The information in this bulletin applies to the academic year 2010-2011 and is accurate and current, to the extent possible, as of May, 2010. 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.

Duke University prohibits discrimination and harassment, and provides equal employment opportunity without regard to race, color, religion, national origin, disability, veteran status, sexual orientation, gender identity, sex, or age. The university also makes good faith efforts to recruit, employ, and promote qualified minorities, women, individuals with disabilities, and veterans. It admits qualified students to all the rights, privileges, programs, and activities generally accorded or made available to students. The university also does not tolerate harassment of any kind.

Questions, comments or complaints of discrimination or harassment should be directed to the Office of the Vice-President for Institutional Equity, (919) 684-8222. Further information, as well as the complete text of the harassment policy, may be found at: www.duke.edu/web/equity/.

Duke University recognizes and utilizes electronic mail as a medium for official communications. The university provides all students with e-mail accounts as well as access to e-mail services from public clusters if students do not have personal computers of their own. All students are expected to access their e-mail accounts on a regular basis to check for and respond as necessary to such communications, just as they currently do with paper/postal service mail.

Information that the university is required to make available under the Student Right to Know and Campus Security Acts may be obtained from the Office of University Relations at (919) 684-2823 or in writing to 615 Chapel Drive, Box 90563, Duke University, Durham, North Carolina 27708.

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, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Duke University.

The Bulletin of Duke University publishes the following titles: The Duke Community Standard in Practice: A Guide for Undergraduates, Divinity School, Fuqua School of Business, Graduate School, School of Law, School of Medicine, Nicholas School of the Environment, School of Nursing, Sanford School of Public Policy, Summer Session, and Undergraduate Instruction. All bulletins are available online at: http://www.registrar.duke.edu/registrar/studentpages/student/bulletins.html

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# Academic Calendar

## 2010-2011*

Trinity College of Arts and Sciences. The Pratt School of Engineering. Consult calendars of the various schools for additional information.

### Summer 2010

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<th>February</th>
<th>May</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 Monday—Registration begins for all Summer sessions</td>
<td>19 Wednesday—Term I classes begin</td>
</tr>
<tr>
<td>20 Regular class meeting schedule begins on Thursday, May 20</td>
<td>20 Thursday—Regular class meeting schedule begins</td>
</tr>
<tr>
<td>21 Drop/Add continues</td>
<td>21 Friday—Drop/Add for Term I ends</td>
</tr>
<tr>
<td>31 Monday—Memorial Day holiday. No classes are held</td>
<td>31 Monday—Memorial Day holiday. No classes are held</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>June</th>
<th>July</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 Wednesday—Last day to withdraw from Term I classes</td>
<td>1 Thursday—Term I final examinations end</td>
</tr>
<tr>
<td>28 Monday—Term I classes end</td>
<td>5 Monday—Independence Day holiday observed. No classes are held</td>
</tr>
<tr>
<td>29 Tuesday—Reading period</td>
<td>6 Tuesday—Term II classes begin</td>
</tr>
<tr>
<td>30 Wednesday—Term I final examinations begin</td>
<td>8 Thursday—Drop/Add for Term II ends</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>August</th>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Monday—Last day to withdraw from Term II classes</td>
<td>24 Tuesday—New student orientation begins</td>
</tr>
<tr>
<td>12 Thursday—Term II classes end</td>
<td>25 Wednesday, 11:00 a.m.—Convocation for new students</td>
</tr>
<tr>
<td>13 Friday—Reading period (until 7:00 p.m.) 7:00 p.m.—Term II final examinations begin</td>
<td>30 Monday, 8:30 a.m.—Fall semester classes begin; Drop/Add continues</td>
</tr>
<tr>
<td>15 Sunday—Term II final examinations end</td>
<td></td>
</tr>
</tbody>
</table>

### Fall 2010

<table>
<thead>
<tr>
<th>August</th>
<th>September</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Monday—Labor Day. Classes in session</td>
<td>6 Monday—Labor Day. Classes in session</td>
</tr>
<tr>
<td>10 Friday—Drop/Add ends</td>
<td>10 Friday—Drop/Add ends</td>
</tr>
<tr>
<td>30 Thursday—4 p.m. Founders’ Day Convocation</td>
<td>30 Thursday—4 p.m. Founders’ Day Convocation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>October</th>
<th>November</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Sunday—Founders’ Day</td>
<td>3 Wednesday—Registration begins for Spring semester, 2011</td>
</tr>
<tr>
<td>8 Friday—Last day for reporting midsemester grades 7:00 p.m.—Fall Break begins</td>
<td>12 Friday—Last day to withdraw with W from Fall 2010 classes</td>
</tr>
<tr>
<td>13 Wednesday, 8:30 a.m.—Classes resume</td>
<td>17 Wednesday—Registration ends for Spring semester, 2011</td>
</tr>
<tr>
<td>18 Thursday—Drop/Add begins for Spring 2011</td>
<td></td>
</tr>
</tbody>
</table>

* The dates in this calendar are subject to change. Past, current, and future academic calendars can be found online at: [http://registrar.duke.edu/registrar/studentpages/student/academicalendars.html](http://registrar.duke.edu/registrar/studentpages/student/academicalendars.html)

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8 Academic Calendar
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<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Tuesday, 10:30 p.m.—Thanksgiving recess begins</td>
</tr>
<tr>
<td>29</td>
<td>Monday, 8:30 a.m.—Classes resume</td>
</tr>
<tr>
<td>December</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Friday—Fall semester classes end</td>
</tr>
<tr>
<td>11-13</td>
<td>Saturday-Monday—Reading period</td>
</tr>
<tr>
<td>14</td>
<td>Tuesday, 9:00 a.m.—Final examinations begin</td>
</tr>
<tr>
<td>19</td>
<td>Sunday, 10:00 p.m.—Final examinations end</td>
</tr>
<tr>
<td>March</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Monday, 8:30 a.m.—Classes resume</td>
</tr>
<tr>
<td>30</td>
<td>Wednesday—Last day to withdraw with W from Spring 2011 classes.</td>
</tr>
<tr>
<td>April</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Wednesday—Registration begins for Fall semester, 2011</td>
</tr>
<tr>
<td>15</td>
<td>Friday—Registration ends for Fall semester, 2011</td>
</tr>
<tr>
<td>16</td>
<td>Saturday—Drop/Add begins for Fall semester, 2011</td>
</tr>
<tr>
<td>27</td>
<td>Wednesday—Spring semester classes end</td>
</tr>
<tr>
<td>28-May</td>
<td>Thursday-Sunday—Reading period</td>
</tr>
<tr>
<td>1</td>
<td>Monday—Final examinations begin</td>
</tr>
<tr>
<td>4</td>
<td>Wednesday, 9:00 a.m.—2:00 p.m.—Reading period</td>
</tr>
<tr>
<td>7</td>
<td>Saturday, 10:00 p.m.—Final examinations end</td>
</tr>
<tr>
<td>13</td>
<td>Friday—Commencement begins</td>
</tr>
<tr>
<td>15</td>
<td>Sunday—Graduation exercises; conferring of degrees</td>
</tr>
</tbody>
</table>
University Administration

GENERAL ADMINISTRATION
Richard H. Brodhead, PhD, President
Victor J. Dzau, MD, Chancellor for Health Affairs; and President and Chief Executive Officer, Duke University Health System, Inc.
Peter Lange, PhD, Provost
Tallman Trask III, MBA, PhD, Executive Vice-President
Neal F. Triplett, MBA, President of DUMAC, LLC
Pamela Bernard, JD, Vice-President and University Counsel
Robert M. Califf, MD, Vice-Chancellor for Clinical Research
Kyle Cavanaugh, MBA, Vice-President for Human Resources
Kemel Dawkins, BA, Vice-President for Campus Services
Tracy Futhey, MS, Vice-President for Information Technology and Chief Information Officer
Scott Gibson, MBA, Executive Vice-Dean for Administration, School of Medicine
Catherine Lynch Gilliss, DNSc, Vice-Chancellor for Nursing Affairs and Dean of the School of Nursing
B. Hofler Milam, MBA, Vice-President for Finance and Treasurer
Larry Moneta, EdD, Vice-President for Student Affairs
Molly K. O’Neill, MSHA, Vice-Chancellor for Medical Center Integrated Planning; and Vice-President for Business Development and Chief Strategic Planning Officer, Duke University Health System, Inc.
Benjamin D. Reese, Jr., PsyD, Vice-President for Institutional Equity
Richard V. Riddell, PhD, Vice-President and University Secretary
James S. Roberts, PhD, Executive Vice-Provost for Finance and Administration
Michael J. Schoenfeld, MS, Vice-President for Public Affairs and Government Relations
Robert S. Shepard, PhD, Vice-President for Alumni Affairs and Development
Robert L. Taber, PhD, Vice-Chancellor for Corporate and Venture Development
Samuel M. Wells, PhD, Dean of the Chapel
Kevin White, PhD, Vice-President and Director of Athletics
Huntington F. Willard, PhD, Vice-Chancellor for Genome Sciences and Director of the Institute for Genome Sciences and Policy
Phail Wynn, Jr., MBA, EdD, Vice-President for Durham and Regional Affairs

GENERAL ACADEMIC ADMINISTRATION
Peter Lange, PhD, Provost
Nancy B. Allen, MD, Vice-Provost for Faculty Diversity and Faculty Development
Bruce W. Cunningham, PhD, Assistant Vice-Provost, University Registrar, and Director, Student Service Center
Kimberly Harris, BS, Director, Academic Human Resources
Deborah Jakubs, PhD, University Librarian and Vice-Provost for Library Affairs
David Jamieson-Drake, PhD, Director, Institutional Research
Deborah A. Johnson, PhD, Assistant Vice-Provost and Director of Administrative and Community Support Services
Scott Lindroth, PhD, Vice Provost for the Arts
Jacqueline Looney, PhD, Associate Vice-Provost for Academic Diversity and Associate Dean of the Graduate School
Gilbert Merkx, PhD, Vice-Provost for International Affairs and Development
Stephen Nowicki, PhD, Dean and Vice-Provost for Undergraduate Education
Amy Oates, BA, Director, Academic Financial Services and Systems
Katharine Pfeiffer, MA, Assistant Vice-Provost and Director, Student Information Services and Systems
James S. Roberts, PhD, Executive Vice-Provost for Finance and Administration
Susan Roth, PhD, Vice-Provost for Interdisciplinary Studies
James N. Siedow, PhD, Vice-Provost for Research
John Simon, PhD, Vice-Provost for Academic Affairs
Jo Rae Wright, PhD, Vice-Provost and Dean of the Graduate School

ARTS AND SCIENCES
Alvin L. Crumbliss, PhD, Dean of the Faculty of Arts and Sciences
Srinivas Aravamudan, PhD, Dean of the Humanities
Angela O’Rand, PhD, Dean of the Social Sciences
Robert Calderbank, PhD, Dean of the Natural Sciences
Robert F. Barkhau, BS, Director, Arts and Sciences Facilities
Sandra P. Connolly, MS, Senior Associate Dean for Finance and Administration
Colleen Fitzpatrick, MEd, Assistant Vice President for Trinity College and Undergraduate Education
Edward D. Gomes, Jr., BS, Senior Associate Dean, Trinity Technology Services
Kevin W. Moore, PhD, Senior Associate Dean for Faculty Affairs
Nancy Zeleniak, Associate Dean for Communications
Lee W. Willard, PhD, Senior Associate Dean for Academic Planning and Associate Vice Provost

TRINITY COLLEGE OF ARTS AND SCIENCES
Alvin L. Crumbliss, PhD, Dean of the Faculty of Arts and Sciences and Dean of Trinity College
Lee D. Baker, PhD, Dean of Academic Affairs of Trinity College
Gerald L. Wilson, BD, PhD, Senior Associate Dean of Trinity College, Social Sciences, and Director of the Office of Pre-Law Advising
Paula E. Gilbert, PhD, Director and Associate Dean for Continuing Studies and Summer Session
Norman C. Keul, PhD, Associate Dean for Humanities and Interdisciplinary Programs
Margaret Riley, PhD, Director of Global Education Office and Associate Dean for Study Abroad
Ron Gruenwald, PhD, Associate Dean for Natural Sciences and Director of the Undergraduate Research Support Office
Daniel C. Scheirer, PhD, Associate Dean for Natural Sciences and Director of the Office of Health Professions Advising
Sabrina L. Thomas, PhD, Associate Dean for Social Sciences, Director of the Office of Student Returns, Pre-Business Advising
Ingeborg Walther, PhD, Associate Dean for Humanities and Director of the Office of Curriculum and Course Development
Milton A. Blackmon, EdD, Associate Dean for the Undeclared and Humanities
Donna Kostyu, PhD, Interim Director of the Academic Advising Center and Associate Dean for the Undeclared and Natural Sciences
Alyssa Perz-Edwards, PhD, Assistant Dean for the Undeclared and Natural Sciences
Lynn K. White, MD, Associate Dean for the Undeclared and Natural and Mathematical Sciences

THE EDMUND T. PRATT JR. SCHOOL OF ENGINEERING
Thomas Katsoulas, PhD, Dean
Jeffrey Glass, PhD, Senior Associate Dean for Education
Linda Franzoni, PhD, Associate Dean for Student Programs
Constance E. Simmons, MBA, Associate Dean for Undergraduate Affairs

STUDENT AFFAIRS
Larry Moneta, EdD, Vice President for Student Affairs
Zoila Airall, PhD, Assistant Vice President of Student Affairs for Campus Life
William Wright-Swadel, MEd, Fannie Mitchell Executive Director, Career Center
Kathy R. Hollingsworth, PhD, Executive Director, Counseling and Psychological Services
Caroline Nisbet, MA, Assistant Vice President of Student Affairs for Resource Administration
William Purdy, MD, Executive Director, Student Health Center
Suzanne Wasiorek, MHA, JD, LLM, Assistant Vice President of Student Affairs and Dean of Students

ADMISSIONS AND FINANCIAL AID
Christoph O. Gutten tag, MA, Dean of Undergraduate Admissions
Alison Rabil, EdD, Assistant Vice-Provost and Director of Financial Aid
General Information
Duke University

Duke University was created in 1924 by James Buchanan Duke as a memorial to his father, Washington Duke. The Dukes—a Durham family that built a worldwide financial empire in the manufacture of tobacco and the production of electricity in the Carolinas—had long been interested in Trinity College, the predecessor of Duke University. Trinity traced its roots to 1838 in nearby Randolph County, when local Methodist and Quaker communities joined forces to support a permanent school that they named Union Institute. After a brief period as Normal College (1851-59), a teacher-training institution, the school changed its name to Trinity in 1859, became a liberal arts college, and 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, the trustees graciously accepted the provisions of James B. Duke’s indenture creating the family philanthropic foundation, the Duke Endowment, which provided, in part, 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 when it was rebuilt in stately Georgian architecture. West Campus, Gothic in style and dominated by the soaring tower of the 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 and 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. 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" by establishing an on-campus residence for them. When West Campus opened in 1930, the original Durham campus became the Women’s College of Duke University while Trinity continued as the name of the men’s undergraduate college. Now, about equal numbers of undergraduate women and men attend Trinity College and the Pratt School of Engineering combined.

Duke, likewise, has a long history in engineering. Engineering courses were taught intermittently in the nineteenth century beginning as early as 1851. Engineering became a
permanent department in 1910, an undergraduate College of Engineering in 1939, and a School of Engineering in 1966 with 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 [B.D.] degree was awarded in 1927, the first Ph.D. in 1929, and the first M.D. in 1932. The School of Law, founded in 1904, was reorganized in 1930. The following year, the undergraduate School of Nursing was born, transforming in 1984 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, adding "and Earth Sciences" to its name in 2000. The last professional school to become part of Duke University, the business school, was established in 1969 and renamed the Fuqua School of Business in 1980.

Modern times have seen Duke realize its founders’ aspirations, becoming a major center of learning far removed from its origins in a log schoolhouse in rural Randolph County. Its reach is now global. Many 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 6,000 undergraduates from a multiplicity of backgrounds. Its motto, Eruditio and Religio, reflects the university’s fundamental belief in the union of knowledge and faith, the advancement of learning, and the defense of scholarship; its love of freedom and truth; and its valuation of service to others. Duke University has encouraged generations of students to understand and appreciate the world they live in, their opportunities, and their responsibilities.

For more information, visit http://library.duke.edu/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
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 preeminence 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 2,000 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 freshmen students in the Focus Program with a series of first-year 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 the Divinity School, the Fuqua School of Business, the 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 Perkins and Bostock libraries and the Rare Book, Manuscript, and Special Collections Library. The Duke libraries Web site http://library.duke.edu is a gateway to books, journals, and databases as well as a source of information on topics such as selecting resources and citing them in a paper.

“Save time, ask us” is the motto of the Duke librarians who work with students at information desks in the libraries. Assistance is also available via telephone, e-mail, chat reference, and IM, accessible from the library Web site. 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 searching databases effectively, or just offer advice for getting started in the library. Subject specialist librarians are available for research consultations on a particular topic.

The Mobile Library Web site at http://library.duke.edu/mobile gives users of handheld devices library hours and directions, contact information for Perkins reference desk, and links to other mobile sites including services and content from the Duke libraries’ digital collections. Mobile Library also offers real-time updates on computer workstation availability in the Link, Perkins, Bostock, Lilly and the Music Library.

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 I.D., undergraduates can borrow books from any of these libraries.

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 especially to first-year students. Undergraduates also have access to Lilly’s more than 18,000 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 co-sponsored by Lilly and Duke Student Government. The Music Library and Music Media Center, also on East Campus, have a rapidly expanding collection of music scores, books, journals and music-related media, including more than 10,000 CDs, thousands of LPs (many jazz), and hundreds of DVDs and VHS recordings that students can check out.

On West Campus, the William R. 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 electronic resources: tens of thousands of e-journals, databases, and statistical tools. The library offers the Robert F. Durden 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, including Microsoft Office, media players, and Web browsers. 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 Rare Book, Manuscript, and Special Collections Library (RBMSCL) to use unique and rare materials that range from ancient papyri to the records of twentieth-century advertising. The collections support research in a wide variety of disciplines and programs, including African American studies, anthropology, classics, economics, history, 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 RBMSCL are available at the library’s Web site: http://library.duke.edu/specialcollections/. The Duke University Archives, also part of the RBMSCL, 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 that are open to students. In addition, the Friends of the Duke University Libraries sponsor contests and awards for students. The Lionel Stevenson Essay Contest and the Jeremy North Student Book Collectors Contest are offered in alternating years. Contest winners receive gift certificates redeemable at the Gothic Bookshop. The Friends also sponsor a $750 award that supports undergraduate summer research in archives, museums, and libraries. The award is administered by the university’s Undergraduate Research Support Office and is presented annually. 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, located in the Seeley G. Mudd Building, provides the services and collections necessary to further educational, research, and clinical activities in the medical field. Services are available to Medical Center faculty, staff, and students from the School of Medicine, School of Nursing, Division of Allied Health, and Duke Hospital; as well as graduate departments in the basic medical sciences.

Over 247,664 volumes are available, including the Trent Collection in the History of Medicine. Approximately 100 current print-only subscriptions and 5,108 electronic journal titles are available. Most books published before 1995 and journals published before 1985 have been stored in the Duke Library Service Center located off Briggs Avenue. A computer classroom for hands-on training is located on the lower level of the Library. The Frank Engel Memorial Collection consists of a small group of books on consumer health and nonmedical subjects for general reading, together with several newspapers and popular magazines.

Traditional library services include reference, circulation, Internet assistance, and document delivery services, which are supplemented by mediated and self-service online database searching. Workstations for searching databases and the online catalog are available in the entrance lobby and other areas of the library. Detailed information on services and resources may be found in the information guides available at the library.
The J. Michael Goodson Law Library, with over 625,000 volumes, serves both the university and the local legal community. It is a major research collection of legal literature that includes reported decisions of federal and state courts, current and retrospective collections of federal and state codes, regulations, and session laws. The law library relies increasingly on electronic sources of legal information while continuing to develop and maintain in-house collections of print and other resources to support research and scholarship. All materials are included in the Duke University Libraries online catalog and other tools for finding and accessing electronic resources.

The periodical collection includes current and retrospective access to all major law journals, bar association publications, institute proceedings, and newsletters. A large section of the library collection is devoted to treatises on all phases of law and other social and behavioral sciences relevant to legal research. The library is a selective depository for United States government publications, with concentration on congressional, judicial, and administrative law materials.

In addition to its U.S. holdings, the library holds substantial research collections in foreign and international law. The foreign law collection is extensive in coverage, with long-standing concentrations in European law and corporate law materials, and growing collections in Asian and Latin American law. The international law collection is strong in primary source and treatise material on both private and public international law topics.

The library staff is highly knowledgeable in law, legal research, and in the uses of information technology and can assist in all facets of legal research and library use. Undergraduate and graduate students whose course of study requires access to legal literature are welcome to use the library and check out circulating materials. Visit the law library Web page at: www.law.duke.edu/lib/

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 Web site, www.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, and residence halls are also wired for access to Duke’s campus-wide 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 via Web mail. During the first weeks of school, OIT helps students establish their network connections and provides them with free help getting started on the Internet.

Storage and Backup Services. OIT offers personal Web-based storage (WebFiles) and discount automatic personal-computer backup services through a vendor. For more information, see www.oit.duke.edu/comp-print/storage/index.html

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.

The OIT Service Desk. Service Desk staff are available to assist students with Duke-supported software, hardware, and services. For information about how to reach the Service Desk, see: www.oit.duke.edu/help/index.php.

Computer Labs, Kiosks, and ePrinter. There are more than 20 general purpose computer labs across Duke. The labs, designed to meet a wide spectrum of student needs, include a campus-wide array of printers called ePrint. In addition to the general-purpose computer labs, OIT oversees a number of Internet kiosks and public ePrint stations. For additional information, visit www.oit.duke.edu/comp-print/printing/index.php.

Technology Training. Hands-on training workshops are available to both graduate and undergraduate students on a number of popular software applications such as Macromedia Dreamweaver, Microsoft Word, Microsoft Excel, Microsoft PowerPoint, and InDesign; and on computer security. The workshops are typically one-hour sessions filled with useful, skill-building techniques. For additional information or to register for a workshop, visit www.oit.duke.edu/comp-print/training/index.php.

Telephones. Duke offers 911 telephone service in on-campus residences. There is no fee for this service, but students must supply their own phones. There is a monthly fee for the local service and long distance is billed on a per-minute basis. Emergency (911) calls placed on wireless phones are also routed to local emergency call centers. For additional information, see www.oit.duke.edu/vww/telecom/students/index.php.

Cable Television. DTV, Duke Cable Television, provides both free and pay-service TV packages. For more information, see www.oit.duke.edu/vww/tv/students/index.php.

Science Laboratories. In addition to the teaching and research laboratories in the departments of natural and social sciences and in the Pratt School of Engineering, there are other facilities in which some advanced undergraduates work on individual projects. These include 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. Undergraduates have the opportunity to pursue research in an array of science facilities across the campus, including the Medical Center, the Levine Science Research Center, the Fitzpatrick Center for Engineering, Medicine and Applied Sciences, and the French Family Science 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 seeks to provide a supportive environment substantially anchored in its residential program.

Educational, cultural, recreational, social, and outdoor adventure programming is planned and presented throughout the year for living groups through the cooperative work
of Student Affairs, Trinity College of Arts and 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 and 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, 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 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 environment, engineering, public policy, and arts & sciences 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 and 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 635 faculty members teach in 36 departments and programs. Many teach and collaborate across traditional disciplinary boundaries, which creates 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 these principles in all academic and non-academic 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.
Degree Programs
Degrees and Academic Credit

Duke University offers in Trinity College of Arts and Sciences the degrees of Bachelor of Arts and Bachelor of Science, and in the 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 semester courses (1.0 s.c.), commonly abbreviated as courses, which ordinarily consist of three to four hours of instruction each week of the fall or spring semester or the equivalent total number of hours in a summer term. Double (2.0) courses, half (.5) courses, and quarter (.25) courses are also recognized.

Trinity College of Arts and 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 thirty-four semester courses 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 thirty-four courses credits and continuation requirements, may be met by a course passed under the satisfactory/unsatisfactory grading system.

**General Education requirements consisting of the following:**

**Required Courses:**

**Areas of Knowledge.** Two courses (totaling 2.0) in each of the following five areas:

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

**Modes of Inquiry.** Courses designated as offering exposures to each of the following Inquiries, as indicated below:

- **Cross-Cultural Inquiry (CCI):** two (2.0) courses.
- **Ethical Inquiry (EI):** two (2.0) courses.
- **Science, Technology, and Society (STS):** two (2.0) courses.
- **Foreign Language (FL):** one to three courses (1.0 to 3.0) in the same language, determined by level of proficiency. The details of the FL requirement are explained more fully below.
- **Writing (W):** three (3.0) courses, including Writing 20 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):** two (2.0) courses.

Advanced placement credits, international placement credits, and pre-matriculation 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 be submitted 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 and Modes of Inquiry requirements.

**Small Group Learning Experiences**

- During the first year: one full-course seminar (i.e., a 1.0 semester credit course, not partial credit courses).
- After the first year: a total of two full (2.0) courses designated as seminars, tutorials, independent study, or a thesis course. (The total may include partial credit courses.)

**Course Credits**

There are several separate and specific requirements concerning course credits in Trinity College. Thirty-four (34) courses are required for graduation, not more than two with a grade of D, and including:
• No more than one credit of physical education activity (i.e., two half-credit activity courses, including military science physical activity courses), four credits of dance/American Dance Festival technique/performance (i.e., eight half-credit courses), two credits of house courses (i.e., four half-credit house courses), six from a professional school (e.g., business, engineering, law, medicine, environment courses numbered 200 or above), four in military science, and one credit from academic internships.
• No more than four (4) courses taken satisfactory/unsatisfactory on an elected basis.
• The number of advanced placement, international placement credits, and transfer credits allowed. (See the sections on advanced placement and transfer of work elsewhere, in the chapter “Academic Procedures and Information.”)

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 pre-matriculation credit for college courses taken elsewhere before entering the first-year class may function only as elective courses. Other courses that a student is using as electives may or may not carry general education designations.

General Education Component
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 how to interpret and utilize information in an increasingly technological world, while courses in quantitative studies, including computer science, mathematics, and statistics, 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 grapple with issues pertaining to them throughout their lives and careers. These themes are (1) cross-cultural; (2) ethical; and (3) involving science, technology, and society. 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 wrought profound changes in 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:

1) For students who enter their language study at Duke at the intermediate level or above, and intend to complete their requirement in that language:
   Completion of a 100-level course that carries the FL designation. 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 100 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 any other language 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."

2) For students who begin their study of a foreign language at Duke in an elementary language (first or second semester) course, and intend to complete their requirement in that language:
   The successful completion of three full courses in the same language that carry the FL designation.

   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 20 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.

In addition to the descriptive representation of the general education requirements stated above, they may also be represented by the following matrix:

**General Education Course Requirements**

<table>
<thead>
<tr>
<th>Areas of Knowledge1 (Minimum required)</th>
<th>Modes of Inquiry</th>
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<tbody>
<tr>
<td></td>
<td>Cross-Cultural Inquiry</td>
</tr>
<tr>
<td>Arts, Literatures, and Performance (2)</td>
<td>2</td>
</tr>
<tr>
<td>Civilizations (2)</td>
<td>2</td>
</tr>
<tr>
<td>Natural Sciences (2)</td>
<td>2</td>
</tr>
<tr>
<td>Quantitative Studies (2)</td>
<td>2</td>
</tr>
<tr>
<td>Social Sciences (2)</td>
<td>2</td>
</tr>
<tr>
<td>Other2</td>
<td>2</td>
</tr>
</tbody>
</table>

1 Courses will be designated with regard to their Area(s) of Knowledge. Courses can be counted toward only one Area.

2 Courses offering exposures to Modes of Inquiry that do not count toward Areas of Knowledge.

3 The requirement is based on a required level of proficiency. No student will be required to take more than three courses. Foreign language courses below the intermediate level cannot be used to satisfy requirements in Areas of Knowledge or other Modes of Inquiry. 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.

4 Writing 20 must be taken in the first year; at least one of the two additional courses coded $W$ must be taken after the first year.

N.B.: Independent Study Courses do not count toward the general education requirement. One Research Independent Study (coded $R$) may count toward the Writing in the Disciplines ($W$) requirement.

**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 (ordinarily 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. Instructors are encouraged to present to each student at the end of the term a written evaluation of the student's work. A tutorial ($T$) 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."

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 a preceptorial.

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 semester courses are required for graduation, including a maximum of two courses passed with a grade of D. The thirty-four course credits may include (1) no more than one semester-course credit in physical education activity courses; (2) no more than four semester-course credits in dance/American Dance Festival technique/performance courses; (3) no more than two credits in house courses; (4) no more than six credits for courses taken in professional schools; (5) no more than one semester-course credit in elective academic internships; (6) no more than four semester-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.) Certain military science courses listed as carrying credit do not count toward graduation but appear on a student's permanent academic record. Military science courses, like 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" and the Residence section immediately below.

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 if it seems probable that an extension will enable the student to complete all remaining requirements for graduation. Very rarely, a student will be granted a tenth semester of study. This may only be
approved by a 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. Departmental and program majors require a minimum of ten courses, at least eight of which must be at the 100 level or above. The interdepartmental major requires a minimum of fourteen courses, at least ten of which must be at the 100 level or above. The total number of courses that a department/program may require at any level in the major and related departments may not exceed seventeen semester courses for the Bachelor of Arts degree and nineteen semester courses 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. Two majors is the maximum number of majors that may be recorded on a student's record. See the chapter "Academic Procedures and Information" 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, 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, French/Italian (combined major), French/Spanish (combined major), German, history, international comparative studies, Italian and European studies, Italian/Spanish (combined major), linguistics, literature, mathematics, medieval and Renaissance studies, music, neuroscience, philosophy, physics, political science, psychology, public policy studies, religion, Russian, Slavic and Eurasian studies, sociology, Spanish, statistical science, theater studies, visual arts, visual 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 122.

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. The Academic Advising Center and the academic deans will have available from departments a standard set of course criteria for their interdepartmental major. These criteria 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, with at least ten at the 100 level or above; the courses must be split evenly between the departments. At least four of the seven courses required by each department is 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, including at least three at the level of 100 or above. Further information about specific minors is available under the description of the individual department/academic programs in the chapter "Courses and Academic Programs." Students may not major and minor in the same department/program with the exception of four departments in which multiple majors or concentrations are already 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 consist of at least six courses, four of which are at the 100-level or above, including an introductory and a capstone course. 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; Children in Contemporary Society; Documentary Studies; Early Childhood Education Studies; Energy and the Environment; Genome Sciences and Policy; Global Health; Health Policy; Human Development; Information Science and Information Studies; Islamic Studies; Jewish Studies; Latin American Studies; Latino/a Studies in the Global South; Markets and
Management Studies; Marine Science and Conservation Leadership; Modeling Biological Systems; Policy Journalism and Media Studies; Politics, Philosophy and Economics; Study of Ethics; and Study of Sexualities.

Fuller descriptions of these certificate programs appear in the chapters “Specialized Programs Within Academic Units” and “Courses and Academic Programs.”

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 U.S. national security. Full information is available on the Program II Web site: trinity.duke.edu/program-ii.

Admission. If interested in Program II, students should first attend an information session, then confer with faculty or directors of undergraduate studies in the departments closest to their interests, and with the academic dean for Program II. Students will select a 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. It must also offer a coherent plan for learning rather than a sampler of interesting courses and should incorporate the depth and breadth of study expected of a liberal education in Trinity College. 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 B.S. 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 64.

**COMBINATION PROGRAMS OF TRINITY COLLEGE AND DUKE PROFESSIONAL SCHOOLS**

A student interested in attending a Duke professional school (environment or law) may, upon meeting certain requirements, combine the senior year in Trinity College of Arts and Sciences with the first year in the professional school. To qualify the student must (1) successfully complete twenty-six semester courses 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 general information and 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), Health Professions Advising Office at [http://trinity.duke.edu/prehealth-advising](http://trinity.duke.edu/prehealth-advising)). 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 Web site 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 and 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 Web site. As undergraduates, they should become involved in research which may involve laboratory work, advanced seminars, or independent study. 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 Web sites. It may also be included in the “Handbook for Majors” for the major department. A research mentor, a faculty advisor, and the Ph.D. 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 the 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 Schools of Business.** Students seeking information about graduate schools of business should consult the advisor in Trinity College. In preparing for graduate business school, students should gain a good liberal arts background, choosing courses that will help them develop communication skills, analytical skills, and an understanding of human nature. Students have often chosen such courses as Computer Science 1, Economics 51 or 55, Economics 182, and Mathematics 31 as those which develop analytical skills. 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 Prebusiness Advising Office, 011 Allen Building.

