams; seaports, airports, and offshore structures. The mission of the undergraduate program in the Department of Civil and Environmental Engineering at Duke University is to provide an education that prepares graduates to solve technical problems, to pursue life-long learning in their field, to assume leadership roles in their chosen careers, and to recognize their professional and personal obligations to the broader society and culture. The program is designed to provide a holistic educational experience where engineering sciences and design are combined with humanities and social sciences to provide the foundation for the critical thinking and skills that allow graduates to enjoy the benefits of a liberal education.

The goals of the program are to position our graduates to:

- use their knowledge and understanding of engineering sciences and design to advance their professional career;
- think critically when solving and managing tasks;
- communicate effectively in multidisciplinary, professional environments;
- exercise professional responsibility and sensitivity in the context of the social, economic, ethical, and environmental implications of their engineering work;
- function effectively and efficiently as an individual and as a part of a team; and
- pursue life-long learning to earn relevant professional credentials (for example, licensure, professional, or graduate degrees).

Students may pursue either degree program in civil and environmental engineering coupled with a double major in another department at Duke. Examples of recently completed double majors reflect the breadth of interests shared by civil and environmental engineering students at Duke; public policy studies, economics, French, mathematics, and music. A certificate program in architectural engineering is also available.

The civil and environmental engineering program is built upon the expertise and experience of the faculty and is supported by commensurate laboratory and instructional facilities. The civil and environmental engineering professors are committed to providing quality classroom instruction, advising, and laboratory experiences in settings that encourage student-faculty as well as student-student interactions. The faculty conducts research of national and international consequence, and undergraduates have ample opportunities to be involved in such research, through undertaking independent study projects and/or by working as research assistants. The research facilities in the department, including laboratory equipment and instrumentation as well as computer resources, are comparable to those found in other major universities.

Graduates of the Department of Civil and Environmental Engineering are able to select from a wide range of career paths. Recent graduates have pursued advanced study in engineering, business, law, and architecture, while others have accepted positions with major corporations and federal, state, and local government agencies as design engineers and project managers.

Courses in Civil and Environmental Engineering (CEE)

160L. Introduction to Environmental Engineering and Science. QS, STS Examination of engineering and the societal context of anthropogenic contributions and impacts to the built environment. Focus on the human necessities of air, water, land, and energy and the technological interplays of environmental engineering in sustainably meeting human needs. Materials and energy balances applied to environmental engineering problems. Water

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pollution control, applied ecology, air quality management, solid and hazardous waste control, and environmental ethics. Instructor: Plata or Schaad. One course.

190. Special Topics in Civil Engineering. Study arranged on a special topic in which the instructor has particular interest and competence. Consent of instructor and director of undergraduate studies required. Half course or one course each. Instructor: Staff. Variable credit.


205. Practical Methods in Civil Engineering. Introduction to the practical methods used by Civil Engineers, including surveying, computer-aided-design, geographical information systems, and use of the mills, lathes, and other machine tools. Instructor: Schaad. Half course.

301L. Fluid Mechanics. Physical properties of fluids; fluid-flow concepts and basic equations; continuity, energy, and momentum principles; dimensional analysis and dynamic similarity; viscous effects; applications emphasizing real fluids. Selected laboratory work. Corequisites: Engineering 244L and Mathematics 353. Instructor: Boadu, Kabala, Laursen, Porporato. One course.


307. Transport Phenomena in Biological Systems (AC or GE, BB). One course. C-L: see Biomedical Engineering 307; also C-L: Mechanical Engineering and Materials Science 307


315. Engineering Sustainable Design and the Global Community. QS, STS Design and testing of solutions to complex interdisciplinary design products in a service learning context. Technical design principles; sustainable and engineering best practices; prototype formation, testing and evaluation; and establishment of research and analysis methodologies in a community based research experience. Working in partnership with a community agency (local, national, or international) and participation in an experimental learning process by engineering a design solution for an identified community need. Evaluation focused on design deliverables, fabricated prototypes and a critical reflection of the experimental learning process. One credit. Prerequisites: Engineering 201L or Electrical and Computer Engineering 110L or consent of instructor. Instructor: Schaad. One course. C-L: Environment 365, Public Policy Studies 211, Energy and the Environment

315-20. Engineering Sustainable Design and the Global Community: Structural Focus. QS, STS Design and testing of solutions to complex interdisciplinary design products in a service learning context with a focus on structural products. Technical design principles; sustainable and engineering best practices; prototype formation, testing and evaluation; and establishment of research and analysis methodologies in a community based research experience. Working in partnership with a community agency (local, national, or international) and participation in an experimental learning process by engineering a design solution for an identified community need. Evaluation focused on design deliverables, fabricated prototypes and a critical reflection of the experimental learning process. Instructor: Schaad. One course. C-L: Environment 365-20, Public Policy Studies 211-20

315-60. Engineering Sustainable Design and the Global Community: Environmental Focus. QS, STS Design and testing of solutions to complex interdisciplinary design products in a service learning context with a focus on structural products. Technical design principles; sustainable and engineering best practices; prototype formation, testing and evaluation; and establishment of research and analysis methodologies in a community based research
experience. Working in partnership with a community agency (local, national, or international) and participation in an experimental learning process by engineering a design solution for an identified community need. Evaluation focused on design deliverables, fabricated prototypes and a critical reflection of the experimental learning process. Prerequisite: Engineering 201L or Electrical and Computer Engineering 110L or consent of instructor. Instructor: Schaad. One course. C-L: Environment 365-60, Public Policy Studies 211-60

316. Transportation Engineering. The role and history of transportation. Introduction to the planning and design of multimodal transportation systems. Principles of traffic engineering, route location, and geometric design. Planning studies and economic evaluation. Prerequisite: Statistical Science 130 and consent of instructor for non-engineering students. Instructor: Staff. One course.

365. Hydrologic and Environmental Data Analysis. NS, QS One course. C-L: see Earth and Ocean Sciences 322; also C-L: Environment 322

394. Engineering Undergraduate Fellows Projects. Intensive research project in Civil and Environmental Engineering by students selected as Engineering Undergraduate Fellows. Course credit is contingent upon satisfactory completion of 493 and 494. Consent of instructor and program director required. Instructor: Staff. One course.

411. Architectural Engineering II. ALP, STS Design and integration of building subsystems (enclosure, space, structural, environmental-control) in the design of a medium-sized building. Prerequisite: Civil and Environmental Engineering 311 or consent of instructor. Instructor: Brasier. One course.


422L. Concrete and Composite Structures. Properties and design of concrete. Analysis and design of selected reinforced concrete structural elements according to strength design methodology. Mechanics forming the foundation of the methodology is featured. Laboratory work on properties of aggregates, concrete, and reinforced concrete. Prerequisite: Engineering 201L. Instructor: Nadeau. One course.


425. Analytical and Computational Solid Mechanics. Investigation and application of intermediate concepts of mechanics, expanding upon elementary ideas covered in Engineering 201L. Topics include: generalized stress and strain relations and differential equations of equilibrium in solids; the theory of elasticity, including some fundamental solutions; failure and strength theories from mechanics; and plate bending. Introduction of the finite element method as a means of solution of plate and planar elasticity problems, including basic theoretical concepts and modeling techniques involved in applications. Assigned work will feature analytical work and application of commercial finite element packages. Prerequisites: Engineering 201L, Mathematics 212 and 216, or consent of instructor. Instructor: Laursen or Dolbow. One course. C-L: Mechanical Engineering and Materials Science 425

429. Integrated Structural Design. Student design teams complete a preliminary design of an actual structural engineering project and present the design to a panel of civil engineering faculty and practitioners. A written technical report is required. Topics to be addressed include: the design process; cost estimation; legal, ethical, and social aspects of professional engineering practice; short-term and long-term design serviceability considerations. Open only to civil engineering students during their final two semesters. Prerequisites: Civil and Environmental Engineering 421L, 422L, and 423L. Instructor: Nadeau. One course.

461L. Chemical Principles in Environmental Engineering. Fundamentals of chemistry as applied in environmental engineering processes. Chemistry topics include acid-base equilibrium, the carbonate system, mineral surfaces interactions, redox reactions, and organic chemistry. Applied environmental systems include water treatment, soil remediation, air pollution and green engineering. Laboratory included. Field trips will be arranged. Prerequisite: Chemistry 20, 21, or 101DL, or consent of instructor. Instructor: Hsu-Kim. One course. C-L: Energy and the Environment
462L. Biological Principles in Environmental Engineering. Fundamentals of microbiology related to biological environmental engineering processes. Topics include microbial metabolism, molecular biology tools, microbial kinetics and stoichiometry, and bioreactor models. Applications include unit processes in wastewater treatment and bioremediation. Laboratory included. Field trips to be arranged. Recommended for sophomores and above Instructor: Deshusses. One course. C-L: Energy and the Environment


469. Integrated Environmental Design. Student design teams complete a preliminary design of an actual environmental engineering project and present the design to a panel of civil engineering faculty and practitioners. A written technical report is required. Topics to be addressed include: the design process; cost estimation; legal, ethical, and social aspects of professional engineering practice; short-term and long-term design serviceability considerations. Open only to civil engineering students during their final two semesters. Prerequisites: Civil and Environmental Engineering 461L, 462L, and 463L. Instructor: Schaad. One course. C-L: Global Health

490. Special Topics in Civil Engineering. Study arranged on a special topic in which the instructor has particular interest and competence. Consent of instructor and director of undergraduate studies required. Half course or one course each. Instructor: Staff. Variable credit.

491. Projects in Civil Engineering. These courses may be taken by junior and senior engineering students who have demonstrated aptitude for independent work. Consent of instructor and director of undergraduate studies required. Half course or one course each. Instructor: Staff. Variable credit.

492. Projects in Civil Engineering. These courses may be taken by junior and senior engineering students who have demonstrated aptitude for independent work. Consent of instructor and director of undergraduate studies required. Half course or one course each. Instructor: Staff. Variable credit.


511. Construction Management. This course is a broad overview of the roles and responsibilities of the construction management engineer. Included in this is an examination of: Project Management Planning, Cost Management, Time Management, Quality Management, Contract Administration, and Safety Management. Topics covered will include: defining the responsibilities and management structure of the project management team, organizing and leading by implementing project controls, defining roles and responsibilities and developing communication protocols, and identifying elements of project design and construction likely to give rise to disputes and claims. Field trips. Instructor: Schaad. One course.

521. **Elasticity (GE, BB).** Linear elasticity will be emphasized including concepts of stress and strain as second order tensors, equilibrium at the boundary and within the body, and compatibility of strains. Generalized solutions to two and three dimensional problems will be derived and applied to classical problems including torsion of noncircular sections, bending of curved beams, stress concentrations and contact problems. Applications of elasticity solutions to contemporary problem in civil and biomedical engineering will be discussed. Prerequisites: Engineering 201L; Mathematics 353. Instructor: Staff. One course. C-L: Biomedical Engineering 526

525. **Wave Propagation in Elastic and Poroelastic Media.** Basic theory, methods of solution, and applications involving wave propagation in elastic and poroelastic media. Analytical and numerical solution of corresponding equations of motion. Linear elasticity and viscoelasticity as applied to porous media. Effective medium, soil/rock materials as composite materials. Gassmann's equations and Biot's theory for poroelastic media. Stiffness and damping characteristics of poroelastic materials. Review of engineering applications that include NDT, geotechnical and geophysical case histories. Prerequisite: Mathematics 353 or consent of instructor. Instructor: Boadu. One course.

530. **Introduction to the Finite Element Method.** Investigation of the finite element method as a numerical technique for solving linear ordinary and partial differential equations, using rod and beam theory, heat conduction, elastostatics and dynamics, and advective/diffusive transport as sample systems. Emphasis placed on formulation and programming of finite element models, along with critical evaluation of results. Topics include: Galerkin and weighted residual approaches, virtual work principles, discretization, element design and evaluation, mixed formulations, and transient analysis. Prerequisites: a working knowledge of ordinary and partial differential equations, numerical methods, and programming in FORTRAN or MATLAB. Instructor: Aquino, Dolbow, Laursen, or Scovazzi. One course. C-L: Mechanical Engineering and Materials Science 524

535. **Engineering Analysis and Computational Mechanics.** Mathematical formulation and numerical analysis of engineering systems with emphasis on applied mechanics. Equilibrium and eigenvalue problems of discrete and distributed systems; properties of these problems and discretization of distributed systems in continua by the trial functions with undetermined parameters. The use of weighted residual methods, finite elements, and finite differences. Prerequisite: senior or graduate standing. Instructor: Dolbow and Laursen. One course.

541. **Structural Dynamics.** Formulation of dynamic models for discrete and continuous structures; normal mode analysis, deterministic and stochastic responses to shocks and environmental loading (earthquakes, winds, and waves); introduction to nonlinear dynamic systems, analysis and stability of structural components (beams and cables and large systems such as offshore towers, moored ships, and floating platforms). Instructor: Gavin. One course.

560. **Environmental Transport Phenomena.** Conservation principles in the atmosphere and bodies of water, fundamental equations for transport in the atmosphere and bodies of water, scaling principles, simplification, turbulence, turbulent transport, Lagrangian transport, applications to transport of particles from volcanoes and stacks, case studies: volcanic eruption, Chernobyl accident, forest fires and Toms River power plant emission. Instructor: Wiesner. One course.

561L. **Environmental Aquatic Chemistry.** Principles of chemical equilibria and kinetics applied to quantitative chemical description of natural and engineered aquatic systems. Topics include acid/base equilibrium, the carbonate system, metal complexation, oxidation/reduction reactions, precipitation/dissolution of minerals, and surface absorption. Instructor: Hsu-Kim. One course. C-L: Environment 542L

562. **Biological Processes in Environmental Engineering.** Biological processes as they relate to environmental systems, including wastewater treatment and bioremediation. Concepts of microbiology, chemical engineering, stoichiometry, and kinetics of complex microbial metabolism, and process analyses. Specific processes discussed include carbon oxidation, nitrification/denitrification, phosphorus removal, methane production, and fermentation. Consent of instructor required. Instructor: Staff. One course.