**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. For a complete listing of these and any additional course requirements set by each school, consult *Medical School Admissions 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 with course work 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: Economics 51D, 182; English 117A; History 177A; Philosophy 48; Political Science 91, 127, 177-178, 207S; Public Policy Studies 55D; Sociology 10D.

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 Center, 04 Allen Building.

Theological Schools and Religious Work. Students contemplating theological study should correspond with appropriate schools. Students should also confer with the authorities of their respective religious judicatories to determine requirements for a successful application to the school of their choice. Generally speaking, appropriate preparation for theological study could include the following subjects: English language and literature; history, including non-Western cultures as well as European and American; philosophy, particularly its history and its methods; natural sciences, both the physical and the life sciences; psychology, sociology, and anthropology; the fine arts and music; biblical and modern languages; religion, both in the Judeo-Christian and in the Near and Far Eastern traditions.

This kind of course work introduces the student to ways of thinking that will be germane to theological study. Some theological schools require various languages for admission. This may include a year of language study at the college level. It may also include biblical language skill, Greek and/or Hebrew. More detailed information about theological education may be obtained from the director of admissions of Duke University 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. Five programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone (410) 347-7700. These programs are biomedical engineering, civil engineering, electrical engineering (through 2010 only), electrical and computer engineering, and mechanical engineering. These accredited programs, 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 complete successfully a minimum of thirty-four semester courses. These thirty-four semester courses must include the following:

<table>
<thead>
<tr>
<th>General Requirements¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing 1 s.c.</td>
</tr>
<tr>
<td>Mathematics 5 s.c.</td>
</tr>
<tr>
<td>Natural Science 4 s.c.</td>
</tr>
<tr>
<td>Humanities and Social Sciences 5 s.c.</td>
</tr>
<tr>
<td>Engineering and Applied Sciences 4 s.c.</td>
</tr>
<tr>
<td>Digital Computation</td>
</tr>
</tbody>
</table>

¹ No more than 1 credit in physical education activity and 1 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.

² Students placing out of any of these classes must take a suitable substitute. AP credit can be used as a substitute for Math 31 and Math 32.

³ Students entering with AP, IPC, and PMC credits for both Physics 61 and 62 must take one of the following physics courses at Duke: Physics 62, 63, 143, or, with approval, Physics 176, 181, or 182. Courses in mathematics, statistics, and computer science will not meet the elective requirement. A list of disallowed courses is maintained in the dean's office.

⁴ A maximum of 2 advanced placement credits may be used to meet Humanities and Social Sciences requirements for the Bachelor of Science in Engineering degree.
The first year of study in the Pratt School of Engineering is largely common to all engineers, with seven of the eight first year courses being completely transferable between the five accredited 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 10 (Introduction to Engineering), a first-year colloquium in which both disciplinary and multi-disciplinary 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 31L</td>
<td>1</td>
<td>Mathematics 32L</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry 31L</td>
<td>1</td>
<td>Physics 61L</td>
<td>1</td>
</tr>
<tr>
<td>Writing 20 or Humanities/Social Science Elective</td>
<td>1</td>
<td>Writing 20 or Humanities/Social Science Elective</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 53L</td>
<td>1</td>
<td>Technical Course</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 10</td>
<td>.5</td>
<td>Total</td>
<td>4–4.5</td>
</tr>
<tr>
<td>Total</td>
<td>4–4.5</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

1 Half credit course not required, but recommended.

1 A maximum of two semester courses of junior or senior level air science, military science, or naval science course work may be counted in satisfying the minimum requirements of thirty-four semester courses for a baccalaureate degree in engineering. These courses must be included in the sixteen semester courses listed under departmental requirements. All other courses completed in air, military, or naval science are taken in addition to the minimum program.

The Pratt First Year Curriculum

The first year of study in the Pratt School of Engineering is largely common to all engineers, with seven of the eight first year courses being completely transferable between the five accredited 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 10 (Introduction to Engineering), a first-year colloquium in which both disciplinary and multi-disciplinary 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:

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<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 31L</td>
<td>1</td>
<td>Mathematics 32L</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry 31L</td>
<td>1</td>
<td>Physics 61L</td>
<td>1</td>
</tr>
<tr>
<td>Writing 20 or Humanities/Social Science Elective</td>
<td>1</td>
<td>Writing 20 or Humanities/Social Science Elective</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 53L</td>
<td>1</td>
<td>Technical Course</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 10</td>
<td>.5</td>
<td>Total</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>4–4.5</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

1 Half credit course not required, but recommended.
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 freshman Focus programs, or initiation of a Trinity or Pratt double major/minor).

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>Chemistry 32L or Chemistry 151L</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Engineering 25L</td>
</tr>
<tr>
<td>Electrical and Computer Engineering</td>
<td>Electrical and Computer Engineering 27L</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>Engineering 20&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Undecided</td>
<td>Select from all above</td>
</tr>
</tbody>
</table>

<sup>1</sup> Engineering 20 is required for Mechanical Engineering majors.

After the first year, recommended curricula become more department specific, and are outlined on the following pages for the sophomore through senior years.
Biomedical Engineering Departmental Requirements

All general requirements and departmental requirements comprising the accredited Biomedical Engineering major are incorporated in the following sequence, only one of several possible sequences. To encourage depth in a specific area of Biomedical Engineering, students select two Areas of Biomedical Interest in the Junior year. There are four Areas of Biomedical Interest: (1) Biomaterials and Biomechanics (BB), (2) Imaging and Measurement Systems (IM), (3) Molecular, Cellular and Tissue Engineering (MC), and (4) Electrobiology (EL). Students must take one required class in each of their two selected Areas followed by two electives in one of the selected Areas. All BME elective courses have one or more of Area of Interest designations (BB, IM, MC, EL) or a General (GE) designation. Any BME 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 Biomedical Interest and electives.

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics 62L</td>
<td>1</td>
<td>Biomedical Engineering 153L</td>
<td>1</td>
</tr>
<tr>
<td>Biology 101L</td>
<td>1</td>
<td>Biomedical Engineering 100L</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 75 or Biomedical Engineering 110</td>
<td>1</td>
<td>Mechanical Engineering 83</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 103</td>
<td>1</td>
<td>Mathematics 107</td>
<td>1</td>
</tr>
<tr>
<td>Social Science or Humanities Elective</td>
<td>1</td>
<td>Social Science or Humanities Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 108</td>
<td>1</td>
<td>Biomedical Engineering Area Core Class I (^1)</td>
<td>1</td>
</tr>
<tr>
<td>Electrical and Computer Engineering 54L or Biomedical Engineering 171</td>
<td>1</td>
<td>Biomedical Engineering Area Core Class II (^1)</td>
<td>1</td>
</tr>
<tr>
<td>Life Science Elective</td>
<td>1</td>
<td>Statistics 113</td>
<td>1</td>
</tr>
<tr>
<td>Social Science or Humanities Elective</td>
<td>1</td>
<td>Biomedical Engineering 154L</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Engineering Design (^2)</td>
<td>1</td>
<td>Biomedical Engineering General Elective</td>
<td>1</td>
</tr>
<tr>
<td>Biomedical Engineering Area Elective I (^3)</td>
<td>1</td>
<td>Biomedical Engineering Area Elective II (^3)</td>
<td>1</td>
</tr>
<tr>
<td>Biomedical Engineering General Elective or Social Science or Humanities Elective</td>
<td>1</td>
<td>Biomedical Engineering General Elective or Social Science or Humanities Elective</td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td>1</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

1. Select from the following: Biomedical Engineering 201L, 202L, 207, 233.
2. Select from the following: Biomedical Engineering 227L, 236L, 260L, 261L, 262L, 264L.
3. Both Area electives (I and II) must be from the same Area as described in the text above.

Students intending to study abroad should plan to travel in the Fall semester of their Junior year. Pre-med students should consult with their advisor about course planning. These students will need to take Chemistry 151L and 152L, Biology 101L, and a second life sci-
ence elective by the end of the junior year. This is done by rearranging courses. Options for dual majors in Electrical and Computer Engineering, Civil Engineering, and Mechanical Engineering as well as elective concentrations are available on the department Web site: www.bme.duke.edu.

**Civil and Environmental Engineering Departmental Requirements**

All general requirements and departmental requirements comprising the accredited civil engineering major are incorporated in the following program that calls for a concentration in one of two areas, either structural engineering and mechanics (S/M) or environmental engineering and water resources (E/W). Either concentration satisfies all of the requirements. Because of the number of electives in the program, it is possible to complete both concentrations. The following table is presented as a guide to completing the program; other alternatives for courses sequencing exist.

<table>
<thead>
<tr>
<th>Sophomore Year</th>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 103</td>
<td>1 Mathematics 107</td>
<td>1</td>
</tr>
<tr>
<td>Physics 62L</td>
<td>1 Civil Engineering 130L</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 75L</td>
<td>1 Engineering 123L</td>
<td>1</td>
</tr>
<tr>
<td>Civil Engineering 24L or Elective</td>
<td>1 Elective</td>
<td>1</td>
</tr>
<tr>
<td>Civil Engineering 100</td>
<td>.5 Engineering 150</td>
<td>.5</td>
</tr>
<tr>
<td>Total</td>
<td>4.5 Total</td>
<td>4.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 108</td>
<td>1 Statistics 113</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 115</td>
<td>1 Elective</td>
<td>1</td>
</tr>
<tr>
<td>Civil Engineering 122L</td>
<td>1 Civil Engineering 139L</td>
<td>1</td>
</tr>
<tr>
<td>Civil Engineering Course¹</td>
<td>1 Civil Engineering Course¹</td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td>1 Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4 Total</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Senior Year</th>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering Course¹</td>
<td>1 Civil Engineering 192 or 193²</td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td>1 Elective</td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td>1 Elective</td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td>1 Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4 Total</td>
<td>4</td>
</tr>
</tbody>
</table>

¹ Students selecting the S/M concentration should take the following CE courses: Junior Year: Fall Semester - CE 131L, Spring Semester - CE 133L; Senior Year: Fall Semester - CE 134L. Students selecting the E/W concentration should take the following CE courses: Junior Year: Fall Semester - CE 120L; Spring Semester - CE 123L and CE 124L.

² The S/M concentration culminates in CE 192L (Integrated Structural Design), while the E/W concentration culminates in CE 193L (Integrated Environmental Design).

The regular program of electives should include at least one from: Biomedical Engineering 153L, Civil and Environmental Engineering 207, 208, 245, Computer Science 100E, Electrical and Computer Engineering 27L, 176, Engineering 119L, Mechanical Engineering
and Material Science 83L, 101L, or Physics 171L (students completing the S/M concentration may take Civil and Environmental Engineering 120L, 123L, or 124L; students completing the E/W concentration may take Civil and Environmental Engineering 131L, 133L, or 134L); at least five semester courses in humanities and social sciences; at least one course in the natural sciences; and in addition to specified civil and environmental engineering courses, at least one civil engineering elective course at the 100 or 200 level. Allowable natural science courses include Biology 101L, Earth and Ocean Sciences 11, Earth and Ocean Sciences 12. Students planning to attend graduate school are strongly advised to take at least one additional civil engineering elective (making two total), with one of these at the 200 level.

**Electrical and Computer Engineering Departmental Requirements**

The general Pratt School of Engineering requirements and Electrical and Computer Engineering departmental requirements comprising the accredited electrical and computer engineering major are incorporated in the following program. This program is presented as a guide to assist students in planning their four-year program and should not be viewed as an inflexible sequencing of courses.

### Sophomore Year

<table>
<thead>
<tr>
<th>Fall Semester Courses</th>
<th>Spring Semester Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICS 62L, Electricity, Magnetism, and Optics 1</td>
<td>ECE 54L, Signals and Systems 1</td>
</tr>
<tr>
<td>MATH 103, Intermediate Calculus 1</td>
<td>ECE 51L, Microelectronic Devices and Circuits 1</td>
</tr>
<tr>
<td>ECE 52L, Introduction to Digital Systems 1</td>
<td>Biology 101, Principles of Biology 1</td>
</tr>
<tr>
<td>COMPSCI 100E 1</td>
<td>MATH 107, Linear Algebra and Differential Equations 1</td>
</tr>
<tr>
<td>Elective 1</td>
<td>SS-H 2 1</td>
</tr>
<tr>
<td>Total 5</td>
<td>Total 5</td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Fall Semester Courses</th>
<th>Spring Semester Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE Concentration Elective 1 1</td>
<td>ECE Elective 1</td>
</tr>
<tr>
<td>ECE 53L, Electromagnetics 1</td>
<td>STA 113 or Math 135 or ECE 255 1</td>
</tr>
<tr>
<td>MATH 108, Ordinary and Partial Differential Equations 1</td>
<td>ECE Concentration Elective 2 1</td>
</tr>
<tr>
<td>SS-H 3 1</td>
<td>SS-H 4 1</td>
</tr>
<tr>
<td>Total 4</td>
<td>Total 4</td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>Fall Semester Courses</th>
<th>Spring Semester Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE Concentration Elective 3 1</td>
<td>ECE Concentration Elective 4 1</td>
</tr>
<tr>
<td>ECE Elective/ECE Design Elective 1</td>
<td>ECE Design Elective/ECE Elective 1</td>
</tr>
<tr>
<td>SS-H 5 1</td>
<td>Elective 1</td>
</tr>
<tr>
<td>Elective 1</td>
<td>Elective 1</td>
</tr>
<tr>
<td>Total 4</td>
<td>Total 4</td>
</tr>
</tbody>
</table>

1 Electrical and Computer Engineering concentration electives to be selected from the following areas: signal processing, communications and control systems; electromagnetic fields; solid-state devices and integrated circuits; digital systems; photonics. Electrical and Computer Engineering concentration electives must be selected from at least two areas, and at least two courses must be from the same area.

*The Edmund T. Pratt Jr. School of Engineering* 41
Note for electrical and computer engineering majors: the selection of approved electives should take into account a departmental requirement that a student must have accumulated by graduation time 12 electrical and computer engineering courses, including an engineering design elective to be taken in the senior year of the program. This course must have as a prerequisite at least one course in the discipline; currently, Electrical and Computer Engineering 135, 154, 251, and 261 are approved.

**Mechanical Engineering and Materials Science Departmental Requirements**

The general requirements and departmental requirements comprising the accredited mechanical engineering major are all incorporated in the following program.

### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering 75L</td>
<td>1</td>
<td>Engineering 123L</td>
</tr>
<tr>
<td>Physics 62L</td>
<td>1</td>
<td>Elective(^1)</td>
</tr>
<tr>
<td>Mathematics 103</td>
<td>1</td>
<td>Mathematics 107</td>
</tr>
<tr>
<td>Elective(^1)</td>
<td>1</td>
<td>Engineering 119L</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering 125L or 131</td>
<td>1</td>
<td>Mechanical Engineering 83L or Elective(^1)</td>
</tr>
<tr>
<td>Mechanical Engineering 101L</td>
<td>1</td>
<td>Mechanical Engineering 126L</td>
</tr>
<tr>
<td>Mathematics 108</td>
<td>1</td>
<td>Natural Science Elective(^2)</td>
</tr>
<tr>
<td>Elective(^1) or Mechanical Engineering 83L</td>
<td>1</td>
<td>Mechanical Engineering 131 or 125L</td>
</tr>
<tr>
<td>Elective(^1)</td>
<td>1</td>
<td>Elective(^1)</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>Total</td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering 141L</td>
<td>1</td>
<td>Mechanical Engineering 160L</td>
</tr>
<tr>
<td>Mechanical Engineering 150L</td>
<td>1</td>
<td>Mechanical Engineering Elective(^3)</td>
</tr>
<tr>
<td>Mechanical Engineering Elective(^3)</td>
<td>1</td>
<td>Elective(^1)</td>
</tr>
<tr>
<td>Elective(^1)</td>
<td>1</td>
<td>Elective(^1)</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
</tr>
</tbody>
</table>

\(^1\) Part of a program of approved electives planned with the student’s faculty advisor to suit individual interests and abilities. Five of these nine electives must be selected to meet the humanities and social sciences requirements of the Pratt School of Engineering. Also, three of the nine electives must be 100 level or higher, with the exception that engineering courses below the 100 level taken during the freshman or sophomore years may substitute for two of these 100-level electives. ROTC courses cannot be counted toward the 100-level requirement.

\(^2\) A list of disallowed courses is maintained in the dean’s office.

\(^3\) Restricted to 100-level or higher.

**Declaration of Major.** A student is urged to declare a major before registration for the first semester of the sophomore year, but 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 a form available in the Office of the Dean of Engineering.

**Double 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. However, the director of undergraduate studies for the second major must certify that the departmental major requirements have been met. The student must initiate the procedure, either through the associate dean of the Pratt School of Engineering or through the director of undergraduate studies in the second department. 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. Courses which are common to both majors shall be counted toward satisfying the requirements of both majors.

**IDEAS.** These interdisciplinary programs in engineering and applied science, leading to the Bachelor of Science in Engineering degree, provide opportunities for students to establish special majors in interdisciplinary fields such as computer engineering, environmental engineering, and materials science. 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 engineering accreditation criteria.

Any student, in consultation with the 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 the 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 Program in Aerospace Engineering.** The objective of this multi-disciplinary 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. Specific program requirements may be obtained from the Mechanical Engineering and Material Science Web site, from the Director of Undergraduate Studies of that department, or from the Office of the Dean of Engineering.

**Certificate Program in Architectural Engineering.** 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. Specific program requirements may be obtained from the Civil and Environmental Engineering Web site, from the Director of Undergraduate Studies of that department, or from the Office of the Dean of Engineering.

**Certificate Program in Energy and the Environment.** The objective of this multi-disciplinary program is to provide students with an understanding of the breadth of the issues that confront our society in its need for clean, affordable, and reliable energy. Administered jointly by the Pratt School of Engineering and the Nicholas School of the Environment, the certificate provides students with an understanding of the three key disciplines in the study of energy and the environment: markets and policy, environmental impacts, and energy resources and technology. The certificate program culminates in a multidisciplinary capstone
project course, teaming engineers with non-engineers to tackle real world energy problems. Specific program requirements may be obtained from the Director of Undergraduate Studies in Environmental Sciences and Policy, the Director of Undergraduate Studies in Mechanical Engineering and Materials Science, the Director of Undergraduate Studies in Civil and Environmental Engineering, or from the Undergraduate Programs Office for the Nicholas School.

**International Honors Program.** The International Honors Program is a certificate program consisting of six to eight semester courses, depending on the foreign language level proficiency of the student. All of the IHP course requirements may, with sufficiently advanced planning, fulfill humanities and social sciences or approved elective requirements which are encompassed in the schools accredited engineering programs. Early planning and advising are essential to fulfilling all IHP requirements as part of the baccalaureate degree program. Specific program requirements and an application may be obtained in the office of the dean of engineering.

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

**Master of Engineering Management.** This program offers engineering students exposure to both business and law as well as advanced engineering. Open to students after completion of the accredited bachelor's degree in engineering, it 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).

**Residence Requirements.** At least seventeen semester courses 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 students major advisor and academic dean.

**Satisfactory/Unsatisfactory Grading Option.** With the consent of the instructor and the faculty advisor, an engineering student may choose to be graded on a satisfactory/unsatisfactory basis in up to four unrestricted electives within the thirty-four-course program. A student may take no more than one course on a satisfactory/unsatisfactory basis each semester.

**Repetition of Courses.** 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.

**Continuation Requirements.** A student must achieve a satisfactory record of academic performance each semester and make satisfactory progress toward graduation to remain enrolled in the university. A student must pass at least three courses in each semester, except for the first semester of the freshman year, in which at least two courses must be passed.

A student who fails to meet this continuation requirement must leave the university for at least two semesters. A complete summer session may be counted as a semester. Following application for readmission, return must be approved by the dean and the director of undergraduate studies in the student’s major department. If the student thereafter fails to pass three courses in a semester, permanent dismissal from the university usually results. A student who enrolls in more than four courses in a given semester and fails two or more of them will not be permitted to enroll for more than four courses in the following semester without approval of the dean. In addition, a student may be dismissed temporarily or permanently for failing to make satisfactory progress toward graduation, including satisfactory progress toward fulfillment of curricular requirements within ten semesters. The term satisfactory progress shall be defined also by the following schedule:

1. To begin enrollment in the second year, a student must have passed 6 s.c. at Duke and earned S, C-, or better in 4 s.c.
2. To begin enrollment in the third year, a student must have passed 13 s.c. at Duke and earned S, C-, or better in 11 s.c.
3. To begin enrollment in the fourth year, a student must have passed 20 s.c. at Duke and earned S, C-, or better in 18 s.c.
4. To begin enrollment in the fifth year, a student must have passed 27 s.c. at Duke and earned S, C-, or better in 25 s.c.

**In the Summer Session:** to maintain enrollment at Duke a student may not fail more than one full course 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.

**Grade Requirement for Graduation.** Of the thirty-four semester courses 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.
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 on the basis of pre-college examination and/or credits earned of the following three types: advanced placement (AP), international placement credit (IPC), and pre-matriculation credit. Trinity College will record on students’ permanent Duke record courses of these three types completed prior to their matriculation at Duke. The three types of pre-college work are regarded as equivalent and may be used for placement into higher-level course work 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 towards the degree requirement of 34 course credits for any combination of AP, IPC, or pre-matriculation 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 elective 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 course work 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 pre-matriculation 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, but awards transfer credit to qualified students for college-level course work completed prior to matriculation with a grade of at least B-. These courses may be used to satisfy distribution requirements toward the B.S.E 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.

College Board Advanced Placement Program (AP) Examinations. A score of 4 or 5 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, computer science, economics, English, environmental science, French, German, history, Japanese, Latin, mathematics, music, physics, political
science, psychology, Spanish, and statistics. The Department of Mathematics will also consider a score of 3 for placement beyond the introductory course. The record of a student presenting such a score and desiring to continue in the same subject at Duke will be evaluated for placement in an advanced course. Departmental policies regarding advanced placement may vary. AP scores of 4 or 5 in German, Japanese, Latin, French literature, and Spanish literature may result in placement in courses at the 100 level; an AP score of 5 in French or Spanish language may result in placement in courses at the 100 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 should 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 or at least by the end of the first year. See the following information concerning policies in the Department of Physics:

**Advanced Placement in Physics.** Neither credit nor advanced placement is given for a score below 5 on the Advanced Placement (AP) Physics-B exam. Exceptional Trinity College students presenting a score of 5 on the AP Physics-B exam may be placed out of Physics 53 with consultation 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 4 or 5 on the AP Physics-C Mechanics exam will receive credit for Physics 61; students with a score of 4 or 5 on the AP Physics-C Electricity and Magnetism exam will receive credit for Physics 62. 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 [www.phy.duke.edu/undergraduate/elsewhere.php](http://www.phy.duke.edu/undergraduate/elsewhere.php).

AP courses completed with a score of 4 or 5 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. Enrollment in a course for which AP or IPC credit has been given will cause the AP or IPC credit to be forfeited. 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 here at Duke. If awarded AP, IPC, or PMC credit for Physics 61 and 62, the student must take one of the following physics here at Duke: Physics 62, 63, 143, or with approval, 176, 181, or 182. 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 Baccalauréat; the British, Hong Kong, or Singapore A-Level Examinations; the Cambridge pre-U; 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 pre-matriculation credits (see above). Similarly, 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 pre-matriculation credits may be used toward the 34 required for graduation. Additional IPC, AP and pre-matriculation credits may be used to accelerate. In the Pratt School of Engineering, these courses may be used to satisfy distribution requirements toward the B.S.E degree.

**Pre-Matriculation 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 50.) In Trinity College, pre-
matriculation 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 pre-matriculation, IPC, or AP credits may be used toward the 34 required for graduation. Additional IPC, AP and pre-matriculation credits may be used to accelerate. In the Pratt School of Engineering, these courses may be used to satisfy distribution requirements toward the B.S.E. degree. No pre-matriculation credit will be awarded for college course work 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&lt;sup&gt;1, 2&lt;/sup&gt;</td>
<td>240-410</td>
<td>French 1&lt;sup&gt;3&lt;/sup&gt; or 14</td>
</tr>
<tr>
<td></td>
<td>420-480</td>
<td>French 2</td>
</tr>
<tr>
<td></td>
<td>490-580</td>
<td>French 15 or 63</td>
</tr>
<tr>
<td></td>
<td>590-630</td>
<td>French 76</td>
</tr>
<tr>
<td></td>
<td>640-plus</td>
<td>French 100-level course</td>
</tr>
<tr>
<td>German&lt;sup&gt;1, 4&lt;/sup&gt;</td>
<td>200-410</td>
<td>German 1 or 14</td>
</tr>
<tr>
<td></td>
<td>420-480</td>
<td>German 2</td>
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<td></td>
<td>490-580</td>
<td>German 65</td>
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<td></td>
<td>590-620</td>
<td>German 66</td>
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<td></td>
<td>630-650</td>
<td>German 117</td>
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<tr>
<td></td>
<td>660-plus</td>
<td>German 118 and beyond</td>
</tr>
<tr>
<td>Spanish&lt;sup&gt;1, 5&lt;/sup&gt;</td>
<td>below 200</td>
<td>Spanish 1&lt;sup&gt;3&lt;/sup&gt; or 14</td>
</tr>
<tr>
<td></td>
<td>200-370</td>
<td>Spanish 1&lt;sup&gt;3&lt;/sup&gt;</td>
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<tr>
<td></td>
<td>380-450</td>
<td>Spanish 2</td>
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<tr>
<td></td>
<td>460-580</td>
<td>Spanish 15 or 63</td>
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<td></td>
<td>590-650</td>
<td>Spanish 76</td>
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<tr>
<td></td>
<td>660-plus</td>
<td>Spanish 100-level course</td>
</tr>
<tr>
<td>Latin&lt;sup&gt;1, 6&lt;/sup&gt;</td>
<td>200-520</td>
<td>Latin 1</td>
</tr>
<tr>
<td></td>
<td>530-630</td>
<td>Latin 63</td>
</tr>
<tr>
<td></td>
<td>640-690</td>
<td>Latin 91</td>
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<tr>
<td></td>
<td>700-plus</td>
<td>Latin 100-level course</td>
</tr>
<tr>
<td>Mathematics&lt;sup&gt;7&lt;/sup&gt;</td>
<td>500-670</td>
<td>Mathematics 25L</td>
</tr>
<tr>
<td></td>
<td>680-800</td>
<td>Mathematics 31L</td>
</tr>
</tbody>
</table>

1 In these languages students are permitted to drop back one level without loss of credit (e.g., from 100 to 76 or from 76 to 63, in French; from 117 to 66 or from 66 to 65 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 63, but could for 76). In no case will credit be given for French 1 or Spanish 1 to students who have completed more than two years of French or Spanish in high school.

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

3 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.

4 Students should also check the Self-Placement Guidelines at: [www.german.duke.edu/undergrad/self-placement.html](http://www.german.duke.edu/undergrad/self-placement.html).

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

6 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).

7 In the absence of an achievement test score, course placement is determined by the SAT score as follows: 670 or below—Math. 25L; 680-800—Math. 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 the senior year in secondary school. In Spanish or French, a score of 4 or 5 on the AP literature exam, or a score of 5 on the AP language exam qualifies students to enroll in a 100-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 Web site 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 25L or 31L 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 course work 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 pre-matriculation 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 pre-calculus 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 pre-matriculation 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 in the United States 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 domestic transfer courses. International students who take courses in their home country for transfer will be subject to the same policies and limitations governing domestic credit. No credit will be accepted for course work 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 semester-course 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 an 888 or a 999 number, lower or upper level, respectively. 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 in the United States that, upon evaluation, yield transfer credit at Duke may be given Areas of Knowledge and Modes of Inquiry codes. (The same is true of courses taken abroad.) 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 or online course instruction, and credit for no more than two semester courses 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 Modes of Inquiry codes for transfer course work must apply for those codes using the Transfer Course Modes 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 semester-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 and their advisors confer when necessary, but they should confer at least once before every registration period to review goals, plans for achieving them, and any problems encountered or anticipated. Before declaring a major in Trinity College, students confer with the academic advisor and the academic dean. Upon declaring a major, the student is assigned a faculty advisor; 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. Much good advising is informal and 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.

**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 advisors. 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 Web site, [www.registrar.duke.edu](http://www.registrar.duke.edu). See the chapter "Special Programs" 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 in Durham, North Carolina State University at Raleigh, 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 drop/add period 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; and for reasons of course overload, i.e., more than four semester courses, the academic dean may give permission prior to the final four weeks of classes. The academic dean may also permit students with compelling reasons and in a normal course load to withdraw from a course up to the first day of the final four weeks of classes. After the drop/add period, students permitted to withdraw receive a designation of \(W\) on their academic record. Course work discontinued without the dean's permission will result in a grade of \(F\).

When students note errors in their course schedules, they should consult immediately 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. Course work 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 and the 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 in comparison to the average person in the general population.

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. Seniors may request an underload, including part-time status, for the last semester (see the section on Full-Time and Part-Time Degree Status in this chapter). Students should take note that two additional semester credits are needed in order to meet the thirty-four (34) semester-course requirement for graduation. During the drop/add period, students in Trinity College may ordinarily register for up to five and a half course credits. Students on academic probation may register for no more than four course credits, and the academic dean may also limit the course load for a student who has previously received an academic warning. Registration for six course credits requires the approval of their academic dean. During the same period, students in the Pratt School of Engineering may register for up to five course credits, and up to five and a half or six course credits with the approval of their dean. In no case will students be allowed to register for more than six credits. Students must be enrolled in at least three 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 the 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 one-half course credit.

Eligibility for Courses. The rules established by the Graduate School provide that juniors may enroll in a 200-level (senior/graduate) course. Students wishing to enroll in a 200-level course in their sophomore (second) year must secure permission of the instructor of the course and of their academic dean. Juniors and seniors are normally not allowed to enroll in 300-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 will enforce the prerequisites for some courses when registration for them is attempted.

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 higher 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"). 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 three semester courses 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 five semester courses. Admission to the Graduate School is necessary.

Students may not register for two courses officially listed as meeting at the same time. In Trinity College 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, however, may be audited. 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 (34) courses required for graduation. Course repeat request forms are available in the offices of the academic deans.

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. In a summer term, a student carrying two courses for credit may be given permission to audit, without additional fees, nonlaboratory courses with the above exceptions. 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. 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 108 for the appropriate fee schedule. Auditors must register on the Friday before classes begin.

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 (non-research) and Research Independent Study. Both require (1) approval of the instructor involved as well as the director of undergraduate studies in the relevant department or program; (2) student meetings at least once every two weeks during fall or spring semester and once each week during summer semester; (3) completion of a final product to be completed during the semester for which a student is registered for the course; (4) evaluation by the instructor of the work, including the final product, associated with the independent study.

Courses entitled Independent Study are individual non-research 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 requirements. 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 semester they are enrolled in the course. The request form is available on T-Reqs: [http://t-reqs.trinity.duke.edu/](http://t-reqs.trinity.duke.edu/).

**Academic Internships**

In Trinity College course credit can be earned for internships only when they include as a component an academic course of instruction. 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 for evaluation. Academic internships are of two types: 1) academic internships that are required for an existing major and are required in programs designed to meet state teaching certification standards; 2) all other academic internships, which are considered to be electives. Only one course credit from these elective academic internships may count toward the thirty-four (34) course credits required for graduation. Further information about procedural requirements may be obtained from the academic deans.

**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 and 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 classroom and outside 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 before they will be permitted to register for classes for their fifth undergraduate semester or to study abroad on a semester or year-long 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, with at least ten at the 100-level or above; 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 Advising Center or the academic dean for interdepartmental majors, as noted above; 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 wishes to declare a second major should do so in the Office of the University Registrar. Only one undergraduate degree may be earned; however if the student's second major is not offered within the degree to be granted for completion of the first major, 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, 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, French/Italian (combined), French/Spanish (combined), German, history, international comparative studies, Italian, Italian/Spanish (combined), linguistics, literature, mathematics, medieval and Renaissance studies, music, neuroscience, philosophy, physics, political science, psychology, public policy studies, religion, Russian, Slavic and Eurasian studies, sociology, Spanish, statistical science, theater studies, visual arts, visual studies, and women's studies.

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

**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](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/policies-procedures](http://www.pratt.duke.edu/policies-procedures).

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 University Schedule Committee.
Incomplete Course Work

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.) 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 unless an earlier due date is established by the instructor and the academic dean. Students may not complete work in a course after graduation. Once recorded, a notation of the I 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.

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 as specified in the Bulletin of Duke University Summer Session 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 course work 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 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 grade reports 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, in Trinity College 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 courses 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 54.