563. **Chemical Fate of Organic Compounds.** One course. C-L: see Environment 540

564. **Physical Chemical Processes in Environmental Engineering.** Theory and design of fundamental and alternative physical and chemical treatment processes for pollution remediation. Reactor kinetics and hydraulics, gas transfer, adsorption, sedimentation, precipitation, coagulation/flocculation, chemical oxidation, disinfection. Prerequisites: introductory environmental engineering, chemistry, graduate standing, or permission of instructor. Instructor: Staff. One course.
565. Environmental Analytical Chemistry. This course covers the fundamentals and applications of analytical chemistry as applied to detection, identification, and quantification of anthropogenic contaminants in environmental samples including air, water, soil, sediment, and biota. The topics include both sample preparation methods (i.e. wet chemistry) and instrumental analysis (e.g. mass spectrometry, chromatography, and optical spectroscopy). Particular emphasis is placed on current advancements in measurement science as applied to environmental chemistry. The material includes both theoretical and practical aspects of environmental analysis. Prerequisite: Chemistry 131 or Chemistry 151L or consent of instructor. Instructor: Ferguson. One course. C-L: Environment 566

566. Environmental Microbiology. Fundamentals of microbiology and biochemistry as they apply to environmental engineering. General topics include cell chemistry, microbial metabolism, bioenergetics, microbial ecology and pollutant biodegradation. Prerequisites: Civil and Environmental Engineering 462L or graduate standing or consent of the instructor. Instructor: Gunsch. One course.

569. Introduction to Atmospheric Aerosol. Atmospheric aerosol and its relationship to problems in air control, atmospheric science, environmental engineering, and industrial hygiene. Open to advanced undergraduate and graduate students. Prerequisites: knowledge of calculus and college-level physics. Consent of instructor required. Instructor: Khlystov. One course.


574. Remote Sensing in Coastal Environments. NS, QS One course. C-L: see Earth and Ocean Sciences 530; also C-L: Environment 530


576L. Aerosol Measurement Techniques for Air Quality Monitoring and Research. Principles of measurements and analysis in ambient particulate matter (aerosol). Traditional and emerging measurements techniques currently used in air quality monitoring and homeland defense. Open to advanced undergraduate and graduate students interested in the science and engineering related to atmospheric aerosol. Consent of the instructor required. Instructor: Staff. One course.

581. Pollutant Transport Systems. Distribution of pollutants in natural waters and the atmosphere; diffusive and advective transport phenomena within the natural environment and through artificial conduits and storage/treatment systems. Analytical and numerical prediction methods. Prerequisite: Civil and Environmental Engineering 301L and Mathematics 353, or equivalents. Instructor: Staff. One course.

585. Vadose Zone Hydrology. Transport of fluids, heat, and contaminants through unsaturated porous media. Understanding the physical laws and mathematical modeling of relevant processes. Field and laboratory measurements of moisture content and matric potential. Prerequisites: Civil and Environmental Engineering 301L and Mathematics 353, or consent of instructor. Instructor: Kabala. One course.


623. Mechanics of Composite Materials. Theory and application of effective medium, or homogenization, theories to predict macroscopic properties of composite materials based on microstructural characterizations. Effective elasticity, thermal expansion, moisture swelling, and transport properties, among others, are presented along with
associated bounds such as Voigt/Reuss and Hashin-Shtrikman. Specific theories include Eshelby, Mori-Tanaka, Kuster-Toksoz, self-consistent, generalized self-consistent, differential method, and composite sphere and cylinder assemblages. Tensor-to-matrix mappings, orientational averaging, and texture analysis. Composite laminated plates, environmentally induced stresses, and failure theories. Prerequisite: Civil and Environmental Engineering 520 or consent of instructor. Instructor: Nadeau. One course.

625. Intermediate Dynamics: Dynamics of Very High Dimensional Systems. One course. C-L: see Mechanical Engineering and Materials Science 541

626. Energy Flow and Wave Propagation in Elastic Solids. Derivation of equations for wave motion in simple structural shapes: strings, longitudinal rods, beams and membranes, plates and shells. Solution techniques, analysis of systems behavior. Topics covered include: nondispersive and dispersive waves, multiple wave types (dilational, distortion), group velocity, impedance concepts including driving point impedances and moment impedances. Power and energy for different cases of wave propagation. Prerequisites: Engineering 244L and Mathematics 353 or consent of instructor. Instructor: Franzoni. One course. C-L: Mechanical Engineering and Materials Science 543

627. Linear System Theory. Construction of continuous and discrete-time state space models for engineering systems, and linearization of nonlinear models. Applications of linear operator theory to system analysis. Dynamics of continuous and discrete-time linear state space systems, including time-varying systems. Lyapunov stability theory. Realization theory, including notion of controllability and observability, canonical forms, minimal realizations, and balanced realizations. Design of linear feedback controllers and dynamic observers, featuring both pole placement and linear quadratic techniques. Introduction to stochastic control and filtering. Prerequisites: Electrical and Computer Engineering 382 or Mechanical Engineering 344, or consent of instructor. Instructor: Staff. One course. C-L: Mechanical Engineering and Materials Science 627


629. System Identification. Numerical linear algebra for modeling and filtering data (FFT, SVD, QR, and PCA); ordinary least squares, total least squares, and recursive least squares; measurement noise and propagation of measurement error; regularization; optimal linear filtering; state-space models, eigensystem realization, deterministic and stochastic subspace identification through projections and canonical correlation. Applications drawn from engineering, natural sciences, and finance. Instructor: Gavin. One course.

630. Nonlinear Finite Element Analysis. Formulation and solution of nonlinear initial/boundary value problems using the finite element method. Systems include nonlinear heat conduction/diffusion, geometrically nonlinear solid and structural mechanics applications, and materially nonlinear systems (for example, elastoplasticity). Emphasis on development of variational principles for nonlinear problems, finite element discretization, and equation-solving strategies for discrete nonlinear equation systems. Topics include: Newton-Raphson techniques, quasi-Newton iteration schemes, solution of nonlinear transient problems, and treatment of constraints in a nonlinear framework. An independent project, proposed by the student, is required. Prerequisite: Civil and Environmental Engineering 530/Mechanical Engineering 524, or consent of instructor. Instructors: Aquino, Dolbow, Laursen, or Scovazzi. One course. C-L: Mechanical Engineering and Materials Science 627

635. Computational Methods for Evolving Discontinuities. Presents an overview of advanced numerical methods for the treatment of engineering problems such as brittle and ductile failure and solid-liquid phase transformations in pure substances. Analytical methods for arbitrary discontinuities and interfaces are reviewed, with particular attention to the derivation of jump conditions. Partition of unity and level set methods. Prerequisites: Civil and Environmental Engineering 530, or 630, or instructor consent. Instructor: Dolbow. One course.

642. Environmental Geomechanics. The course addresses engineered and natural situations, where mechanical and hydraulic properties of soils and rocks depend on environmental (thermal chemical, biological) processes. Experimental findings are reviewed, and modeling of coupled thermo-mechanical, chemo-mechanical technologies are reviewed. Instructor: Hueckel. One course.

643. Environmental and Engineering Geophysics. Use of geophysical methods for solving engineering and environmental problems. Theoretical frameworks, techniques, and relevant case histories as applied to engineering and environmental problems (including groundwater evaluation and protection, siting of landfills, chemical waste disposals, roads assessments, foundations investigations for structures, liquefaction and earthquake risk assessment). Introduction to theory of elasticity and wave propagation in elastic and poroelastic media, electrical and electromagnetic methods, and ground penetrating radar technology. Prerequisite: Mathematics 353 or Physics 152L, or consent of instructor. Instructor: Boadu. One course.


645. Experimental Systems. Formulation of experiments; Pi theorem and principles of similitude; data acquisition systems; static and dynamic measurement of displacement, force, and strain; interfacing experiments with digital computers for data storage, analysis, and plotting. Students select, design, perform, and interpret laboratory-scale experiments involving structures and basic material behavior. Prerequisite: senior or graduate standing in engineering or the physical sciences. Instructor: Gavin. One course.


647. Buckling of Engineering Structures. An introduction to the underlying concepts of elastic stability and buckling, development of differential equation and energy approaches, buckling of common engineering components including link models, struts, frames, plates, and shells. Consideration will also be given to inelastic behavior, postbuckling, and design implications. Prerequisite: Civil and Environmental Engineering 421L, or consent of instructor. Instructor: Virgin. One course. C-L: Mechanical Engineering and Materials Science 527


649. Structural Engineering Project Management. Apply project management tools and skills to a structural engineering design project. Implement changes in schedule, budget, and changing client and/or regulatory climate. Work with a design team of undergraduate students. Prerequisites: not open to students who have had Civil and Environmental Engineering 429, 469, or 679. Consent of instructor required. Instructor: Nadeau. One course.

661L. Environmental Molecular Biotechnology (GE, MC). Principles of genetics and recombinant DNA for environmental systems. Applications to include genetic engineering for bioremediation, DGGE, FISH, micro-arrays and biosensors. Laboratory exercises to include DNA isolation, amplification, manipulation and analysis. Prerequisites: Civil and Environmental Engineering 462L, Biology 20, Biology 201L, or graduate standing, or consent of instructor. Instructor: Gunsch. One course. C-L: Biomedical Engineering 565L
Physico-Bio-Chemical Transformations. Surveys of a selection of topics related to the interaction between fluid flow (through channels or the porous media) and physical, chemical, and biochemical transformations encountered in environmental engineering. Numerous diverse phenomena, including solute transport in the vicinity of chemically reacting surfaces, reverse osmosis, sedimentation, centrifugation, ultrafiltration, rheology, microorganism population dynamics, and others will be presented in a unifying mathematical framework. Prerequisites: Civil and Environmental Engineering 301L and Mathematics 353, or consent of instructor. Instructor: Kabala. One course.

Aquatic Geochemistry. Geochemistry of the water-solid interface of soils, minerals, and particles in earth systems. Topics will cover the chemical composition of soils, geochemical speciation, mineral weathering and stability, sorption and ion exchange, soil redox processes, and chemical kinetics at environmental surfaces. Prerequisites: CE/ENVIRON 561L or CEE 461L or EOS 525 or ENVIRON 360 or permission of instructor. Instructor: Hsu-Kim. One course. C-L: Environment 666

Chemical Transformation of Environmental Contaminants. Mechanisms and principles underlying organic contaminant transformations in the ambient environment. Topics include hydrolysis, oxidation/reduction, direct and indirect photolysis, and reactions with disinfectant chemicals. Reactions will be considered in context of both natural (e.g. surface water and cloudwater) and engineered (e.g. drinking water, wastewater, and groundwater remediation) systems. Approaches will include both qualitative (reaction mechanism and product identification) as well as quantitative (reaction kinetics and stoichiometry) aspects of environmental reaction chemistry. Prerequisites: CEE 563/ENVIRON 540 or one semester of organic chemistry. Instructor: Ferguson. One course.

Physicochemical Unit Operations in Water Treatment. Fundamental bases for design of water and waste treatment systems, including transport, mixing, sedimentation and filtration, gas transfer, coagulation, and absorption processes. Emphasis on physical and chemical treatment combinations for drinking water supply. Prerequisite: Civil and Environmental Engineering 462L. Instructor: Kabala. One course.

Solid Waste Engineering. Engineering design of material and energy recovery systems including traditional and advanced technologies. Sanitary landfills and incineration of solid wastes. Application of systems analysis to collection of municipal refuse. Major design project in solid waste management. Prerequisite: Civil and Environmental Engineering 462L, or consent of instructor. Instructor: Staff. One course. C-L: Environment 548

Introduction to the Physical Principles of Remote Sensing of the Environment. The course provides an overview of the radiative transfer principles used in remote-sensing across the electromagnetic spectrum using both passive and active sensors. Special focus is placed on the process that leads from theory to the development of retrieval algorithms for satellite-based sensors, including post-processing of raw observations and uncertainty analysis. Students carry on three hands-on projects (Visible and Thermal Infrared, Active Microwave, and Passive Microwave). Background in at least one of the following disciplines is desirable: radiation transfer, signal processing, and environmental physics (Hydrology, Geology, Geophysics, Plant Biophysics, Soil Physics). Instructor consent required. Instructor: Barros. One course.

Fundamentals and Applications of UV Processes in Environmental Systems. Ultraviolet light based processes as they relate to treatment of contaminants in water and air. Concepts in photochemistry and photobiology, fluence determination, UV disinfection, photodegradation processes for chemical containments, advanced oxidation processes, mathematical modeling and design of UV systems. Includes laboratory exercises. Prerequisites: Civil and Environmental Engineering 564, or consent of instructor. Instructor: Staff. One course.

Environmental Engineering Project Management. Apply project management tools and skills to an environmental engineering design project. Implement changes in schedule, budget, and changing client and/or regulatory climate. Work with a design team of undergraduate students. Consent of instructor required. Prerequisites: not open to students who have had Civil and Environmental Engineering 429, 469, or 649. Instructor: Schaad. One course.

Analytical Models of Subsurface Hydrology. Reviews the method of separation of variables, surveys integral transforms, and illustrates their application to solving initial boundary value problems. Three parts include: mathematical and hydrologic fundamentals, integral transforms and their philosophy, and detailed derivation via integral transforms of some of the most commonly used models in subsurface hydrology and environmental engineering. Discussion and use of parameter estimation techniques associated with the considered models. Prerequisite: Mathematics 353 and (Civil and Environmental Engineering 301L or 463L), or consent of instructor. Instructor: Kabala. One course.
682. Dynamic Engineering Hydrology. Dynamics of the occurrence, circulation, and distribution of water; climate, hydrometeorology, geophysical fluid motions. Precipitation, surface runoff and stream flow, infiltration, water losses. Hydrograph analysis, catchment characteristics, hydrologic instrumentation, and computer simulation models. Prerequisite: Civil and Environmental Engineering 301L, or consent of instructor. Instructor: Staff. One course.


684. Physical Hydrology and Hydrometeorology. The objective of this course is to introduce and familiarize graduate students with the fundamental physical processes in Hydrology and Hydrometeorology that control and modulate the pathways and transformations of water in the environment. The content of the course will be strongly oriented toward providing students with a specific basis for quantitative analysis of the terrestrial water cycle including land-atmosphere interactions and clouds and precipitation (rain and snow) processes. The course should be of interest to undergraduate and graduate students interested in Environmental Science and Engineering, and Atmospheric and Earth Sciences. Instructor: Barros. One course.

685. Water Supply Engineering Design. The study of water resources and municipal water requirements including reservoirs, transmission, treatment and distribution systems; methods of collection, treatment, and disposal of municipal and industrial wastewaters. The course includes the preparation of a comprehensive engineering report encompassing all aspects of municipal water and wastewater systems. Field trips to be arranged. Prerequisite: Civil and Environmental Engineering 462L, or consent of instructor. Instructor: Staff. One course.

686. Ecohydrology. This course provides the theoretical basis for understanding the interaction between hydrologic cycle, vegetation and soil biogeochemistry which is key for a proper management of water resources and terrestrial ecosystems especially in view of the possible intensification and alteration of the hydrologic regime due to climate change. Topics include: Probabilistic soil moisture dynamics; plant water stress; coupled dynamics of soil moisture, transpiration and photosynthesis; and infiltration, root uptake, and hydrologic control on soil biogeochemistry. Instructor: Porporato. One course.

689. Advanced Topics in Civil and Environmental Engineering. Opportunity for study of advanced subjects relating to programs within the civil and environmental engineering department tailored to fit the requirements of individuals or small groups. Instructor: Staff. Variable credit.

The Major

Civil Engineering

Major Requirements. The major requirements for civil engineering (CE) are included in the minimum of thirty-four courses listed under general requirements and departmental requirements.

Meeting the departmental requirements together with the four engineering and applied science courses from the general requirements requires that the following courses must be included. All majors must take Engineering 120L, 201L, 206 (0.5 course credit), 244L and 305; Civil and Environmental Engineering 160L, 201L, 205 (0.5 course credit), 301L, 302L; and Statistical Science 130. All majors must complete at least one concentration: structural engineering and mechanics (S/M) or environmental engineering and water resources (E/W). Majors choosing the structural engineering and mechanics concentration (S/M) must take Civil and Environmental Engineering 421L, 422L, 423L and 429. Majors choosing the environmental engineering and water resources concentration (E/W) must take Civil and Environmental Engineering 461L, 462L, 463L and 469. To complete the engineering and applied sciences general requirement, all majors must take one of the following (electrical science, information and computer science, materials science, thermal science, and transfer processes) courses: Biomedical Engineering 253L, Civil and Environmental Engineering 307, 560, 581, Computer Science 201, Electrical and Computer Engineering 110L, 311, Engineering 224L, Mechanical Engineering and Material Science 221L, 331L, or Physics 271L (students completing...
the structural engineering and mechanics concentration may take Civil and Environmental Engineering 461L, 463L, or 462L; students completing the environmental engineering and water resources concentration may take Civil and Environmental Engineering 421L, 422L, or 423L). All majors must take a civil and environmental engineering elective at the 300 level, or higher. All majors have a total of two unrestricted electives.

Toward fulfilling the general requirements, the following elective options must be selected from the following courses. The natural science requirement is satisfied by completing Biology 201L, 215/215L, 275A, 311, Earth and Ocean Sciences 101, 102, 201L, 202, or 370A. At least one of the five courses used to satisfy the humanities and social sciences requirement, or an approved alternate course, must possess an ethical inquiry (EI) code.

A sample, semester-by-semester sequencing of the requirements for the major is available online at [http://www.cee.duke.edu/undergrad/bse-ce-degree-planning](http://www.cee.duke.edu/undergrad/bse-ce-degree-planning). Students planning to attend graduate school are strongly advised to use the unrestricted electives to take at least one additional civil and environmental engineering elective (making two in total), with at least one of them at the 500 level or higher.

**Environmental Engineering Major Requirements.** The major requirements for environmental engineering (EnvE) are included in the minimum of thirty-four courses listed under general requirements and departmental requirements.

Meeting the departmental requirements together with the four engineering and applied science courses from the general requirements requires that the following courses must be included. All majors must take Engineering 201L, 206 (0.5 course credit), and 244L; Civil and Environmental Engineering 160L, 205 (0.5 course credit), 301L, 461L, 462L, 463L, 469, 560; and Statistical Science 130. All majors must take Engineering 305 or Civil and Environmental Engineering 201L. All majors must take Civil and Environmental Engineering 302L, or an approved soil physics/earth science course. All majors must take an approved thermodynamics course. All majors must take one of the following environmental engineering and environmental science courses: Chemistry 201D, 202L, Civil and Environmental Engineering 563, 566, 661L, 666, Environment 543A, 382LA, 383LA, or 573A. All majors must take one of the following environmental engineering transport courses: Civil and Environmental Engineering 307, 569, 581, 683, 684, Earth and Ocean Sciences 272A, 315, 323, 273LA, Environment 370A, 535, or 585A. All majors must take one of the following environmental engineering transport courses: Civil and Environmental Engineering 315, 571, 575, 671, 672, 685, or Engineering 424L. All majors have one unrestricted elective.

Toward fulfilling the general requirements, the following elective options must be selected from the following courses. The natural science requirement is satisfied by completing an approved biology course. At least one of the five courses used to satisfy the humanities and social sciences requirement, or an approved alternate course, must possess an ethical inquiry (EI) code.

A sample, semester-by-semester sequencing of the requirements for the major is available online at [http://www.cee.duke.edu/undergrad/bse-enve-degree-planning](http://www.cee.duke.edu/undergrad/bse-enve-degree-planning).

**Electrical and Computer Engineering**

Professor Carin, Chair; Professor of the Practice Huettel, Associate Chair and Director of Undergraduate Studies; Professors Brady, Brown, Calderbank, Carin, Chakrabarty, Collins, Cummer, Daubechies, Donald, Dunson, Fair, Ferrari, Gauthier, Glass, Grill, Harer, Joines, Jokerst, Katsouleas, Kim, Kriklik, Lebeck, Liu, Maggoni, Maggs, Massoud, Nolte, Samei, Sapiro, Smith, and Trivedi; Associate Professors Board, Brooke, Dwyer, Gehm, Lo, Nowacek, Sorin, Stiff-Roberts and Teitsworth; Assistant Professors Cox, Farsiu, Lee, Mikkelens, Peterchev, Reeves and Zavlanos; Professors Emeriti Casey, George, Marinos, Wang, and Wilson; Professors of the Practice Huettel and Ybarra; Associate Professor of the Practice Gustafson; Assistant Professor of the Practice Hilton; Assistant Research Professors Liao, Marks, Morizio, Morton, Torrione, and Urzhumov; Adjunct Professors Derby and Wilson; Adjunct Associate Professor Janet; Adjunct Assistant Professors Remus; Visiting Professors Kaiser and McCumber

The educational mission of the Department of Electrical and Computer Engineering is to graduate electrical and computer engineers who embody excellence in a broad sense. We expect our graduates to advance within industry positions or in graduate study, or to carry the attributes of an engineering education into other disciplines. The electrical and computer engineering program of study must include mathematics and basic sciences, fundamentals, and applications in several engineering sciences, and team-based experience in the process of design, where theory is applied in the context of real needs and limitations, and where judgment must be exercised. Our electrical and computer engineering graduates should be able to think critically when solving problems and managing tasks and communicate effectively in multidisciplinary professional environments. To be a responsible member of the
engineering profession, each graduate must be aware of social, ethical, environmental, and economic factors and constraints on engineering activity, and must understand the importance of these matters in a global context. We aspire to have our graduates exhibit intellectual depth and creativity, uphold high ethical standards, and show a commitment to the betterment of society through service and professional work.

To this end, the specific program educational objectives that we look for in our graduates are that they

- advance professionally in their chosen field;
- contribute to their professional community and to society; and
- engage in lifelong learning in professional and personal endeavors.

The electrical and computer engineering (ECE) program is fully accredited by the Engineering Commission of the Accreditation Board for Engineering and Technology (ABET)\(^1\) and leads to a bachelor of science in engineering (BSE) degree. The ECE curriculum provides a solid foundation in mathematics, physical and life sciences, computer science, and humanities and social sciences that complements a set of twelve theme-based ECE courses.

The Department of Electrical and Computer Engineering has designed its curriculum based on the theme of integrated sensing and information processing (ISIP). The ISIP theme capitalizes on the collective research expertise of the ECE faculty and provides a coherent, overarching framework that links principles of ECE to each other and to real-world engineering problems. The cornerstone of the ECE curriculum is the first course fundamentals of electrical and computer engineering, which has been designed to provide students with a holistic view of ECE by introducing concepts spanning how to interface sensors and systems with the physical world, how to transfer/transmit energy/information, and how to extract, manipulate, analyze, and interpret information. The integrated design challenge in this first course introduces students to team problem solving and motivates in-depth study of ECE concepts in subsequent terms. Each of four follow-on core courses focuses on a specific subfield of ECE (digital systems, microelectronics, sensing and waves, signals and systems), and integrates lateral and vertical connections to other courses through the use of thematic examples. Following the five core courses are seven ECE technical electives that include a culminating engineering design course where teams of students address a significant real-world problem or opportunity.

The ECE curriculum emphasizes creative problem solving through open-ended design challenges in many courses. Working in teams, students collaborate to utilize and develop their individual and collective technical, management, and leadership skills to design, simulate, build, and test components and systems to meet a set of specifications, often defined by industry standards.

Students have the option to pursue two or three areas of concentration, depending on personal interests. The upper-level technical electives, which extend the breadth and depth of the ECE core curriculum, provide a firm foundation for future technical accomplishment and for effective problem solving in the diverse fields that our graduates pursue.

The flexibility of the ECE curriculum enables students and their faculty advisors to tailor a unique educational experience for every student. This may include a semester abroad; a second major, minor, or certificate program; and/or a research experience with a faculty member. The most popular second majors are computer science and biomedical engineering. Other popular second majors include mathematics, economics, physics, and public policy. Interests such as premedicine, prelaw, art, music, psychology, and social sciences can be accommodated through individually designed programs. Students are encouraged to take more than the minimum required courses in the sciences and the liberal arts, as is fitting at an engineering school in a university with a strong liberal arts tradition.

Courses in Electrical and Computer Engineering (ECE)

**110L. Fundamentals of Electrical and Computer Engineering.** Students learn core ECE concepts, providing a foundation on which subsequent courses build. These concepts include techniques for analyzing linear circuits, semiconductor and photonic devices, frequency representation, filtering, and combinational and sequential logic. Central to the course is an extensive design challenge that requires students to integrate knowledge across topics while honing practical design and project management skills. The course culminates in an exciting competition in which teams of robots race to overcome challenging obstacles using sensor data acquisition and processing. Prerequisite: Engineering 103L and Pre or Corequisite: Mathematics 112L. Instructor: Gustafson or Huettel. One course.

**230L. Introduction to Microelectronic Devices and Circuits.** Hands-on, laboratory driven introduction to microelectronic devices, sensors, and integrated circuits. Student teams of 3-4 students/team compete in a design,

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assembly, testing, characterization and simulation of an electronic system. Projects include microelectronic devices, sensors, and basic analog and digital circuits. Classroom portion designed to answer questions generated in laboratory about understanding operation of devices and sensors, and the performance of electronic circuits. Student evaluation based on project specification, prototyping, integration, testing, simulation and documentation. Prerequisites: Engineering 103L, Physics 152L and either Electrical and Computer Engineering 110L or Biomedical Engineering 253L Instructor: Brooke or Massoud. One course.


253. Introduction to Operating Systems. Basic concepts and principles of multiprogrammed operating systems. Processes, interprocess communication, CPU scheduling, mutual exclusion, deadlocks, memory management, I/O devices, file systems, protection mechanisms. Also taught as Computer Science 210. Prerequisites: Computer Science 201 and 250. Instructor: Chase or Ellis. One course.

270L. Introduction to Electromagnetic Fields. Fundamentals and application of transmission lines and electromagnetic fields and waves, antennas, field sensing, and signal transmission. Transmission line transients and digital signal transmission; transmission lines in sinusoidal steady state, impedance transformation, and impedance matching; electrostatics and magnetostatics, including capacitance and inductance; electromagnetic waves in uniform media and their interaction with interfaces; antennas and antenna arrays. Alternating laboratories and recitations. Laboratory experiments include transmission line transients, impedance matching, static and dynamic electromagnetic fields, and antennas. Prerequisite: Engineering 103L, Physics 152L, Mathematics 216 and either Electrical and Computer Engineering 110L or Biomedical Engineering 253L. Instructor: Carin, Cummer, Joines, Liu, or Smith. One course.

280L. Introduction to Signals and Systems. Continuous and discrete signal representation and classification; system classification and response; transfer functions. Fourier series; Fourier, Laplace, and z transforms. Applications to Integrated Sensing and Information Processing; networks, modulation, sampling, filtering, and digital signal processing. Laboratory projects using digital signal processing hardware and microcontrollers. Computational solutions of problems using Matlab and Maple. Prerequisite: Engineering 103L, and either Electrical and Computer Engineering 110L or Biomedical Engineering 253L. Instructor: Carin, Cummer, Joines, Liu, or Smith. One course.

290. Special Topics in Electrical and Computer Engineering. Study arranged on a special electrical and computer engineering topic in which the faculty has particular interest and competence as a result of research and professional activities. Instructor consent required. Instructor: Staff. One course.

311. Thermal Physics. Thermal properties of matter treated using the basic concepts of entropy, temperature, chemical potential, partition function, and free energy. Topics include the laws of thermodynamics, ideal gases, thermal radiation and electrical noise, heat engines, Fermi-Dirac and Bose-Einstein distributions, semiconductor statistics, kinetic theory, and phase transformations. Also taught as Physics 363. Prerequisites: Mathematics 212 or equivalent and Physics 51L, 152L or equivalent. Instructor: Staff. One course.


340L. Optics and Photonics. NS One course. C-L: see Physics 320L; also C-L: Visual and Media Studies 325L
350L. Digital Systems. Design and implementation of combinational and sequential digital systems with special attention to digital computers. The use of computer-aided design tools, hardware description languages, and programmable logic chips to facilitate larger and higher performance designs will be stressed. Laboratory exercises and group design projects will reinforce the various design techniques discussed in class. Prerequisite: Electrical and Computer Engineering 250L or Computer Science 250. Instructor: Board, Dwyer, Hilton, Lee, Sorin. One course. C-L: Computer Science 350L, Information Science and Information Studies

356. Computer Network Architecture. One course. C-L: see Computer Science 356; also C-L: Information Science and Information Studies

363L. Electric Vehicle Project. Analysis, design, and construction of electrical and mechanical components found in electric vehicles. Traction motors, controllers, batteries and chargers, and metering. Hybrid and fuel cell vehicle systems. Project includes building electrical devices and wiring of traction, control, lighting, and other components along with construction of adapters and devices necessary for the conversion of a vehicle to electric drive. Prerequisite: Physics 152L, Electrical and Computer Engineering 110L or Engineering 224L. Instructor: Staff. One course. C-L: Mechanical Engineering and Materials Science 463


381. Fundamentals of Digital Signal Processing. An introduction to theory and applications of digital signal processing. Concepts, analytical tools and design techniques to process signals in digital form. Signal sampling and reconstruction, discrete-time transforms including the z-transform, discrete-time Fourier transform, and discrete Fourier transform. Discrete systems including the analysis and design of FIR and IIR filters. Introduction to applications of digital signal processing such as image processing, and optimal detection of signals in noise. Discrete system simulations using MATLAB. Prerequisite: Electrical and Computer Engineering 280L and Statistical Science 130 or Mathematics 230 or Electrical and Computer Engineering 555 or permission of instructor. Instructor: Huettel or Nolte. One course.