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>Grade</th>
<th>Points</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 (4) courses taken on this basis may be counted toward the 34 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.
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 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.

Note: All courses listed in this Bulletin as offered on a pass/fail grading basis will be converting to a satisfactory/unsatisfactory grading basis, effective fall semester 2010.

**Grades When Absent from Final Examination.** See the section on final examinations and excused absences on page 58.

**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 considered a failure to achieve satisfactory performance in that course. Furthermore, an incomplete (I grade) during the academic year cancels eligibility for semester honors; i.e., Dean's List and Dean's List with Distinction. See the section on incomplete work on page 58.

**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 in the college. Students who fail to meet the minimum requirements to continue must leave the college for at least two semesters. (A summer session may be counted as a semester.) Those desiring to return after the dismissal period may apply to Trinity College of Arts and Sciences for readmission. 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 two semester courses; (2) after the first semester at Duke, a student must pass at least three semester courses; (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 and 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>To be eligible to continue to</th>
<th>A student must have passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd semester at Duke</td>
<td>2 semester courses at Duke</td>
</tr>
<tr>
<td>3rd semester at Duke</td>
<td>6 semester courses at Duke</td>
</tr>
<tr>
<td>4th semester at Duke</td>
<td>10 semester courses at Duke</td>
</tr>
<tr>
<td>5th semester at Duke</td>
<td>14 semester courses at Duke</td>
</tr>
<tr>
<td>6th semester at Duke</td>
<td>19 semester courses at Duke</td>
</tr>
<tr>
<td>7th semester at Duke</td>
<td>22 semester courses at Duke, plus two additional courses ¹</td>
</tr>
<tr>
<td>8th semester at Duke</td>
<td>26 semester courses at Duke, plus two additional courses ¹</td>
</tr>
</tbody>
</table>

¹The additional semester courses may be earned through advanced placement and/or transferred courses.

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. No more than two courses completed with D grades 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" 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 or 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 electes 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 or a second D will be issued an academic warning by the academic dean.
Academic Probation. For a student enrolled in four or more semester courses, 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 semester courses); 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 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 108.) 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, and 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," "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 prior to the dismissal period.

Applications for readmission are made to the appropriate school or college. 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 may be considered for housing on campus.

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, please visit the Office of Student Returns Web site: http://trinity.duke.edu/admissions/office-of-student-returns.

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 leave of absence for one or two semesters by completing a leave request form and submitting it to their academic dean. Students are expected to file leave of absence forms with their deans by the end of the last day of classes of the semester immediately preceding the leave. A personal leave of absence usually starts after one semester ends and before the next semester begins; a medical leave of absence with proper documentation may be granted at any time, but before the last day of classes in a semester should a leave be required before the semester ends. Detailed information about leaves is provided on the request form available in the academic deans’ offices and on the Office of Students returns Web site: http://trinity.duke.edu/admissions/office-of-student-returns.

Registration information will be provided by the university registrar to students on leave. Ordinarily, students who take a medical leave of absence during a semester become eligible, with proper medical clearance, to return after a full/regular semester has passed. They will be sent registration information when they have provided to the Office of Student Returns acceptable medical documentation to clear them for a return, and they must be cleared by the office at least one week prior to the beginning of classes. 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 Residence Life and Housing Services 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. For detailed information on the readmission process, visit the Office of Student Returns Web site: http://trinity.duke.edu/admissions/office-of-student-returns.

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 of an application form available in the office of the designated associate dean in Trinity College and the assistant dean for undergraduate affairs in the Pratt School of Engineering. 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 only upon completion of the first year. A student transferring to Trinity College of Arts and Sciences from the 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 after having earned a baccalaureate degree in either Trinity College or the Pratt school, 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 for a period not to exceed two semesters from their original withdrawal date. Former Trinity College students can not transfer more than the equivalent of two domestic transfer credits back to Duke. Former Pratt School of Engineering students can not transfer more than the equivalent of four semester credits back to Duke. For both Trinity and Pratt students, any transfer credits will count towards the maximum allowable transfer credits from another institution as stipulated under the policy “Work Taken After Matriculation at Duke” in this chapter. 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 four semester courses) each semester unless they are eligible and have received permission from their academic dean to be enrolled in fewer than 4.0 course credits (see “Course Load and Eligibility for Courses” on page 54 in this chapter). Students who intend to change from full-time to part-time status must request permission from their academic dean. Except for extraordinary circumstances, such permission is given only to students for the final semester of their senior year. So that the number of part-time students can be taken into account in enrollment and budget decisions, juniors must plan ahead and register their intention to be part-time by April 15 preceding the academic year in which the part-time semester will be taken. Part-time students may register for not more than two courses (or two courses and a half-credit physical education activity). Part-time students may not live in university housing. Degree candidates who matriculated through Continuing Education or are employees should confer with their academic dean about course load requirements.

Resident and Nonresident Status. See the chapter “Campus Life and Activities” on page 92.

Nondegree to Degree Status. A nondegree student must apply to the Office of Undergraduate Admissions for admission to degree candidacy.

Undergraduate Status. An undergraduate student admitted to Trinity College or the Pratt School of Engineering officially becomes a Duke undergraduate student at the point of matriculation and is accorded all the rights and privileges of a Duke student at that time. When an undergraduate has completed all of the requirements of the bachelor’s degree and is no longer enrolled in course work towards the degree, the student ceases to be a Duke undergraduate student in the strict sense of the word. Their rights and privileges are then defined by the Duke Alumni Association. (Note: this definition also applies to non-degree seeking visiting students during the period of their enrollment at Duke.)

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 and 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 the 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 as approved by the Committee on Honors of the Arts and Sciences Council or 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. 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.

**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 twenty-five percent of each graduating class will receive Latin Honors.

**OTHER HONORS**

Trinity College of Arts and 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 last 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 the 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 last 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 Web site. The total number of persons elected annually is limited by chapter bylaw to no more than ten percent of the graduating class, of whom no more than one 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 the 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: 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 (www.duke.edu/web/sigmaxi/) or the Society’s Web site (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, North Carolina 27708.

**International Postgraduate Scholarships.** Students interested in various prestigious fellowships for graduate study (for example, the Fulbright, Luce, Marshall, Rhodes, and Winston Churchill) should consult the Web site: www.aas.duke.edu/ousf/postgrad/. Specific information about deadlines and procedures for the individual scholarships and fellowships is available through that site.

**Prizes and Awards**

The achievements of undergraduate students are recognized in various fields of activity. The following prizes suggest the range of recognition. According to current university policy, some of the scholarships listed must be awarded in honorary form unless the students
chosen are on financial aid, in which case the scholarships will be incorporated in the winners' financial packages. These scholarships are identified by an asterisk (*).

HUMANITIES

The Edward H. Benenson Awards in the Arts. These awards are granted annually by a faculty committee through the bequest of Duke alumnus and former trustee Edward H. Benenson. Funds are awarded based on merit for legitimate educational expenses for projects in art, music, theater, dance, creative writing, photography, film/video/digital and other art forms. All undergraduates and graduating seniors are eligible. The application deadline is in March; online instructions and applications are available in the spring on the Web site of the Undergraduate Research Support Office (http://undergraduateresearch.duke.edu/programs?id=7).

The Louis Sudler Prize in the Arts. An award is presented annually by a faculty committee to a graduating senior who has demonstrated the most outstanding achievement in artistic performance or creation during four years of undergraduate work. The prize was established in 1983 through the generosity of Louis C. Sudler, Chicago, Illinois.

The David Taggart Clark Prize in Classical Studies. This prize derives from income earned on the generous bequest (1956) of Professor David Taggart Clark, classicist and economist. It is awarded to the senior major in classical civilization or classical languages who is judged to have written the best honors essay of the year, and consists of an important book or books in the field of classics.

Harold Brody Award for Excellence in Musical Theater. In recognition of exceptional achievement in musical theater, this award is given annually to a Duke student or group of students, with preference given to graduating seniors. It recognizes accomplishments in musical theater by students in the Department of Theater Studies, the Department of Music, and the student-run musical theater group Hoof ’n’ Horn. The award was established by an alumnus with a deep affection for and appreciation of the art of musical theater.

John M. Clum Distinguished Theater Studies Graduate Award. This award is named for the distinguished founder of the Duke University Program in Drama, now the Department of Theater Studies. It recognizes a graduating senior who has made extraordinary contributions to the life of the department and who has exhibited outstanding personal and professional qualities.

Alex Cohen Awards. These awards, funded by the Alex Cohen Endowment and the Department of Theater Studies, support student initiatives in theater during the summer. Two to four grants are awarded every spring. These awards were established in honor of Alex Cohen (1972-1991), a Duke student and aspiring actor.

Richard E. Cytowic Outstanding Acting Student Award. This award, donated by Dr. Richard E. Cytowic ’73, a former President of Duke Players, recognizes a graduating senior who has distinguished himself or herself in class work, production, and by contributing to the life of the department. Richard Cytowic acted in and directed a number of productions for Duke Players during his three years as a Duke undergraduate. He was a founding member of the Summer Theater at Duke Company in 1972. Dr. Cytowic was also a student member of the committee that established the Program in Drama, which became the Department of Theater Studies.

Dasha Epstein Award in Playwriting. This award is presented annually to a current Duke student (preference given to third-year students) with demonstrated promise in playwriting. The award covers the costs of attending the Vassar College and New York Stage and Film’s Powerhouse Theater Apprentice Program.

The Jody McAuliffe Award for Excellence in Directing. This award is presented annually to an undergraduate at Duke University for sustained excellence in directing for the stage. It is supported by alumnus Amit Mahtaney.

Reynolds Price Award for Script-writing. This award is presented annually by the Department of Theater Studies to a Duke undergraduate for the best original script for stage, screen, or television.

Dale B.J. Randall Award in Dramatic Literature. This award recognizes outstanding achievement in the study of dramatic literature. It is presented annually to the undergraduate student writing the best essay in a course in dramatic literature. It honors Professor Emeritus Dale B.J. Randall, a distinguished scholar of Renaissance English drama, a member of Duke’s English department faculty from 1957 to 1999 and of the Program in Drama from 1991 to 1999. He served as Interim Director of the latter in 1991-92.

Kenneth J. Reardon Award. This award recognizes outstanding commitment and leadership in theater design, management, or production. It was established in honor of Kenneth J. Reardon, former professor of English (1947-1980) and director of Duke Players (1947-1967). Professor Reardon was an inspiration to decades of students through his commitment to producing and teaching theater on the Duke campus. With the help of Professor Joseph Weatherby, he planned and implemented the conversion of an engineering building into what is now the beloved Branson Theater on East Campus.

The Bascom Headen Palmer Literary Prize. This prize was established in honor of Bascom Headen Palmer’s achievement as recipient of the Hesperian Literary Society Medal in 1875, his senior year in Trinity College.
The Henry Schuman Music Prize. A prize of $350 is awarded annually to a graduating senior for an original composition or a distinguished paper in music history or analysis. The award is sponsored by the Department of Music through a continuing gift from Dr. and Mrs. James H. Semans, a lifelong friend of the Semans and Trent families, a talented amateur violinist, and one who helped to build valued collections in the Duke Library.

Giorgio Ciompi Scholarships. Named for the founder of the Ciompi String Quartet, Duke University's quartet in residence, these music scholarships are given to students who can demonstrate talent and achievement on a string instrument. Although recipients need not major in music, they are required to study privately. These scholarships cover fees for applied instruction.

The Smith Memorial Scholarship. This scholarship of up to $2,000, in memory of Marvin Boren and Elvira Lowe Smith, is awarded to an organism who is an undergraduate music major. It is renewable as long as the recipient continues to study the organ and maintains satisfactory progress.

The Larry and Violet H. Turner Scholarships. Established by a gift of Larry Turner, class of 1935, these scholarships are given to undergraduates demonstrating outstanding ability on a string instrument. Although recipients need not major in music, they are required to study privately and to participate as members of the Duke Symphony Orchestra. The scholarships cover fees for private instruction.

The Julia Wilkinson Mueller Prize for Excellence in Music. An award of $300 will be presented to a graduating senior for achievement in musical performance.

The Guido Mazzoni Award in Italian. This award is given each year to an outstanding Italian major in honor of Guido Mazzoni (1859-1943), Italian patriot, military hero, Professor of Italian, and member of the Italian parliament.


*The William M. Blackburn Scholarship. This fund was established in 1962 to honor William Blackburn, distinguished teacher of writing at Duke. The scholarship, awarded by the Department of English, recognizes outstanding achievement in the field of creative writing.

Stanley E. Fish Award for Outstanding Work in British Literature. This award, given by the Department of English, recognizes outstanding work by an undergraduate enrolled in an English course in British Literature.

The Anne Flexner Memorial Award for Creative Writing. This award was established by the family and friends of Anne Flexner, who graduated from Duke in 1945. Open to all Duke undergraduates, the competition for prose fiction (5,000-word limit) and poetry (200-line limit) is sponsored in the spring semester by the Department of English.

Barbara Herrnstein Smith Award for Outstanding Work in Literary Theory or Criticism. This award, given by the Department of English, recognizes outstanding work by an undergraduate enrolled in an English course in literary theory or criticism.

*The Margaret Rose Knight Sanford Scholarship. This fund was established in recognition of the untiring efforts of Margaret Rose Knight Sanford on behalf of Duke University. The scholarship is awarded to a female student who demonstrates particular promise in creative writing. Awards are made by the Department of English.

*The Francis Pemberton Scholarship. This award was created by the trustees of the Mary Duke Biddle Foundation in memory and in honor of Francis Pemberton's service to the Biddle Foundation. The scholarship is awarded by the Department of English to a junior or senior pursuing the study of creative writing.

The Terry Welby Tyer, Jr. Award for Creative Writing. This award was established by the family of Terry Welby Tyler, Jr., who would have graduated with the class of 1997, to recognize and honor outstanding undergraduate poetry. Open to all Duke undergraduates, the competition is sponsored by the Department of English.

Margot Hill Support Grants. The Hill Support Grants set aside funds to assist undergraduate students in taking advantage of opportunities that might arise during the academic year, such as attending workshops, conferences, and retreats. Students may apply for these grants by providing Professor Deborah Pope with a statement of how the grant is to be used. More than one student may apply for the same event. This will be available on a rolling basis.

Schutte Senior Writing Award. This cash award, named in honor of Margot Hill’s (Duke ’04) high school English teacher, is intended to recognize the whole of a student’s creative achievements during his or her time at Duke. It is given to a graduating senior of superior writing ability who contributes greatly to the wider writing community on campus. Nomination of candidates are made by members of the English department writing faculty,
and selection is made by the English Department. Should no candidate meet the standards of the award in a given year, no award will be made.

**Award for Most Original Honors Thesis.** This award is given by the Department of English for the most original honors thesis.

**Award for Outstanding Work in American Literature.** This award, given by the Department of English, recognizes outstanding work by an undergraduate enrolled in an English course in American Literature.

**SOCIAL SCIENCES**

**The Winfred Quinton Holton Awards in Education.** These awards were established in 1922 by gifts of Holland Holton, Class of 1907, and Lela Young Holton, Class of 1907, in memory of their son, Winfred Quinton Holton, with the income to be used for work and projects involving education. Two Holton awards are given: an award for educational research and an award for early childhood studies. Decisions are made by faculty in the Program in Education.

**The William T. Laprade Prize in History.** This prize is offered in honor of William T. Laprade, who was a member of the Department of History at Trinity College and Duke University from 1909 to 1953, and chair of the department from 1938 to 1952. It is awarded to a senior who is being graduated with distinction and whose senior essay in history has been judged to be unusually meritorious.

**Robert S. Rankin Political Science Awards:**

- **Award in American Government and Constitutional Law.** An award to the outstanding student in the field of American government and constitutional law. A monetary prize is donated by a former student of Professor Rankin's, Judge Jerry B. Stone, A.B. '44, J.D. '48.

- **Award in American National, State, and Local Governments.** An award to the outstanding student in the field of American national and/or state and/or local governments. A monetary prize is also donated by Judge Stone.

**American Government Award for Leadership and Academic Achievement.** One or more awards have been donated by Robert H. Connery, Professor Emeritus of Public Law and Government at Columbia University and from 1949-65 a colleague of Professor Rankin when both were members of the Duke faculty, and by a group of Professor Rankin's former students. These monetary awards are given to students, chosen by the Department of Political Science, who have demonstrated excellence in the study of American government and whose past achievements and future promise manifests not only high intellectual attainments, but also an exemplary leadership role in service to Duke University or to the community as broadly defined.

**Alona E. Evans Prize in International Law.** An annual award to an undergraduate and/or graduate student in arts and sciences whose paper(s) on international law reflect(s) excellence in scholarship. Funds for the award are derived from income earned on the generous bequest of Professor Alona E. Evans, A.B. '40, Ph.D. (political science) '45.

- **Ole R. Holsti Award in American Foreign Policy and International Relations.** An award to honor the best undergraduate written work in the area of American foreign policy and international relations. Ole R. Holsti, Professor Emeritus of Political Science, taught at Duke from 1974-1998. Funds for the award are derived from gifts from the international relations faculty in the Department of Political Science, Duke University.

**Elizabeth G. Verville Award.** An annual award to the undergraduate who submits the best paper in the subject matter of political science. Funds for the award are derived from a gift donated by Elizabeth G. Verville, a political science major, A.B. '61.

**The Marguerite (Mimi) Voorhees Kraemer Award.** This annual award was created by the family and friends of Mimi Voorhees, a public policy studies major, class of 1979. It recognizes one or more PPS students who have demonstrated strong leadership qualities and a commitment to public service. This award is given to qualifying juniors as a scholarship to help defray the costs of participating in the summer internship program.

**The Joel Fleishman Distinguished Scholar Award.** This award is presented annually by the Sanford School of Public Policy, recognizing the graduating major with the highest academic achievement in public policy.

**The Melcher Family Award for Excellence in Journalism.** This $500 award is presented annually by the DeWitt Wallace Center for Media and Democracy for the best published article written by a freshman, sophomore, or junior at Duke University. The award was created by Richard A. Melcher ('74), a former writer for The Chronicle, to support excellence in student journalism. The deadline for article submissions is June 1.

**The Terry Sanford Departmental Award.** This award is presented annually by the Sanford School of Public Policy to the graduating major recognizing his/her achievement in leadership.

**The Karl E. Zener Award for Outstanding Performance of a Major in Psychology.** Psychology students submitting outstanding theses for Graduation for Distinction may be nominated for the Karl E. Zener Award. A committee of three faculty members along with the director of undergraduate studies determines the winner of this award. The award is based on the student’s total academic record as well as the paper submitted to the award committee. This award consists of a monetary prize and inclusion by name on a memorial plaque in Zener Auditorium.
NATURAL SCIENCES AND MATHEMATICS

The Edward C. Horn Memorial Prize for Excellence in Biology. Given each year to a graduating biology major who has shown, in the opinion of the biology faculty, the highest level of academic achievement and promise, this prize is offered in memory of Professor Edward C. Horn. It is a tribute to his warm regard for students and faculty and his appreciation of scholarly excellence. The prize consists of books appropriate to the student's field of interest.

The Excellence in Plant Science Prize. Given each year by the plant science faculty to a graduating biology major who has demonstrated excellence in botanical research. The prize consists of books appropriate to the student's field of interest.

The James B. Rast Memorial Award in Organismal Biology. The parents and friends of James Brailsford Rast, a member of the Class of 1958 of Duke University, endowed this award in his memory. This award is given each year by the biology faculty in recognition of excellence in course work and research in the study of organismal biology.

The Maggie Schneider Award in Marine Biology. In memory of Maggie Schneider, a member of the Duke class of 2004, this award is given each year by the faculty of the Duke University Marine Laboratory to the biology major who demonstrates the love of learning and service in marine and conservation biology.

American Chemical Society Undergraduate Award in Analytical Chemistry. This prize is given annually by the Analytical Division of the American Chemical Society to an undergraduate student in analytical chemistry. Selection by a faculty committee is based on academic excellence and laboratory proficiency. The prize is a subscription to the journal, Analytical Chemistry, published by the American Chemical Society.

The Chemistry Department Award. This prize is awarded annually to an outstanding senior chemistry major in the Bachelor of Science degree program. Selection by a faculty committee is based on the student's independent research and interest in pursuing graduate study in chemistry. The award is a one-year membership in the American Chemical Society and a one-year subscription to an appropriate journal.

The Merck Index Award. This prize is awarded annually to one or more graduating chemistry majors intending to pursue a career in medicine. Selection by a faculty committee is based on scholastic excellence. The prize consists of a copy of the Merck Index presented by Merck and Co., Inc.

The Hypercube Scholar Award. This prize is awarded annually to an outstanding senior chemistry major in the bachelor of science program. Selection by a faculty committee is based on the student's scholastic achievement, performance in independent study, and interest in pursuing advanced work in a field of chemistry that utilizes molecular modeling extensively. The prize consists of a molecular modeling computer software package presented by Hypercube, Inc.

Thomas V. Laska Memorial Award. Awarded annually by the Division of Earth and Ocean Sciences to a graduating senior in recognition of most outstanding achievement and promise for future success in the earth and ocean sciences. The recipient receives a gift and his/her name is engraved, with those of past recipients, on a granite tablet located in the divisional office. The award is sponsored by Andrew J. and Vera Laska in memory of their son, Thomas Vaclav Laska.

The Julia Dale Prize in Mathematics. This award was established in 1938 by friends and relatives of Julia Dale, an assistant professor of mathematics at Duke University who died early in her career. The annual cash award is given through the Department of Mathematics to one or more undergraduate students in recognition of excellence in mathematics.

Karl Menger Award. This award was established in 1989 by relatives of the distinguished twentieth-century mathematician Karl Menger. The annual cash award is given through the Department of Mathematics in recognition of outstanding performance in mathematical competitions.

ENGINEERING

The Walter J. Seeley Scholastic Award. This award is presented annually by the Engineers' Student Government to that member of the graduating class of the school who has achieved the highest scholastic average in all subjects, and who has shown diligence in pursuit of an engineering education. The award was initiated to honor the spirit of academic excellence and professional diligence demonstrated by the late Dean Emeritus Walter J. Seeley. It is hoped that this award will serve as a symbol of the man and the ideals for which he stood. The name of the recipient is inscribed on a plaque displayed in the Engineering Building.

The American Society of Civil Engineers Prize. The prize is awarded annually by the North Carolina Chapter of the American Society of Civil Engineers to two outstanding civil engineering seniors, upon recommendation of the faculty of the civil engineering department. The basis for selection is the student's scholastic
Prizes and Awards

record, contribution to the student chapter, and participation in other college activities and organizations. The prize consists of a certificate of award and the payment of one year's dues in the American Society of Civil Engineers.

The George Sherrerd III Memorial Award in Electrical Engineering. This award is presented annually to the senior in electrical engineering who, in the opinion of the electrical engineering faculty, has attained the highest level of scholastic achievement in all subjects and has rendered significant service to the Pratt School of Engineering and the university at large. The award was established in 1958 by the parents of George Sherrerd III, a graduate of the Class of 1955, to recognize outstanding undergraduate scholarship. Recipients receive a monetary award, and their names are inscribed on a plaque displayed in the Engineering Building.

The Charles Ernest Seager Memorial Award. This award recognizes outstanding achievement in the annual Student Prize Paper Contest of the Duke branch of the Institute of Electrical and Electronics Engineers or significant contributions to electrical engineering. The award, established in 1958 by the widow and friends of Charles Ernest Seager, a graduate of the Class of 1955, consists of inscribing the name of the contest winner on a plaque displayed in the Engineering Building.

The Milinow Prize. This prize is awarded annually to students from North or South Carolina graduating in the Department of Electrical Engineering, who, in the opinion of the faculty of that department, and, as shown by their grades, have made the most progress in electrical engineering during the last year in school. The prize consists of a certificate of award and one year's payment of dues in the Institute of Electrical and Electronics Engineers for the membership year in which the honoree is awarded the baccalaureate degree.

The Raymond C. Gaugler Award in Materials Science and Engineering. This award is presented annually to the senior who has made the most progress at Duke in developing competence in materials science or materials engineering. The basis for selection is the student's scholastic record, research, or design projects completed at Duke, and interest in a materials-related career. The award has been established by Patricia S. Pearsall in memory of her grandfather, Raymond C. Gaugler, who was president of the American Cyanamid Company prior to his death in 1952.

The American Society of Mechanical Engineers Award. This award is presented annually to a senior in mechanical engineering for outstanding efforts and accomplishments in behalf of the American Society of Mechanical Engineers Student Section at Duke. The award consists of a certificate of recognition.

The School of Engineering Student Service Award. This award, established in 1978, is given to those graduating seniors who, by their contributions of time, effort, and spirit, have significantly benefitted the community of the Pratt School of Engineering. The names of the recipients are inscribed on a plaque displayed in the Engineering Building.

The T.C. Heyward Scholarship Award. This award is presented annually to an outstanding senior in mechanical engineering at Duke University. The recipient is chosen by a committee of the mechanical engineering faculty and selection is based on academic excellence, engineering ability, and leadership. The recipient receives a monetary award and his or her name is inscribed on a plaque displayed in the Engineering Building.

The William Brewster Snow Award in Environmental Engineering. This award is presented to an outstanding senior in civil engineering who, through superior academic achievement and extracurricular activities, has demonstrated interest and commitment to environmental engineering as a career. Selection of the recipient is made by the civil engineering faculty. The recipient is presented with an inscribed plaque and his or her name is also inscribed on a plaque permanently displayed in the Engineering Building.

The Otto Meier, Jr. Tau Beta Pi Award. This award was established in recognition of Dr. Meier's leadership in establishing the North Carolina Gamma Chapter in 1948 and his continuous service as chapter advisor until 1975. This award is given annually to the graduating Tau Beta Pi member who symbolizes best the distinguished scholarship and exemplary character required for membership. The name of the recipient is inscribed on a plaque displayed in the Engineering Building.

The da Vinci Award. This award is presented by a faculty committee of the Department of Biomedical Engineering to the biomedical engineering senior with the most outstanding academic record. This award commemorates the contributions of Leonardo da Vinci in laying the foundations for the study of biomechanics.

The von Helmholtz Award. This award is presented by a faculty committee of the Department of Biomedical Engineering to the biomedical engineering senior who has made the most outstanding contribution to the department. This award commemorates the work of von Helmholtz in laying the foundations of biomedical engineering.

Aubrey E. Palmer Award. This award, established in 1980, is presented annually by the faculty of the Department of Civil and Environmental Engineering to a civil engineering senior in recognition of outstanding
The award consists of a certificate of recognition and the name of the recipient inscribed on a plaque displayed in the Engineering Building.

**The Mechanical Engineering and Materials Science Faculty Award.** This award is presented annually in recognition of academic excellence to the graduating mechanical engineering senior who has attained the highest level of scholastic achievement in all subjects. The name of the recipient is inscribed on a plaque displayed in the Engineering Building.

**The Eric I. Pas Award.** This award, established in 1998 in memory of Dr. Eric Pas, former Director of Undergraduate Studies in Civil and Environmental Engineering, is presented to the graduating civil engineering senior judged by the faculty of the Department to have conducted the most outstanding independent study project.

**The Charles R. Vail Award.** This award recognizes the most outstanding undergraduate student teaching assistant in the Department of Electrical and Computer Engineering.

### GENERAL EXCELLENCE WITH SPECIAL INTERESTS

**The Janet B. Chiang Grants.** These grants support student projects with the goal of furthering Asian/American understanding (qualifying projects include the development and teaching of house courses, travel grants to educational conferences, stipends for independent research or publications development and for need-based grants for study in Asia).

**The Sirena WuDunn Memorial Scholarship Fund.** This fund was created by the family and friends of Sirena WuDunn. Awards are made annually to students who best embody Sirena’s ideals and interests and who have demonstrated academic excellence and interest in Asian culture.

**The Raymond D. Lublin, M.D. Premedical Award.** This award to an outstanding graduating senior who will be attending medical school and who has excelled in both science and non-science areas of the curriculum was established in the name of an honored physician and surgeon by his wife, Mrs. Raymond D. Lublin.

**Chester P. Middleworth Awards.** These awards were established to encourage and recognize excellence in research and writing by Duke students in their use of primary source materials held by the Rare Book, Manuscript, and Special Collections Library. Two cash awards are made annually to undergraduates through the Rare Book, Manuscript, and Special Collections Library which is housed within Perkins Library.

### SPORTS

**Kevin Deford Gorter Memorial Endowment Fund.** This fund was created by the family of Kevin Deford Gorter to assist, promote, and expand the Sport Clubs program at Duke University. An award is made annually to the student who has made the greatest contribution to the program and best exemplifies the purposes of Sport Clubs at Duke University.

**The William Senhauser Prize.** Given by the mother of William Senhauser in memory of her son, a member of the Class of 1942, who gave his life in the Pacific theater of war on August 4, 1944. This award is made annually to the student in Trinity College of Arts and Sciences or the Pratt School of Engineering who has made the greatest contribution to the university through participation and leadership in intramural sports.

### Notification of Intention to Graduate

The Diploma Form for students in Trinity College of Arts and Sciences and the 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. It is the responsibility of students to submit the form on or before established deadlines. For students in Trinity College, information regarding the location and date of availability of the online diploma form is sent to prospective graduates at their Duke e-mail address. In the Pratt School of Engineering, diploma forms are available in the dean’s office.

### 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. Those who complete the 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 6.
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) and notices about academic progress to parents and guardians, 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 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.

A student in doubt about how to proceed in discussing a particular problem, or who seeks resolution of a problem, is 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 Senior Associate Dean for Education in the 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 the 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 the 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
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 beginning in 2010 is offering 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 Turkish and Persian/Farsi.

Every four years, DUCIS revises its global thematic focus. Current topics through 2014 are globalization and equity; 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 U.S. 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. Especially for undergraduates, DUCIS organizes “Late Breaking News” in collaboration with a Duke dormitory. The series hosts Duke faculty members in discussions of current international events.

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 U.S. 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, business, 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 the Department of Asian and Middle Eastern Studies. At the graduate level the institute offers a certificate and an M.A. in East Asian Studies.

**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 (CANADIAN).” 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, Portuguese, Spanish, French, and Haitian Kreyol. The center also sponsors visiting professors and lecturers from Latin America, a speakers series, conferences, summer travel 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-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 seminars as well as the annual Latin American Film Festival and consortium conference. For more information consult the academic coordinator at Room 138 Franklin Center, Box 90254, Durham, NC 27708-0254; telephone (919) 681-3981; e-mail: las@duke.edu; Web site: [http://clacs.aas.duke.edu/](http://clacs.aas.duke.edu/).

**Center for Slavic, Eurasian, and East European Studies.** With the support of the U.S. Department of Education, this joint Duke-University of North Carolina Center coordinates interdisciplinary efforts primarily in the fields of Russian (including Soviet) and East European history, economics, political science, literature, linguistics and language training. Language instruction in Russian, Polish, and Ukrainian is available. The committee also sponsors visiting lectures, conferences, symposia, and films.

**Center for European Studies.** Faculty associated with the Duke-University of North Carolina Center for European Studies promote comparative research, graduate training, and teaching activities concerned with historical and contemporary European issues. Funded in part by the U.S. Department of Education, this program regularly sponsors campus-wide events, such as conferences on contemporary trends in European politics and society and recent developments in the European Union. It also supports faculty-student working groups, curriculum development, and library materials acquisition. A West Europe concentration is available for International Comparative Studies majors.

**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 U.S. 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, check the Web site at: http://cds.aas.duke.edu/ or contact the Education Director, Center for Documentary Studies, 1317 W. Pettigrew Street, Durham, NC 27705; telephone (919) 660-3663.

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 policy-making 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 553 in the chapter “Courses and Academic Programs.”

THE DUKE CENTER FOR CIVIC ENGAGEMENT AND DUKEENGAGE

The Duke Center for Civic Engagement (DCCE) serves as the administrative umbrella organization for all undergraduate civic engagement activities at Duke. It exists as part of the Office of the University Provost. Coordination takes place with organizations that connect service and learning, including but not limited to the Office of Service Learning, the Hart Leadership Program, and various scholarship programs. The office formerly known
as the Community Service Center is now operating under the name DCCE-Durham Programs.

DukeEngage, coordinated by the DCCE, 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 U.S. and/or abroad;
- those that are initiated by students through grant proposals.

For more information, visit http://dukeengage.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 may 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.

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
Specialized Programs

THE FOCUS PROGRAM

The Focus Program offers first-year students a variety of interdisciplinary course clusters in the fall and spring semesters, 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 over 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).

Grants and Awards. The Focus Program runs a program of follow-up grants for participants. These grants are intended to help students continue the experience through research and projects with a faculty mentor. Applications are accepted each semester for projects conducted during the following semester or during the summer.

Current Focus Program information may be found on the program Web site: http://focus.duke.edu. Questions and comments may be directed to the Focus Program office, 226–227 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 of Instruction" in this bulletin.

The Air Force Reserve Officer Training Corps (AFROTC). AFROTC selects, trains, and commissions college men and women as officers in the U.S. 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. Between the junior and senior years, POC cadets are given the opportunity to volunteer for advanced training in a variety of different areas. Students may compete for one-year through four-year scholarships. These scholarships pay up to full tuition, a monthly tax-free stipend of $300-$500, and an annual book allowance. All members of the POC receive the nontaxable stipend and book allowance. Upon graduation all cadets are assigned to active duty with the U.S. 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). AROTC 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 (4) week Leadership Training Course (LTC) during the summer. 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.

Upon graduation and acceptance of a commission, the service obligation may be fulfilled on active duty, in the Army Reserve, or in the Army National Guard, as directed by the Secretary of the Army. At the beginning of the senior year, cadets submit a preference statement concerning the method by which they wish to fulfill their service obligation and the specialty in which they desire to serve. A request to delay the fulfillment of the service obligation in order to attend graduate or professional schooling is also possible. Cadets are encouraged to compete for Army ROTC scholarships, which pay full tuition and fees, a $1,200 textbook, and equipment allowance, and $300-$500 per month for each month in school (up to $5,000 per year). Nonscholarship Advanced Course cadets also receive the $300-$500 monthly stipend. All of the above benefits are tax-free.

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.

Non-scholarship students wishing to join the NROTC Battalion may be enrolled in the College Program at any time. 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](http://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 at Raleigh, North Carolina Central University in Durham, 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 Web site, in the “students”
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, D.C., and Spelman College in Atlanta, Georgia. 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 interested in an exchange must have completed two semesters of course work 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 interested in an exchange must have completed four semesters of course work 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 NEW YORK ARTS AND MEDIA PROGRAM**

Duke in New York Arts and Media is a Fall program that introduces students to the exciting worlds of theatre, 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 the “Documenting New York” seminar (ALP, R, W) and a guest speaker course, “Making Media” (ALP and STS) with Duke faculty who come with you to the City. They also take a course at NYU in areas that may cover areas not available at Duke or satisfy some special need. The seminar explores literature and movies about the City, as well as specific sites and neighborhoods. It takes students to – and teaches them about --1-2 events a week 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 representation in films and fiction. 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 SSI,
students take 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 SSII, 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 NYU 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 theatre, 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 NYU’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 please go to: http://econ.duke.edu/DukeinNY/program.

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 new course offering taught by Duke faculty that will focus on issues relating to LA’s status as a megacity, including architecture and urbanism, contemporary art, experimental arts, activism, radical popular culture, visual studies and global south debates, as well as the rich cultural life of Asian, Latino/a, African-American, and other communities in Los Angeles.

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. Courses offered by USC complete the 4-course semester. For more information, you can view the Duke in LA contact the Global Education Office for Undergraduates at gloaled@duke.edu or visit the Duke in LA Web page: http://studyabroad.duke.edu/home/Programs/Semester/Duke_in_LA.

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 15-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 like Mexico, Panama, Singapore, and Trinidad. 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 Services Office, Duke University Marine Lab, 135 Duke Marine Lab Rd., Beaufort, North Carolina 28516 (252-504-7502); e-mail: ml_admissions@nicholas.duke.edu or visit http://www.nicholas.duke.edu/marinelab.

UNDERGRADUATE RESEARCH SUPPORT OFFICE

Duke University actively strengthens connections between its undergraduate students' academic experience and the research endeavors of its faculty scholars and investigators. The Undergraduate Research Support (URS) Office in Trinity College promotes student learning through research by increasing the number and diversity of opportunities for students, by fostering mentoring and by supporting Trinity College's curriculum requirement for all students. The office provides assistantships and grants through the academic year, offers competitive research fellowships for summer research and organizes summer research programs in multiple disciplines. 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 pre-matriculation credit will be awarded for college course work 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-U). 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.

International students may receive a total of two domestic transfer credits for study in their home country. 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:

1. a scholastic grade point average of at least 2.7 for semester or academic year study abroad—a student lacking this average may petition the academic dean responsible for study abroad if there are unusual circumstances;
2. certification, when applicable, from the foreign language department concerned,
that the student has an adequate knowledge of the language of the country in which study is pursued;

3. 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-U policies and procedures. Transfer credit courses may, upon evaluation, carry Area of Knowledge codes. Modes of Inquiry codes are 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 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://global.duke.edu/geo and in the Duke Abroad Handbook.

To determine eligibility to earn recognition for honors such as Dean’s List while studying abroad, consult the section on Academic Recognition and Honors 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 Financial Information chapter (page 108) 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 (http://global.duke.edu/geo). The Duke-administered programs are as follows:

**China, Beijing.** In cooperation with Yunnan Normal University, Duke conducts a fall semester program in Kunming, Yunnan Province. Participants must have at least one year of Chinese language prior to departure. While in China, they enroll in two Chinese language courses and two non-language courses. Students live in international student dormitories on campus. 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.** These fall and spring programs are co-sponsored 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 Global Health 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.

**Ecuador, Quito.** This semester or academic year interdisciplinary program in Latin American and Andean studies, called “Duke in the Andes,” is based at the Universidad Politécnica Salesiana. Students take one core course designed especially for the program,
and select their remaining courses from program courses and host university offerings. Service learning is required. Excursions may include the Andean highlands, Amazon basin, coastal villages, and the Galapagos Islands. Spanish 76 or equivalent proficiency is required and all coursework is in Spanish. Students live with families.

France, Paris. Duke offers a semester or academic year program in Paris, under the name EDUCO, at the Universities of Paris I, IV, and VII. The language of instruction is French. Applicants must have completed French through the 100-level or equivalent, with an overall B grade average. Students live in French households, foyers, and student apartments. 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. The fall term is open to beginners, although at least one year of German is recommended. The spring term requires two years of German or the equivalent. Engineering students with only one year of German are eligible for the spring program if they take the special Intensive German for Engineers class in January, for an additional course credit. Students live with families.

India, China. Duke will launch the Global Semester Abroad program in the Spring semester of 2011. Duke faculty will oversee four courses on development, environment, and global health, with two courses taught in Udaipur, India and two in Beijing, China. Students will conduct research and visit local NGO’s. Accommodations will be in hotels, homestays, and student residence halls.

Italy, Florence. A consortial program offered jointly by Duke, the University of Michigan and the University of Wisconsin-Madison. Florence and Italy are the focus of this program, which typically offers core courses in Italian art history, architecture, and Italian language and literature. Supplemental courses have included music, political science, history, film, and theater. Instruction by way of classroom meetings and on-site lectures in and around Florence is augmented by day-long trips to such cities as Siena and Pisa, and two weekend excursions to Rome and Venice. Previous Italian language study is encouraged, but not required. Most courses are taught in English. Students live, eat, and take courses at the 16th-century Villa Corsi-Salvati in Sesto Fiorentino, located six kilometers from the center of Florence. Duke is a partner in this program only in the fall term.

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 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), Tilburg University (the Netherlands), and Boston College. 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. Most courses are taught in English. Students live in dormitories on the island of San Servolo.

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 majors the opportunity to study during the fall semester at the University of Glasgow. Students take the program's special seminar in public policy in addition to three 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 co-sponsored 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, Madrid.** Duke University offers a semester or academic year program at the Universidad San Pablo in Madrid. 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. The language of instruction is Spanish. Students live in residence halls. The program is also open to students in other majors.

**Turkey, Istanbul.** The interdisciplinary curriculum of this spring semester 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 director and one course in Turkish language. The remaining two classes are 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.

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-U, Bay 6, 2nd Floor, Smith Warehouse, or at http://global.duke.edu/geo. 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-U Web site. In all cases, the dean for study abroad 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-U Web site. The following programs have been offered in previous years.

**Australia, Sydney.** This one-course, four-week 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 two-course, six-week 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.** This two-course, six-week program focuses on intensive Portuguese language and Brazilian identity and civic engagement. The program is based in Rio de Janeiro and hosted by the Advanced Program in Contemporary Culture of the Federal University of Rio de Janeiro. The program features an excursion to Salvador, Bahia. Students live with host families.

**China, Beijing.** This two-course, eight-week 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.

**Costa Rica.** The GEO-U, in collaboration with the Organization for Tropical Studies (OTS), offers a one-course, four-week 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.

**France, Paris.** This two-course, six-week program provides the opportunity to take Duke courses in Paris. The language of instruction is French. Applicants must have completed French 76 or the equivalent. Students live in homestays.

**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 rainforests 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.

**Italy, Rome.** This one-course, four-week 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.** This one-course, four-week 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.

**Mexico, Cholula.** Duke students are able to complete one full year of elementary or intermediate Spanish in this six-week summer program in Mexico. Both beginning and
intermediate levels are double courses and count as two course credits each. Immersion into Mexican society is accomplished by exposure to both language and Hispanic culture. The program includes excursions to such famous archaeological sites as Oaxaca and Teotihuacan, and museum visits in Mexico City. Accommodations are in homestays and residence halls.

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.

Spain, Madrid. This two-course, six-week 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 76 or the equivalent.

Switzerland, Geneva. This two-course, six-week 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.

United Kingdom, London-Drama. This two-course, six-week 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 over 20 theater productions in London and Stratford-upon-Avon. Accommodations are in a dormitory.

United Kingdom, Oxford. This six-week, two course-credit 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 free to Duke students and at very low cost to others.

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, North Carolina 27708-0072, or telephone (919) 684-6402.
Campus Life and Activities
Student Affairs

The mission of Duke Student Affairs is to support the optimal growth of our students in achieving their educational goals and to provide services that enhance their intellectual, social, cultural, and physical development. The division collaborates with students, faculty, staff, parents, and others in the delivery of key services, support, and programming. The division is critically engaged in many aspects of students’ lives including the residential experience, leadership development, civic engagement, and health. For more information, see the Web site at: http://studentaffairs.duke.edu.

Residential Life

Duke enjoys a long tradition as a residential university and supplements the formal academic education of students by providing a comprehensive residence life program. A primary goal is to facilitate the creation of residential communities in which there are common interests, free-flowing exchange of ideas, relaxed social activities, and active recreational opportunities. Students, faculty, and staff work cooperatively to provide programs and activities in keeping with these guiding principles. Leadership opportunities, faculty dinners/discussions, community service opportunities, and intramural sports are but a few of the offerings in which students may choose to become involved.

First-year students are required to live in East Campus university residence halls. After the first year, students will reside in West Campus residence halls, and in some instances, in Central Campus living arrangements. After the second year, students may elect to live on West Campus or in Central Campus apartments. More than 80% of the undergraduate student body lives on campus each year. Students enrolled beyond their fourth year and those who attend part-time are not eligible for university housing.

First-Year-Student Residence Halls. First-year students reside on East Campus in first-year student houses, all of which are coed. A faculty member lives in-residence in all but two of the first-year houses. In addition, four professional staff members (Residence Coordinators) live on East Campus. First-year students are assigned randomly to their residence hall. Within the residence halls, single, double, or triple rooms are available.

Upperclass Residences. Upperclass students live in coed residence halls on West Campus, and in the Central Campus Apartments. West Campus residence halls are organized into six quadrangles, each administered by a professional staff member (Residence Coordinator) who resides within the quad. Quads serve as the organizational framework for residence hall student governance, social and recreational activities, and various academic services and events. Each quad also features an array of selective living groups, learning communities, and academically sponsored theme groups. Selective groups include residential fraternities and social communities. The Arts Theme House, SHARE, and Prism are among the academically sponsored learning communities. For a current list...
of residential groups and communities, see the Residence Life and Housing Services Web site at: http://studentaffairs.duke.edu. Within all upperclass houses, except those located in Edens and the Keohane Quads, triple rooms are available.

Central Campus provides another housing option for juniors and seniors as well as for some sophomores—a community of university-owned and operated apartments that accommodate about 1,000 undergraduate students.

University housing includes all residence halls as well as Central Campus Apartments. All students are required to live on campus for their first three years, with freshmen living in residence halls on East Campus and sophomores living in residence halls on West Campus and in Central Campus apartments. Juniors must choose to live either in West Campus residence hall rooms or in Central Campus apartments, space permitting. Seniors are free to reside on campus, space permitting, or off campus in one of the numerous private housing options available near campus. Semesters taken in "study away" programs are applied to the three-year residency requirement. Eligible students who choose to live off-campus may retain their resident status and eligibility for university housing if they follow the proper procedures as published by Residence Life and Housing Services. The university provides free on-campus bus service, connecting East, West, and Central campuses.

All residence halls have resident assistants who live in-house and are overseen by professional staff in Residence Life and Housing Services. These graduate and undergraduate students have broad responsibilities in the residence halls which include advising the house leadership, serving as resource persons for students, and reinforcing behaviors congruent with the Community Standard.

A quad council is elected from constituent members on all three campuses to perform the dual roles of programming and governance. The primary purpose of the council system is to establish and sustain a vibrant residential community, facilitated by a rich blend of intellectual and co-curricular pursuits. All residential students pay fees as a means of supporting the programming initiatives designed for the enrichment of the community in which they live. Representatives from each council comprise the Campus Council which serves as the governing body to support and provide direction for residential life.

**Residence Hall Programming.** Educational and cultural programming is planned and presented throughout the year in the residence halls through the cooperative work of Residence Life and Housing Services, Trinity College of Arts and Sciences, the Pratt School of Engineering, and resident students. In all but two of the first-year residence halls, faculty members live in the halls and participate in house activities during the academic year. Faculty members interact regularly with living groups in an effort to facilitate engaging and intellectually stimulating endeavors within the residence halls. There are a number of seminar rooms located in both east and west residences. The goals of these various residentially based programs are to enhance the quality of intellectual and social life for the residents on campus, to facilitate student-faculty interaction outside the formal classroom setting, and to develop greater sense of community within the individual residence halls as well as within the greater university. For more information, please visit http://studentaffairs.duke.edu and go to Residence Life and Housing Services.

**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"). First-year plans include both board and debit accounts; plans for upperclassmen are debit accounts.

In the West Union Building on West Campus, The Great Hall offers a wide variety of foods, all in one location. The Loop Pizza Grill offers gourmet salads, California- and Chicago-style pizza, and burgers. Subway serves sub sandwiches, ice cream, and beverages.
Chick-fil-A offers fried and grilled chicken sandwiches, salads, soft drinks, desserts, and lemonade in addition to burritos made by Cosmic Cantina. Alpine Bagels and Brews has bagels, sandwiches, assorted coffees, fresh-squeezed orange juice, yogurt, salads, and desserts. Just off the Bryan Center plaza, Pauly Dogs offers hot dogs, soft drinks, and assorted snacks. In the Bryan Center, also on West Campus, the Alpine Atrium serves bagels, assorted coffees, sandwiches, fresh-squeezed orange juice, smoothies, salads, and desserts. The Armadillo Grill offers a variety of Tex-Mex options. Our 24 hour McDonald’s features a full McDonald’s menu for breakfast, lunch, and dinner. With its spacious seating and comfortable sofas, it is a one-of-a-kind facility, unlike the typical McDonald’s at the mall. Other West Campus operations include Café La Balance (soups/sandwiches), located at the Law School, and 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. The Perk (Bostock Library) is a traditional coffee bar offering coffees, sandwiches, and pastries. Tommy’s Rubs & Grubs in West Edens Link serves BBQ ribs, chicken, and southern vegetables. The Bella Union, also 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. The Refectory, an environment-friendly eatery, is located in the Divinity school and serves breakfast and lunch.

On East Campus, The Marketplace carries an array of choices including pasta, pizza, deli, rotisserie, grill, and salad bar stations. Trinity Café has a diverse selection of quality coffees, pastries, bakery items, and snacks. In Trent Hall, Grace’s Café offers a wide variety of American and authentic Chinese cuisine. Blue Express (LSRC Pratt Dining Commons) provides hot and cold sandwiches and entrees, snacks, desserts, and drinks; and Twinnies (Ciemas Building) offers sandwiches and salads. Our newest eatery, French Science café, features coffee and fresh pastries.

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.

**Religious Life**

Two symbols indicate the importance of religion to this university since its founding: *Erudition et Religio*, the motto on the seal of the university, and the location of the Duke Chapel at the center of the campus.

The Dean of the Chapel and the Director of Religious Life work with campus ministers and staff from nearly 30 individual groups, including Roman Catholic, Jewish, Hindu, Muslim, Buddhist, and Protestant communities, to provide a ministry which is responsible to the plurality of religious and spiritual interests on the campus.

Through the religious life of the university, students are encouraged to search for meaning, to ask the ultimate questions, to worship, to meditate in the beautiful chapel, to learn from outstanding theologians from a wide array of traditions, and to work to bring about a more just and humane society.

**Services Available**

**Residence Life and Housing Services.** This department is dedicated to creating a residential community supportive of a rich educational experience. It advises individual students regarding residential and interpersonal issues, houses undergraduates, and assists students in planning and presenting educational and cultural programs within the residence halls.
Members of the Residence Life and Housing Services staff advise and support residentially-based governing bodies, notably the East Campus Council, the six quad councils, Central Campus Council, and the Campus Council.

Staff in Residence Life and Housing Services and the Dean of Students Office oversee the university’s response to student emergencies. For more information see the Residence Life and Housing Services Web site at http://studentaffairs.duke.edu.

Dean of Students. This office responds to student and parent concerns, provides advising and support to Duke’s student Greek organizations, administers the mediation and student conduct processes, and assists students with issues related to off-campus housing. The office plans and implements Parents and Family Weekend and New Student Orientation and coordinates the first-year and transfer student advisory counselors (FACs). FACs are upperclass men and women who are assigned to small groups of entering students. During orientation, FACs welcome their groups and help to acquaint new students with the university. The Dean of Students office oversees undergraduate student conduct. Student conduct is handled by coordinating and applying the general rules and regulations of the university as well as working with all participants involved in the disciplinary process. For more information, see the Dean of Students Web site at http://studentaffairs.duke.edu.

Student Health Center. The Student Health Center provides medical care, advice, and education for all currently enrolled full-time students and part-time degree candidates.

The primary location for medical care is the Student Health Center in Duke Clinic (primary entrance on Flowers Drive) where students are seen, by appointment or walk-in, for assessment and/or treatment. Students residing on East Campus may also use the East Campus Wellness Clinic in Wilson Hall for assistance in accessing appropriate clinical services. When a student’s health needs warrant additional specialized treatment, referrals are made to other health resources within the Duke Health System and healthcare providers in the local community. In addition to medical care, the Student Health Center offers a variety of wellness and health promotion programs. The health promotion staff is available to assist students in making informed choices that support healthy lifestyles at Duke and beyond.

The student health fee covers most services offered by the Student Health Center, Counseling and Psychological Services, and Sexual Assault Support Services. All full-time and part-time degree candidates must pay the student health fee for each semester or summer term enrolled at Duke. An optional summer fee for students not enrolled in summer session, but remaining at Duke, is available and may be purchased at the Student Health Center. Waivers of the student health fee are based on access to campus facilities. Waivers may be granted to students residing more than 50 miles away who do not come to campus for class, research, or other academic activity. Waivers are also available to students who are full-time Duke employees or spouses of Duke employees.

The university makes available a medical insurance plan to protect against the high cost of unexpected illnesses or injuries that are not covered by the student health fee and would require hospitalization, surgery, or the services of specialists. This insurance covers students both on and off campus, at home, or while between home and school during interim vacation periods throughout the one-year term of the policy. All full-time students and part-time degree candidates are required to enroll in this insurance policy unless they show evidence (the name of the insurance company and policy number) that they are covered by other generally comparable insurance. Students must verify and update insurance information each semester as part of Duke’s online registration process. Participation in the Duke plan is mandatory for international students holding a J-1 or F-1 visa. These students will automatically be enrolled in and charged for the Duke plan.

Health records of Duke students are confidential and are released only with the student's written permission. This policy applies to requests from university officials, friends, family members, or health professionals not involved in the student's immediate
For information about hours of operation and services, see the Student Health Web site at: http://healthydevil.studentaffairs.duke.edu. During the academic year, students may call 681-WELL (681-9355) 24 hours a day for health information and advice.

**Counseling and Psychological Services.** Counseling and Psychological Services (CAPS) provides a range of counseling and psychiatric services to address the acute emotional and psychological difficulties of students. The professional staff is composed of psychologists, clinical social workers, and psychiatrists experienced in working with college students. They provide evaluation and brief counseling/psychotherapy for a wide range of concerns, including college adjustment, self-esteem and identity, family relationships, academic performance, and intimacy and sexuality. While students' visits with counselors are usually by appointment, emergencies services are available.

Each semester, CAPS offers counseling groups and seminars focusing on enhanced self-understanding and coping strategies. Support groups have been offered for second generation Americans; African American students; students completing dissertations; students with eating disorders; and gay, lesbian, bisexual, and transgender students. Other groups have addressed such topics as eating and body image concerns, emotional regulation, meditation and perfectionism.

The staff is available to the university community for consultation regarding student development and mental health. Staff members are also available to lead workshops and discussion groups on topics of interest to students.

CAPS, consistent with professional ethics and the North Carolina law, maintains a policy of strict confidentiality concerning information about each student's contact with CAPS. If a student desires information to be released, written authorization must be provided. CAPS services are covered by the student health fee. For additional information, call (919) 660-1000, or see the CAPS Web site at http://studentaffairs.duke.edu.

**Career Center.** The Career Center provides services and programs that facilitate the career development process for Duke University students and alumni. This process teaches skills in self-assessment, career exploration, decision-making, and job selection. The center serves the students and alumni of Trinity College, the Pratt School of Engineering, and the Graduate School.

A network of alumni volunteers provides career information, job-hunting strategies, and shadowing opportunities. A full-time internship coordinator plus a variety of internship resources help students gain practical experience relevant to their career interests.

Career counselors help students begin the process of discovering career interests and options. In addition to individual appointments, daily drop-in advising hours are available for quick questions. Workshops on resume and cover letter writing, interview techniques, and researching employers are offered regularly to aid students with the job search process. Students may research career fields, employers, and sources of summer and full-time work opportunities using a collection of books, periodicals, and other materials housed in the Career Center library. For more information see the Career Center Web site at: http://studentaffairs.duke.edu.

**Gender Violence Prevention and Intervention.** The Office of Gender Violence Prevention and Intervention (GVPI) provides a central on-campus resource for information and assistance regarding sexual violence. GVPI offers prevention education to the Duke community and direct service to student survivors as well as their families and friends. In addition to coordinating the Survivor's Network, a support group for sexual assault survivors, staff work closely with other University departments to provide comprehensive information and advocacy relevant to counseling, medical services, law enforcement, academic issues, judicial and legal concerns, and residential living. For more information, call the GVPI staff at 919-684-3897 or visit the Women's Center. For crisis information and referral outside normal business hours, call the crisis information line at 682-6882, the Dean-
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 the 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 in comparison to the average person in the general population. 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 the Pratt School of Engineering will accommodate students who have a documented long-term or chronic 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 in this bulletin.

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 Service Center. The Student Service Center (SSC) provides assistance with routine transactions and questions associated with student administrative services offices (bursar, registrar, financial aid, student loan, external loan, and DukeCard). The office accepts and posts payments to student accounts, collects signatures on co-payable loan and scholarship checks, distributes reimbursement and travel advance checks, provides authorized cash advances, prints official transcripts, collects forms pertaining to registration and records, manages the North Carolina Legislative Tuition Grant Program, updates student biographical and demographic data, issues International student ID cards, generates duplicate Work-Study authorization forms, manages the student employment process, and processes classroom reservations for one-time events. The SSC also has walk-up computers for students to use, a DukeCard self-service station where students can add dining and FLEX points to their DukeCard, and an ePrint station.

SSC staff members are trained to answer general questions about other services that impact students, including student health insurance, parking, payroll deductions, and student health services. For more information, see the Web site at http://www.duke.edu/studentservicecenter/.

Offices for Program Planning

The Office of Student Activities and Facilities (OSAF) promotes the development of leadership skills through a variety of programs that both educate and support individual students and student organizations. OSAF is the central resource for information concerning student organizations, acting both as liaison and advocate, facilitating the financial management of organizational funds, and providing both counsel and direct services. The office coordinates the event registration process for student organization events and oversees all student-related nonresidential, nonacademic facilities. For more information, visit the OSAF Web site: http://studentaffairs.duke.edu.

The Mary Lou Williams Center for Black Culture. The Mary Lou Williams Center for Black Culture strives to increase awareness, promote self and group understanding, build unity and community, and foster an appreciation for and understanding of Black history, Black people, Black culture, and the vast contributions of people of the African Diaspora. It provides programs and services that foster the successful academic and personal development of Black students at Duke University and positively impacts the community. All of the center’s efforts are designed to deal critically, supportively, and creatively with individuals and entities in order to foster consciousness about the significance of Black experience.

The center sponsors performances, lectures, films, community conversations, exhibitions, and a host of other enduring as well as innovative events. Located on the second floor of the West Union Building on West campus, the Mary Lou Williams Center was named in honor of the pianist and composer who graced Duke University as an Artist-in-Residence from 1977 until her death in 1981. For more information, see the center’s Web site at http://studentaffairs.duke.edu.

The Women's Center. The Women's Center promotes the full and active participation of women in higher education at Duke by providing advocacy, support services, referrals, and educational programming on gender-related issues. Women's Center programs and services address leadership, safety, harassment, health, campus climate concerns, personal and professional development, and the intersection of gender with race, class, and sexual orientation. The center responds to the changing needs of the university community, raises awareness of how gender issues affect both women and men on campus, and advocates for individuals and groups experiencing gender-related problems, such as sexual harassment or gender discrimination. Duke's Gender Violence Prevention and Intervention Program is also housed in the Women's Center.
The center offers internships, paid student jobs, and volunteer opportunities to help with programming and operations; houses a 4,000-volume feminist lending library; and publishes VOICES, a yearly literary magazine addressing issues of gender, ethnicity, and sexual orientation on campus and in the wider community. Additionally, the center advises and serves as a meeting place for student groups addressing gender issues on campus including SHARP (Sexual Harassment and Rape Prevention) peer educators, GPWN (Graduate and Professional Women's Network), and WiSE (Women in Science and Engineering). For more information, see the Women’s Center Web site at: http://studentaffairs.duke.edu.

International House. International House serves as the center of co-curricular programs for internationals and U.S. Americans interested in other cultures and peoples. International House assists internationals and their families with orientation and acclimation, enhances cross-cultural interaction through programming and community outreach, and provides advocacy and support for the Duke international community. There are more than 2,000 international students from 100 countries enrolled at Duke. Programs include an intensive orientation program at the beginning of the academic year; the International Friends Program that pairs internationals with local families to promote friendship and cross-cultural learning; and Duke Partners that pairs internationals with U.S. Americans for weekly conversation and language exchange. International Competency Training is offered for individuals interested in developing awareness and skills needed to manage cultural diversity at both interpersonal and organizational levels. The International Association is a student-run group that sponsors culture nights, trips, sports, teams, and an annual campus-wide International Festival. For more information, see the International House Web site at http://studentaffairs.duke.edu.

The Center for Multicultural Affairs. The Center for Multicultural Affairs provides support services for students of color and offers educational opportunities and resources in the areas of diversity and multicultural education to the campus at-large. It has responsibility for assisting with changes in the Duke University community that promote optimum growth and development for African American, Asian American, Latino American, and Native American undergraduates and graduate/professional students. It also assumes a primary role on campus for the diversity education of all students as well as in helping to build a shared sense of community among all groups. The center conducts and supports such activities as the student run Center for Race Relations, Council of Cultural Group Presidents, faculty lecture series, programming grants for student groups, student leadership training program, public forums on student life, mentorship projects with university alumni, seminars on current issues affecting students of color, and institutional research on students of color. The center serves as a resource for the university community on students of color related issues and diversity in general. For more information, see the Center for Multicultural Affairs Web site at: http://studentaffairs.duke.edu.

The Center for Lesbian, Gay, Bisexual, and Transgender Life. The mission of the Center for Lesbian, Gay, Bisexual, and Transgender Life (Center for LGBT Life) is to provide education, advocacy, support, and space for lesbian, gay, bisexual, transgender, questioning, and straight-allied students, staff, and faculty at Duke, as well as alumni/ae and members of neighboring communities. The center provides a safe haven to discuss issues of sexuality as they relate to self, family, friends, and others; a friendly and comfortable location for lesbians, gays, bisexuals, transgender persons, and allies to socialize and discuss issues affecting the community; a place for groups to meet and organize activities; a resource center and library containing magazines, books, and information by, for, and about lesbians, gays, and bisexuals and transgender persons; advocacy on lesbian, gay, bisexual, and transgender matters at Duke; and a broad array of co-curricular, educational programming aimed at diverse audiences in and around the university. Through these services, the Center for LGBT Life presents opportunities for all students, faculty, staff, and alumni/ae to create
a more hospitable campus climate. The center is located on the garden level of West Union Building. For more information, see the Center’s Web site at http://studentaffairs.duke.edu.

**Jewish Life at Duke.** Jewish Life at Duke is comprised 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 through social, educational, religious, and cultural activities. Events are open to all members of the Duke community as well as the Durham and Chapel Hill Jewish community. For more information, visit http://studentaffairs.duke.edu.

**Muslim Life at Duke.** Muslim Life at Duke works to enrich the lives of Muslim students and the whole campus through organizing events and activities that cater to the spiritual, social, and intellectual needs of Duke students, including a variety of activities and events related to interfaith, community service, and social activism. All events allow students to discuss issues related to faith, peace, compassion, and understanding in a warm and enriching setting. Through its programs and services, Muslim Life at Duke plays a vital role in Duke’s commitment towards providing a quality educational experience to students of all faith traditions. For more information, visit http://studentaffairs.duke.edu.

### 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 Web site 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 three hundred 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 N.C. Rural Health Coalition. There are 35 nationally-affiliated Greek chapters on Duke’s campus. Around 37% of undergraduates are Greek-affiliated; over 40% of women belong to sororities and nearly 30% 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 non-drama 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 over twenty academic department majors unions on campus. There are also academic and leadership honorary societies.
Media. *The Chronicle*, the campus newspaper, publishes five 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 the Pratt School of Engineering, appears twice each year and contains articles on technical and semi-technical 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 Union Community Television (Cable 13) is operated by students and produces color television programs that are broadcast throughout the campus on the university cable system.

Health, Wellness, and Physical Education

Besides offering a variety of classes (see the chapter "Courses of Instruction"), the Department of Health, Wellness, and Physical Education also sponsors numerous programs for all students in intramurals, sports clubs, and recreation.

The Intramural Sports Program provides an opportunity for every student to participate in organized recreation competition in over 40 activities. The program is comprised of four major areas: men's intramurals, women's intramurals, co-ed intramurals, and recreation programs. It is open to all graduate and undergraduate students of Duke University. Participation, not skill, is a major factor that is emphasized in the program.

More than 35 sports clubs have been chartered by Duke students for those with similar interests to participate in competition and recreational activities. Clubs vary from those which compete with clubs of other universities, such as soccer, rugby, and ice hockey, to those of a more recreational nature such as cycling, and sailing, and others which yearly present several performances.

The university's many recreational facilities, available to all students, include the championship Robert Trent Jones Golf Course, tennis courts (some lighted) on both campuses, indoor swimming pools on East and West campuses and an outdoor pool on Central campus, three gymnasiaums including the Brenda and Keith Brodie Recreation Center on East Campus and the Wilson Recreation Center on West Campus, several weight training rooms, squash and racquetball courts, outdoor handball and basketball courts, an all-weather track, numerous playing fields, jogging trails, and informal recreational areas. Tournaments in recreational sports are often organized and conducted by students. Students may reserve facilities and equipment at designated times.

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). The ACC consists of Boston College, Clemson, Duke, Florida State, Georgia Tech, Maryland, Miami, North Carolina at Chapel Hill, North Carolina State, Virginia, Virginia Tech, and Wake Forest.
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.

Judicial System and Regulations

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 judicial 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 and Sciences and in the 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. Certain 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 Duke University: Undergraduate Instruction, candidates are urged to consult the Duke Admissions Web site, www.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 the 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 the 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 the 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 Web site, www.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.

**Continuing Education.** Admission as a continuing education 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; 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.