391. Undergraduate Research in Electrical and Computer Engineering. For juniors only. Half course or one course each. Instructor: Staff. Variable credit.

392. Undergraduate Research in Electrical and Computer Engineering. For juniors only. Half course or one course each. Instructor: Staff. Variable credit.
449. Opto-Electronic Design Projects. Teams design board-level sensing systems to published specifications. Optical, analog, digital, RF, microfluidics components. Resource planning/management, budgeting, study of standard specs and component characteristics, vendor interaction, board design, submission to foundry, component assembly on board, system test, comparison to design specs. Cost, economic viability, ethical issues, manufacturability, environmental/social/political impact considered. Prerequisite: Electrical and Computer Engineering 230L and Electrical and Computer Engineering 250L and Electrical and Computer Engineering 270L and Electrical and Computer Engineering 280L and Mathematics 353 and (Statistical Science 130 or Mathematics 230 or Electrical and Computer Engineering 555) and Physics 152L and Chemistry 101DL and (Biology 201L or Biology 202L or Biology 311) and any 300 or 400 level Electrical and Computer Engineering course. Instructor: Brooke, Jokerst. One course.

459. Introduction to Embedded Systems. An introduction to hardware/software codesign of embedded computer systems. Structured programming techniques for high and low level programs. Hardware interfacing strategies for sensors, actuators, and displays. Detailed study of Motorola 68HC11 and 68HC12 microcomputers as applied to embedded system development. Hardware and simulation laboratory exercises with 68HC11 and 68HC12 development boards. Major design project. Prerequisite: Electrical and Computer Engineering 230L, Electrical and Computer Engineering 250L, Electrical and Computer Engineering 270L and Electrical and Computer Engineering 280L; Mathematics 353; one of Statistical Science 130 or Mathematics 230 or Electrical and Computer Engineering 555; Physics 152L; Chemistry 101DL; one of Biology 201L, 202L or 311; and Electrical and Computer Engineering 350 and Electrical and Computer Engineering 331L. Instructor: Board. One course.


485. Digital Audio and Acoustic Signal Processing. Introduction to fundamental concepts, theory, and practice of digital audio and acoustic signal processing. Digital audio concerns the process of transducing, digitizing, filtering, transforming, coding, storing, manipulating, transmitting, distributing, analyzing, and reproducing high quality music and other acoustic signals. Topics include: signal quantization, discrete-time signal analysis, audio digital filtering and equalization, hearing for audio applications, audio perceptual encoding (e.g. MP3), time and pitch-scale modification, room acoustics, audio spatial effects, 3-D audio rendition, and basic microphone array processing. Prerequisite: Electrical and Computer Engineering 280L. Instructor: Krolik. One course.


488. Digital Image and Multidimensional Processing. Introduction to the theory and methods of digital image and video sampling, denoising, coding, reconstruction, and analysis. Both linear methods (such as 2- and 3-D Fourier analysis) and non-linear methods (such as wavelet analysis). Key topics include segmentation, interpolation, registration, noise removal, edge enhancement, halftoning and inverse halftoning, deblurring, tomographic reconstruction, superresolution, compression, and feature extraction. While this course covers techniques used in a wide variety of contexts, it places a strong emphasis on medical imaging applications. Prerequisites: Electrical and Computer Engineering 280L and Statistical Science 130 or Mathematics 230 or Electrical and Computer Engineering 555 or permission of instructor. Instructor: Collins. One course. C-L: Information Science and Information Studies

490D. Special Topics in Electrical and Computer Engineering. Study arranged on a special electrical and computer engineering topic in which the faculty has particular interest and competence as a result of research and professional activities. Instructor consent required. One course. Instructor: Staff. One course.
490L. Special Topics in Electrical and Computer Engineering. Study arranged on a special electrical and computer engineering topic in which the faculty has particular interest and competence as a result of research and professional activities. Instructor consent required. One course. Instructor: Staff. One course.

493. Undergraduate Research in Electrical and Computer Engineering. For seniors only. Half course or one course each. Instructor: Staff. Variable credit.

494. Undergraduate Research in Electrical and Computer Engineering. For seniors only. Half course or one course each. Instructor: Staff. Variable credit.

495. Special Topics in Electrical and Computer Engineering. Study of selected topics in electrical engineering tailored to fit the requirements of a small group. Consent of instructor and director of undergraduate studies required. Half course or one course each. Instructor: Staff. Variable credit.

496. Special Topics in Electrical and Computer Engineering. Study of selected topics in electrical engineering tailored to fit the requirements of a small group. Consent of instructor and director of undergraduate studies required. Half course or one course each. Instructor: Staff. Variable credit.

511. Foundations of Nanoscale Science and Technology. One course. C-L: see Nanosciences 511

521. Quantum Mechanics. Discussion of wave mechanics including elementary applications, free particle dynamics, Schrödinger equation including treatment of systems with exact solutions, and approximate methods for time-dependent quantum mechanical systems with emphasis on quantum phenomena underlying solid-state electronics and physics. Prerequisite: Mathematics 216 or equivalent. Instructor: Brady, Brown, or Stiff-Roberts. One course.


523. Quantum Information Science. NS, QS Fundamental concepts and progress in quantum information science. Quantum circuits, quantum universality theorem, quantum algorithms, quantum operations and quantum error correction codes, fault-tolerant architectures, security in quantum communications, quantum key distribution, physical systems for realizing quantum logic, quantum repeaters and long-distance quantum communication. Prerequisites: Electrical and Computer Engineering 521 or Physics 464 or equivalent. Instructor: Kim. One course. C-L: Physics 627

524. Introduction to Solid-State Physics. Discussion of solid-state phenomena including crystalline structures, X-ray and particle diffraction in crystals, lattice dynamics, free electron theory of metals, energy bands, and superconductivity, with emphasis on understanding electrical and optical properties of solids. Prerequisite: quantum physics at the level of Physics 264L or Electrical and Computer Engineering 521. Instructor: Teitsworth. One course.

525. Semiconductor Physics. A quantitative treatment of the physical processes that underlie semiconductor device operation. Topics include band theory and conduction phenomena; equilibrium and nonequilibrium charge carrier distributions; charge generation, injection, and recombination; drift and diffusion processes. Prerequisite: Electrical and Computer Engineering 330 or consent of instructor. Instructor: Staff. One course.


527. Analog Integrated Circuits. Analysis and design of bipolar and CMOS analog integrated circuits. SPICE device models and circuit macromodels. Classical operational amplifier structures, current feedback amplifiers, and building blocks for analog signal processing, including operational transconductance amplifiers and current
conveyors. Biasing issues, gain and bandwidth, compensation, and noise. Influence of technology and device structure on circuit performance. Extensive use of industry-standard CAD tools, such as Analog Workbench. Prerequisite: Electrical and Computer Engineering 526. Instructor: Staff. One course.


533. Biochip Engineering. A problem-solving course in which students consider technology options for a complete lab-on-a-chip design. Lectures cover the basics of analog flow microfluidic devices, digital microfluidic devices, fabrication technologies for discrete devices, system integration issues, and a significant emphasis on biological applications for analysis, sample preparation, and detection issues. Technologies covered will include microfluidic devices, electrophoresis, analytical methods used in genetics, sample preparation methods, and analyte detection. Prerequisites: Biology 201L, Chemistry 101DL, and Physics 152L (or equivalents). Instructor: Fair. One course.

534. CAD For Mixed-Signal Circuits. The course focuses on various aspects of design automation for mixed-signal circuits. Circuit simulation methods including graph-based circuit representation, automated derivation and solving of nodal equations, and DC analysis, test automation approaches including test equipment, test generation, fault simulation, and built-in-self-test, and automated circuit synthesis including architecture generation, circuit synthesis, task generation, placement and routing are the major topics. The course will have one major project, 4-6 homework assignments, one midterm, and one final. Prerequisites: Electrical and Computer Engineering 331L. Permission of instructor required. Instructor: Staff. One course.

536. Synthesis and Verification of VLSI Systems. Algorithms and CAD tools for VLSI synthesis and design verification, logic synthesis, multi-level logic optimization, high-level synthesis, logic simulation, timing analysis, formal verification. Prerequisite: Electrical and Computer Engineering 350L or equivalent. Instructor: Chakrabarty. One course.

537. Radiofrequency (RF) Transceiver Design. Design of wireless radiofrequency transceivers. Analog and digital modulation, digital modulation schemes, system level design for receiver and transmitter path, wireless communication standards and determining system parameters for standard compliance, fundamentals of synthesizer design, and circuit level design of low-noise amplifiers and mixers. Prerequisites: Electrical and Computer Engineering 280L and Electrical and Computer Engineering 331L or equivalent. Instructor: Staff. One course.

538. VLSI System Testing. Fault modeling, fault simulation, test generation algorithms, testability measures, design for testability, scan design, built-in self-test, system-on-a-chip testing, memory testing. Prerequisite: Electrical and Computer Engineering 350L or equivalent. Instructor: Chakrabarty. One course.

539. CMOS VLSI Design Methodologies. Emphasis on full-custom digital ASIC design using CMOS technology. Extensive use of CAD tools for IC design, simulation, and layout verification. Includes techniques for designing high-speed, low-power, easily-testable circuits. Semester design project: Student groups design and simulate simple custom IC using Mentor Graphics CAD tools. Formal project proposal, written project report, and formal project presentation required. Prerequisites: Electrical and Computer Engineering 230L, Electrical and Computer Engineering 250L, Electrical and Computer Engineering 270L and Electrical and Computer Engineering 280L; Mathematics 355; one of Statistical Science 130 or Mathematics 230 or Electrical and Computer Engineering 555;
Electrical and Computer Engineering 695

Physics 152L; Chemistry 101DL; one of Biology 201L, 202L or 311; Electrical and Computer Engineering 331L and Electrical and Computer Engineering 350L. Some background in computer organization is helpful. Instructor: Chakrabarty. One course.

541. Advanced Optics. QS One course. C-L: see Physics 621; also C-L: Biomedical Engineering 552


552. Advanced Computer Architecture I. QS, R One course. C-L: see Computer Science 550

554. Fault-Tolerant and Testable Computer Systems. Technological reasons for faults, fault models, information redundancy, spatial redundancy, backward and forward error recovery, fault-tolerant hardware and software, modeling and analysis, testing, and design for test. Prerequisite: Electrical and Computer Engineering 250L or equivalent. Instructor: Sorin. One course. C-L: Computer Science 554


558. Computer Networks and Distributed Systems. QS, R One course. C-L: see Computer Science 514

559. Advanced Digital System Design. This course covers the fundamentals of advanced digital system design, and the use of a hardware description language, VHDL, for their synthesis and simulation. Examples of systems considered include the arithmetic/logic unit, memory, and microcontrollers. The course includes an appropriate capstone design project that incorporates engineering standards and realistic constraints in the outcome of the design process. Additionally, the designer must consider most of the following: Cost, environmental impact, manufacturability, health and safety, ethics, social and political impact. Each design project is executed by a team of 4 or 5 students who are responsible for generating a final written project report and making an appropriate presentation of their results to the class. Prerequisite: Electrical and Computer Engineering 230L, Electrical and Computer Engineering 250L, Electrical and Computer Engineering 270L, and Electrical and Computer Engineering 280L; Mathematics 353; one of Statistical Science 130 or Mathematics 230 or Electrical and Computer Engineering 555; Physics 152L; Chemistry 101DL; one of Biology 201L, 202L, or 311; and Electrical and Computer Engineering 350 and Electrical and Computer Engineering 331L. Instructor: Derby. One course.

571. Electromagnetic Theory. The classical theory of Maxwell's equations; electrostatics, magnetostatics, boundary value problems including numerical solutions, currents and their interactions, and force and energy relations. Three class sessions. Prerequisite: Electrical and Computer Engineering 270L. Instructor: Carin, Joines, Liu, or Smith. One course.

573. **Optical Communication Systems.** Mathematical methods, physical ideas, and device concepts of optoelectronics. Maxwell’s equations, and definitions of energy density and power flow. Transmission and reflection of plane waves at interfaces. Optical resonators, waveguides, fibers, and detectors are also presented. Prerequisite: Electrical and Computer Engineering 270L or equivalent. Instructor: Joines. One course.

574. **Waves in Matter.** Analysis of wave phenomena that occur in materials based on fundamental formulations for electromagnetic and elastic waves. Examples from these and other classes of waves are used to demonstrate general wave phenomena such as dispersion, anisotropy, and causality; phase, group, and energy propagation velocities and directions; propagation and excitation of surface waves; propagation in inhomogeneous media; and nonlinearity and instability. Applications that exploit these wave phenomena in general sensing applications are explored. Prerequisites: Electrical and Computer Engineering 270L or equivalent. Instructor: Cummer. One course.

575. **Microwave Electronic Circuits.** Microwave circuit analysis and design techniques. Properties of planar transmission lines for integrated circuits. Matrix and computer-aided methods for analysis and design of circuit components. Analysis and design of input, output, and interstage networks for microwave transistor amplifiers and oscillators. Topics on stability, noise, and signal distortion. Prerequisite: Electrical and Computer Engineering 270L or equivalent. Instructor: Joines. One course.

577. **Computational Electromagnetics.** Systematic discussion of useful numerical methods in computational electromagnetics including integral equation techniques and differential equation techniques, both in the frequency and time domains. Hands-on experience with numerical techniques, including the method of moments, finite element and finite-difference time-domain methods, and modern high order and spectral domain methods. Prerequisite: Electrical and Computer Engineering 571 or consent of instructor. Instructor: Carin or Liu. One course.