**Application Procedures**

**DEGREE STATUS**

Information regarding applying for admission may be obtained online at the Duke Admissions Web site, [www.admissions.duke.edu](http://www.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 Common Application plus the Duke Student Supplement Form. The Common Application ([www.commonapp.org](http://www.commonapp.org)) and the Universal College Application ([www.universalcollegeapp.com](http://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 Web sites or at the Duke Admissions Web site, [www.admissions.duke.edu](http://www.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. For most applicants, Duke offers interviews with local alumni when the Duke Student Supplement Form has been filed by the deadline (October 19 for Early Decision applicants and December 10 for Regular Decision applicants).

**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 and to withdraw applications from 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 should 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. This plan is designed to give well-qualified students who know Duke is their first choice a means of indicating that commitment to the university and of receiving 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. When offered, midyear admission has allowed students to begin their college work a semester early or to postpone matriculation for a semester.

**Transfer Admission.** Transfer admission from other accredited institutions may be arranged for a limited number of students each semester. Because the transcript of at least one full year of academic work is preferred by the Admissions Committee, and because transfer students are required to spend their last two years at Duke, most candidates apply to Duke during their first or second year of college. All Duke students, except those majoring in engineering, must meet the requirements for the Trinity College curriculum, so students applying to transfer to Trinity College should plan to spend three years at Duke in order to meet the requirements for the Trinity College curriculum and the major. 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 50.

August (fall semester) transfer students submit a completed application by March 15, learn of their decisions in mid-May, and respond to the university by June 1. January (if offered) transfer students submit a completed application by October 15, learn of their decisions by November 15, and reply to the university by December 1. January transfer is not available to students in their first year of college.

**NONDEGREE STATUS**

**Summer Session.** Registration forms and schedules of courses may be obtained by writing or calling the Office of the Summer Session, Box 90059, Duke University, Durham, North Carolina 27708-0059, (919) 684-2621. No 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 course work through continuing education is available from the Office of Continuing Studies, Box 90700, Duke University, Durham, North Carolina 27708-0700.

**READMISSION OF FORMER STUDENTS**

A student who desires to return following withdrawal from college should apply directly to the appropriate college or school. Students wishing to be readmitted to Trinity College should apply directly to the Office of Student Returns located in 011 Allen Building. For additional information visit the Office of Student Returns Web site, http://trinity.duke.edu/admissions/office-of-student-returns. Students wishing to be readmitted to the Pratt School of Engineering must apply directly to Pratt. For additional information visit www.pratt.duke.edu. Also see the section, “Changes in Status” on page 62.
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 which 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 Web site at: http://dukefinancialaid.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, 2010-2011 (two semesters)</th>
<th>Two Summer Terms, 2010 (one semester equivalent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trinity College</td>
<td>$38,985</td>
<td>$10,272-11,984</td>
</tr>
<tr>
<td>Engineering</td>
<td>$38,985</td>
<td>$10,272-11,984</td>
</tr>
<tr>
<td>Residential Fee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Room</td>
<td>$7,570-9,120</td>
<td>n/a</td>
</tr>
<tr>
<td>Double Room</td>
<td>$5,740-6,900</td>
<td>$2,022</td>
</tr>
<tr>
<td>Triple Room</td>
<td>$5,110-6,160</td>
<td>n/a</td>
</tr>
<tr>
<td>Food (projections include a meal plan service fee)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% board plan</td>
<td>$5,560</td>
<td>$1,839</td>
</tr>
<tr>
<td>75% board plan</td>
<td>$4,790</td>
<td>$1,169</td>
</tr>
<tr>
<td>Books and Supplies</td>
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<td>$645</td>
</tr>
<tr>
<td>Student Health Fee</td>
<td>$580</td>
<td>$186</td>
</tr>
<tr>
<td>Student Activity</td>
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</tr>
<tr>
<td>Student Services Fee</td>
<td>$239</td>
<td>n/a</td>
</tr>
<tr>
<td>Recreation Fee</td>
<td>$208</td>
<td>$34(^1)</td>
</tr>
<tr>
<td>Residential Program Fee</td>
<td>$94</td>
<td>n/a</td>
</tr>
</tbody>
</table>

\(^1\) This fee is optional.

* The figures in this section are projections and are subject to change.
Financial Information

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 $54,829. The budget estimate for the summer (two terms, one semester equivalent) is $14,998. 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 notification of acceptance, students (including transfer students) are required to pay a nonrefundable registration fee of $100 which includes a one-time transcript processing fee, and to make an advance deposit of $200. The deposit will not be refunded to accepted applicants who fail to matriculate.

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 not 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, $4,872; half course, $2,436; quarter course, $1,218. Registration for more than two courses requires payment of full tuition. Graduate students registered for undergraduate courses will be assessed three units for non-laboratory 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 $474 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 your bills for tuition and fees. Tuition and fees are due before the start of each term. Fall 2010 charges are due on August 2, 2010; spring 2011 charges will be due January 3, 2011. If you are applying for financial aid, you should complete that process before the due date for fall 2010 bills.

Your bills are available electronically on ACES. You will receive an e-mail notice each time a new bill is ready for your review. A hard copy of your bill is also mailed to your permanent address of record. You may view your bills and your up-to-date student account history on ACES.

Payment. Please pay by e-check, a fast and convenient method for paying your student account. To pay by e-check, visit ACES or www.bursar.duke.edu and click the DukePay icon. You may also mail your payment using the remittance envelope included with your hard copy bill.

Payment Plan. Duke partners with Tuition Management Systems (TMS) to offer you and your family a ten month payment plan (payments run 7/1/10 to 4/1/11). You 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. You may also contact the Bursar’s Office for questions regarding your student account; contact them via e-mail at www.bursar.duke.edu, telephone at (919) 684-3531, or facsimile at (919) 684-3091.

Restrictions on Past Due Accounts. As noted above, tuition and fees are due before the start of each term. If your account becomes past due, a late payment penalty charge (not to exceed 1.25% of the past due balance from the prior bill) will be assessed on subsequent bills. If your account remains unpaid, you will not be allowed to register for future semesters and may be administratively withdrawn from Duke. As long as your account is past due, you will not have access to academic transcripts, be able to have academic credits certified,
or receive a diploma at graduation. If your account remains outstanding after your 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 $3,230 per semester, payable to Duke University, to maintain a student's enrollment at Duke.

**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.

**Tuition and Fees for Summer Session.** Tuition for undergraduates is $2,568 for each 3 semester hour (s.h.) course, $3,424 for each 4 s.h. course, $1,712 for each half course (2 s.h.), $856 for each quarter course (1 s.h.), and $5,136 for each one and one-half course program (6 s.h.) offered at the Marine Laboratory.

Tuition for graduate students taking an undergraduate course is as indicated above.

**Health Fee.** All Duke students and all full-time non-Duke students are required to pay $93 per term. All students at the Marine Laboratory are required to pay $78 per five-week registration period.

**Music Fee.** A fee of $116 will be charged for Music 79. A fee of $232 will be charged for Music 80 to 89. A fee of $464 will be charged for Music 90 to 99.

**Auditing Fees.** With permission of the instructor, students registered for a full course program (two courses) may audit one non-laboratory course except a physical education and dance activity course, a studio art course, an applied music course, and foreign programs. No extra charge is made.

Students carrying less than a full course program may be granted permission by the instructor to audit a course (the above exceptions apply) but must pay $257 for the course if it is in Arts and Sciences. Professional school course audit policies may differ.

**Payment of Tuition and Fees.** The Office of the Bursar will mail bills in April, May, June, and July to current Duke students enrolled for Summer Session. The bill due date will be three weeks from the date of the bill. 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 I charges will be due on or before Wednesday, May 5, 2010. Payment for Term II charges will be due on or before Monday, June 21, 2010. If payment is not received by these dates, registration will be cancelled.

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 days. (See the University Registrar’s Web page, [http://registrar.duke.edu](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 directly to the Office of the University Registrar in person, by mail, by fax, or by scanned e-mail attachment. All requests must be signed by the student. Transcripts may 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 course work must be submitted by August 1 for the fall semester, December 1 for the spring semester, April 15 for Term I of Summer Session, or June 1 for Term II of 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, consult http://www.hr.duke.edu/benefits/education/tuition_assistance.html. Staff members of Continuing Studies and Summer Session are available to advise Duke employees on educational matters (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 $7,570 to $9,120 for the academic year; for a double room, the fee ranges from $5,740 to $6,900; for a triple room, the fee ranges from $5,110 to $6,160 per occupant. Apartment rates for upperclass students range from $5,360 to $6,910 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 University bulletin, 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 contact: housing@studentaffairs.duke.edu, (919) 684-4304. Web site: http://rlhs.studentaffairs.duke.edu.

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 comprised of two parts:

- 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 figures contained in this section are projections and are subject to change prior to the beginning of the Fall 2010 semester.
The cost of the First Year Plan is $2185 per semester for the twelve-meal plan, plus one of three "points" plans (Plan G, H or I) which range from $320 to $415. 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 $1,730 to $2,690 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 ($1,220 per semester).

Nonresident students are not required to participate in the dining plan; however, Plan F, at a cost of $565 per semester is offered as an option.

An optional summer dining plan is provided in three plan levels ranging from $280 to $900 per summer term.

Students may also purchase a Flexible Spending Account (FLEX) that can be used to purchase any goods or services from Dining Services, 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” 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 percent</td>
</tr>
<tr>
<td>During third, fourth, or fifth week</td>
<td>60 percent</td>
</tr>
<tr>
<td>During sixth week</td>
<td>20 percent</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
Financial Information

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”.) 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:

1. 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.

2. 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.)

3. 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 U.S. citizen or eligible non-citizen. The university's aid program includes both merit and need-based scholarships, work-study, and all federal grant and loan programs. Admissions decisions 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. In 2008-2009, nearly 47% of the student body received ninety-eight million dollars in aid of various types. Additional information is available on the university’s financial aid Web site at http://dukefinancialaid.duke.edu.

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

* This policy does not apply to study abroad program students.
Income Tax Returns from the most recent year (all schedules and W2s must be included). If tax returns for the most recent year are not available at the time of application, we will accept a copy of the prior year’s return to do an estimated aid award. Early Decision applicants must submit copies of their tax information directly to the Undergraduate Financial Aid Office. 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.

Renewal of Financial Aid after the Freshman Year. Each year students must file an application for renewal of 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 Financial Aid Office is May 1. Failure to meet this deadline may affect the type and amount of aid offered. All qualified students may receive need-based aid for up to nine semesters or eight semesters plus two summer terms.

To have financial aid renewed, a student must meet the continuation requirements outlined in the chapter “Academic Procedures and Information” as appropriate. Students not qualifying for financial aid due to their inability to meet these requirements may appeal directly to the Financial Aid Office. 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. A student may choose to attend two summer sessions as part of their ninth semester of aid eligibility. Interested students can obtain specific details as to available funding and an application through the Financial Aid Office in February of each year.
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 $1,800 to $6,800 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 which 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.

Gift Scholarships. The following are among the named gift scholarships offered through Duke University. Where specified, these scholarships 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 2.8 average or higher. Scholars are required to be enrolled in four full academic credits each semester. Upperclass students must complete each academic year with a 3.0 average or higher. Students failing to meet the required average will be put "on review." Thereafter, students on review must receive a 3.0 average each year to keep the scholarship or fellowship. If a scholar is ineligible to return to Duke for academic reasons, or is dismissed for disciplinary reasons, he or she will lose the scholarship.

Angier B. Duke Memorial Scholarships. The 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 freshman scholarship holders received full tuition, room, board, and mandatory fees if enrolled in Trinity College of Arts and Sciences or the Pratt School of Engineering. Students demonstrating additional need will receive a grant from Duke University funds up to the amount needed. 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 $5000.

Robertson Scholars. This history-making undergraduate scholarship program was created and funded by visionary alumnus Julian Robertson and his wife Josie. Half of these scholars matriculate at the University of North Carolina (UNC)-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.

The University Scholars 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.

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 and Sciences on the basis of scholarship, character, leadership, and need.

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

J. A. Jones Memorial Scholarships. These 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 School of Engineering and financial need.

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

Richard Miles Thompson Scholarships. The Richard Miles Thompson Scholarships are awarded annually to two upperclass students enrolled in the 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 10 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, (919) 660-3700.

**Reginaldo Howard Scholarships.** These scholarships, awarded annually to freshmen of African descent, are provided to honor the late Reggie Howard, first black president of the student government. 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.

**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 and 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.** The endowment, 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 and Sciences or Pratt School of Engineering at Duke University. Scholarships will be awarded successively based upon each entering class and the availability of endowment income with first awards given in the Fall of 2005. The scholarship students 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 fund and distributions from it shall be administered in accordance with the policies and procedures of Duke University and the laws of the State of North Carolina then in effect.

**The Janet B. Chiang Memorial Scholarship Fund.** This 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 Carolina Residents

The Benjamin N. Duke Leadership Award. 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.

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.

Carolinias Honors Scholarships. Carolinias 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 and Sciences and Edmund T. Pratt Jr. 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%) 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.

*North Carolina Legislative Tuition Grant.* The North Carolina General Assembly has established a program of tuition grants available to North Carolina residents who are full-time students at private colleges and universities in the state of North Carolina. The grant for each eligible student is approximately $1,820 per year. Applications will be mailed to all eligible students during the summer. In the case of a need-based financial aid recipient, this grant reduces a student's tuition and therefore his budget. All qualified need-based aid recipients are required to apply for this grant.

*State Contractual Scholarships for Needy North Carolinians.* Funds provided by the state of North Carolina through the Legislative Grant Program are distributed to needy North Carolinians qualifying for the State Contractual Scholarship Program. Application is made through the College Scholarship Service's PROFILE.

**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%. 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 Financial Aid Office.

*The Federal Stafford Student Loan Program* is a federal loan program. Each year students may borrow up to $3,500 as freshmen, $4,500 as sophomores, and $5,500 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 4.5%, and interest does not accrue while the student is enrolled at least half-time in an accredited degree program. Students not demonstrating need may borrow through the Unsubsidized Stafford Loan program. The interest rate for the loan is 6.8% 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 Subsidized Stafford Loan, it will be included in the student’s award letter from the Financial Aid Office.

*The Parent Loan for Undergraduate Students (PLUS)* is a federal loan program that 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 7.9% and repayment of this loan begins within 60 days after the final 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 Loan 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.

**Employment.** Most financial aid recipients are offered a job as part of their aid package. The money is paid directly to the student for hours worked. All students interested in working
during the school year should review the jobs posted at http://dukelist.duke.edu. Every effort will be made to help students find jobs consistent with their interests.

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 $1,900 for use during the first year of college. In subsequent years, minimum student earnings will be $2,200 for sophomores, $2,300 for juniors, and $2,400 for seniors. These figures are viewed as estimates and are revised consistent with actual earnings.

Duke University offers subsidized employment opportunities to many students not qualifying for need-based financial aid. Interested students should submit the appropriate aid applications.
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 2010-2011 are included in this chapter with full descriptions. For courses that will be offered in 2010-2011, also consult the online ACES Schedule of Courses.

Introductory-level courses are numbered below 100; advanced-level courses are numbered 100 and above. Courses numbered 1 through 49 are primarily for first-year students; courses numbered from 200 through 299 are primarily for seniors and graduate students. (See the section on course load and eligibility in the chapter “Academic Procedures and Information.”) 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. 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 and Sciences
Professor Crumbliss, *Interim Dean of Trinity College and of Arts and Sciences*; Professor Baker, *Dean of Academic Affairs of Trinity College*; Senior Associate Dean for Administration Wilson; Associate Deans Blackmon, Gilbert, Grunwald, Keul, Kostyu, Riley, Scheirer, Thomas, Walther, and White; Assistant Deans Perz-Edwards and White
Aerospace Studies—Air Force ROTC (AEROSCI)

Lieutenant Colonel Oertel, Director of Undergraduate Studies; Assistant Professor Hill, Captain, USAF, Commandant of Cadets; Assistant Professor Fletcher, Captain, USAF, Unit Admissions Officer

Eligibility Requirements. All freshmen 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 completed successfully 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 U.S. 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 2L, are open to all other students with consent of instructor.

General Military Courses

First Year

2L. 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. Half course.


Second Year

51. 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

105S. 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. Laboratory required for AFROTC cadets. Instructor: Staff. One course.

106S. Air Force Leadership and Management. EI Continuation of Aerospace Studies 105S. 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 105S. Laboratory required for AFROTC cadets. Instructor: Staff. One course.

**Fourth Year**

**205S. 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.

**206S. Defense Studies. EI** Continuation of Aerospace Studies 205S. Officership, ethics, military law, Air Force issues, roles and missions, Air Force and joint doctrines, preparation for active duty, and refining communications skills from 205S. Leadership Laboratory mandatory for AFROTC cadets. Instructor: Staff. One course.

### African and African American Studies (AAAS)

Professor Matory, *Chair*; Associate Professor Lubiano, *Director of Undergraduate Studies*; Professors Bonilla-Silva, Brody, Brown, Darity, French, Holloway, James, McClain, Moten, Neal, and Powell; Associate Professors Baker, Crichlow, Glymph, Lubiano, Piot, and Wallace; Associate Research Professor Royal; Assistant Professors Hall, Holsey, Makhulu, and Milian

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 Office of Study Abroad.

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.

**49S. First-Year Seminar.** Topics vary each semester offered. Instructor: Staff. One course.


**70. Topics on the Third World and the West. CCI, CZ** One course. C-L: see History 75; also C-L: International Comparative Studies, Latin American Studies

**71. Topics on the Third World and the West. CCI, CZ** One course. C-L: see History 76; also C-L: International Comparative Studies, Latin American Studies

**74. Introduction to Jazz. ALP, CCI** One course. C-L: see Music 74

**74D. Introduction to Jazz. ALP, CCI** One course. C-L: see Music 74D

**88FCS. Focus Program Seminars.** Topics vary semester to semester. Open only to students in the Focus Program. Instructor: Staff. One course.

**93. Old Worlds/New Histories, 500-1500 CE. CCI, CZ, SS** One course. C-L: see History 93; also C-L: International Comparative Studies 103G

**98. Special Topics in Performance.** Topics vary from semester to semester. Instructor: Staff. One course.

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


**101. 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...


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


105HS. Gateway Seminar: Civil Rights & Asian Americans. CCI, CZ, EI, R, SS One course. C-L: see History 105HS; also C-L: Asian & Middle Eastern Studies 106

106. 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.

106B. Introduction to African and African American Studies. CCI, CZ, W Same as 106A, except writing across discipline course. Not open to students who have taken African and African American Studies 106 or 106A. Instructor: Staff. One course.


110A. West African Rootholds in Dance. ALP, CCI, CZ One course. C-L: see Dance 110L; also C-L: Asian & Middle Eastern Studies 110A, Cultural Anthropology 129A, Religion 161A

112S. Freedom Stories: Documenting Southern Lives and Writing. ALP, CCI, CZ One course. C-L: see Documentary Studies 112S; also C-L: History 150ES

113B. Europe's Colonial Encounter, 1492-1992. CCI, CZ, EI One course. C-L: see History 113B; also C-L: Ethics

115A. History of Africa: From Antiquity to Early Modern Times. CCI, CZ, SS One course. C-L: see History 115A; also C-L: International Comparative Studies, Women's Studies

115B. History and Modern Africa. CCI, CZ, SS One course. C-L: see History 115B; also C-L: International Comparative Studies, Women's Studies

115E. Modern Africa through Film. ALP, CCI, CZ One course. C-L: see History 115E; also C-L: International Comparative Studies 140E

115F. Africa and Humanitarians. CCI, CZ, EI One course. C-L: see History 115F; also C-L: International Comparative Studies 140F

115G. South African History, 1870 to the Present. CCI, CZ, EI, SS One course. C-L: see History 115G; also C-L: Political Science 171B, International Comparative Studies 103H

116. Comparative Race and Ethnic Studies. CCI, EI, R, SS One course. C-L: see Sociology 116; also C-L: Children in Contemporary Society, Latino/a Studies in the Global South

122. Culture and Politics in Africa. CCI, CZ, SS Explores the politics, history and culture of societies and nation-states 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 122, Visual Studies 104B, International Comparative Studies
123S. Civil/Human Rights Activism: In the Spirit of Pauli Murray. ALP, CCI, CZ, R One course. C-L: Documentary Studies 126S, Cultural Anthropology 161AS
124S. Slave Society in Colonial Anglo-America: The West Indies, South Carolina, and Virginia. CCI, CZ, R One course. C-L: see History 124S; also C-L: International Comparative Studies
125S. Behind the Veil: Methods. CCI, CZ, R One course. C-L: see Documentary Studies 125S; also C-L: History 129S
126S. The Press and the Public Interest. SS One course. C-L: see Public Policy Studies 127S; also C-L: Policy Journalism and Media Studies
127A. The Caribbean, 1492-1700. CCI, CZ One course. C-L: see History 127A; also C-L: International Comparative Studies, Latin American Studies
127B. The Caribbean in the Eighteenth Century. CCI, CZ One course. C-L: see History 127B; also C-L: International Comparative Studies 151B, Latin American Studies
131. The South in Black and White. ALP, CCI, CZ One course. C-L: see Documentary Studies 132
131S. African Mbira Music: An Experiential Learning Class. ALP, CCI, CZ One course. C-L: see Music 133S; also C-L: Cultural Anthropology 133S
132. 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 Studies 104C
133S. Documenting Black Experiences. ALP, CCI One course. C-L: see Documentary Studies 139S; also C-L: Arts of the Moving Image 105AS, Cultural Anthropology 134CS, Public Policy Studies 196KS
134. Psychology of Ethnicity and Context. CCI, SS One course. C-L: see Psychology 133; also C-L: Children in Contemporary Society, Global Health
137. 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 145C, Women's Studies 137
138S. Francophone Literature. ALP, CCI, FL One course. C-L: see French 161S; also C-L: Asian & Middle Eastern Studies 168S, International Comparative Studies 110CS, History 162S, Canadian Studies, Latin American Studies
140S. Cidanania, Cultura e Participacao/Citizenship, Culture and Participation. ALP, CCI, CZ, EI, R One course. C-L: see Portuguese 141S; also C-L: Cultural Anthropology 140AS, Public Policy Studies 103S, International Comparative Studies 130HS

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143S. Black Theater Workshop. ALP, CCI One course. C-L: see Theater Studies 143S

144. The Anthropology of Race. CCI, EI, SS One course. C-L: see Cultural Anthropology 144

145A. Africans in America to the Civil War. CCI, CZ, EI One course. C-L: see History 145A; also C-L: Documentary Studies

145B. African Americans Since the Civil War. CCI, CZ, EI One course. C-L: see History 145B; also C-L: Documentary Studies

147. Urban Education. CCI, SS An interdisciplinary examination of contemporary educational problems in American cities, with particular attention to race and class, and the formation of public policy for urban schools and school reform. Instructor: Payne. One course. C-L: Éducation 147, Sociology 136, Children in Contemporary Society

149. Introduction to Racial and Ethnic Minorities in American Politics. CCI, SS One course. C-L: see Political Science 141

149D. Introduction to Racial and Ethnic Minorities in American Politics. CCI, SS One course. C-L: see Political Science 141D

150. Religions of the African Diaspora. CCI, CZ, SS Diasporic religious expression and practice, from Africa to the Americas. Special attention to the relationship between religion and history, both during slavery and beyond, as well as to the social, gendered, aesthetic, and more strictly religious forces that lie at the heart of Black diasporic religious expression. Instructor: Staff. One course. C-L: Cultural Anthropology 150, Religion 160, International Comparative Studies


152. Religion in Black America. CCI, CZ One course. C-L: see Religion 153A

152S. Religion in Black America. CCI, CZ One course. C-L: see Religion 153AS

153. 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 153

154. Racial and Ethnic Economic Inequality; A Cross National Perspective. CCI, EI, SS One course. C-L: see Public Policy Studies 152; also C-L: Economics 154

155. Religion and Race. CCI, CZ, SS One course. C-L: see Religion 153C

156. Modern and Contemporary African American Art. ALP, CCI, CZ, R One course. C-L: see Art History 176

157. Art, Architecture, and Masquerade in Africa. ALP, CCI, CZ, R One course. C-L: see Visual Studies 101F; also C-L: International Comparative Studies 110A

158. Dance and Religion in Asia and Africa. ALP, CCI, CZ One course. C-L: see Dance 158; also C-L: Asian & Middle Eastern Studies 136, Cultural Anthropology 149C, Religion 161N, International Comparative Studies 102A

159. 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 to the 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 122D, Public Policy Studies 196J, International Comparative Studies

161S. Islam in the Americas. CCI, CZ, SS, W One course. C-L: see Religion 156S; also C-L: History 156S

162AS. Social Facts and Narrative Representations. ALP One course. C-L: see Literature 162AS

163. The Civil Rights Movement. CCI, CZ, EI, SS One course. C-L: see History 163E; also C-L: Ethics

164S. The Role of Race and Culture on Development (D, P). CCI, SS One course. C-L: see Psychology 164S

168S. The Atlantic Slave Trade. CCI, CZ, R One course. C-L: see History 168BS; also C-L: International Comparative Studies 103FS, Latin American Studies

169. 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 179, International Comparative Studies 111A

170. Afro-Brazilian Culture and History. CCI, CZ, R One course. C-L: see History 170C; also C-L: Portuguese 170C, Latin American Studies

171. From Apartheid to Democracy in South Africa. CCI, EI, SS One course. C-L: see Political Science 171; also C-L: International Comparative Studies 110B

173. African American Literature. ALP, CCI, R One course. C-L: see English 164A

174. African American Literature. ALP One course. C-L: see English 164B

177S. Race and Equity. SS One course. C-L: see Public Policy Studies 173S; also C-L: Policy Journalism and Media Studies

178. African American Intellectual History, Twentieth Century. CCI, CZ, W One course. C-L: see Cultural Anthropology 175; also C-L: History 176B

179. Separation and Inclusion. SS One course. C-L: see Public Policy Studies 174; also C-L: Policy Journalism and Media Studies

181. Special Topic in an Individual African American Author. ALP, CCI, R One course. C-L: see English 165

182. African American Literary Genres. ALP, CCI, R One course. C-L: see English 166

183S. Africa and the Slave Trade. CCI, EI, SS History of the Atlantic slave trade in Africa, various responses to it, debates regarding its impact, ways it is remembered today. Instructor: Holsey. One course. C-L: Cultural Anthropology 122B

187. Haitian Creole for the Recovery in Haiti. CZ One course. C-L: see French 199; also C-L: Latin American Studies 190, Cultural Anthropology 156E, Linguistics 198

189. Creole/Kreyòl Studies I. CCI, CZ One course. C-L: see French 190

190A. 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
130 Courses and Academic Programs

juniors and seniors. Consent of both instructor and director of undergraduate studies required. Instructor: Staff. One course.

190B. 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.

191A. Independent Study. See African and African American Studies 190A. Consent of both instructor and director of undergraduate studies required. Instructor: Staff. One course.

191B. Research Independent Study. R See African and African American Studies 190B. Consent of both instructor and director of undergraduate studies required. Instructor: Staff. One course.


193. Creole/Kreyòl Studies II. One course. C-L: see French 193; also C-L: International Comparative Studies 182C

194A. Distinction Program Sequence. Research for the development of thesis. Open only to senior majors. Consent of both instructor and director of undergraduate studies. Instructor: Staff. One course.

194B. Distinction Program Sequence. Continuation of African and African American Studies 194A. Open only to senior majors. Consent of both instructor and director of undergraduate studies. Instructor: Staff. One course.


195IS. Capstone Seminar: Globalization, Women and Development. CCI, CZ, R, SS, STS One course. C-L: see History 195IS; also C-L: International Comparative Studies 102S, Women's Studies 191S

195S. Fugitive Slave (Maroon) Communities in New World Slave Societies. CCI, CZ Also taught as History 195S or 196S. Instructor: Gaspar. One course. C-L: International Comparative Studies


198S. Senior Seminar. Open to seniors majoring in African and African American Studies and to others with consent of instructor. Instructors: Staff. One course.

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

199L. Special Topics. Laboratory version of African and African American Studies 199. Topics vary semester to semester. One course. Topics course. Instructor: Staff. One course.

199S. Special Topics. Seminar version of African and African American Studies 199. Topics vary from semester to semester. Instructor: Staff. One course.

200S. Seminar in Asian and Middle Eastern Cultural Studies. CZ One course. C-L: see Asian & Middle Eastern Studies 200S; also C-L: Cultural Anthropology 288S, Literature 200S

209S. Race, Class, and Gender: A Social History of Modern (1750-present) Britain. CCI, CZ, EI, SS One course. C-L: see History 209S

210S. Black Visual Theory. ALP, CCI, CZ, EI, R One course. C-L: see Visual Studies 221S
213S. African Modernities. CCI, SS Encounters between African societies and global forces, including colonialism, capitalism, development initiatives. Instructor: Holsey. One course. C-L: Cultural Anthropology 203S, International Comparative Studies

217S. Schooling and Social Stratification. CCI, SS One course. C-L: see Public Policy Studies 217S, also C-L: Education 217S

225S. Monuments and Memory: Public Policy and Remembrance of Racial Histories. ALP, CCI, EI, SS One course. C-L: see Public Policy Studies 225S

229S. Poverty, Inequality, and Health. EI, R, SS One course. C-L: Public Policy Studies 229S

254. Justice, Law, and Commerce in Islam. CZ, EI One course. C-L: see Religion 254; also C-L: Medieval and Renaissance Studies 254, International Comparative Studies, Islamic Studies

262S. Minority Mental Health: Issues in Theory, Treatment, and Research. CCI, SS One course. C-L: see Psychology 262S

268S. Harlem Renaissance. ALP, CCI, CZ, R One course. C-L: see Art History 269S

270S. Topics in African Art. ALP, CZ One course. C-L: see Art History 270S; also C-L: International Comparative Studies

278S. Race and American Politics. CCI, SS One course. C-L: see Political Science 278S; also C-L: Public Policy Studies 278S

279S. Race, Racism, and Democracy. CCI, SS, W One course. C-L: Cultural Anthropology 279S

297S. Teaching Race, Teaching Gender. CCI, SS Interdisciplinary analyses of the problematics of teaching about social hierarchies, especially those of race, class, and gender. Curricular content and its interaction with the social constructions of students and teachers. Instructor: Lubiano. One course. C-L: Women's Studies 297S, History 297S, Literature 225S

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


THE MAJOR

The major requires ten courses, eight of which must be at the level of 100 or above. Students may choose one of the two following options.

A. The Americas Focus

Major Requirements:
2. Three courses focusing upon the Americas, one course in each of the following areas:
   a. Arts or Literature
   b. History
   c. Social, Religious, Economic, or Political Institutions/Processes.
3. African and African American Studies 198S (Senior Seminar).
4. Four additional African and African American Studies courses.

B. Africa Focus

Major Requirements:
2. Three courses focusing upon Africa, one course in each of the following areas:
   a. Arts or Literature
   b. History
   c. Social, Religious, Economic, or Political Institutions/Processes.
3. African and African American Studies 198S (Senior Seminar).

**THE MINOR**

The minor requires five courses, two of which must be African and African American Studies 106 and 107, and three of which must be at the level of 100 or above. Courses must be selected in each of the following areas:

1. Arts or Literature
2. History
3. 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 188.

**Anthropology**

See the departments of Evolutionary Anthropology (on page 332) and Cultural Anthropology (on page 238).

**Arabic**

For courses in Arabic, see Asian and Middle Eastern Studies on page 171.

**Art, Art History, and Visual Studies (ARTSVIS/ARTHIST/VISUALST)**

Professor Van Miegroet, Chair; Professor Stiles, Director of Undergraduate Studies; Professors Antliff, Bruzelius, Hansen, Leighton, Lenoir, McWilliam, Morgan, Powell, Seaman, Stiles, Van Miegroet, and Wharton; Associate Professors Abe, Dillon, Gabara, and Weisenfeld; Assistant Professor Galletti; Assistant Research Professors Lasch and Szabo; Associate Professors of the Practice Noland, Rankin, and Shatzman; Adjunct Professors Rorschach and Schrot; Adjunct Associate Professor Brady; Adjunct Assistant Professor Schroder; Professor Emeritus Markman

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

**ART HISTORY (ARTHIST)**

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 upon
careful observation, the ordering of diverse sorts of information, expository writing, and
scholarly research makes it a good general preparation for any profession.

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.

49S. **First-Year Seminar.** ALP, CZ, R Topics vary each semester offered. Instructor: Staff.
One course.

60. **Duke-Administered Study Abroad: Special Topics in Art History.** ALP, CZ Topics
differ by section. Instructor: Staff. One course.

69D. **Introduction to the History of Art.** ALP, CCI, CZ Same as Art History 69, except
instruction provided in two lectures and one small discussion meeting each week. Instructor:
Staff. One course.

70D. **Introduction to the History of Art.** ALP, CCI, CZ Same as Art History 70 except
instruction provided in two lectures and one small discussion meeting each week. Instructor:
Staff. One course.

80FCS. **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.

95S. **Special Topics in Art History.** ALP Subjects, areas, or themes that embrace a range of
disciplines or art historical areas. Instructor: Staff. One course.

97. **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.

98. **Visual Culture Outside the United States, II.** ALP, CZ See Art History 97. Instructor:
Staff. One course.

110. **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 consideration of
Romanesque precedents and the origins of the various structural elements of Gothic
architecture. Instructor: Bruzelius. One course. C-L: Medieval and Renaissance Studies
112A

111. **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 Mediterrane-
nean 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 112B

113. **Eighteenth-Century Art and Architecture.** ALP, CCI, CZ The visual arts and esthetic
issues in the development of modern culture in Europe and the relationship between artists
and the public in the period of the Enlightenment. Considering all media, including painting,
sculpture, prints, architecture and gardens, topics may include the rise of academies, the
development of art criticism, the role of the spectator in art; the involvement of women in
art and its institutions; historical and theoretical discussions of rococo and neoclassical
styles; the idea of revolutions in history; Rousseau and the cult of nature; and the impact of
new philosophical trends on aesthetic theory. Instructor: Schroder. One course.

114. **The Aegean Bronze Age.** ALP, CCI, CZ One course. C-L: see Classical Studies 155

116. **Museum Internship.** R One course.
121. 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: Visual Studies 101B

122. Introduction to Documentary Film. ALP, CCI
One course. C-L: Arts of the Moving Image 102, Literature 120E, Documentary Studies 107, Visual Studies 117C

123. Early Greek Archaeology: From the Fall of Mycenae to the Persian Wars. ALP, CCI, CZ, W
One course. C-L: see Classical Studies 123

124. Greek Art and Archaeology II: Classical to Greco-Roman. ALP, CCI, CZ, W
One course. C-L: see Classical Studies 124

125A. 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 126

126A. Rome: History of the City (Study Abroad). ALP, CCI, CZ
One course. C-L: see Classical Studies 145; also C-L: History 101F

128. 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 128

131FCS. 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. C-L: International Comparative Studies 110FCS

134. 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 131C

135A. Topics in Italian Art and Architecture. ALP, CCI, CZ
Topics vary from year to year. Consent of instructor required. (Taught in Italy.) Instructor: Staff. One course.

136. Film Genres. ALP
One course. C-L: Arts of the Moving Image 106, Literature 120F, Visual Studies 117F

One course. C-L: see Russian 142S

139. The Living Middle Ages. ALP, CCI, CZ
One course. C-L: see Medieval and Renaissance Studies 114; also C-L: Classical Studies 139, History 116

140. 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 140C

144A. 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 144B
144B. 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 137

146. 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 120

149. Aspects of Renaissance Culture (DS2). ALP, CCI, CZ One course. C-L: see Medieval and Renaissance Studies 115; also C-L: History 148A, Italian 134


153. 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. Not open to students who have previously taken this course as Visual Studies 157. Instructor: Van Miegroet. One course. C-L: Medieval and Renaissance Studies 154B, International Comparative Studies

155. 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: Italian 153, Medieval and Renaissance Studies 152A


168. Experimental Art and Its Ethics 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 177, Literature 133B, International Comparative Studies 101A, Ethics


171. 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


176. Modern and Contemporary African American Art. ALP, CCI, CZ, R Emphasis on works derived from an Afro-United States cultural perspective. Major figures include Henry Ossawa Tanner, Aaron Douglas, Jacob Lawrence, Charles White, Elizabeth Catlett, Romare

177A. 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.

177B. 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.

177C. 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.

177E. 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.

177FS. 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.

177S. 20th Century Latin American Photography. CCI, CZ, FL One course. C-L: see Spanish 177S; also C-L: International Comparative Studies 132BS, Visual Studies 126KS, Latin American Studies

180B. Later Japanese Art. 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


182. 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


185. Russian Art and Politics: 1800-Present. ALP, CCI, CZ One course. C-L: see Russian 182

185FCS. Russian Art and Politics. ALP, CCI, CZ One course. C-L: see Russian 182FCS
187. 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

189A. 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. Not open to students who have taken ARTHIST 189. Instructor: Wharton. One course. C-L: International Comparative Studies 189B

189AD. 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. Not open to students who have taken ARTHIST 189. Instructor: Wharton. One course. C-L: International Comparative Studies 189AD

189BD. Postmodern 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. Not open to students who have taken ARTHIST 189. Instructor: Wharton. One course.

190. Berlin: Architecture, Art and the City, 1871-Present. ALP, CCI, CZ Development of urban Berlin from the Grunderzeit (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: German 158, International Comparative Studies

190B. 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 196A

191A. 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.

191B. 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.

192A. Research Independent Study. R See Art History 191A. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

192B. Independent Study. See Art History 191B. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

196B. English Art 1740-1850: Hogarth to the Pre-Raphaelites. ALP, CCI, CZ, R, W Painting and sculpture in Britain from Hogarth to the Pre-Raphaelites; developments in
narrative painting, portraiture and history painting; funerary sculpture and the emergence of the public movement; the role of institutions and art collectors; writing on art from Hogarth and Reynolds to Hazlitt and Ruskin. Instructor: McWilliam. One course.

196C. French Art 1780-1850. ALP, CCI, CZ A thematic history of painting in France from Classicism to Realism; the impact of revolution and social change on visual art; the academy and artistic training and exhibition; romanticism and changing conceptions of creativity and artistic individuality; the crisis in history painting and the new appeal of landscape; critics and collectors. Instructor: McWilliam. One course.

198. 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.

199. 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 Studies 101G, Documentary Studies, Arts of the Moving Image

For Seniors and Graduates

200S. Special Topics. Focus on particular aspects of Art and Art History. Topics vary. Instructor consent required. Topics course. Instructor: Staff. One course.

201S. 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 220S

204S. Greek Art and Society: Hellenistic. ALP, CCI, CZ Greek world expanded by Alexander's conquests into western Anatolia and north-western India. Material and visual culture of important sites and characteristic buildings, monuments, images. Particular attention paid to: recent discoveries at Vergina and Pella; royal capital of Attalid Pergamon; city-states of Athens and Priene; Egyptian and Greek interaction in Ptolemaic Alexandria and Egypt. Other important subjects include: the Hellenistic royal image on coins and in statues; colonial settlement, such as that at Ai Khanoum in north-east Afghanistan; changes in honorific and funerary representation. Course also looks at late Hellenistic Delos and mass export of Hellenistic material. Instructor consent required. Instructor: Dillion. One course. C-L: Classical Studies 240

210S. Renaissance Studies. ALP, CCI, CZ One course. C-L: see Italian 210S; also C-L: Medieval and Renaissance Studies 210S

227S. Roman Painting. ALP, CCI, CZ, R One course. C-L: see Classical Studies 236S
236S. 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 237S

237S. Greek Painting. ALP, CCI, CZ, R One course. C-L: see Classical Studies 232S

238S. Greek Sculpture. ALP, CCI, CZ, R One course. C-L: see Classical Studies 231S

240S. Technology and New Media: Academic Practice. SS, STS One course. C-L: see Information Science and Information Studies 240S; also C-L: Visual Studies 250BS

241. 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 158-159. Course credit contingent upon completion of Art History 242. Instructor: Van Miegroet. One course. C-L: Medieval and Renaissance Studies 241, Visual Studies 210, International Comparative Studies


247S. 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: Staff. One course. C-L: Medieval and Renaissance Studies 248S


255S. 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: Rorschach. One course.


265S. 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. Instructor: Antliff, Leighten, or McWilliam. One course.

269S. 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. Not open to students who have previously taken this course as Visual Studies 220S Instructor: Powell. One course. C-L: African and African American Studies 268S


272S. 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: African and African American Studies 270S, International Comparative Studies

274S. Topics in Japanese Art. ALP, CCI, CZ, R Problems and issues in a specific period or genre of Japanese art. Specific focus varies from year to year. Consent of instructor required. Instructor: Weisenfeld. One course. C-L: International Comparative Studies

283S. 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


288S. Special Topics. ALP Subjects, areas, or themes that embrace a range of disciplines or art historical areas. Instructor: Staff. One course.

291A. 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.

291B. 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.

292A. Research Independent Study. R See Art History 291A. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

292B. Independent Study. See Art History 291B. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

296S. 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.

297S. 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

VISUAL ARTS (ARTSVIS)

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.

A major or concentration in studio art can provide the foundation for further study in various areas of the visual arts. It may prepare the student for further training as an artist, teacher, or architect, as well as in related fields such as advertising or design. Lower-level courses emphasize the fundamentals of drawing, color, and form; upper-level courses encourage the student to develop a more individual conceptual approach and style, within the context of historical precedents and traditions.


54. Introduction to Visual Practice. ALP Basic principles and methods of visual practice: 2DD and 3DD composition, drawing, color theory, photographic and architectural principles, as well as digital and time-based media like film, video, and performance. Visuality in everyday life and its impact on other fields of knowledge. Includes methods such as mapping, virtual environments, graph theory, and vernacular visual practices. Intended primarily for first and second year students. Prerequisite for all intermediate and advanced Visual Arts and Visual Practice classes. Instructor: Lasch. One course.


81FCS. 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.

87FCS. Visual Representation and Visual Culture. ALP, SS, STS One course. C-L: see Information Science and Information Studies 87FCS

100. 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. Consent of instructor required. Instructor: Staff. One course.

101. 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 54 and 100 and consent of instructor. Instructor: Shatzman. One course. C-L: Visual Studies 102A

102. 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 54, 100 and consent of instructor based on portfolio. Instructor: Staff. One course.

103. 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.

105. 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 100 and consent of instructor. Instructor: Staff. One course.

106. Digital Imaging. ALP Photoshop and Illustrator used to introduce single and serial images for print and web output. Consent of instructor required. Instructor: Staff. One
course. C-L: Visual Studies 191, Documentary Studies, Information Science and Information Studies


108. 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. Not open to students who have taken this course as FVD 118. Prerequisites: Visual Arts 100 and consent of instructor required. Not open to students who have previously taken this course as Visual Arts 108. Instructor: Staff. One course. C-L: Visual Studies 192L, Information Science and Information Studies 108, Arts of the Moving Image 137

108FCS. Virtual Form and Space. ALP Studio course that explores various applications of virtual environments and specific 3D modeling techniques. Introduction to animation principles. Screenings, discussions, and lab. Not open to students who have taken this course as FVD 118. Not open to students who have previously taken this course as Visual Arts 108. Open only to students in the Focus Program. Instructor: Salvatella de Prada. One course. C-L: Visual Studies 192FCS, Information Science and Information Studies 108FCS, Arts of the Moving Image 137FCS

109. 3D Modelling 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 Studies 191 or 194 and consent of instructor. Instructor: Salvatella de Prada. One course. C-L: Visual Studies 197

110. 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.

111. Intermediate Sculpture. ALP Studio practice in sculpture at the intermediate level. Group and individual discussion and critique. Prerequisite: Visual Arts 110 and consent of instructor. Instructor: Noland. One course.

112S. A Digital Approach to Documentary Photography: Capturing Transience. ALP One course. C-L: see Documentary Studies 113S; also C-L: Visual Studies 103JS, Information Science and Information Studies

114S. Large Format Photography. ALP One course. C-L: see Documentary Studies 114S; also C-L: Visual Studies 103KS

115. Introduction to Photography. ALP One course. C-L: see Documentary Studies 115; also C-L: Visual Studies 103L

116S. 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: Noland. One course. C-L: Documentary Studies, Arts of the Moving Image

117. Documentary Photography and the Southern Culture Landscape. ALP, CCI One course. C-L: see Documentary Studies 117; also C-L: Visual Studies 103M

118S. American Communities: A Photographic Approach. ALP, CCI, SS One course. C-L: see Documentary Studies 176S; also C-L: Public Policy Studies 176S, Visual Studies 103XS, Arts of the Moving Image, Policy Journalism and Media

119S. Advanced Documentary Photography. ALP, SS One course. C-L: see Documentary Studies 177S; also C-L: Public Policy Studies 177S, Visual Studies 103YS, Arts of the Moving Image, Policy Journalism and Media
120. Painting. ALP  Studio practice in painting with individual and group criticism and discussion of important historic or contemporary ideas. Prerequisites: Visual Arts 54, 100 and consent of instructor. Instructor: Staff. One course.

122AS. Alternative Photographic Processes. ALP One course. C-L: see Documentary Studies 118S; also C-L: Visual Studies 103NS

124. Book Art: Text 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. Prerequisites: ARTSVIS 54. ARTSVIS 101 preferred. Instructor consent required. Instructor: Shatzman. One course.


127. 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 principles. Comparison of the language and tools of old and new media. Analysis of visual materials, discovering conceptual and stylistic connections, including Illustrator and Photoshop. Not open to students who have taken this course as ARTSVIS 55. Consent of instructor required. Prerequisites: Visual Arts 54. Instructor: Staff. One course. C-L: Visual Studies 194

130. 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. Prerequisites: Visual Arts 54 and consent of instructor. Instructor: Shatzman. One course.

131. Printmaking: Lithography. ALP, R Introduction to stone lithography and its drawing and printing methods. Includes both black and white and color printing. The methods and history of lithographic printing. Projects emphasize the development of visual images through this medium. Prerequisites: Visual Arts 54 and 100 and consent of instructor. Instructor: Shatzman. One course.

132. 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. Prerequisites: Visual Arts 54 and consent of instructor. Instructor: Shatzman. One course.

133. 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 54, 100 and consent of instructor. Instructor: Shatzman. One course.

138S. Adapting Literature -- Producing Film. ALP One course. C-L: Arts of the Moving Image 133S, Documentary Studies 133S, Information Science and Information Studies

142S. Photography in Context. ALP, R One course. C-L: see Documentary Studies 123S; also C-L: Visual Studies 131BS

146S. Experimental Filmmaking. ALP One course. C-L: Arts of the Moving Image 142S

147S. Collaborative Art: Practice and Theory of Working Within a Community. ALP One course. C-L: see Documentary Studies 147S; also C-L: Visual Studies 103TS


150S. Intermediate Narrative Production. ALP Focus on narrative film and video techniques, from script to realization. Exercises in production management, cinematography, lighting, shot blocking and working with actors in dramatic productions, employing continuity editing techniques. Suggested prerequisites: Film/Video/Digital 130, Introduction to Production. Instructor: Staff. One course. C-L: Arts of the Moving Image 150S

152. Site, Situation & Object: Sculpture & Architecture. ALP, R Studio course in which students are expected to 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. Prerequisite: ARTSVIS 110 or equivalent. Instructor consent required. Instructor: Staff. One course.


158S. Small Town USA: Local Collaborations. ALP, CCI, R One course. C-L: see Documentary Studies 158S; also C-L: Public Policy Studies 158S, Visual Studies 103WS


161S. Costume Design. ALP, R One course. C-L: see Theater Studies 161S

162S. Scene Design. ALP, R One course. C-L: see Theater Studies 162S

163S. Lighting Design. ALP, R One course. C-L: see Theater Studies 160S; also C-L: Dance 160S

164S. Visiting Filmmaker Master Courses: Special Topics. ALP One course. C-L: Arts of the Moving Image 162S, Documentary Studies 171S

165S. Film Animation Production. ALP One course. C-L: Arts of the Moving Image 135S, Visual Studies 117IS, Information Science and Information Studies

166S. Intermediate Animation. ALP One course. C-L: Arts of the Moving Image 151S

169S. Special Topics in Visual Arts. ALP Subject varies from year to year. Instructor: Staff. One course.

170. Topics in Visual Arts. ALP Subject varies from year to year. Consent of instructor required. Instructor: Staff. One course.

173. 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

Art, Art History, and Visual Studies (ARTSVIS/ARTHIST/VISUALST) 145

178S. Color Photography: Fieldwork and Digital Color. ALP One course. C-L: see Documentary Studies 178S; also C-L: Visual Studies 103ZS

180S. The Photographic Essay: Narratives Through Pictures. ALP One course. C-L: see Documentary Studies 180S; also C-L: Public Policy Studies 184S

183L. 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: Alt. One course. C-L: Visual Studies 194CL, Information Science and Information Studies 194CL, Arts of the Moving Image 168

190A. Painting. ALP Practice in painting. Consent of instructor required. Instructor: Staff. Half course.

190B. Photography. ALP Practice in photography. Consent of instructor required. Instructor: Staff. Half course.

190C. Multimedia. ALP Practice in multimedia. Permission of instructor required. Instructor: Staff. Half course.


194S. Multimedia Documentary: Editing, Production, and Publication. ALP One course. C-L: see Documentary Studies 194S; also C-L: Visual Studies 131AS

196FCS. 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 Studies 196FCS

196S. The Photobook: History & 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 Studies 196S

For Seniors and Graduates

200S. 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.

204. 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 100-level photography or film production classes. Instructor consent required. Instructor: Noland. One course.

208S. Poverty and the Visual. ALP, CCI, CZ Relationship between art, visual culture, and poverty from the 1950s to the present across cultures. Readings, research, visual analyses, and production assignments based on a broader understanding of poverty as a philosophical, economic, social, and cultural concept. Instructor: Lasch. One course.

217. 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.

218. 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.

236S. 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. One course. C-L: Visual Studies 236S, Sociology 236S, Cultural Anthropology 236S

266S. The Human as Electrochemical Computer - Toward a New Computational and Aesthetic Paradigm. 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 Studies 266S, Information Science and Information Studies 266S, Arts of the Moving Image 202S

269S. Special Topics in Visual Arts. ALP Special Topics in Visual Arts. Subject varies from year to year. One course. Instructor: Staff. One course.

VISUAL STUDIES (VISUALST)

Visual Studies concerns all aspects of the production, circulation, and reception of visual images in culture, science, and society. It emerged in the late 1970s during the same period as Cultural Studies, as a field of inquiry throughout the humanities. Studies in visual culture engage students in the analysis of the rhetoric and semiotics of images, providing access to how visual meaning is socially, politically, and culturally constucted and received. Visual Studies enables students to interpret the representations that shape the visual constructs of a particular society, to consider how systems of visual 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 is the foundation of Visual Studies.

49S. First-Year Seminar. Topics vary. Open only to first-year students. Instructor: Staff. One course.

50. Introduction to Astronomy. NS One course. C-L: see Physics 55

60. Duke Administered Study Abroad: Special Topics in Visual Studies. ALP Topics differ by section. Instructor: Staff. One course.

72A. Artificial Life, Culture, and Evolution. QS, SS, STS One course. C-L: see Information Science and Information Studies 72; also C-L: Computer Science 72

88FCS. Berlin in the Twentieth Century. ALP, CCI, CZ, EI One course. C-L: see German 88FCS

100D. 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.) Not open to students who previously took this course as Art History 108D. Instructor: Staff. One course. C-L: Arts of the Moving Image 126

101B. 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 121

101C. French Art and Visual Culture in the Early Modern Period. ALP, CCI, CZ, R Students proficient in French will be encouraged to do some of the reading in French. C-L: Art History 156. Instructor: Van Miegroet. One course. C-L: Art History 156, Medieval and Renaissance Studies 157, International Comparative Studies 180A


101G. 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 199, Documentary Studies, Arts of the Moving Image

102A. 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 54 and 100 and consent of instructor. Instructor: Shatzman. One course. C-L: Visual Arts 101
102B. 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: Alt. One course. C-L: Visual Arts 173, Information Science and Information Studies 173

103A. Traditions in Documentary Studies. ALP, CCI  
One course. C-L: see Documentary Studies 101

103BS. Medicine and the Vision of Documentary Photography. ALP  
One course. C-L: see Documentary Studies 104S; also C-L: Public Policy Studies 104S

103CS. The Documentary Experience: A Video Approach. ALP, R, SS  
One course. C-L: see Documentary Studies 105S; also C-L: Cultural Anthropology 134S, Arts of the Moving Image 139S, History 150BS, Political Science 156S, Public Policy Studies 105S

103FS. Children's Self Expression: Literacy Through Photography. EI, SS  
One course. C-L: see Documentary Studies 144S; also C-L: Education 144S, Early Childhood Education

103GS. Documenting Religion. CCI, CZ  
One course. C-L: see Documentary Studies 168S; also C-L: Religion 161QS, Cultural Anthropology 162AS

103IS. Children and the Experience of Illness. SS  
One course. C-L: see Documentary Studies 100S; also C-L: Public Policy Studies 100S

103JS. A Digital Approach to Documentary Photography: Capturing Transience. ALP  
One course. C-L: see Documentary Studies 113S; also C-L: Visual Arts 112S, Information Science and Information Studies

103KS. Large Format Photography. ALP  
One course. C-L: see Documentary Studies 114S; also C-L: Visual Arts 114S

103L. Introduction to Photography. ALP  
One course. C-L: see Documentary Studies 115; also C-L: Visual Arts 115

103M. Documentary Photography and the Southern Culture Landscape. ALP, CCI  
One course. C-L: see Documentary Studies 117; also C-L: Visual Arts 117

103NS. Alternative Photographic Processes. ALP  
One course. C-L: see Documentary Studies 118S; also C-L: Visual Arts 122AS

103PS. Visual Research and the American Dream. ALP, R, SS  
One course. C-L: see Documentary Studies 122S; also C-L: Sociology 128S

103RS. Sociology through Photography. ALP, SS  
One course. C-L: see Documentary Studies 146S; also C-L: Sociology 152S

103TS. Collaborative Art: Practice and Theory of Working Within a Community. ALP  
One course. C-L: see Documentary Studies 147S; also C-L: Visual Arts 147S

103US. Planning the Documentary Film: From Concept to Treatment. ALP, R  
One course. C-L: see Documentary Studies 148S; also C-L: Arts of the Moving Image 140S, Information Science and Information Studies


103WS. Small Town USA: Local Collaborations. ALP, CCI, R  
One course. C-L: see Documentary Studies 158S; also C-L: Visual Arts 158S, Public Policy Studies 158S
103XS. American Communities: A Photographic Approach. ALP, CCI, SS One course. C-L: see Documentary Studies 176S; also C-L: Visual Arts 118S, Public Policy Studies 176S, Arts of the Moving Image, Policy Journalism and Media Studies

103YS. Advanced Documentary Photography. ALP, SS One course. C-L: see Documentary Studies 177S; also C-L: Visual Arts 119S, Public Policy Studies 177S, Arts of the Moving Image, Policy Journalism and Media Studies

103ZS. Color Photography: Fieldwork and Digital Color. ALP One course. C-L: see Documentary Studies 178S; also C-L: Visual Arts 178S

104A. Film and the African Diaspora. ALP, CCI, SS One course. C-L: see African and African American Studies 101; also C-L: Women's Studies 110, Arts of the Moving Image

104B. Culture and Politics in Africa. CCI, CZ, SS One course. C-L: see African and African American Studies 122; also C-L: Cultural Anthropology 122, International Comparative Studies

104C. Black Popular Culture. CCI, CZ One course. C-L: see African and African American Studies 132

104E. Representing Slavery. ALP, CCI, EI, SS One course. C-L: see African and African American Studies 151; also C-L: Cultural Anthropology 122C, International Comparative Studies 110F

105B. Indian Cinema. ALP, CCI, CZ, R One course. C-L: see Asian & Middle Eastern Studies 170; also C-L: Literature 112E, Arts of the Moving Image 111D

105C. Japanese Cinema. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 171; also C-L: Literature 112H, Arts of the Moving Image 111F

105E. Melodrama East and West. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 179; also C-L: Women's Studies 179, Literature 151J, International Comparative Studies 170A

105F. World of Korean Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 175; also C-L: Literature 112G, Arts of the Moving Image 111G, Cultural Anthropology 161A

105G. Modern Chinese Cinema. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 188; also C-L: Literature 112J, Arts of the Moving Image 111A

105J. Global Chinese Cities through Literature and Film. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 133; also C-L: Literature 165L, Cultural Anthropology 101A, International Comparative Studies 121H

105KS. Discourse of Disease and Infection. ALP, CCI, CZ, STS One course. C-L: see Asian & Middle Eastern Studies 134S; also C-L: Literature 165MS, Cultural Anthropology 101BS, International Comparative Studies 104CS

108A. Drama of Greece and Rome. ALP, CCI One course. C-L: see Classical Studies 106; also C-L: Theater Studies 117

109A. Computer Graphics. QS One course. C-L: see Computer Science 124; also C-L: Modeling Biological Systems

110A. Anthropology and Film. SS One course. C-L: see Cultural Anthropology 104; also C-L: International Comparative Studies 101C, Documentary Studies, Arts of the Moving Image

110B. Fantasy, Mass Media, and Popular Culture. CCI, R, SS One course. C-L: see Cultural Anthropology 108; also C-L: International Comparative Studies 103E, Documentary Studies, Policy Journalism and Media Studies, Study of Sexualities

110C. Anthropology and the Motion Picture. ALP, CCI, CZ One course. C-L: see Cultural Anthropology 109

110DE. Advertising and Society: Global Perspective (DS4). CCI, SS One course. C-L: see Cultural Anthropology 110D; also C-L: Sociology 160D, Linguistics 120D
110E. Advertising and Society: Global Perspective (DS4). CCI, SS One course. C-L: see Cultural Anthropology 110; also C-L: Sociology 160, Linguistics 120, Canadian Studies, International Comparative Studies, Arts of the Moving Image, Markets and Management Studies, Policy Journalism and Media Studies, Women's Studies

110G. Global Culture. CCI, SS One course. C-L: see Cultural Anthropology 117; also C-L: International Comparative Studies

110H. Representing the Middle East. CCI, CZ, SS One course. C-L: see Cultural Anthropology 132; also C-L: Asian & Middle Eastern Studies 132, History 131B, Turkish 132, International Comparative Studies 141B, Islamic Studies

111AS. The Surface of the Earth. NS One course. C-L: see Earth and Ocean Sciences 103S

112A. Financial Markets and Investment. QS, SS One course. C-L: see Economics 157

114A. Aesthetics, Design, and Culture. One course. C-L: see Engineering 175

115A. Studies in Film History (DS4). ALP One course. C-L: see English 185; also C-L: Theater Studies 172, Literature 116

115BS. The Arts in New York: A Thematic Approach. ALP, R, W One course. C-L: see English 181BS; also C-L: Theater Studies 128S

117AS. Introduction to Production. ALP, STS One course. C-L: see Arts of the Moving Image 130S; also C-L: Theater Studies 173S, Information Science and Information Studies

117B. Contemporary Documentary Film: Filmmakers and the Full Frame Documentary Film Festival. ALP, CCI, STS One course. C-L: Documentary Studies 129, Arts of the Moving Image 103, Political Science 156A, Public Policy Studies 171

117C. Introduction to Documentary Film. ALP, CCI One course. C-L: Arts of the Moving Image 102, Art History 122, Literature 120E, Documentary Studies 107


117F. Film Genres. ALP One course. C-L: Arts of the Moving Image 106, Literature 120F, Art History 136

117G. American Film Comedy. ALP One course. C-L: Arts of the Moving Image 107, English 186C, Literature 120G

117H. Conflict, Conflict Resolution, and Film. ALP, CCI, SS One course. C-L: Arts of the Moving Image 108, Political Science 156, Literature 120C, Public Policy Studies 172

117IS. Film Animation Production. ALP One course. C-L: Visual Arts 165S, Arts of the Moving Image 135S, Information Science and Information Studies

117JS. Motion Graphics in Film and Video. ALP, STS One course. C-L: Arts of the Moving Image 136S, Visual Arts 136S

117KS. Documentary Film/Video Theory and Practice (DS4). ALP One course. C-L: Cultural Anthropology 131S, Arts of the Moving Image 138S, Documentary Studies

117LS. Editing the TV Documentary: From Creativity to Collaboration to Negotiation. ALP One course. C-L: Arts of the Moving Image 141S, Documentary Studies 141S


118BS. German Film. ALP, FL One course. C-L: see German 141S; also C-L: Arts of the Moving Image 111C

118C. Terror and German Cinema. ALP, CCI, CZ One course. C-L: see German 189; also C-L: Literature 112L

118ES. Freud's Vienna: Experiments in Modernity Around 1900. ALP, CCI, CZ, FL One course. C-L: see German 142S
118GD. German Film. ALP, CZ One course. C-L: see German 168D; also C-L: Arts of the Moving Image 1111
118GS. German Film. ALP, CZ One course. C-L: see German 168; also C-L: Arts of the Moving Image
118H. Existentialist Cinema. ALP, CCI, CZ, EI, STS One course. C-L: see German 184; also C-L: Theater Studies 172B, Literature 112N, International Comparative Studies 183C, Arts of the Moving Image
119A. Weimar and Nazi Germany. CZ, R One course. C-L: see History 135B; also C-L: International Comparative Studies
120A. Perspectives on Information Science and Information Studies. CZ, STS One course. C-L: see Information Science and Information Studies 100
120BS. Gender and Digital Culture. ALP, STS, W One course. C-L: see Information Science and Information Studies 145S; also C-L: Women's Studies 145S, Cultural Anthropology 143B
120CS. Constructing Immersive Virtual Worlds. QS One course. C-L: see Information Science and Information Studies 170S; also C-L: Computer Science 122S
120E. Fundamentals of Web-Based Multimedia Communications. ALP, QS, R One course. C-L: see Information Science and Information Studies 140; also C-L: Arts of the Moving Image 167
120G. Media Remix: Sampling Theory. ALP, EI, STS One course. C-L: see Information Science and Information Studies 165
120HS. Foundations of Interactive Game Design. ALP, STS One course. C-L: see Information Science and Information Studies 155S
121A. Introduction to Film (DS4). ALP One course. C-L: see Literature 110; also C-L: Theater Studies 171, English 101A, Arts of the Moving Image 101, Policy Journalism and Media Studies
121B. Gender and Sexuality in Japanese Anime Culture. ALP, CCI One course. C-L: see Literature 112F
121CS. Sexualities in Film and Video (DS4). ALP One course. C-L: see Literature 115S; also C-L: Arts of the Moving Image 115S, Study of Sexualities
121E. Introduction to Cultural Studies (DS4). ALP One course. C-L: see Literature 100; also C-L: English 101B, Arts of the Moving Image
121F. International Popular Culture. ALP, CCI One course. C-L: see Literature 141; also C-L: International Comparative Studies, Arts of the Moving Image, Latin American Studies
121G. Film Theory. ALP, STS One course. C-L: see Literature 114; also C-L: Arts of the Moving Image 104, Women's Studies
121HS. Media Theory. STS One course. C-L: see Literature 114AS; also C-L: Arts of the Moving Image 118S, Information Science and Information Studies 114S
122A. Aesthetics: The Philosophy of Art. ALP, CZ One course. C-L: see Philosophy 102
122B. Philosophy of Mind. CZ, R One course. C-L: see Philosophy 112; also C-L: Linguistics 108, Information Science and Information Studies
123A. Modern Optics I. NS One course. C-L: see Physics 185; also C-L: Electrical and Computer Engineering 122
125A. Media and National Security. SS, STS One course. C-L: see Public Policy Studies 117; also C-L: Policy Journalism and Media Studies
125BS. Television Journalism. SS One course. C-L: see Public Policy Studies 118S; also C-L: Information Science and Information Studies, Policy Journalism and Media Studies
125CS. Magazine Journalism. SS, W One course. C-L: see Public Policy Studies 119S; also C-L: Documentary Studies 119S, Policy Journalism and Media Studies
125ES. News Writing and Reporting. R, SS, W One course. C-L: see Public Policy Studies 120S; also C-L: Arts of the Moving Image, Policy Journalism and Media Studies

126A. Italian Cinema. ALP, CCI One course. C-L: see Italian 132; also C-L: Literature 112K, Arts of the Moving Image 111E, Theater Studies 172A

126E. French Cinema. ALP, CCI, FL One course. C-L: see French 155; also C-L: International Comparative Studies 181E, Arts of the Moving Image 111B

126F. World War II and French Film. CCI, CZ, EI, FL One course. C-L: see French 156; also C-L: Arts of the Moving Image 117, History 153C

126G. Comics and Culture: Images of Modern France in the Making. ALP, CCI, FL One course. C-L: see French 157

126H. Yesterday's Classics/Today's Movies. ALP, CCI, FL One course. C-L: see French 158; also C-L: Arts of the Moving Image 111L

126I. Contemporary Culture Wars. CCI, CZ, EI, FL One course. C-L: see French 159

126JS. French Films/American Masks. ALP, CCI, FL One course. C-L: see French 165S

126KS. 20th Century Latin American Photography. CCI, CZ, FL One course. C-L: see Spanish 177S; also C-L: Art History 177S, International Comparative Studies 132BS, Latin American Studies

126MS. Mexicana Through from North and South: Writing, Art, Film. ALP, CCI, FL One course. C-L: see Spanish 145S

127AS. Russian Language and Culture through Film. CCI, FL, SS, STS One course. C-L: see Russian 124S

127B. Eastern Europe in Transition: Markets, Media, and the Mafia. CCI, CZ, SS One course. C-L: see Russian 125; also C-L: Sociology 121, International Comparative Studies 161B, Policy Journalism and Media Studies

127CS. Russian Language and Culture through Film II. ALP, CCI, FL, SS, STS One course. C-L: see Russian 126S

127E. Contemporary Russian Media. CCI, EI, FL, SS One course. C-L: see Russian 135A; also C-L: International Comparative Studies, Arts of the Moving Image

127F. Contemporary Russian Culture: Detective Novels and Film. ALP, CCI, CZ, FL One course. C-L: see Russian 143

127G. Art and Dissidence: The Films of Tarkovsky, Kubrick, Kurosawa, and Lynch. ALP, CCI, CZ One course. C-L: see Russian 163; also C-L: Arts of the Moving Image 111O, Arts of the Moving Image

128B. American Drama and Film: 1945-1960 (DS4). ALP One course. C-L: see Theater Studies 102; also C-L: English 162B

128C. American Drama and Film Since 1960 (DS4). ALP One course. C-L: see Theater Studies 103

128F. Criminality of Art. ALP One course. C-L: see Theater Studies 176; also C-L: Literature 131C

128GS. Masculine Anxiety and Male-Male Desire in Drama and Film Since 1950. ALP, CCI One course. C-L: see Theater Studies 179S; also C-L: Literature 125AS

129A. Gender and Popular Culture. CCI, SS One course. C-L: see Women's Studies 162

129AS. Gender and Popular Culture. CCI, SS One course. C-L: see Women's Studies 162S

130A. Religion in American Life. CZ, EI One course. C-L: see Religion 124

131AS. Multimedia Documentary: Editing, Production, and Publication. ALP One course. C-L: see Documentary Studies 194S; also C-L: Visual Arts 194S

131BS. Photograpy in Context. ALP, R One course. C-L: see Documentary Studies 123S; also C-L: Visual Arts 142S
Topics differ by section. Instructor: Staff. One course.