578. **Inverse Problems in Electromagnetics and Acoustics.** Systematic discussion of practical inverse problems in electromagnetics and acoustics. Hands-on experience with numerical solution of inverse problems, both linear and nonlinear in nature. Comprehensive study includes: discrete linear and nonlinear inverse methods, origin and solution of nonuniqueness, tomography, wave-equation based linear inverse methods, and nonlinear inverse scattering methods. Assignments are project oriented using MATLAB. Prerequisites: Graduate level acoustics or electromagnetics (Electrical and Computer Engineering 571), or consent of instructor. Instructor: Liu. One course.


582. **Digital Signal Processing.** Introduction to fundamental algorithms used to process digital signals. Basic discrete time system theory, the discrete Fourier transform, the FFT algorithm, linear filtering using the FFT, linear production and the Wiener filter, adaptive filters and applications, the LMS algorithm and its convergence, recursive least-squares filters, nonparametric and parametric power spectrum estimation minimum variance and eigenanalysis algorithms for spectrum estimation. Prerequisite: Electrical and Computer Engineering 581 or equivalent with consent of the instructor. Instructor: Collins, Krolik, or Nolte. One course.

584. **Acoustics and Hearing (GE,EL,IM).** One course. C-L: see Biomedical Engineering 545

585. **Signal Detection and Extraction Theory.** Introduction to signal detection and information extraction theory from a statistical decision theory viewpoint. Subject areas covered within the context of a digital environment are decision theory, detection and estimation of known and random signals in noise, estimation of parameters and adaptive recursive digital filtering, and decision processes with finite memory. Applications to problems in communication theory. Prerequisite: Electrical and Computer Engineering 581 or consent of instructor. Instructor: Nolte. One course.

587. **Information Theory.** Information theory is the science of processing, transmitting, storing, and using information. This course provides an introduction to mathematical measures of information and their connection to
practical problems in communication, compression, and inference. Entropy, mutual information, lossless data compression, channel capacity, Gaussian channels, rate distortion theory, Fisher information. Useful for researchers in a variety of fields, including signal processing, machine learning, statistics, and neuroscience. Appropriate for beginning graduate students in electrical engineering, computer science, statistics, and math with a background in probability. Instructor: Reeves, Carin. One course. C-L: Statistical Science 563

590. Advanced Topics in Electrical and Computer Engineering. Opportunity for study of advanced subjects related to programs within the electrical and computer engineering department tailored to fit the requirements of a small group. Instructor consent required. Instructor: Staff. One course.


611. Nanoscale and Molecular Scale Computing. Students study the design and analysis of nanoscale computing systems. Topics include nano electronic devices (e.g., graphene and carbon nanotube transistors, quantum dots, etc.), computational paradigms (conventional von Neumann, quantum cellular automata, quantum computing, etc.), microarchitecture and instruction set design specific to nanoscale systems, defect and fault tolerance, fabrication techniques (e.g., self-assembly), modeling and simulation methods. This course relies on current literature and student discussion. Prerequisites: Electrical and Computer Engineering 350, Electrical and Computer Engineering 511. Instructor: Dwyer, Lebeck. One course. C-L: Computer Science 624

652. Advanced Computer Architecture II. QS One course. C-L: see Computer Science 650


676. Lens Design. Paraxial and computational ray tracing. Merit functions. Wave and chromatic aberrations. Lenses in photography, microscopy and telescope. Spectrograph design. Emerging trends in lens system design, including multiple aperture and catadioptric designs and nonimaging design for solar energy collection. Design project management. Each student must propose and complete a design study, including a written project report and a formal design review. Prerequisite: Electrical and Computer Engineering 340L or 375. Instructor: Brady. One course.

678. Pattern Classification and Recognition Technology. Theory and practice of recognition technology: pattern classification, pattern recognition, automatic computer decision-making algorithms. Applications covered include medical diseases, severe weather, industrial parts, biometrics, bio information, animal behavior patterns, image processing, and human visual systems. Perception as an integral component of intelligent systems. This course prepares students for advanced study of data fusion, data mining, knowledge base construction, problem-solving methodologies of "intelligent agents" and the design of intelligent control systems. Prerequisites: Mathematics 216, Statistical Science 130 or Mathematics 230, Computer Science 101, or consent of instructor. Instructor: Collins. One course.


688. Sensor Array Signal Processing. An in-depth treatment of the fundamental concepts, theory, and practice of sensor array processing of signals carried by propagating waves. Topics include: multidimensional frequency-domain representations of space-time signals and linear systems; apertures and sampling of space-time signals; beamforming and filtering in the time-space and frequency domains, discrete random fields; adaptive beamforming methods; high
resolution spatial spectral estimation; optimal detection, estimation, and performance bounds for sensor arrays; wave propagation models used in sensor array processing; blind beamforming and source separation methods; multiple-input-multiple-output (MIMO) array processing; application examples from radar, sonar, and communications systems. Instructor: Krolik. One course.

The Major

The requirements for the electrical and computer engineering major are included in the minimum total of thirty-four courses listed under the general requirements and departmental requirements. The following specific courses or their approved alternatives must be taken: Electrical and Computer Engineering 110L; Electrical and Computer Engineering 230L, 250L, 270L, 280L; Computer Science 201; four approved electrical and computer engineering concentration electives, in two different areas with at least two courses in one of the elected areas; two elective electrical and computer engineering courses at the 300-level or higher; and one electrical and computer engineering design course. Currently, Electrical and Computer Engineering 449, 459, 559, and 539 are approved as electrical and computer engineering design electives. To fulfill the fourth natural science requirement (of the general engineering requirements), students must take an approved biology course (Biology 201L, 202L, 275A, or 311). A statistical science course is also required (Statistical Science 130, Mathematics 230, Electrical and Computer Engineering 555, or Electrical and Computer Engineering 380).

To encourage depth and breadth in electrical and computer engineering, students must select a minimum of four upper-level courses in at least two areas of concentration, with no less than two courses in one of the elected areas. There are five areas of concentration: (1) computer engineering and digital systems, (2) signal processing, communications, and control systems, (3) solid-state devices and integrated circuits, (4) electromagnetic fields, and (5) photonics. Students are encouraged to consult with their advisors when selecting areas of concentration and electives.

A sample, semester-by-semester sequencing of the requirements for the major is available online at http://www.ece.duke.edu/undergrad/bse-degree-planning.

The Minor

The requirements for the minor in electrical and computer engineering is composed of five courses in electrical and computer engineering including three “core” courses selected from Electrical and Computer Engineering 110L, Electrical and Computer Engineering 230L, Electrical and Computer Engineering 250L, Electrical and Computer Engineering 270L, and Electrical and Computer Engineering 280L; and two additional electrical and computer engineering courses at the 300 level or above. Courses that are used to fulfill the student’s primary major may not be double-counted toward the minor. Students with credit for any of the “core” courses (e.g., exact or equivalent course taken to satisfy a requirement of the primary major) may substitute additional upper-level electrical and computer engineering courses, with approval from the director of undergraduate studies in electrical and computer engineering.

Engineering (Interdepartmental)

Courses in Engineering (EGR)

89S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

90L. Introduction to Engineering. This course is designed to introduce students to the study and practice of engineering. Presentations will be made by representatives of all four engineering departments as well as outside practitioners, researchers, and industrial leaders. Selected group design and/or laboratory modules will be required of all participants. Satisfactory/Unsatisfactory grading only. Instructor: Franzoni. Half course.

95FS. First Year seminar in Focus. NS, SS, STS Topics vary each semester offered. Focus students only. Instructor: staff. One course.

103L. Computational Methods in Engineering. QS Introduction to computer methods and algorithms for analysis and solution of engineering problems using numerical methods in a workstation environment. Topics include; numerical integration, roots of equations, simultaneous equation solving, finite difference methods, matrix analysis, linear programming, dynamic programming, and heuristic solutions used in engineering practice. This course does not require any prior knowledge of computer programming. Instructor: Gustafson. One course.
112. Mapping Engineering onto Biology. Introduction to concepts and implementation of Mapping Engineering onto Biology. Explores both a new learning paradigm as well as methodologies for reverse engineering biological systems. Uses a Bow-Tie Hierarchy of scale applying traditional design methodology in order to reverse engineer healthy functioning systems that represent Problems Nature Solved (Engineering Biology) and Problems Nature Has (i.e., we have in disease) (Engineering Pathology). Third (inventive) phase is to forward engineer new approaches to medicine or new technologies. Students in design teams of four, carry out course assignment that asks a different and interesting to the student, problem nature solved? Out-of-class open counseling with instructors and expert faculty across campus. Instructor: Needham. One course.

112FS. Mapping Engineering into Biology. NS, R, STS Students will be introduced to the new and exciting ways in which we can start to bring engineering and biology together. The course asks fundamental questions such as "How did Nature solve problem X?" and "What are the problems that Nature has?" and explore how to forward engineer new products and processes inspired by Nature's own solutions. The seminar will give students a foundation to achieve technological innovation through effective channeling of creativity and scientific principles. The class divides in teams and ranges of expertise and interest in biology, chemistry, physics, mathematics, and engineering are encouraged to join in. Instructor consent required. Instructors: Needham and Bonaventura. One course.

120L. Introduction to Structural Engineering. An introduction to engineering and the engineering method through a wide variety of historical and modern case studies, ranging from unique structures like bridges to mass produced objects like pencils. Instructor: Petroski. One course.

121L. Engineering Innovation. Introduces freshmen to the process of team-based creative conceptualization, visualization prototyping, and product realization. Students use computer-aided design tools to create custom circuit boards and computer numerically controlled (CNC) machined components to produce prototype systems. Design concepts are introduced and supported through hands-on assignments. Instructor: Twiss and Simmons. One course.

160FS. Engineering the Planet. This seminar examines the environmental impacts of large infrastructure from dam construction, to large-scale farming and irrigation, clear-cutting of natural forests, and extensive urbanization of land-margin ecosystems. Focus on the social and engineering make-up of global environmental change and water resources. Introduction to the science and technology of environmental adaptation and sustainability. Students will organize in small research groups working on trans-disciplinary case-studies. Instructor: Barros. One course.

190. Special Topics in Engineering. Study arranged on special engineering topics in which the faculty have particular interest and competence as a result of research or professional activities. Consent of instructor(s) required. Quarter course, half course, or one course. Instructor: Staff. Variable credit.


190AS. Duke-Administered Study Abroad: Special Topics in Engineering. Topics vary by semester. Instructor consent required. Instructor: Staff. One course.

201L. Mechanics of Solids. Analysis of force systems and their equilibria as applied to engineering systems. Stresses and strains in deformable bodies; mechanical behavior of materials; applications of principles to static problems of beams, torsion members, and columns. Selected laboratory work. Prerequisites: Mathematics 112 and Physics 151L. Instructor: Albertson, Dolbow, Gavin, Hueckel, Nadeau, or Virgin. One course.

201L-1. Mechanics of Solids (1/2). Summer Session I ONLY. First half of a single course in solid mechanics that spans both summer sessions. Students must enroll in both Engineering 201L-1 and Engineering 201L-2. (See course description for Engineering 201L). Prerequisites: Mathematics 112 and Physics 151L. Instructor: Albertson, Dolbow, Gavin, Hueckel, Nadeau, or Virgin. Half course.


224L. Electrical Fundamentals of Mechatronics. Introduction to mechatronics with a special emphasis on electrical components, sensing, and information processing. Topics include circuit analysis and design, system response characterization, conversion between digital and analog signals, data acquisition, sensors, and motors. Laboratory projects focus on analysis, characterization, and design of electrical and mechatronic systems. Prerequisites: Engineering 103L and 201L, Mathematics 212, and Physics 152L, or equivalents, or permission of instructor. Instructor: Gustafson. One course.

244L. Dynamics. Principles of dynamics of particles, rigid bodies, and selected nonrigid systems with emphasis on engineering applications. Kinematic and kinetic analysis of structural and machine elements in a plane and in space using graphical, computer, and analytical vector techniques. Absolute and relative motion analysis. Work-energy; impact and impulse-momentum. Laboratory experiments. Prerequisites: Engineering 201L and Mathematics 212 or consent of instructor. Instructor: Dowell, Hall, Knight, or Virgin. One course.

260. Global Disasters: Science and Policy. NS, SS, STS In this interdisciplinary course, students will examine the multifaceted aspects of "global" disasters. Invited experts will first examine the science behind the disasters, discuss the range of meteorologic, hydrologic and geologic factors that cause disasters; explore how societies plan for and/or respond to the immediate and long-term physical, social, emotional and spiritual issues associated with survival; and present case studies of response, recovery and reconstruction efforts. In the second phase of the course, economic experts will address some of the most pressing and rapidly evolving economic calamities. In the third segment of the course, the focus will shift to political "disasters" and how natural and/or economic events can destabilize a political system. Students will attend the lecture and labs components of the course and complete on-line quizzes to demonstrate understanding of the material presented. Additionally, they will prepare one research paper on a relevant topic, the results of which will be presented to the class. Instructor: Schaad. One course. C-L: Public Policy Studies 276, Environment 260

261. Global Disasters: Reasons, Response and Recovery. NS, SS, STS In this interdisciplinary, service learning course, students will conduct a life cycle analysis of a natural disaster. Invited experts will discuss the range of meteorologic, hydrologic and geologic factors that cause disasters: explore how societies plan for and /or will respond to the immediate and long-term physical, social, emotional and spiritual issues associated with survival; and present case studies of response, recovery and reconstruction efforts. Students will participate in a service-learning exercise in an area ravaged by a natural disaster. Students will attend the lecture component of the course and complete on-line quizzes to demonstrate understanding of the material presented. For the service learning experience, students will form interdisciplinary teams to plan and carry out response activities over Spring Break in an area ravaged by a natural disaster (e.g. New Orleans, Outer Banks, and Florida). They will keep a journal (audio or written) of their activities, write a brief synopsis (4-5 pages), and make a group oral presentation of their findings following their return. They will also submit a hypothetical research proposal for project which might stem from the course and their experiences. Instructor: Schaad. One course. C-L: Public Policy Studies 277, Environment 262

305. Engineering Systems Optimization and Economics. SS Introduction to mathematical optimization, engineering economic analysis, and other decision analysis tools used to evaluate and design engineering systems. Application of linear and nonlinear programming, dynamic programming, expert systems, simulation and heuristic methods to engineering systems design problems. Applications discussed include: production plant scheduling, water resources planning, design and analysis, vehicle routing, resource allocation, repair and rehabilitation scheduling and economic analysis of engineering design alternatives. Corequisite: Mathematics 216. Instructor: Peirce. One course. C-L: Economics 212

350S. Ethics in Professions: Scientific, Personal and Organizational Frameworks. EI, STS Ethics studied through the analysis and interpretation of case studies from the scientific and engineering professions. Topics include: moral development; concepts of truth and fairness; responsible conduct of research; the person and virtues; confidentiality; risk and safety; social responsibility; etiology and consequences of fraud and malpractice; legal aspects of professionalism, and allocation of resources. The capstone course for students completing the certificate in the Program in Science, Technology, and Human Values. Instructor: Vallero. One course. C-L: Study of Ethics, Global Health, Markets and Management Studies, Marine Science and Conservation

355. Smart Home Technology Development. Engineering projects related to the Duke Smart Home Program are undertaken. Projects should be interdisciplinary in nature and have engineering relevance in the sense of undertaking
to meet human need through a disciplined approach under the guidance or a member of the engineering faculty. Consent of instructor is required. Instructor: staff. 1/2 credit pass/fail course. Half course.