150. 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. Not open to students who have previously taken this course as Art History 104. Instructor: Dillon. One course. C-L: Classical Studies 140

154. 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. Not open to students who have previously taken this course as Art History 112. Instructor: Bruzelius. One course. C-L: Medieval and Renaissance Studies 113

156. 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 161X

158. History of Netherlandish Art in a European Context. ALP, CCI, CZ
See Art History 241. (Taught in the Netherlands.) Not open to students who have taken 241-242. Course credit contingent upon successful completion of Art History 159. Instructor: Van Miegroet. One course. C-L: Art History 158, Medieval and Renaissance Studies 158, International Comparative Studies

159. History of Netherlandish Art in a European Context. ALP, CCI, CZ
See Art History 242. (Taught in the Netherlands.) Not open to students who have taken 241-242. Second half of Art History 158-159; required for credit for 158. Instructor: Van Miegroet. One course. C-L: Art History 159, Medieval and Renaissance Studies 159, International Comparative Studies

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. Not open to students who have previously taken this course as Art History 196A. Instructor: McWilliam. One course. C-L: International Comparative Studies 180C

166. Print Culture. ALP, CCI, CZ
Survey of the modern image-based print culture in its technological advancements and social impact, including case studies of key moments and exemplary aesthetic expressions in the history of image reproduction on paper. Topics include early woodcut illustrations; subsequent printmaking projects; the carte-de-visite; European fin-de-siècle popularity of poster art and Japanese woodcuts; twentieth-century photography and printmaking collectives in the Americas; and the photogravure's role in the
rise of the pictorial magazine. Not open to students who have previously taken this course as Art History 119. Instructor: Powell. One course.

169. 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

172. History of the Museum. ALP, CCI, CZ, R The purposes and functions of the museum as a Western institution from precursors to the present. The architecture, display practices, and pedagogical goals of art, natural history, and other museums. The incorporation of non-Western visual culture and the globalization of the museum in the contexts of colonialism and modernism. Comparative study of the treatment of Western and non-Western objects. Critical theory, aesthetics, and museum practices in terms of visual studies. Field research in museums required. Not open to students who have previously taken this course as Art History 172A. Instructor: Abe. One course. C-L: Literature 132C, International Comparative Studies

173. Chinese Visual Culture. ALP, CCI, CZ, R Introduction to visual culture produced in China from the Neolithic period to the present including archaeological discoveries of burials, tombs, temples, and palaces, the literati arts of calligraphy and painting, architecture, popular visual production, film, and fashion with attention to the role of overseas Chinese in recent history. Not open to students who have previously taken this course as Art History 164. Instructor: Abe. One course. C-L: International Comparative Studies

174. America Dreams, American Movies. ALP One course. C-L: see Theater Studies 174; also C-L: Arts of the Moving Image 129

175. 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. Not open to students who have previously taken this course as Art History 181B. Instructor: Weisenfeld. One course.

181. 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. Not open to students who have previously taken this course as Art History 175. Instructor: Stiles. One course. C-L: Information Science and Information Studies 175, Literature 133C, Theater Studies 175A, Women's Studies 176

183. 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: Staff. One course. C-L: Information Science and Information Studies 183, Arts of the Moving Image 128

184S. 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. Not open to students who have previously taken this course as Art History 179S. Instructor: Olson. One course. C-L: Information Science and Information Studies 179S, Cultural Anthropology 179S


189S. 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.

190. 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.


192FCS. Virtual Form and Space. ALP Studio course that explores various applications of virtual environments and specific 3D modeling techniques. Introduction to animation principles. Screenings, discussions, and lab. Not open to students who have taken this course as FVD 118. Not open to students who have previously taken this course as Visual Arts 108. Open only to students in the Focus Program. Instructor: Salvatella de Prada. One course. C-L: Visual Arts 108FCS, Information Science and Information Studies 108FCS, Arts of the Moving Image 137FCS

192L. 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. Not open to students who have taken this course as FVD 118. Prerequisites: Visual Arts 100 and consent of instructor required. Not open to students who have previously taken this course as Visual Arts 108. Instructor: Staff. One course. C-L: Information Science and Information Studies 108, Arts of the Moving Image 137, Visual Arts 108

193. Visual Culture and Photography. ALP How photographers create, document, and reflect visual culture, beginning with James Agee's notion of a photographer "ordering the façade" to interpretations, reflections, and comments on visual expressions in local landscapes and fieldwork. Not open to students who have previously taken this course as ARTSVIS 123. Instructor: Rankin. One course. C-L: Documentary Studies 102

194. 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 principles. Comparison of the language and tools of old and new media. Analysis of visual materials, discovering conceptual and stylistic connections, including Illustrator and Photoshop. Not open to students who have taken this
course as ARTSVIS 55. Consent of instructor required. Prerequisites: Visual Arts 54. Instructor: Staff. One course. C-L: Visual Arts 127

194CL. 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: Alt. One course. C-L: Information Science and Information Studies 194CL, Arts of the Moving Image 168, Visual Arts 183L

195. Advanced Visual Practice. ALP Interdisciplinary course focusing on student productions. Mixing of new and traditional disciplines (multimedia), and visual manifestations of knowledge from the wider field of visual studies, as well as areas normally considered outside art encouraged. Any number of media accepted, including concentration in just one. Embraces international contemporary art, as well as the multiple expressions of visual society. Prerequisites: Visual Arts 54, at least one 100-level Visual Arts class, and at least one Art History course or equivalent work. Not open to students who have previously taken this course as ARTSVIS 128. Instructor: Lasch. One course.

196FCS. 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 196FCS

196S. The Photobook: History & 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 196S

197. 3D Modelling 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 Studies 191 or 194 and consent of instructor. Instructor: Salvatella de Prada. One course. C-L: Visual Arts 197

198A. 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.

198B. 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.
199A. Research Independent Study. R See Visual Studies 198A. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

199B. Independent Study. See Visual Studies 198B. Open to qualified students in the junior year, by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

200S. Theories of Visual 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 Studies 100. Not open to students who have previously taken this course as Art History 208S. Instructor: Abe, Stiles, Weisenfeld. One course.

201SL. 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. Instructor: Brady, Bruzelius, Dillon, or Olson. One course.

210. 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 158-159. Course credit contingent upon completion of Art History 242. Instructor: Van Miegroet. One course. C-L: Art History 241, Medieval and Renaissance Studies 241, International Comparative Studies


215S. 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. Not open to students who have previously taken this course as Art History 221S. Instructor: McWilliam. One course.

221S. 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 210S

224S. Russian Language and Culture through Film. ALP, CCI, FL, SS, STS One course. C-L: see Russian 224S

225S. 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. Not open to students who have previously taken this course as Art History 287S. Instructor: Gabara. One course. C-L: Latin American Studies

226S. Russian Language and Culture through Film II. ALP, CCI, FL, SS, STS One course. C-L: see Russian 226S

230S. 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.

231S. 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. Not open to students who have previously taken this course as Art History 222S. Instructor: Wharton. One course.

232S. 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.


235S. 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.

236S. 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. One course. C-L: Sociology 236S, Visual Arts 236S, Cultural Anthropology 236S

250AS. Critical Studies in New Media. ALP, R, SS, STS One course. C-L: see Information Science and Information Studies 250S; also C-L: Literature 261S, Art History 250S, Arts of the Moving Image

250BS. Technology and New Media: Academic Practice. SS, STS One course. C-L: see Information Science and Information Studies 240S; also C-L: Art History 240S

251A. Media and Democracy. CCI, SS One course. C-L: Public Policy Studies 221, Information Science and Information Studies, Policy Journalism and Media Studies


260S. Special Topics in Visual Studies. ALP Subjects, areas, or themes that embrace a range of disciplines related to visual studies. Instructor: Staff. One course.

265S. Emergent Embodied Interface Design. ALP, STS Seminar exploring issues surrounding embodied approaches to interface design, including bio-memetics; 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; as well as database potentials, and emergent generative methodologies for creating works of art, drawings, and diagrams related to these subjects. Instructor: Seaman. One course. C-L: Information Science and Information Studies 265S, Arts of the Moving Image 201S

266S. The Human as Electrochemical Computer - Toward a New Computational and Aesthetic Paradigm. 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 266S, Visual Arts 266S, Arts of the Moving Image 202S

270S. 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 construction of individual, institutional and collective memory. Instructor: Olson. One course. C-L: Information Science and Information Studies 207

160 Courses and Academic Programs
298A. 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.

298B. 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.

299A. Research Independent Study. R See Visual Studies 298A. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

299B. Independent Study. See Visual Studies 298B. Open only to qualified students in the senior year. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

THE MAJOR

The student will elect a sequence of courses emphasizing the history of art, visual arts, visual 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 100-level or above. Both introductory art history courses, Art History 69 and 70, are required, as well as Visual Arts 54 (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 Studies. One of the eleven courses must be a 200-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 towards 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 200-level seminars: Art History 296S (Methodology of Art History), and a second seminar in the same field as a 100-level course already taken by the student. For example, Art History 141, (Fifteenth-Century Italian Art), is a logical preparation for Art History 247S (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 54 and 100; Mathematics 31, 32, and 103; and/or Physics 53L or 54L; and/or Civil and Environmental Engineering 161 or 162. 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 B.A. 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) Art History 291/2 on a subject approved by the concentration in architecture advisor; (2) seven additional courses in Art History, including at least three of the following: Art History 110, 111, 152, 182, 189A or 189BD, or topics courses that focus on space or architecture in Visual 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 31, 32, and 103; Physics 53L or 54L; Civil
and Environmental Engineering 161 or 162). Distribution requirements for the major must be fulfilled.

**Visual Arts**

**Major Requirements.** The major in visual arts requires at least eleven courses including Visual Arts 54 (*Introduction to Visual Practice*); seven 100-level or above courses within the following visual arts fields: visual practice, architecture, photography and new media; and two courses either in Art History and/or Visual Studies. All senior visual arts majors are also required to take Visual Arts 200S (*Senior Capstone in Visual Arts*) during their final spring semester at Duke. Students are highly encouraged to enroll in an independent study during their junior or senior year as one of their upper-level requirements, and prior to their Senior Capstone experience.

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 towards the major. Further courses are available for credit at North Carolina State University and the University of North Carolina at Chapel Hill.

**Visual Studies**

**Major Requirements.** The Visual Studies major requires thirteen courses, at least eight of which must be at the 100-level or above. Courses required for the major include Visual Studies 100D (*Introduction to Visual Culture*) and the capstone course Visual Studies 200S (*Theories of Visual Studies*), as well as eleven additional courses to be divided as follows: three courses in Visual Studies; two courses in Art History (Art History 69 or 70 [Survey Art] and one 100-level course); two courses in Visual Arts, (Visual Arts 54 [*Introduction to Visual Practice*] and one 100-level); and four previously approved cross-listed courses in any of the departments participating in this major.

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 towards 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 100 (*Drawing*) and Art History 69 or 70 (*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 200-level seminar.

**Visual Arts:** Six 100-level courses including a minimum of one course in at least three of the following primary areas of instruction: film/video/digital, graphic design, painting, photography, printmaking, and sculpture. Students are encouraged to enroll as seniors in an independent study and, during the spring of that year, in Visual Arts 269S (*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 pass/fail or Advanced Placement credits do not count towards the minor.

Art History
Requirements: Five courses in art history at the 100 level or above

Photography
Requirements: Five courses at the 100 level or above, with the following courses required: Visual Arts 115 (Introductory Photography); Art History 199 (History of Photography, 1839 to the Present); and Visual Arts 218 (Individual Project).

Visual Arts
Requirements: Five courses in visual arts at the 100 level or above.

Visual Studies
Requirements: Five courses to be distributed as follows: any three courses at the 100 or 200 level in visual studies and any two courses in any cross-listed discipline previously approved for the visual studies major.

Arts of the Moving Image (AMI)

Associate Professor Abe, 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 produce film, photography, television, digital media, and emergent computational art forms. Courses are taught in both arts of the moving image studies and arts of the moving image production. 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 motion picture and new media technologies. Courses offered in arts of the moving image studies include introduction to film, documentary film, film history, national cinemas, and new media. Course credit is also available for internships.

ARTS OF THE MOVING IMAGE PRODUCTION
Students gain expertise in a wide range of technologies, from analog film production and cell animation to digital video production, motion graphics and computational programming. Courses offered in arts of the moving image production include narrative, animation, 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 towards the certificate.

CERTIFICATE REQUIREMENTS
There are two categories of courses required for the certificate: arts of the moving image courses and related courses offered through other departments, taught by faculty members in various disciplines. Students must take at least six courses, which must include a gateway course, either Introduction to Arts of the Moving Image (Arts of the Moving Image 100), Introduction to Film (Arts of the Moving Image 101S, crosslisted with Literature 110, Theater Studies 171, English 101A) or Introduction to Production (Arts of the Moving Image 130S, crosslisted with English 183S, Theater Studies 173S, Visual Studies 117AS, Information Science and Information Studies) and the Capstone Course (Arts of the Moving Image 170S). Additionally students must take at least one arts of the moving image production course, which may include Arts of the Moving Image 130S, and one arts of the moving image studies course, which may include Arts of the Moving Image 100 or Arts of the Moving Image 101, plus three other arts of the moving image or related 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.

For a major that includes a film studies track, see the Literature Program.

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.

ARTS OF THE MOVING IMAGE STUDIES COURSES

49S. First-Year Seminar. ALP Topics vary each semester offered. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Special Topics in Film and Video. ALP Topics differ by section. Instructor: Staff. One course.

101. Introduction to Film (DS4). ALP One course. C-L: see Literature 110; also C-L: Theater Studies 171, English 101A, Visual Studies 121A, Policy Journalism and Media Studies

102. Introduction to Documentary Film. ALP, CCI Introduction to the history, theory, and styles of nonfiction film and video. Transformation in technologies and their influence on form, from actuality films to contemporary digital documentaries. Documentary's marginal status and surprising commercial appeal; the mixing of fiction and nonfiction strategies in cultural construction. Use of documentary as a tool for exploring individual identity, filmmaker/subject relationships, and fomenting political change. Instructor: Staff. One course. C-L: Art History 122, Literature 120E, Documentary Studies 107, Visual Studies 117C

103. 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 FVD 129. Instructor: Paletz and Rankin. One course. C-L: Documentary Studies 129, Political Science 156A, Public Policy Studies 171, Visual Studies 117B

104. Film Theory. ALP, STS One course. C-L: see Literature 114; also C-L: Visual Studies 121G, Women's Studies


105AS. Documenting Black Experiences. ALP, CCI One course. C-L: see Documentary Studies 139S; also C-L: African and African American Studies 133S, Cultural Anthropology 134CS, Public Policy Studies 196KS

106. 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 120F, Art History 136, Visual Studies 117F


108B. Visual Storytelling in Conflict. ALP, CCI, EI  Analysis of the human cost of historical and current global conflict. Examination and production of videos that break down conflict to its most personal level, with particular attention to the way in which conflict manifests and is dealt with across cultures, the ethics of recreating personal stories through video, and portrayal of stories that are accessible and valuable even to those with no immediate stake in the situation. Instructor: Wallace. One course. C-L: Political Science 156C, Visual Studies 117E, Literature 120H, Public Policy Studies 108B

109. Political Economy of the Global Image. CCI, EI, SS, STS  One course. C-L: see Literature 117; also C-L: English 184

110. Film and Politics. ALP, EI, R, SS  One course. C-L: see Political Science 156B

111A. Modern Chinese Cinema. ALP, CCI, CZ  One course. C-L: see Asian & Middle Eastern Studies 188; also C-L: Literature 112J, Visual Studies 105G

111B. French Cinema. ALP, CCI, FL  One course. C-L: see French 155; also C-L: International Comparative Studies 181E, Visual Studies 126E

111C. German Film. ALP, FL  One course. C-L: see German 141S; also C-L: Visual Studies 118BS

111D. Indian Cinema. ALP, CCI, CZ, R  One course. C-L: see Asian & Middle Eastern Studies 170; also C-L: Literature 112E, Visual Studies 105B

111E. Italian Cinema. ALP, CCI  One course. C-L: see Italian 132; also C-L: Literature 112K, Visual Studies 126A, Theater Studies 172A

111F. Japanese Cinema. ALP, CCI, CZ  One course. C-L: see Asian & Middle Eastern Studies 171; also C-L: Literature 112H, Visual Studies 105C

111G. World of Korean Cinema. ALP, CCI, CZ, EI  One course. C-L: see Asian & Middle Eastern Studies 175; also C-L: Literature 112G, Visual Studies 105F, Cultural Anthropology 161A

111H. Contemporary Israeli Cinema. ALP, CCI, EI  One course. C-L: see Asian & Middle Eastern Studies 161; also C-L: Literature 112M, Jewish Studies 140, Cultural Anthropology 161, Women's Studies 151

111I. German Film. ALP, CZ  One course. C-L: see German 168D; also C-L: Visual Studies 118GD

111J. Colonial Cinema and Postcolonial Reflections. ALP, CCI, CZ  One course. C-L: see Asian & Middle Eastern Studies 177; also C-L: Literature 112D, International Comparative Studies 122F

111M. Screen the Holocaust: Jews, WWII and World Cinema. ALP, CCI, CZ, EI  One course. C-L: see Asian & Middle Eastern Studies 143; also C-L: Jewish Studies 143

111N. Russian Revolutionary Cinema. CCI, CZ  One course. C-L: see History 150E; also C-L: Russian 150

112. Movies of the World/The World of Movies. ALP, CCI, STS  One course. C-L: see Literature 113; also C-L: German 156, Russian 113

113. States of Exile and Accented Cinemas. ALP, CCI, EI, SS  One course. C-L: see Literature 113AS; also C-L: Islamic Studies, Latin American Studies

114. Performance Traditions of the Middle East. ALP, CCI  One course. C-L: see Literature 118; also C-L: Theater Studies 129B, Islamic Studies

115S. Sexualities in Film and Video (DS4). ALP  One course. C-L: see Literature 115S; also C-L: Visual Studies 121CS, Study of Sexualities
116S. Transforming Fiction for Stage and Screen. ALP, W One course. C-L: see Theater Studies 138S; also C-L: English 108BS
117. World War II and French Film. CCI, CZ, EI, FL One course. C-L: see French 156; also C-L: History 153C, Visual Studies 126F
118S. Media Theory. STS One course. C-L: see Literature 114AS; also C-L: Information Science and Information Studies 114S, Visual Studies 121HS
120. Special Topics in Film Studies. Special Topics in Film Studies. Instructor: Staff. One course.
120S. Special Topics in Film Studies. Seminar version of Film/Video/Digital 120. Instructor: Staff. One course.
121S. Special Topics in the United States Culture Industries. ALP, R, W An historical and contemporary survey of genre applications in film, television, gaming, and other United States culture industries, from production, marketing, exhibition, and reception perspectives. Theoretical genre concepts integrated with real world practical experience. Primary research in cultural archive resulting in substantive paper. Open only to students enrolled in the Duke in Los Angeles program. Instructor: Thompson. One course. C-L: Literature 197S
122. Internship. Students arrange academic work in conjunction with approved internship in the entertainment industry. Academic work must be with Film/Video/Digital faculty and include the university minimum (one research paper) as well as reading from bibliography approved by professor and/or viewing list worked out in advance. Consent of instructor required. Instructor: Staff. One course.
123. 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 197S required. Open only to students admitted to the Duke in Los Angeles Program. Instructor: Staff. One course.
124S. 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: Literature 198S, Information Science and Information Studies 124S
126. Introduction To Visual Culture. ALP, CCI, CZ One course. C-L: see Visual Studies 100D
128. Cultural History of the Televisual. ALP, CZ, STS One course. C-L: see Visual Studies 183; also C-L: Information Science and Information Studies 183
129. America Dreams, American Movies. ALP One course. C-L: see Theater Studies 174; also C-L: Visual Studies 174

ARTS OF THE MOVING IMAGE PRODUCTION COURSES
130S. Introduction to Production. 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 FVD 100S. Instructor: Staff. One course. C-L: Theater Studies 173S, Visual Studies 117AS, Information Science and Information Studies
131S. Screenwriting. ALP, W One course. C-L: see Theater Studies 137S; also C-L: English 102S

132S. From Stories to Movies. ALP, W One course. C-L: see Theater Studies 141S

133S. Adapting Literature -- Producing Film. ALP Collaborative exploration of the process of adapting literature for production of documentary and or dramatic film projects. Generally linked to the production of a PBS or independent documentary film or the production of a short dramatic film. Students gain an understanding of the interdisciplinary aspects of filmmaking. Instructor: James. One course. C-L: Documentary Studies 133S, Visual Arts 138S, Information Science and Information Studies

134S. Acting For the Camera. ALP One course. C-L: see Theater Studies 153S

135S. 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 FVD 102S. Instructor: Burns. One course. C-L: Visual Arts 165S, Visual Studies 117IS, Information Science and Information Studies

136S. 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 FVD 109S. Consent of instructor required. Instructor: Staff. One course. C-L: Visual Studies 117JS, Visual Arts 136S

137. Virtual Form and Space. One course. C-L: see Visual Arts 108; also C-L: Information Science and Information Studies 108

137FCS. Virtual Form and Space. ALP One course. C-L: see Visual Arts 108FCS; also C-L: Information Science and Information Studies 108FCS

138S. Documentary Film/Video Theory and Practice (DS4). ALP The politics and aesthetics of realism. History of styles from Griersonian "propaganda" to cinema verite and "reality TV." Practical exercises in location sound, camera to subject relationship, and camera movement. Prerequisite: English 101A, Literature 110, Literature 111S, or Theater Studies 171. Not open to students who have taken this course as FVD 104S. Instructor consent required. Instructor: Staff. One course. C-L: Cultural Anthropology 131S, Visual Studies 117KS, Documentary Studies


140S. Planning the Documentary Film: From Concept to Treatment. ALP, R One course. C-L: see Documentary Studies 148S; also C-L: Visual Studies 103US, Information Science and Information Studies

141S. 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 141S, Visual Studies 117LS

142S. Experimental Filmmaking. ALP The history of avant-garde in film and video combined with production exercises. Instructor: Staff. One course. C-L: Visual Arts 146S

143S. Sound for Film and Video. ALP, STS Topics focusing on technical basis and aesthetic motivation of sound recording and sound exploitation. Technical demonstration and student exercises explore the mechanics and dramatic and psychological implications of formats, microphone placement, mixing, acoustic signature, digital recording, double system, and sound editing, leading to an individually produced sound design for live action or animation.
film/video. Not open to students who have taken this course as FVD 103S. Instructor: Staff. One course. C-L: Documentary Studies, Information Science and Information Studies

144S. Television Production Techniques. ALP Introduction to broadcast television techniques, including live multi-camera production, studio operations, field production and digital nonlinear editing. Practical experience in the production of a cable television program combined with industry study and theoretical readings. Instructor: Staff. One course.


146S. 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: Burns. One course.

147S. Dance for the Camera. ALP, R, STS One course. C-L: see Dance 106S; also C-L: Documentary Studies 134S

148S. Editing for Film and Video. ALP One course. C-L: Information Science and Information Studies 148S, Documentary Studies 149S

149S. Producing Docu-Fiction. ALP One course. C-L: Documentary Studies 151S

150S. Intermediate Narrative Production. ALP Focus on narrative film and video techniques, from script to realization. Exercises in production management, cinematography, lighting, shot blocking and working with actors in dramatic productions, employing continuity editing techniques. Suggested prerequisites: Film/Video/Digital 130, Introduction to Production. Instructor: Staff. One course. C-L: Visual Arts 150S

151S. Intermediate Animation. ALP Concentration on selected media primarily two-dimensional but including three dimensional forms. Animation camera including camera effects, motion analysis, and effects animation. American studio styles compared to independent artist animators. Instructor: Burns. One course. C-L: Visual Arts 166S

152S. Intermediate 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 FVD 116S. Prerequisite: Documentary Studies 105S or equivalent experience and knowledge. Consent of instructor required. Instructor: Staff. One course. C-L: Documentary Studies 150S, Public Policy Studies 182S, Visual Studies 103VS, Information Science and Information Studies

160S. 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


163T. Tutorial. ALP Instructor: Staff. One course.

164. Individual Project. Independent work open to highly qualified juniors and seniors on recommendation of instructor and/or invitation of department. Instructor: Staff. One course.

165. Internship. Students may arrange academic work in conjunction with approved internship in the entertainment industry. Academic work must be with core faculty and include the university minimum (one research paper) as well as reading from bibliography
approved by professor and/or viewing list worked out in advance. Prerequisite: English 101A, Film/Video/Digital 130, Literature 110, or Theater Studies 173. Instructor: Staff. One course.

167. Fundamentals of Web-Based Multimedia Communications. ALP, QS, R One course. C-L: see Information Science and Information Studies 140; also C-L: Visual Studies 120E


169S. 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.

170S. Capstone Course: Program in Film/Video/Digital. ALP, STS Culminating seminar for Film/Video/Digital Program certificate students. Designed to allow students to complete their certificate with a finished project or advanced research in the field. Not open to students who have taken this course as FVD 115S. Instructor: Staff. One course. C-L: Literature 110BS

201S. Emergent Embodied Interface Design. ALP, STS One course. C-L: see Visual Studies 265S; also C-L: Information Science and Information Studies 265S

202S. The Human as Electrochemical Computer - Toward a New Computational and Aesthetic Paradigm. ALP, NS, R, STS One course. C-L: see Visual Arts 266S; also C-L: Information Science and Information Studies 266S

298S. Special Topics in Arts of the Moving Image. ALP Focus on aspects of Arts of the Moving Image. Topics vary.

RELATED COURSES OFFERED REGULARLY

African and African American Studies
101. Film and the African Diaspora

Art History
199. History of Photography, 1839 to the Present
250S. Critical Studies in New Media
263. Art & Dissidence: Films of Tarkovsky, Kubrick, Kurosawa, & Lynch

Asian & Middle Eastern Studies
139. Poetic Cinema

Cultural Anthropology
104. Anthropology and Film
104D. Anthropology and Film
110. Advertising and Society: Global Perspective

Documentary Studies
176S. American Communities: A Photographic Approach
177S. Advanced Documentary Photography

English
101B. Introduction to Cultural Studies
107S. Dramatic Writing
108AS. Advanced Dramatic Writing
189. Special Topics in Film
189S. Special Topics in Film
284. Contemporary Film Theory

German
168. German Film
184. Existentialist Cinema

History
150E. Russian Revolutionary Cinema

Information Science and Information Studies
210S. How They Got Game: History and Culture of Interactive Simulations and Video Games
250S. Critical Studies in New Media

International Comparative Studies
101C. Anthropology and Film
183C. Existentialist Cinema
281ES, Cinema and Literature in Italy

**Italian**
225S, Cinema and Literature in Italy

**Literature**
100. Introduction to Cultural Studies
112N. Existentialist Cinema
112S. Special Topics in National Cinema
120AS. Special Topics in Television Genres
120BS. Special Topics in Film
141. International Popular Culture
143. Problems in Global Culture
143S. Problems in Global Culture
210S. Basic Concepts in Cinema Studies
212S. Film Feminisms
261S. Critical Studies in New Media

**Music**
169. Hollywood Film Music

**Political Science**
203S. Politics and Media in the United States

**Program in Arts of the Moving Image**
126. Introduction To Visual Culture

**Public Policy Studies**
120S. News Writing and Reporting
163S. Telecommunications Policy and Regulation
176S. American Communities: A Photographic Approach
177S. Advanced Documentary Photography

**Religion**
184. Religion and Film

**Russian**
135A. Contemporary Russian Media
150. Russian Revolutionary Cinema
163. Art and Dissidence: The Films of Tarkovsky, Kubrick, Kurosawa, and Lynch

**Sociology**
160. Advertising and Society: Global Perspective
160D. Advertising and Society: Global Perspective
170. Mass Media

**Theater Studies**
135S. Dramatic Writing
136S. Advanced Dramatic Writing
155S. Directing
172B. Existentialist Cinema

**Visual Arts**
116S. Photography
118S. American Communities: A Photographic Approach
119S. Advanced Documentary Photography
125S. Intermediate Digital Photography

**Visual Studies**
101G. History of Photography, 1839 to the Present
103XS. American Communities: A Photographic Approach
103YS. Advanced Documentary Photography
104A. Film and the African Diaspora
110A. Anthropology and Film
110E. Advertising and Society: Global Perspective
118GS. German Film
118H. Existentialist Cinema
121E. Introduction to Cultural Studies
121F. International Popular Culture
125ES. News Writing and Reporting
127E. Contemporary Russian Media
127G. Art and Dissidence: The Films of Tarkovsky, Kubrick, Kurosawa, and Lynch
169. Documentary Photography and Film of the Nuclear Age
250AS. Critical Studies in New Media
In Women's Studies
212S. Film Feminisms

**SPECIAL TOPICS COURSES OFFERED PERIODICALLY**

**History**
104. Latin America through Film

**Literature**

**Portuguese**
200S. Seminar in Portuguese Literature: Literatura e Cinema Os Classicos Brasilieros

**Public Policy Studies**
195S. Selected Public Policy Topics: Community Service and the Documentary Tradition
195S. Selected Public Policy Topics: Entertainment Industry: Policy and Practice
195S. Selected Public Policy Topics: Communications Frontier Technology: Media and Democracy
264. Advanced Topics: Media and Democracy

**Spanish**
142S. Cines del Caribe
169. Topics in Nineteenth- and Twentieth-Century Spanish Literature: Spanish Cinema

**Theater Studies**
139S. Special Topics in Dramatic Writing: Advanced Screenwriting

### Asian and Middle Eastern Studies (AMES)

Associate Professor Ching, Chair; Associate Professor of the Practice Kim, Director of Undergraduate Studies; Professors Cooke and Liu; Associate Professor Ching; Assistant Professors Ginsburg, Hong, H. Kim, Kwon, McLarney, and Rojas; Associate Professors of the Practice Endo, Khanna, Kim, and Lee; Assistant Professor of the Practice Lo; Lecturers Cai, Kurokawa, Plesser, Vaishnava, and Yao; Instructors Habib, He, Heish, E. Kim, Saito, and Wang; Secondary Appointments: Professor Conceison (theater studies); Assistant Professors Göknar (Slavic and Eurasian studies), Metzger (English)

A major or a 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, and Korean. The program offers Arabic, Chinese, Hebrew, Hindi, Japanese, and Korean literature courses, many in translation.

### ASIAN AND MIDDLE EASTERN STUDIES (AMES)

**49S. First-Year Seminar.** Topics vary each semester offered. Instructor: Staff. One course.

**50. Duke-Administered Study Abroad: Special Topics in Asian and Middle Eastern Studies.** Topics differ by section. Instructor: Staff. One course.