391. Projects in Engineering. Courses in which engineering projects of an interdisciplinary nature are undertaken. The projects must have engineering relevance in the sense of undertaking to meet human need through a disciplined approach under the guidance of a member of the engineering faculty. Consent of instructor required. Instructor: Staff. One course.

424L. Energy and Environment Design. An integrative design course addressing both creative and practical aspects of the design of systems related to energy and the environment. Development of the creative design process, including problem formulation and needs analysis, feasibility, legal, economic and human factors, environmental impacts, energy efficiency, aesthetics, safety, and design optimization. Application of design methods through a collaborative design project involving students from the Pratt School of Engineering and Trinity College. Open only to students pursuing the undergraduate certificate in Energy and Environment. Prerequisites: Civil Engineering 160L, Environment 330 and Mechanical Engineering 461. One course. One course.

491. Projects in Engineering. Courses in which engineering projects of an interdisciplinary nature are undertaken. The projects must have engineering relevance in the sense of undertaking to meet human need through a disciplined approach under the guidance of a member of the engineering faculty. Consent of instructor required. Instructor: Staff. One course.

Energy Engineering

The energy engineering minor at Duke adds breadth, depth, and diversity to enrolled students’ educational experience by providing rigorous exposure to fundamentals of energy engineering. The program’s objective is to prepare graduates to

- engage in engineering careers in diverse areas with particular emphasis on energy-related matters;
- pursue graduate education and research in energy engineering or energy-related fields; and
- integrate energy concepts in their primary engineering discipline and/or optimize the use of energy within their professional pursuits and in society.

Energy Engineering Steering Committee

Neal Simmons (Chair) Mechanical Engineering and Materials Science; Marc Deshusses (Program Director), Civil and Environmental Engineering; Nico Hotz, Mechanical Engineering and Materials Science; Nan Jokerst, Electrical and Computer Engineering; Josiah Knight, Mechanical Engineering and Materials Science

Eligibility

All Duke engineering undergraduates are eligible to participate in the energy engineering program and qualify for the minor. Completion of the minor is noted on the student’s academic transcript.

Minor Requirements

Five unique courses and one capstone design course must be completed to earn the minor in energy engineering. The requirements for the minor are:

Core Course

One required: Energy Engineering 310 (Introduction to Energy Generation, Delivery, Conversion and Efficiency) or Mechanical Engineering 461 (Energy Engineering and the Environment).

Energy Engineering Area Courses

Four courses required, at least one in each category, up to two outside Duke.

Generation and Delivery

Energy Engineering 490.01 (Special Topics—Bioenergy), or Biological and Agricultural Engineering 528* (Biomass to Renewable Energy Processes); Energy Engineering 490.03 (Special Topics—Renewable Energy Technologies); Energy Engineering 490.05 (Special Topics—Modern Power Systems); Nuclear Engineering 301* (Fundamentals of Nuclear Engineering); Mechanical and Aerospace Engineering 503* (Advanced Power Plants)
Conversion and Efficiency

Energy Engineering 490.02 (Special Topics—Energy for the Built Environment); Energy Engineering 490.04 (Special Topics—Power Electronics), or Electrical and Computer Engineering 534* (Power Electronics) (or equivalent course at Duke); Energy Engineering 490.06 (Energy Engineering 370) (Special Topics—Transportation Energy); Mechanical and Aerospace Engineering 421* (Design of Solar Thermal Systems)

*taught at NCSU

Other courses not listed here can be considered to fulfill the area course requirements. They are to be approved by the energy engineering program director on an individual basis with consideration given to the engineering content and relevance to the field. Please contact the program director before enrolling.

Capstone Design

Energy 490L (Energy and Environment Design) or departmental capstone if the project is energy-related, with prior approval by the energy engineering program director.

For more information, see http://energy.pratt.duke.edu/.

Courses in Energy Engineering (ENERGYEGR)

310. Introduction to Energy Generation, Delivery, Conversion and Efficiency. An overall introduction to energy issues as they related to generation, delivery, conversion and efficiency. Topics include efficiencies of both new and established energy generation and conversion methods, electricity generation by fossil fuels, nuclear, solar, wind and hydropower and alternative energy technologies. Other topics include space heating and cooling by traditional methods and by solar, transportation energy in automobiles, mass transit and freight. Topics are evaluated quantitatively by modeling and using principles of fluid mechanics, thermodynamics and heat transfer. The environmental consequences of energy choices on local, national and global scales, including toxic emissions, greenhouse gases and resource depletion are also discussed in integrated throughout the course. Prerequisite: Mechanical Engineering 331L, or Mechanical Engineering 512, or Physics 311, or similar thermodynamics, or consent of instructor. One course. C-L: ENERGY 310. Course is not open to students who have taken Mechanical Engineering 461. Instructors: Cocks and Knight. One course. C-L: Energy 310, Energy and the Environment

490. Special Topics in Energy Engineering. Study arranged on a special topic in which the instructor has particular interest and competence. Consent of instructor and director of energy engineering program required. Half course or one course each. Topics vary by section. Course may be repeated if the subtitles of the courses are different. Variable credit. Instructor: Staff. Variable credit. C-L: Energy and the Environment


Energy and the Environment

For courses in energy and the environment, see page 287.

Mechanical Engineering and Materials Science

Professor Dowell, Chair; Associate Professor Bliss, Director of Undergraduate Studies; Professors Bejan, Chilkoti, Cocks, Curtarolo, Dolbow, Dowell, Ferrari, Glass, Guilak, Hall, Hueckel, Knio, Leong, Lopez, Marszalek, Mitzi, Needham, Setton, Shaughnessy, Tan, Virgin, West, Witelski, Zauscher, and Zhong; Associate Professors Bliss, Blum, Chen, Cummings, Gavin, Hauser, Howle, Knight, Mann, Scovazzi Yellen; Assistant Professors Hotz, Wiley, Zavlanos, and Zhao; Professor of the Practice Franzoni; Associate Professor of the Practice Simmons; Associate Research Professor Tang; Assistant Research Professor Thomas; Senior Research Scientist Kielb; Adjunct Professor Lorente, Twiss; Adjunct Assistant Professor Stepp; Professors Emeriti Garg, Hochmuth, Pearsall

A major in mechanical engineering is available in this department. The mechanical engineering program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.¹

Mechanical engineers are concerned with the optimum use of materials, energy, time, and individual effort to serve societal needs through the design of machines, structures, devices, and mechanical, thermal, and elecro-

dynamic systems, and through better understanding of dynamic processes involving these systems. They have a wide involvement in many industries including aerospace, automotive, energy and power generation, biomechanical and biomedical engineering, construction, electronics, manufacturing, national defense, and transportation systems. Within these industries, the engineer might specialize in the design, analysis, automation, operation, or marketing of systems or services. The individual’s contribution may lie anywhere in the spectrum from highly theoretical to imminently practical, and often involves leadership as an engineering manager or organization executive.

Because mechanical engineers in industry and research engage in such a great variety of activities, their education must be broadly based. Our goal is to graduate mechanical engineers who embody excellence in a broad sense. We expect our graduates to move to industry positions or on to graduate study, or to carry the attributes of an engineering education into other disciplines. The mechanical engineering program of study must include mathematics and basic sciences, fundamentals and applications in several engineering sciences, and team-based experience in the process of design, where theory is applied in the context of real needs and limitations, and where judgment must be exercised. Our mechanical engineering graduates should be able to think critically when solving problems and managing tasks and communicate effectively in multidisciplinary professional environments. To be a responsible member of the engineering profession, each graduate must be aware of social, ethical, environmental, and economic factors and constraints on engineering activity, and must understand the importance of these matters in a global context. We aspire to have our graduates exhibit intellectual depth and creativity, uphold high ethical standards, and show a commitment to the betterment of society through service and professional work.

To this end, the specific program educational objectives that we look for in our graduates are that they:

• advance professionally in their chosen field;
• contribute to their professional community and to society; and
• engage in lifelong learning in professional and personal endeavors.

The curriculum capitalizes on the exceptional abilities of our highly select students to cultivate the learning, thinking, and problem-solving abilities needed to adapt, to develop, and to exercise responsible leadership through times of rapid change. The program provides firm preparation in the essential engineering topics while allowing wide flexibility for students to pursue their own specialized interests. The overall program requirements are summarized following the list of courses.

Courses in Mechanical Engineering (ME)
221L. Structure and Properties of Solids. Introduction to materials science and engineering, emphasizing the relationships between the structure of a solid and its properties. Atomic and molecular origins of electrical, mechanical, and chemical behavior are treated in some detail for metals, alloys, polymers, ceramics, glasses, and composite materials. Prerequisites: Chemistry 20, 21, or 101DL and Engineering 201L or Biomedical Engineering 110L. Instructor: Curtarolo, Simmons, West, or Zauscher. One course.

307. Transport Phenomena in Biological Systems (AC or GE, BB). One course. C-L: see Biomedical Engineering 307; also C-L: Civil and Environmental Engineering 307

321L. Mechanical Engineering Analysis for Design. Calculation of 3D stresses, strains, and deflections encountered in mechanical designs. Types of problems include: curved beams, contact stresses, press/shrink fits, etc. Reliability and uncertainty analysis, failure theories, fatigue, and fracture mechanics. Computational methods of analysis, such as finite elements analysis are covered. Prerequisites: Engineering 121L, 201L, 244L, and Mathematics 353. Instructor: Franzoni, Howle, Zhao. One course.


336L. Fluid Mechanics. An introductory course emphasizing the application of the principles of conservation of mass, momentum, and energy in a fluid system. Physical properties of fluids, dimensional analysis and similitude, viscous effects and integral boundary layer theory, subsonic and supersonic flows, normal shockwaves. Selected laboratory work. Prerequisites: Engineering 244L and Mechanical Engineering 331L, Co-requisite or prerequisite: Mathematics 353. Instructor: Knight, Shaughnessy, or Zhong. One course.

344L. Control of Dynamic Systems. Model dynamic systems and characterize time and frequency domain response with respect to particular inputs. Characterize systems in terms of rise-time, settling-time and bandwidth. Identify
the difference between stable and unstable system. Apply feedback control to modify the response of dynamic systems based upon specified design objectives. Develop methods of designing compensators for single-input, single-output, and multiple-input, multiple-output dynamic systems based upon classical and modern control approaches. Introduce optimal control theory, the linear quadratic regulator (LQR) problem, and the linear quadratic Gaussian (LQG) problem. Gain a physical understanding of what can be accomplished with feedback control in modifying the dynamics of a system. Pre-requisite: Engineering 224L and Mathematics 216. Instructor: Ferrari, Garg, Zavlanos. One course.

391. Undergraduate Projects in Mechanical Engineering. Individual projects arranged in consultation with a faculty member. Open to students who show special aptitude for research and design. Taught in the Fall. Consent of director of undergraduate studies. Instructor: Staff. Variable credit.

392. Undergraduate Projects in Mechanical Engineering. Individual projects arranged in consultation with a faculty member. Open to students who show special aptitude for research and design. Taught in the Spring. Consent of director of undergraduate studies. Instructor: Staff. Variable credit.

394. Engineering Undergraduate Fellows Projects. Intensive research project in Mechanical Engineering by students selected as Engineering Undergraduate Fellows. Course credit is contingent upon satisfactory completion of 493 and 494. Consent of instructor and program director required. Instructor: Staff. One course.


421L. Mechanical Design. A study of practical aspects of mechanical design including conceptualization, specifications, and selection of mechanical elements. The design and application of mechanical components such as gears, cams, bearings, springs, and shafts. Practice in application of process through design projects. Prerequisite: Engineering 244L and Mechanical Engineering 321L. Instructor: Franzoni, Simmons. One course.

424L. Mechanical Systems Design. An integrative design course addressing both creative and practical aspects of the design of systems. Development of the creative design process, including problem formulation and needs analysis, feasibility, legal, economic and human factors, aesthetics, safety, synthesis of alternatives, and design optimization. Application of design methods through several projects including a term design project. Prerequisites: Mechanical Engineering 344L, 421L, and 431L. Instructor: Kielb or Knight. One course.

425. Analytical and Computational Solid Mechanics. One course. C-L: see Civil and Environmental Engineering 425


438. Constructal Theory and Design. Flow configuration in nature and engineering emerges from the constructal law of increase of flow access in time, when the flow system is endowed with freedom to morph. The course brings together the basic principles of fluid mechanics, heat transfer and thermodynamics, and teaches how to generate (to 'discover') shape and structure for energy flow systems. The course teaches design as science, and presents a paradigm that is applicable across the board, from engineering to biology, geophysics and social dynamics. Instructor: Bejan and Lorente. One course.

442. Introduction to Robotics and Automation. One course. C-L: see Electrical and Computer Engineering 383; also C-L: Information Science and Information Studies

445. Introduction to Vibrations. Mechanical vibrations are studied primarily with emphasis on application of analytical and computational methods to machine design and vibration control problems. A single degree-of-freedom system is use to determine free vibration characteristics and response to impulse, harmonic and periodic
excitations. The study of two and three degree-of-freedom systems includes the determination of the eigenvalues and eigenvectors, and introduction to modal analysis. The finite element method is used to conduct basic vibration analysis of systems with a large number of degrees of freedom. The student learns how to balance rotating machines, and how to design suspension systems, isolation systems, vibration sensors, and tuned vibration absorbers. Prerequisite: Mechanical Engineering 344L. Instructor: Kielb. One course.


463. Electric Vehicle Project. One course. C-L: see Electrical and Computer Engineering 363L

472. Aircraft Performance. Brief overview of the aerodynamics of wings and bodies including profile and induced drag, performance of propellers and internal combustion and gas turbine power plants; the power curve and implications on the performance of the aircraft in steady-state and accelerated flight included power required, airspeeds to fly, takeoff and landing performance, performance of aircraft in turning flight; introduction to the conceptual design of new aircraft. Co-requisite: Mechanical Engineering 336L. Instructor: Hall. One course.


490. Special Topics in Mechanical Engineering. Study arranged on a special engineering topic in which the faculty has particular interest and competence as a result of research and professional activities. Consent of instructor and director of undergraduate studies required. Half or one course. Instructor: Staff. Variable credit. C-L: Energy and the Environment

491. Special Projects in Mechanical Engineering. Individual projects arranged in consultation with a faculty member. Open only to seniors enrolled in the graduation with distinction program or showing special aptitude for research. Half course to two courses. To be taught in the Fall. Prerequisites: B average and consent of the director of undergraduate studies. Instructor: Staff. Variable credit.

492. Special Projects in Mechanical Engineering. Individual projects arranged in consultation with a faculty member. Open only to seniors enrolled in the graduation with distinction program or showing special aptitude for research. Half course to two courses. To be taught in the Spring. Prerequisites: B average and consent of the director of undergraduate studies. Instructor: Staff. Variable credit.


499. Undergraduate Research Seminar Series. For students enrolled in senior-level undergraduate research. Intended for those pursuing Graduation with Departmental Distinction. Course will give students an opportunity to present research results to their peers and faculty in mechanical engineering throughout the semester, as well as provide exposure to the research of other mechanical engineering seniors. 0.0 Credit. S/U. Permission of Instructor.

512. Thermodynamics of Electronic Materials. Basic thermodynamic concepts applied to solid state materials with emphasis on technologically relevant electronic materials such as silicon and GaAs. Thermodynamic functions, phase diagrams, solubilities and thermal equilibrium concentrations of point defects; nonequilibrium processes and the kinetic phenomena of diffusion, precipitation, and growth. Instructor: Staff. One course.


517. Electromagnetic Processes in Fluids. Electromagnetic processes and transport phenomena in fluids is overviewed. Topics to be discussed include: Maxwell's equations, statistical thermodynamic processes, origin of surface forces (i.e. Van der Waals), plasma in gases and electrolyte distribution, wave propagation near boundaries and in complex media, transport equations in continuum limit. Consent of instructor required. Instructor: Staff.

518. Biomedical Materials and Artificial Organs (GE, BB). One course. C-L: see Biomedical Engineering 525


524. Introduction to the Finite Element Method. One course. C-L: see Civil and Environmental Engineering 530

525. Nonlinear Finite Element Analysis. One course. C-L: see Civil and Environmental Engineering 630

527. Buckling of Engineering Structures. One course. C-L: see Civil and Environmental Engineering 647


533. Fundamentals of Heat Conduction. Fourier heat conduction. Solution methods including separation of variables, transform calculus, complex variables. Green's function will be introduced to solve transient and steady-state heat conduction problems in rectangular, cylindrical, and spherical coordinates. Microscopic heat conduction mechanisms, thermophysical properties, Boltzmann transport equation. Prerequisite: Mathematics 111 or consent of instructor. Instructor: Bejan. One course.

534. Fundamentals of Thermal Radiation. Radiative properties of materials, radiation-materials interaction and radiative energy transfer. Emphasis on fundamental concepts including energy levels and electromagnetic waves as well as analytical methods for calculating radiative properties and radiation transfer in absorbing, emitting, and
scattering media. Applications cover laser-material interactions in addition to traditional areas such as combustion and thermal insulation. Prerequisite: Mathematics 353 or consent of instructor. Instructor: Staff. One course.


537. Mechanics of Viscous Fluids. Equations of motion for a viscous fluid, constitutive equations for momentum and energy transfer obtained from second-law considerations, general properties and exact solutions of the Navier-Stokes and Stokes (creeping-flow) equations, applications to problems of blood flow in large and small vessels. Prerequisite: Mechanical Engineering 336L or equivalent. Instructor: Staff. One course.

541. Intermediate Dynamics: Dynamics of Very High Dimensional Systems. One course. C-L: see Civil and Environmental Engineering 625


544. Advanced Mechanical Vibrations. Advanced mechanical vibrations are studied primarily with emphasis on application of analytical and computational methods to machine design and vibration control problems. Equations of motion are developed using Lagrange's equations. A single degree-of-freedom system is used to determine free vibration characteristics and response to impulse, harmonic periodic excitations, and random. The study of two and three degree-of-freedom systems includes the determination of the eigenvalues and eigenvectors, and an in-depth study of modal analysis methods. The finite element method is used to conduct basic vibration analysis of systems with a large number of degrees of freedom. The student learns how to balance rotating machines, and how to design suspension systems, isolation systems, vibration sensors, and tuned vibration absorbers. Instructor: Kielb. One course.

545. Robot Control and Automation. Review of kinematics and dynamics of robotic devices; mechanical considerations in design of automated systems and processes, hydraulic and pneumatic control of components and circuits; stability analysis of robots involving nonlinearities; robotic sensors and interfacing; flexible manufacturing; man-machine interaction and safety consideration. Prerequisites: Mechanical Engineering 542 or equivalent and consent of instructor. Instructor: Staff. One course.

546. Intelligent Systems. An introductory course on learning and intelligent-systems techniques for the modeling and control of dynamical systems. Review of theoretical foundations in dynamical systems, and in static and dynamic optimization. Numerical methods and paradigms that exploit learning and optimization in order to deal with complexity, nonlinearity, and uncertainty. Investigation of theory and algorithms for neural networks, graphical models, and genetic algorithms. Interdisciplinary applications and demonstrations drawn from engineering and computer science, including but not limited to adaptive control, estimation, robot motion and sensor planning. Prerequisites: Mathematics 111 or 216 Consent of instructor required. Instructor: Ferrari. One course.

548. Multivariable Control. One course. C-L: see Civil and Environmental Engineering 648

555. Advanced Topics in Mechanical Engineering. Opportunity for study of advanced subjects related to programs within mechanical engineering tailored to fit the requirements of a small group. Approval of director of undergraduate or graduate studies required. Instructor: Staff. Variable credit.

571. Aerodynamics. Fundamentals of aerodynamics applied to wings and bodies in subsonic and supersonic flow. Basic principles of fluid mechanics analytical methods for aerodynamic analysis. Two-and three-dimensional wing theory, slender-body theory, lifting surface methods, vortex and wave drag. Brief introduction to vehicle design, performance and dynamics. Special topics such as unsteady aerodynamics, vortex wake behavior, and propeller and
rotor aerodynamics. This course is open only to undergraduate seniors and graduate students. Prerequisites: Mechanical Engineering 336L or equivalent, and Mathematics 353 or equivalent. Instructor: Bliss. One course.

572. Engineering Acoustics. Fundamentals of acoustics including sound generation, propagation, reflection, absorption, and scattering. Emphasis on basic principles and analytical methods in the description of wave motion and the characterization of sound fields. Applications including topics from noise control, sound reproduction, architectural acoustics, and aerodynamic noise. Occasional classroom or laboratory demonstration. This course is open only to undergraduate seniors and graduate students. Prerequisites: Mathematics 353 or equivalent or consent of instructor. Instructor: Bliss. One course.

626. Plates and Shells. One course. C-L: see Civil and Environmental Engineering 646

627. Linear System Theory. One course. C-L: see Civil and Environmental Engineering 627

631. Intermediate Fluid Mechanics. A survey of the principal concepts and equations of fluid mechanics, fluid statics, surface tension, the Eulerian and Lagrangian description, kinematics, Reynolds transport theorem, the differential and integral equations of motion, constitutive equations for a Newtonian fluid, the Navier-Stokes equations, and boundary conditions on velocity and stress at material interfaces. Instructor: Shaughnessy. One course.


639. Computational Fluid Mechanics and Heat Transfer. An exposition of numerical techniques commonly used for the solution of partial differential equations encountered in engineering physics. Finite-difference schemes (which are well-suited for fluid mechanics problems); notions of accuracy, conservation, consistency, stability, and convergence. Recent applications of weighted residuals methods (Galerkin), finite-element methods, and grid generation techniques. Through specific examples, the student is guided to construct and assess the performance of the numerical scheme selected for the particular type of transport equation (parabolic, elliptic, or hyperbolic). Instructor: Howle. One course.

643. Adaptive Structures: Dynamics and Control. Integration of structural dynamics, linear systems theory, signal processing, transduction device dynamics, and control theory for modeling and design of adaptive structures. Classical and modern control approaches applied to reverberant plants. Fundamentals of adaptive feedforward control and its integration with feedback control. Presentation of a methodical design approach to adaptive systems and structures with emphasis on the physics of the system. Numerous MATLAB examples provided with course material as well as classroom and laboratory demonstrations. Instructor: Staff. One course.

668. Cellular and Biosurface Engineering. A combination of fundamental concepts in materials science, colloids, and interfaces that form a basis for characterizing: the physical properties of biopolymers, microparticles, artificial membranes, biological membranes, and cells; and the interactions of these materials at biofluid interfaces. Definition of the subject as a coherent discipline and application of its fundamental concepts to biology, medicine, and biotechnology. Prerequisite: Mechanical Engineering 208 or consent of instructor. Instructor: Needham. One course.


672. Unsteady Aerodynamics. Analytical and numerical methods for computing the unsteady aerodynamic behavior of airfoils and wings. Small disturbance approximation to the full potential equation. Unsteady vortex dynamics. Kelvin impulse and apparent mass concepts applied to unsteady flows. Two-dimensional unsteady thin airfoil theory. Time domain and frequency domain analyses of unsteady flows. Three-dimensional unsteady wing
theory. Introduction to unsteady aerodynamic behavior of turbomachinery. Prerequisite: Mechanical Engineering 571. Instructor: Hall. One course.

676. Advanced Acoustics. Analysis methods in acoustics including wave generation, propagation, reflection, absorption, and scattering; sound propagation in a porous material; coupled structure acoustic systems; acoustic singularities: monopoles, dipoles, quadrupoles; radiation from flat surfaces; classical radiation and scattering solutions for cylinders and spheres; Green's functions, Radiation conditions, Modal analysis; sound fields in rooms and enclosures: energy methods; dissipation in fluid media; introduction to nonlinear effects. This course is open only to graduate students with some prior background in acoustics and applied mathematics. Prerequisites: Mechanical Engineering 572 or equivalent. Instructor: Bliss. One course.

The Major

The major requirements for mechanical engineering are included in the minimum total of thirty-four courses listed under general requirements. The following specific courses or their approved alternatives must be included. Engineering courses: Engineering 121L (Engineering Innovation), Engineering 201L (Mechanics of Solids), Engineering 224L (Mechatronics), Engineering 244L (Dynamics); mechanical engineering courses: Mechanical Engineering 221L (Materials), Mechanical Engineering 321L (Analysis for Design), Mechanical Engineering 331L (Thermodynamics), Mechanical Engineering 336L (Fluid Mechanics), Mechanical Engineering 344L (Control Systems), Mechanical Engineering 421L (Mechanical Design), Mechanical Engineering 424L (Mechanical Systems Design), Mechanical Engineering 431L (Heat Transfer); two upper-level mechanical engineering electives to encourage depth in areas of particular interest. In addition, the program allows for four additional general electives, two of which must be upper level and can be used for further breadth or depth. Students are encouraged to consult with their advisors when selecting areas of interest and electives.

The MEMS Undergraduate Program Handbook (available on the departmental website at www.mems.duke.edu/undergrad/bse-degree-planning) provides examples of course sequences that incorporate all general requirements and departmental requirements comprising the accredited mechanical engineering major. In addition, a downloadable MEMS Curriculum Flow Chart and MEMS Annotated Check Sheet are also available on the website, and provide precise summaries of the curriculum requirements and prerequisite structure.

Usually students intending to study abroad should plan to travel in the fall semester of their junior year. Typically these students are expected to take two courses abroad that are approved as equivalent to required mechanical engineering courses and/or mechanical engineering electives. Students should consult their advisor, the Office of Global Education, and the mechanical engineering and material science director of undergraduate studies.

Options for a certificate in aerospace engineering, a certificate in energy and the environment, a minor in energy engineering, a minor or second major in electrical and computer engineering, or a second major in biomedical engineering are described in the MEMS Undergraduate Program Handbook (available at www.mems.duke.edu/undergrad/bse-degree-planning). Mechanical engineering and material science adheres strictly to the Pratt major and minor requirements described in the front portion of this bulletin. Students interested in second majors and minors with departments in Trinity College should seek information from the department of interest.
Index

A
Academic
   advising 39
   internships 44
   recognition and honors 52
Academic Concerns, procedure for resolution 55
Academic Information, for parents and guardians 55
Academic Probation 49
Academic Procedures and Information 35
Academic Regulations 52
Academic Regulations, compliance with 57
Academic Resource Center 62
Academic Skills Instructional Program 62
Academic Warning 49
Academic Warning and Probation 49
Accelerations, see Entrance Credit and Placement
Achievement Tests 37
ACT (American College Test) 85
Activities
   cultural 82
Admission 85
   requirements 85
   tests required for 85
Advanced Level Courses, definition of 101
Advanced Placement Program 36
Aerospace Engineering 667
Aerospace Studies (Air Force ROTC)
   courses in 102
   program overview 64
African and African American Studies 103
Agreements with Other Universities 65
American Dance Festival 75
Americans with Disabilities Act (ADA)
   accommodations under 41
Animal Behavior, see Biology
Anthropology, see Biological Anthropology and Anatomy, see also Cultural Anthropology
Application for Admission 86
Arabic, courses in 170
Architectural Engineering 667
Architecture, concentration in Art and Art History 144
Art History, courses in 112
Art, Art History, and Visual Art and Media Studies 112
Asian and African Languages and Literature, see Asian and Middle Eastern Studies 156
Asian and Middle Eastern Studies 156
Asian/Pacific Studies Institute 59
Astronomy, for courses in astronomy, see Physics
   Auditing a course 43
      tuition for 90
B
Bachelor of Science in Engineering 29
Balto-Finnic, courses in 609
Bills
   fall and spring 90
   summer 91
Biochemistry 659
Bioethics and Science Policy 179
Biological Anthropology and Anatomy, see Evolutionary Anthropology 323
Biology 180
Biomedical Engineering, see Pratt School of Engineering
Biophysics 196
Biophysics major 500

C
Calendar, Academic 8
Campus Centers and Institutes 59
Campus Life and Activities 77
Campus Life, Offices of 77
Canadian Studies 196
Canadian Studies Center 60
Career Center 78
Cell and Molecular Biology 661
Cell Biology 660
Center for Nonlinear and Complex Systems 481
Change of Major 44
Changes in Status 50
Chemistry 198
Child Policy Research 204
Civic Engagement, Duke Center for 62
Civil and Environmental Engineering, see Pratt School of Engineering
C-L (cross-listing), definition of 101
Class Attendance 45
Class Scheduling 45
Classical Civilization, see Classical Studies
Classical Languages, see Classical Studies
Classical Studies 207
College Board
   achievement tests 37
advanced placement program 36
American College Test (ACT) 85
SAT I and II tests 85
tests required of applicants 85
Commencement 55
Computational Biology and Bioinformatics 217
Computational Biology and Bioinformatics minor in
Computer Science 225
Computer Science 217
Concurrent Enrollment 41
Continuation Requirements 48
Continuing Studies 63
Counseling and Psychological Services 79
Course Changes after Classes Begin 41
Course Changes for the Summer Terms 41
Course Load and Eligibility for Courses 42
Course Numbering System 101
Course Sequencing, see Eligibility for Courses
Course/Curriculum codes 101
Courses and Academic Programs 101
Credit for pre-matriculation coursework 36
Creole, courses in 580
Cultural Anthropology 225
Cum Laude 53
Curricular Requirements
   Bachelor of Science in Engineering 29
   Pratt School of Engineering 29

D
Dance Program 237
Dean of Students, Office of the 79
Dean's List 52
Dean's List with Distinction 52
Declaration of Major 44
Definition of Terms 101
Degree Programs and Academic Credit 21
Degree Status (Degree and Non-Degree) 85
Degree Status, Full-Time and Part-Time 51
Dewitt Wallace Center for Media And Democracy 61
Dining Facilities 80
Dining Services 80
Diploma Forms 54
Disabilities, Services for Students With 81
Disruptive Students, Exclusion of 56
Documentary Studies 245
Documentary Studies, Center for 61
Double Honors, see Graduation with Distinction
Double Major 44
Drop-Add Period 41
Duke Center for Civic Engagement 62
Duke Identification Card 41
Duke in Chicago 66
Duke in DC—Policy, Leadership, and Innovation 66
Duke in Los Angeles 68
Duke in New York Arts and Media Program 66
Duke in New York Financial Markets and Institutions
   67
Duke in New York Summer Internships in the City 67
Duke in Silicon Valley 68
Duke Student Government 82
DukeEngage 62
DukeGroups 82

E
Early Decision, application for 86
Earth and Ocean Sciences 253
Economics 262
Edmund T. Pratt Jr. School of Engineering, see Pratt
School of Engineering
Education Program, courses and curriculum 281
Electrical and Computer Engineering, see Pratt School
of Engineering
Eligibility for Courses 42
Employees, enrollment in courses 92
Employment Opportunities 99
Energy and the Environment, certificate program in
   286, 702
Energy Initiative 288
Engineering, see Pratt School of Engineering
English Department 290
Enrollment, concurrent 41
Entrance Credit and Placement 35
Environmental Sciences and Policy 302
Ethics, Study of 318
European Studies, Center for 60
Evolutionary Anthropology 323
Exchange Programs, Domestic 66
Exclusion of Disruptive Students 56
Excused Absences for Final Examinations 46
Expenses
Estimate of 89
living 92

F
Failing and Unsatisfactory Grades 47
Fees, see Tuition and Fees
Film/Video/Digital 330
Final Examinations 46
Final Examinations, excused absences from 46
Financial Aid 94
Financial Information 89
Focus Program Courses 330
Food Services
dining facilities 80
dining plans 92
Fraternity & Sorority Life, office of 78
French, courses in 580
French, see Romance Studies
Fulbright-Hays Scholarships 54
Full-time Degree Status 51

G
General Information 13
Genetics and Genomics, University Program in 666
Genome Sciences and Policy, courses in 330
Geology, see Earth and Ocean Sciences
Germanic Languages and Literature 334
Gift Scholarships 96
Global Education Office for Undergraduates 69
Global Health 342
Government, student 82
Grade Point Average, how to calculate 47
Grade Requirement for Graduation 31
Grade Review Procedure 56
Grading and Grade Requirements 46
Graduation and Commencement 55
Graduation with Distinction 52
Graduation, Notification of Intention 54
Greek Life 78

H
Health, Wellness, and Physical Education 351
Hebrew, see Asian and Middle Eastern Studies
History Department 351
Honors (e.g., Dean’s List, Phi Beta Kappa) 52
House Courses 378
Housing
fees 92
Housing, Dining and Residence Life 79
Howard University/Duke Exchange Program 66
Human Development 378

I
Identification Card (DukeCard) 41
Immunology 662
Incomplete Course Work 45
Independent Study 43
Information Science and Information Studies 380
Intercollegiate Athletics Program 83
Interdepartmental Major 44
Interinstitutional Agreement
agreements with other universities 65
approval for courses taken elsewhere 39
International Comparative Studies 389
International Entrance Examinations 36
International Fellowships 54
International House 78
International Placement Credit 36
International Postgraduate Scholarships 54
Internships, academic 44
Introductory Level Courses, definition of 101
ISIS (Information Science and Information Studies) 380
Islamic Studies 402
Italian, see Romance Studies

J
Japanese, see Asian and Middle Eastern Studies
Jewish Life 78
Jewish Studies 405

K
Korean, see Asian and Middle Eastern Studies

L
Latin American Studies Program 407
Latin American Studies, Center for 60
Latin Honors 53
Latin, see Classical Studies
Latino/a Studies in the Global South 410
Leave of Absence 50
Linguistics 413
Literature Program in Global Cultural Studies 419
Living Expenses 92
Loans 99
Luce Scholarships 54

M
Magna Cum Laude 53
Majors
  Declaration of (Pratt) 45
  Declaration of (Trinity College) 44
Marine Biology, see Biology, Environment (Nicholas School), and the University Program in Marine Sciences
Marine Laboratory 68
Marine Science and Conservation Leadership 432
Marine Sciences, University Program in 435
Markets and Management Studies 438
Marshall Scholarships 54
Marxism and Society 442
Mary Lou Williams Center for Black Culture 78
Mathematics 443
Mechanical Engineering and Materials Science, see Pratt School of Engineering
Media, on campus 82
Medieval and Renaissance Studies 453
Microbiology and Molecular Genetics 662
Military Science (Army ROTC)
  courses in 460
  program overview 64
Multicultural Affairs, Center for 78
Music
  courses in 461
  organizations 82
Muslim Life at Duke 78

N
Naval Science (Naval ROTC)
  courses in 472
Naval Science (Navy ROTC)
  program overview 65
Neurobiology 663
Neuroscience 473, 481
Newspapers 82
Nonlinear and Complex Systems, courses in 481
Nonprofit Management Program 63

O
Office of Student Conduct 79
Organizations, student 82

P
Part-Time Degree Status 51
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prizes and Awards</td>
<td>96</td>
</tr>
<tr>
<td>Probation, Academic</td>
<td>49</td>
</tr>
<tr>
<td>Probation, academic</td>
<td>49</td>
</tr>
<tr>
<td>Psychology</td>
<td>532</td>
</tr>
<tr>
<td>Public Policy Studies</td>
<td>547</td>
</tr>
<tr>
<td>Publications, student</td>
<td>82</td>
</tr>
<tr>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Radio Station (WXDU)</td>
<td>82</td>
</tr>
<tr>
<td>Reading Out of Introductory Courses</td>
<td>38</td>
</tr>
<tr>
<td>Readmission of Former Students</td>
<td>50</td>
</tr>
<tr>
<td>Recognition for Academic Work</td>
<td>52</td>
</tr>
<tr>
<td>Records, Confidentiality of</td>
<td>55</td>
</tr>
<tr>
<td>Refunds</td>
<td>93</td>
</tr>
<tr>
<td>Registration</td>
<td>40</td>
</tr>
<tr>
<td>Religion, courses in</td>
<td>564</td>
</tr>
<tr>
<td>Religious Life</td>
<td>81</td>
</tr>
<tr>
<td>Repeating Courses, restrictions on</td>
<td>42</td>
</tr>
<tr>
<td>Research Independent Study</td>
<td>43</td>
</tr>
<tr>
<td>Research Support Office, Undergraduate</td>
<td>68</td>
</tr>
<tr>
<td>Reserve Office Training Corps (ROTC)</td>
<td>64</td>
</tr>
<tr>
<td>see also Aerospace Studies, Military Science, and Naval Science</td>
<td></td>
</tr>
<tr>
<td>Residence Requirement</td>
<td>31</td>
</tr>
<tr>
<td>Rhodes Scholarships</td>
<td>54</td>
</tr>
<tr>
<td>Romance Studies</td>
<td>577</td>
</tr>
<tr>
<td>Romanian, see Slavic and Eurasian Studies</td>
<td></td>
</tr>
<tr>
<td>ROTC, see Reserve Officer Training Corps</td>
<td></td>
</tr>
<tr>
<td>Russian, see Slavic and Eurasian Studies</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td></td>
</tr>
<tr>
<td>Sanskrit, see Asian and Middle Eastern Studies</td>
<td></td>
</tr>
<tr>
<td>Satisfactory/Unsatisfactory Grading System</td>
<td>47</td>
</tr>
<tr>
<td>Scheduling of Classes</td>
<td>45</td>
</tr>
<tr>
<td>Scholarships</td>
<td>96</td>
</tr>
<tr>
<td>Screen Society</td>
<td>147</td>
</tr>
<tr>
<td>Second Major</td>
<td></td>
</tr>
<tr>
<td>Pratt School of Engineering</td>
<td>32</td>
</tr>
<tr>
<td>Secondary School Teaching</td>
<td>286</td>
</tr>
<tr>
<td>Serbian and Croatian, courses in</td>
<td>621</td>
</tr>
<tr>
<td>Sexualities, Study of</td>
<td>604</td>
</tr>
<tr>
<td>Slavic and Eurasian Studies</td>
<td>606</td>
</tr>
<tr>
<td>Slavic, Eurasian, and East European Studies, Center for</td>
<td>60</td>
</tr>
<tr>
<td>Sociology</td>
<td>625</td>
</tr>
<tr>
<td>Sorority &amp; Fraternity Life</td>
<td>78</td>
</tr>
<tr>
<td>Spanish, see Romance Studies</td>
<td></td>
</tr>
<tr>
<td>Spelman College/Duke University Exchange Program</td>
<td>66</td>
</tr>
<tr>
<td>Statistical Science Department</td>
<td>634</td>
</tr>
<tr>
<td>Structural Biology and Biophysics</td>
<td>666</td>
</tr>
<tr>
<td>Student Aid</td>
<td>94</td>
</tr>
<tr>
<td>Student Conduct, Office of</td>
<td>79</td>
</tr>
<tr>
<td>Student Disability Access Office</td>
<td>81</td>
</tr>
<tr>
<td>Student Government</td>
<td>82</td>
</tr>
<tr>
<td>Student Health</td>
<td>79</td>
</tr>
<tr>
<td>Student Organizations and Clubs</td>
<td>82</td>
</tr>
<tr>
<td>Student Wellness Center</td>
<td>79</td>
</tr>
<tr>
<td>Study Abroad</td>
<td>69</td>
</tr>
<tr>
<td>Duke summer programs abroad</td>
<td>71</td>
</tr>
<tr>
<td>fee for attending non-Duke programs</td>
<td>91</td>
</tr>
<tr>
<td>semester and academic year programs</td>
<td>69</td>
</tr>
<tr>
<td>Study of Sexualities</td>
<td>604</td>
</tr>
<tr>
<td>Summa Cum Laude</td>
<td>53</td>
</tr>
<tr>
<td>Summer Festival of the Arts</td>
<td>75</td>
</tr>
<tr>
<td>T</td>
<td></td>
</tr>
<tr>
<td>Tau Beta Phi</td>
<td>54</td>
</tr>
<tr>
<td>Term Paper, multiple submission of</td>
<td>44</td>
</tr>
<tr>
<td>Tests required of applicants</td>
<td>85</td>
</tr>
<tr>
<td>Tests, see College Board</td>
<td></td>
</tr>
<tr>
<td>Theater Studies</td>
<td>640</td>
</tr>
<tr>
<td>Transcripts</td>
<td>92</td>
</tr>
<tr>
<td>Transfer Admission from Other Institutions</td>
<td>87</td>
</tr>
<tr>
<td>Transfer of Credits for Work Taken Elsewhere</td>
<td>38</td>
</tr>
<tr>
<td>Transferring Between Duke University Schools</td>
<td>51</td>
</tr>
<tr>
<td>Trinity College of Arts and Sciences</td>
<td></td>
</tr>
<tr>
<td>administration</td>
<td>102</td>
</tr>
<tr>
<td>declaration of major</td>
<td>44</td>
</tr>
<tr>
<td>Tuition and Fees</td>
<td>89</td>
</tr>
<tr>
<td>Tuition Plans</td>
<td>99</td>
</tr>
<tr>
<td>Turkish, see Slavic and Eurasian Studies</td>
<td></td>
</tr>
<tr>
<td>Ukrainian, see Slavic and Eurasian Studies</td>
<td></td>
</tr>
<tr>
<td>Undergraduate Research Support Office</td>
<td>68</td>
</tr>
<tr>
<td>University Program in Genetics and Genomics</td>
<td>666</td>
</tr>
<tr>
<td>University Regulations and the Disciplinary Process</td>
<td>83</td>
</tr>
<tr>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Visual and Media Studies, courses in</td>
<td>129</td>
</tr>
<tr>
<td>Visual Arts, courses in</td>
<td>122</td>
</tr>
</tbody>
</table>
W
Warning, Academic 49
Warning, academic 49
Wellness Center, Student 79
Winston Churchill Scholarships 54
Withdrawal
  from courses 41
  from school 50
  readmission 50
Women's Center 78
Women's Studies 648
Work Taken After Matriculation at Duke, credit for 38
Work Taken During High School, credit for 38
Work-study employment 95

Z
Z grade 46