**72. War, Gender, and Postcoloniality. ALP, CCI, EI**

Covers selected wars in the twentieth century by examining the intersections between the experience of war and the ways in which men and women represent themselves. Focus on World Wars I and II, Vietnam, the Algerian Revolution, the Lebanese Civil War, and the Gulf War. Instructor: Cooke. One course. C-L: Islamic Studies

**100. Duke-Administered Study Abroad: Advanced Special Topics in Asian and Middle Eastern Studies.** Topics differ by section. Instructor: Staff. One course.

**106. Gateway Seminar: Civil Rights & Asian Americans. CCI, CZ, EI, R, SS**

One course. C-L: see History 105HS; also C-L: African and African American Studies 105HS

**110A. West African ROOTHOLDS in Dance. ALP, CCI, CZ**

One course. C-L: see Dance 110L; also C-L: African and African American Studies 110A, Cultural Anthropology 129A, Religion 161A

**118S. 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: Kim. One course. C-L: Religion 161YS

119. **Mahayana Buddhism.** CCI, CZ One course. C-L: see Religion 117; also C-L: International Comparative Studies 120B

120. **Introduction to Asian and African Literature.** ALP, CCI An exploration of the ways in which different societies in Asia and Africa encourage particular constructions of self, sexuality, and purposeful life in literature and film. Instructor: Staff. One course. C-L: Literature 165C, International Comparative Studies

125S. **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: Kim. One course. C-L: Linguistics 125S

126S. **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: Kim. One course. C-L: Linguistics 126S

127S. **The City of Two Continents: Istanbul in Literature and Film.** ALP, CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 120S; also C-L: International Comparative Studies 162AS, Islamic Studies

128. **Orhan Pamuk and World Literature.** ALP, CCI, CZ, EI One course. C-L: see Slavic and Eurasian Studies 145; also C-L: International Comparative Studies, Islamic Studies


132. **Representing the Middle East.** CCI, CZ, SS One course. C-L: see Cultural Anthropology 132; also C-L: History 131B, Turkish 132, International Comparative Studies 141B, Visual Studies 110H, Islamic Studies

133. **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: Literature 165L, Visual Studies 105J, Cultural Anthropology 101A, International Comparative Studies 121H, International Comparative Studies

134S. **Discourse of Disease and Infection.** ALP, CCI, CZ, STS Modern discourses of disease and infection. The transmutation of medical theory into a metaphorical discourse of social structure and individual identity. Cultural representations of modern epidemics, including AIDS and SARS. Instructor: Rojas. One course. C-L: Literature 165MS, Cultural Anthropology 101BS, International Comparative Studies 104CS, Visual Studies 105KS
135. Kundalini Yoga and Sikh Dharma. ALP, CCI, CZ One course. C-L: see Dance 155; also C-L: Religion 161H, International Comparative Studies 170H

136. Dance and Religion in Asia and Africa. ALP, CCI, CZ One course. C-L: see Dance 158; also C-L: Cultural Anthropology 149C, Religion 161N, African and African American Studies 158, International Comparative Studies 102A

137. 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

138. 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: Literature 162G, International Comparative Studies 122C, Cultural Anthropology 142A, Women's Studies 138, Study of Sexualities 138

139. 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: Arts of the Moving Image

140. The Modern Middle East. CCI, CZ One course. C-L: see History 152; also C-L: Jewish Studies 149, International Comparative Studies


142. The Modern Middle East. CCI, CZ One course. C-L: see History 152; also C-L: Jewish Studies 149, International Comparative Studies

143. Screening the Holocaust: Jews, WWII and World Cinema. ALP, CCI, CZ, EI Surveys representations of the Jewish Holocaust in World Cinema Examines 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 111M, Jewish Studies 143


145. 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.

**146. Culture and Politics of South Asia.** CCI, CZ, SS One course. C-L: see Cultural Anthropology 151

**148. 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: Literature 165NS, International Comparative Studies 122A, International Comparative Studies

**149. Dance and Dance Theater of Asia.** ALP, CCI, CZ One course. C-L: see Dance 149; also C-L: Cultural Anthropology 149, Theater Studies 133, Religion 161C, International Comparative Studies 170C

**150. 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 circulating religion. Instructor: McLarney. One course. C-L: Religion 172A

**151. 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 circulating religion. Instructor: McLarney. One course. C-L: Religion 172AFCS

**152. Topics in Japanese Anime.** ALP, CCI Topics may vary. Instructor: Yoda. One course.

**153. 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 142B, Literature 153

**154. History and Practice of the Dance and Dance-theatre of India.** ALP, CCI, CZ One course. C-L: see Dance 147; also C-L: Cultural Anthropology 149B, Theater Studies 134

**155. Introduction to Israeli Culture.** ALP, CCI, CZ The examination of contemporary Israeli culture through art, film, architecture, and literature. Concentration on interdisciplinary critical approaches to culture; interconnections of culture and Zionist ideology in the Israeli projection of the nation. Instructor: Ginsburg. One course. C-L: Jewish Studies 139, Religion 161P, Literature 163L

**156. Representing the Holocaust.** ALP, CCI, CZ Issues of representing the Holocaust in Israel through various cultural media, such as literature, film, criticism, historiography, legal

157S. Travel, Gender, and Power. CCI, SS One course. C-L: see Cultural Anthropology 191QS; also C-L: Literature 132BS, Women's Studies 181S

158S. The Middle East in Popular Culture. CCI, CZ, SS One course. C-L: see Cultural Anthropology 191AS; also C-L: Literature 163MS

159. Palestine, Israel, Arab-Israeli Conflict. CCI, EI, SS One course. C-L: see Cultural Anthropology 155; also C-L: Jewish Studies 155, Islamic Studies

160. Introduction to the Civilizations of Southern Asia. CCI, CZ The literary, historic, linguistic, and ethnic diversity of South Asia presented through both readings and contemporary films. Not open to students who have taken Religion 160. Instructor: Staff. One course. C-L: Cultural Anthropology 101, History 193, Religion 144, International Comparative Studies


162. 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 or Yoda. One course. C-L: International Comparative Studies

163. Korean Literature in Translation. ALP, CCI A chronological overview from earliest times until today. Begins with a brief introduction to Korean language and history as they relate to the study of literature. Novels, essays, classics, and various other genres. Instructor: Staff. One course. C-L: Literature 165E, International Comparative Studies

164S. Topics in Korean Religions: 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: Kim. One course. C-L: Religion 165AS


166. Egypt: Mother of the World. ALP, CCI, CZ Modern history of Egypt: Napoleon's conquest in 1798, the "Description of Egypt", Orientalist knowledge, the Ottoman Empire, Muhammad Ali, Islamic Reform, the Arab Renaissance, Women's Awakening, the Islamic Revival, Muslim Brotherhood, Arab Nationalism, Gamal Abd al-Nasser, war and peace with
Israel, the culture of the petroleum industry, Egyptian cosmopolitanism, Egyptian letters (novel, drama, poetry), Egyptian cinema, mass media, television, and popular culture. Includes an optional voyage to Egypt during the spring vacation. Instructor: McLarney. One course. C-L: International Comparative Studies

167. 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. C-L: Literature 165F, International Comparative Studies 120C


169. China and the West. CCI, CZ One course. C-L: see History 172B


172S. 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 165A

173S. Gender Jihad: Muslim Women Writers. 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

174. Jerusalem: Past and Present. ALP, CCI, CZ, EI Examines relations between the physical and spiritual spaces that make up Jerusalem. Explores the topography, demography, infrastructure, history, and cultures of the city. Focuses on the interaction and conflicts between ethnicities, religions, cultures and political entities. Studies divergent discourses about the city and examines the relationship between these discourses and the materiality of the city. Instructor: Ginsburg. One course. C-L: Jewish Studies 133, Religion 161Y

175. 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-

176. Gender in Dance and Theatre. ALP, CCI, CZ One course. C-L: see Dance 175; also C-L: Women's Studies 111, Theater Studies 132, Cultural Anthropology 149A, International Comparative Studies 170E

177. Colonial Cinema and Postcolonial Reflections. ALP, CCI, CZ Introduces cinemas in different colonial contexts, such as British in India, French in Africa, and Japanese in East Asia. Surveys colonial cinemas produced by the colonizer to legitimate colonial enterprises and their postcolonial counterparts. Examines the decolonial strategies registered in postcolonial cinemas as responses to, or “reflections” of, their colonial legacy. Maps the larger historical contexts of colonialism since the late 19th century and reflects on the current transnational trend of globalization. Instructor: Hong, Kwon. One course. C-L: Literature 112D, International Comparative Studies 122F, Arts of the Moving Image 111J

178. Introduction to Islamic Communities in North Carolina. CCI, CZ, SS The diverse locales, practices, and ethnicities. Topics include: basic tenets of Islam, Islam in America, African American Islam, mosque and school, interfaith and pluralism, and Islamic feminism. Includes field trips and group projects in the local community. Instructor: McLarney. One course. C-L: Religion 161O, Islamic Studies


180S. Literati/Literature Culture: Pre Modern Chinese Literature. ALP, CCI 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. Instructor: Baird. One course.

181. China from Antiquity to 1400. CCI, CZ One course. C-L: see History 172C

182. Modern Political Thought in China and Europe. CCI, CZ, SS One course. C-L: see History 112A

183. 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 132, Literature 163Q, International Comparative Studies

183FCS. 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 132FCS, Literature 163QFCS


186S. 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. Instructor: Cooke. One course.

187. 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: Literature 165B, Religion 165B

188. 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 112J, Arts of the Moving Image 111A, Visual Studies 105G

189S. Iraqi Culture in the 20th Century. CCI, CZ Iraqi cultural production from independence in 1932 until today (poetry, fiction, and visual arts). Connection between poetry and art in emergence of modernist movement that spread to the rest of the Arab world. Exposure to leading writers including Tekerli, Ayyub and Jabra Ibrahim Jabra and also to Jewish authors who migrated to Israel in the 1950s. Later short fiction, films and blogs will reflect on the literary impact of state violence under Saddam Hussein and of international wars on life in Iraq: the Iran-Iraq war (1980-88), the Gulf War (1991) and the US invasion of 2003. Instructor: Cooke. One course.

190. 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.

191. 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.

192. 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. One course.

193. 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.
195. Special Topics. Topics vary each semester. Instructor: Staff. One course.

195S. Special Topics. Seminar version of AALL 195. One course.


202S. Research without Borders: Building Expertise in Japanese, European, Latin American, or Slavic Studies. CCI Interdisciplinary resources for graduate-level research in one or more area studies, with a particular focus on European, Latin American, East Asian, and Slavic Studies. Team teaching approach drawing on the diverse regional and disciplinary expertise of four course instructors, who are both subject librarians and area studies specialists. Instructor: Ackerman, Madden, Troost, Zitser. One course. C-L: Russian 203S, Romance Studies 202S, German 264S

250S. 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 225S

251. 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: McLarney. One course.

252. Special Topics in Asian and Middle Eastern Studies. ALP, R Topics vary each semester. Instructor: Staff. One course.

252S. Special Topics in Asian and Middle Eastern Studies. ALP, CCI Seminar version of Asian and Middle Eastern Studies 252. Topics vary each semester. One course.

253. 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). (Same as Asian and African Languages and Literature 153 but requires extra assignments.) Instructor: Ching or Yoda. One course. C-L: Cultural Anthropology 254, Literature 254, International Comparative Studies

254S. 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 278

256. Representing the Holocaust. ALP, CCI, CZ Issues of representing the Holocaust through various cultural media, such as literature, criticism, film, art, music, and the most recent wave of memorials and museums to be built in America, Europe, and Israel. The limits of representation; the historical and ideological deployment of Holocaust representation in different cultural contexts. Same as AALL 156 but requires extra assignments. Instructor: Ginsburg. One course. C-L: Jewish Studies 230
262. 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 African Languages and Literature 162 but requires extra assignments.) Instructor: Ching or Yoda. One course. C-L: Cultural Anthropology 260, International Comparative Studies

267. 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 African Languages and Literature 167 but requires extra assignments.) Instructor: Kwon. One course.

271. 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 African Languages and Literature 171, but requires extra assignments.) Instructor: Yoda. One course.

279. 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 representation. (Same as Asian African Languages 179 but requires extra assignments.) Instructor: Hong. One course.

280S. 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 African Languages and Literature 180S but requires extra assignments.) Instructor: Staff. One course.

288. Seminar on 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 Chinese 188S but requires extra assignments.) Research paper required. Prerequisite: Chinese 184S or advanced oral and written proficiency in Mandarin Chinese. Instructor: Staff. One course. C-L: International Comparative Studies

288S. 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 Chinese 188S but requires extra assignments.) Research paper required. Prerequisite: Chinese 184S or advanced oral and written proficiency in Mandarin Chinese. Instructor: Staff. One course. C-L: International Comparative Studies

291. 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 written report containing significant analysis and interpretation of a previously approved topic. Consent of instructor required. Instructor: Staff. One course.
ARABIC (ARABIC)
2. Elementary Arabic. FL Continuation of Arabic 1. Prerequisite: Arabic 1 or equivalent. Instructor: Lo. One course.
35. Conversational Egyptian and Contemporary Culture. FL Designed to develop proficiency in conversational Egyptian Arabic within a cultural context: manners, social interaction, customs, and holiday traditions. Consent required if student has not taken any Arabic previously. Instructor: Staff. One course.
63. 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 2 or equivalent. Instructor: Habib. One course.
64. Intermediate Arabic. CZ, FL Continuation of Arabic 63. Prerequisite: Arabic 63 or equivalent. Instructor: Habib. One course.
125. 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 64 or equivalent. Instructor: Staff. One course. C-L: International Comparative Studies
126. Advanced Arabic. ALP, FL Continuation of Arabic 125. Prerequisite: Arabic 125 or equivalent. Instructor: Staff. One course. C-L: International Comparative Studies 142A
183. Topics in Arabic. ALP, CCI, FL Readings and other material, including films, television, and radio broadcasts. Exercises in composition. Prerequisite: Arabic 126 or consent of instructor. Instructor: Cooke. One course. C-L: International Comparative Studies
184. Topics in Arabic. ALP, FL Continuation of Arabic 183. Prerequisite: Arabic 126 or consent of instructor. Instructor: Cooke. One course. C-L: International Comparative Studies
191. 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.
193S. 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.
195S. Classical Arabic Texts. ALP, CCI, CZ Readings of Classical Arabic texts to include pre-Islamic poetry, philosophy, historiography, tafsirs, adaption. Instructor: Habib. One course.

CHINESE (CHINESE)
1. Elementary Chinese. FL Introduction to speaking, understanding, reading, and writing modern standard Chinese (Mandarin, or putonghua, based on the Beijing dialect). Instructor: Lee. One course.
2. Elementary Chinese. FL Continuation of Chinese 1. Prerequisite: Chinese 1 or equivalent. Instructor: Lee. One course.
35. **Literacy in Chinese. FL** Designed for students who can converse in Mandarin Chinese about personal information or daily topics but have little or no reading and writing skills in Chinese. All four language skills emphasized with additional work on reading and writing. Students who wish to make sufficient progress in two semesters to advance to Chinese 135 in the fall semester of the following year must take Chinese 35 and 36. Instructor: Yao. One course.

36. **Literacy in Chinese. FL** Continuation of Chinese 35. Students who wish to make sufficient progress in two semesters to advance to Chinese 135 in the fall semester of the following year must take Chinese 35 and 36. Instructor: Yao. One course.

38. **Intensive Literacy in Chinese.** Intensive Literacy in Chinese. Covers the curriculum of Chinese for advanced-beginners (Chinese 35 and 36) 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.

63. **Intermediate Chinese. FL** Reading, oral practice, language laboratory. Not open to students who have completed Chinese 36 or 38. Instructor: Cai. One course.

64. **Intermediate Chinese. FL** Continuation of Chinese 63. Prerequisite: Chinese 63. Not open to students who have completed Chinese 36 or 38. Instructor: Cai. One course.

100. **Duke-Administered Study Abroad: Advanced Special Topics in Chinese. CCI** Topics differ by section. Instructor: Staff. One course.

125. **Advanced Chinese. CCI, FL** Proficiency in speaking, aural comprehension, reading, and writing. Content drawn from newspaper articles, essays, and other readings concerning history, culture, and current political, social, and simple economic issues in China and Taiwan. Prerequisite: Chinese 64 or equivalent. Instructor: Yao. One course. C-L: International Comparative Studies

126. **Advanced Chinese. CCI, FL** One course. C-L: International Comparative Studies 120E

135. **Readings in Modern Chinese. ALP, CCI, FL** Designed for students who have completed Chinese 35 and 36 (previously Chinese 6 and 7). Introduction to more complex syntax with special attention to Chinese cultural and socio-political issues and topics. Content drawn from newspaper articles, essays, and short stories. Helps students to make sufficient progress in one semester to advance to Chinese 183S or 184S in the spring semester. Conducted in Chinese. Prerequisite: Chinese 35, 36; or equivalent. Instructor: Cai. One course.

136. **Reading in Modern Chinese. ALP, CCI, FL** Continuation of Chinese 135. Conducted in Chinese. Prerequisite: Chinese 135 or equivalent. Instructor: Cai. One course. C-L: International Comparative Studies 120F

170S. **Introduction to Classical Chinese. ALP, FL** Introduction to Classical Chinese for the basic reader. Historical background of essential texts in the ancient period, covering classical literature, philosophy, and history. Focus on grammar, systematic sentence analysis, and distinctive functions of grammatical particles. A gateway to advanced literary reading and writing (shu-mian-yu). Enhancement of knowledge of classical literature, philosophy, and history. Consent of instructor required. Prerequisite: Chinese 135 or Chinese 181S. Instructor: Staff. One course.

171S. **Introduction to Classical Chinese II. ALP, CZ, FL** Continuation of Chinese 170S. Acquaintance with historical background of essential texts in the ancient period. Focus on grammar, systematic sentence analysis, and distinctive functions of grammatical particles. A gateway to advanced literary reading and writing (shu-mian-yu). Enhancement of knowledge of classical literature, philosophy, and history. One course.

181S. **Language and Society. 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.

182S. Language and Society II. ALP, CCI, CZ, FL One course. C-L: International Comparative Studies 122AS

183S. Topics in Modern Chinese. ALP, CCI, FL Readings and other material, including web sites, films, television, and radio broadcasts. Exercises in composition. Prerequisite: Chinese 125, 126, 127, 129, or consent of instructor. Instructor: Staff. One course. C-L: International Comparative Studies

184S. Topics in Modern Chinese. ALP, CCI, FL Continuation of Chinese 183S. Readings of modern short stories and essays on special topics of the cultural politics in modern and contemporary China. Additional materials such as web sites, films, and television. Instructor: Staff. One course. C-L: International Comparative Studies

191. 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.

195. Contemporary Chinese Culture. ALP, CCI, FL Elements of Contemporary Chinese Culture including media, popular culture, literature and the arts. Prerequisite: Chinese language proficiency at the fourth year level or the equivalent. Instructor: Liu. One course.

196. Topics in 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.

Courses Offered in the Duke Study in China Program at Capital Normal University


129A. Special Topics in Modern Chinese. 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.

129B. Special Topics in Modern Chinese. CCI, CZ, FL Equivalent to fifth year. Readings and discussion of selections from modern Chinese literature, expository prose, and the Chinese press. Offered in the Duke Study in China Program at Capital Normal University. Instructor: Staff. One course.

HEBREW (HEBREW)

1. Elementary Modern Hebrew. FL Introduction to speaking, understanding, reading, and writing modern Hebrew. Language laboratory. Instructor: Plesser. One course. C-L: Jewish Studies 1
2. Elementary Modern Hebrew. FL Continuation of Hebrew 1. Prerequisite: Hebrew 1 or equivalent. Instructor: Plesser. One course. C-L: Jewish Studies 2
5. Biblical Hebrew I. FL One course. C-L: see Religion 1; also C-L: Jewish Studies 1A
6. Biblical Hebrew II. FL One course. C-L: see Religion 2; also C-L: Jewish Studies 2A
63. Intermediate Modern Hebrew. ALP, FL Reading, composition, conversation, and language laboratory. Prerequisite: Hebrew 1, 2 or equivalent. Instructor: Plesser. One course. C-L: Jewish Studies 63
64. Intermediate Modern Hebrew. ALP, CZ, FL Continuation of Hebrew 63. Prerequisite: Hebrew 63 or equivalent. Instructor: Plesser. One course. C-L: Jewish Studies 64
100. Duke-Administered Study Abroad: Advanced Special Topics in Hebrew. CCI Topics differ by section. Instructor: Staff. One course.

125S. Advanced Modern Hebrew. ALP, CCI, FL Introduction to modern Hebrew literature and Israeli culture. Emphasis on critical reading of literary and cultural texts, including prose, poetry, drama, and film. Conducted in Hebrew. Consent of instructor required. Prerequisite: Hebrew 64 or equivalent. Instructor: Ginsburg. One course. C-L: Jewish Studies 125S, International Comparative Studies

126S. Advanced Modern Hebrew. ALP, CCI, FL Continuation of Hebrew 125S. Consent of instructor required. Prerequisite: Hebrew 125S or equivalent. Instructor: Ginsburg. One course. C-L: Jewish Studies 126S, International Comparative Studies 141AS

183S. Topics in Modern Hebrew. ALP, CCI, FL Readings and other material, including films, television, and radio broadcasts. Exercises in composition. Consent of instructor required. Instructor: Ginsburg. One course. C-L: Jewish Studies 131S

191. 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 (HINDI)

1. Elementary Hindi. FL Conversation, basic grammar, and vocabulary; introduction to the Devanagari script and the reading of graded texts. Instructor: Vaishnava. One course.
2. Elementary Hindi. FL Continuation of Hindi 1. Prerequisite: Hindi 1. Instructor: Vaishnava. One course.
64. Intermediate Hindi. CZ, FL Continuation of Hindi 63. Prerequisite: Hindi 63. Instructor: Vaishnava. One course.
100. Duke-Administered Study Abroad: Advanced Special Topics in Hindi. CCI Topics differ by section. Instructor: Staff. One course.

125. Advanced Hindi. ALP, CCI, FL Proficiency in reading, writing, and speaking. Prerequisite: Hindi 64 or equivalent. Instructor: Khanna. One course.

126. Advanced Hindi. ALP, CCI, FL Continuation of Hindi 125. Prerequisite: Hindi 125 or equivalent. Instructor: Khanna. One course. C-L: International Comparative Studies 170B

183S. Topics in Hindi. ALP, CCI, FL Readings in prevailing literary and mass media forms. Prerequisite: Hindi 126 or consent of instructor. Instructor: Khanna. One course. C-L: International Comparative Studies

184S. Topics in Hindi. ALP, CCI, FL Continuation of Hindi 183S. Prerequisite: Hindi 126 or consent of instructor. Instructor: Khanna. One course. C-L: International Comparative Studies

191. 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.

JAPANESE (JPN)


2. Elementary Japanese. FL Continuation of Japanese 1. Prerequisite: Japanese 1 or equivalent. Instructor: Endo. One course.


64. Intermediate Japanese. CZ, FL Continuation of Japanese 63. Prerequisite: Japanese 63 or equivalent. Instructor: Endo. One course.


191. 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.

205S. Seminar in Japanese. ALP, CCI, FL Topics vary each semester. Prerequisite: Japanese 184 or equivalent. Instructor: Staff. One course.

291. Research Methods in Japanese. CCI, SS Introduction to various research approaches to literary, sociological, and historical studies of Japan. Emphasis on bibliographical sources that best serve needs in chosen area of specialization. Consent of instructor required.
Instructor: Staff. One course. C-L: Cultural Anthropology 290, History 292, Political Science 291, Sociology 291

KOREAN (KOREAN)

1. 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.

2. Elementary Korean. FL Continuation of Korean 1. Developing speaking and listening skills for everyday personal communication; reading simple narratives and descriptions; learning core grammatical patterns. Prerequisite: Korean 1 or equivalent (knowledge of Hangul and rudimentary speaking ability). Instructor: E. Kim. One course.

63. 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 2 or equivalent (ability to communicate in service encounters and express oneself in basic personal situations). Instructor: E. Kim. One course.

64. Intermediate Korean. CZ, FL Continuation of Korean 63. 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 63 or equivalent (ability to speak on daily topics fluently and to read simple stories). Instructor: E. Kim. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Korean. CCI Topics differ by section. Instructor: Staff. One course.

125. 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 64 or equivalent (fluency in speaking, familiarity with culture, and experience in reading at grade 1 to 3 level). Instructor: Kim. One course.

126S. Advanced Korean. CCI, CZ, FL Continuation of Korean 125. Introduction to Chinese characters; focus on reading and discussing authentic texts on modern Korean history and its social and cultural legacies. Prerequisite: Korean 125 or equivalent (fluency in speaking, familiarity with culture, and experience in reading at grade 4 or 5 level). Instructor: Kim. One course.

183S. Topics in Korean. ALP, CCI, FL Focus on developing interpretive and expressive abilities through reading and discussions of essays, short stories, and newspaper articles. Prerequisite: Korean 126S or equivalent. Instructor: Kim. One course.

184S. Topics in Korean. ALP, CCI, FL Continue developing interpretive and expressive abilities through reading and discussions of essays, short stories, and newspaper articles. Prerequisite: Korean 183S or equivalent. Instructor: Kim. One course.

191. 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.

WOLOF (WOLOF)

1. Elementary Wolof. FL Introduction to reading, writing, speaking, and understanding standard Wolof. Includes the manuals of the Senegalese literacy program. Instructor: Ndiaye. One course.

2. Elementary Wolof. FL Introduction to reading, writing, speaking, and listening skills in the Wolof language. Includes manuals, newspapers, music recordings, video clips, and movies. Prerequisite: Wolof 1 or equivalent. Instructor: Ndiaye. One course.
63. **Intermediate Wolof. FL** Proficiency-based course emphasizing four skills: reading, writing, speaking, and listening. Uses Senegalese literacy manuals supplemented by selections from Senegalese radio and television. Prerequisite: Wolof 2. Instructor: Ndiaye. 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 100 level or above), with concentration in one of the six following areas: Arabic, Chinese, Hebrew, Hindi, Japanese, or Korean. The major is organized in accordance with three overlapping structures, as reflected in the following requirements:

I. **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 100 level. Elementary level courses do not count toward the major.

II. **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.

III. **For critical analysis of the issue of cultural identities and cross-cultural links with other cultures in Asian and Middles 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 one faculty advisor in their area of concentration.

**Departmental Graduation with Distinction.** Majors with grade point averages of 3.3 or higher 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 meet together at the beginning of the spring semester of their senior year to report on their research topics and again toward the end of that semester to
make a final presentation on their projects. 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 Language and (2) an Asian and Middle Eastern Language and Literature. Five courses are required in each track.

1) **Minor in an Area of Language Concentration:** includes Arabic, Chinese, modern Hebrew, Hindi, Japanese, or Korean. Five courses are required as follows: (i) a minimum of three and up to a maximum of four language courses, two of which must be at the 100 level (elementary level courses do not count toward the minor); (ii) 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.

2) **Minor in Asian and Middle Eastern Studies.** Five courses are required as follows: (i) two language courses at the intermediate level (63 and 64) or above; (ii) 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 (iii) a minimum of one and up to a maximum of two courses on other cultures at the 100 level or above from Asian and Middle Eastern Studies.

**Astronomy**

For courses in astronomy, see Physics on page 499.

**Biochemistry**

For courses in biochemistry, see Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates (on page 453); also see Biology (on page 188) and Chemistry (on page 207).

**Biology (BIOLOGY)**

Professor Kiehart, Chair; Associate Professor Manos, Director of Undergraduate Studies; Lecturer J.A. Reynolds, Associate Director of Undergraduate Studies; Professors Alberts, Benfey, Brandon (philosophy), Christensen (Environmental Sciences and Policy), Clark, Crowder (Environmental Sciences and Policy), Cunningham, Dong, Forward (Marine Science and Conservation), Goldstein (molecular genetics and microbiology), Jackson, Kiehart, Kirby (pediatrics), McClay, Mitchell-Olds, Morris, H. Nijhout, M. Noor, Nowicki, Rauscher, J. F. Reynolds, Rittschof (Marine Science and Conservation), Rodrigo, Rosenberg (philosophy), Shaw, Siedow, Smith, Staddon (psychology and brain sciences), Sun, Terborgh (Environmental Sciences and Policy), Uyenoyama, Vilgalys, Willard (molecular genetics and microbiology), Willis, Wray, and Yoder; Associate Professors Bejsovec, Donohue, Drea (evolutionary anthropology), Johnsen, Lutzoni, Manos, McShea, Pei, Pryer, Roth, and Wilson; Assistant Professors Baugh, Bernhardt, Bhandawat, Buchler, Chen, Haase, Koelle, Leal, Magwene, Schmid, D. Sherwood, Volkman, and Wright; Professors Emeriti Barber, Boynton, Fluke, Gillham, Hellmers, Klopfer, Knoerr (Nicholas School), Nicklas, Searles, Stone, Strain, Tucker, Wainwright, Ward, White, and Wilbur; Associate Professors of the Practice Armaleo, Broverman, Mercer, and Motten; Assistant Professor of the Practice Reid; Research Professors Cook-Deegan (public policy), Livingstone, Vogel, and Williams; Assistant Research Professors Baudisch and N. Sherwood; Adjunct Professors Eubanks, Kohorn and Lacey; Adjunct Associate Professors DeCruz, DePriest and M. Nijhout; Adjunct Assistant Professor Isikhuemhen; Adjunct Professor of the Practice
Hartshorn; Adjunct Assistant Professors of the Practice Deinert and Zahawi; Lecturers Grunwald and J. Noor; Instructors Eason, Hill, and J. A. Reynolds

A major or a minor is available in this department.

The biology major and minor and biology courses in a variety of areas are offered by the Department of Biology. Additional courses in the biological sciences are offered by the Departments of Evolutionary Anthropology, Chemistry, and Psychology and Neuroscience in Trinity College of Arts and Sciences; by the basic sciences departments in the School of Medicine; and by the Pratt School of Engineering and the Nicholas School of the Environment and Earth Sciences.

Biology 101L constitutes the normal introductory course for students planning to major in the biological sciences and is a prerequisite for intermediate and advanced courses in biology. For non-majors, this course may count for the area requirement in the natural sciences. Biology 19 also meets the introductory requirement by advanced placement and Biology 20L by transfer credit. Biology 26L (A or B) constitutes the second semester of the typical introductory sequence (following Biology 101L) and satisfies the prerequisite requirement for students planning to major in biology (see below).

10L. 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


20L. Introductory Biology. NS Credit for introductory biology by transfer of college-level work not corresponding to Biology 25L in content, but including laboratory work. May be counted toward Natural Sciences Area of Knowledge. Equivalent to Biology 25L as prerequisite. One course.

25L. Principles of Biology. NS Introductory course for students planning to major in biology and for students in other majors intending to pursue a postgraduate degree in the life sciences. Provides an integrated overview of biology, covering basic principles in cell and molecular biology, energy transport, development, physiology, genetics, microevolution, macroevolution, and ecology. Instructors: Alberts, Grunwald, McClay, or Motten, and staff. One course.

40. 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.

41. 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.

42. Life’s Beginnings. NS, STS Cells, molecules, and evolution from the start. The origin and evolution of life on earth as a case study in science, as a human enterprise, and as a way of knowing. Intended for non-biology majors. Instructor: Mercer. One course.

46. 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 46, Global Health

47. 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.

48. 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 194FCS, 118, 101L or 102L. Instructor: Hill. One course. C-L: Genome Sciences and Policy 48, Marine Science and Conservation

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

52. Duke-Administered Study Abroad: Special Topics in Biology. NS, STS Topics differ by section. Instructor: Staff. One course.

53. The Dynamic Oceans. NS, STS One course. C-L: see Earth and Ocean Sciences 12; also C-L: Marine Science and Conservation

90. 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.

92FCS. 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

93FCS. 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.

95S. Topics in Modern Biology. NS Occasional seminars in various topics in biology. Intended for nonmajors. Instructor: Staff. One course.

101L. 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 qualitative principles to molecular biology. Relevance to human diseases and the biotechnology industry. Laboratory includes an introduction to recombinant DNA technology.
Prerequisite: Chemistry 31L, or equivalent. Instructor: Buchler, Haase, Kiehart, Wray. One course.


103L. General Microbiology. NS Classical and modern principles of the structure, physiology, and genetics of microorganisms and their roles in human affairs. Prerequisite: one course in a biological science or consent of instructor. Instructor: Dong, Lutzoni, Schmid, or Vilgalys. One course. C-L: Global Health


105. Introduction to Mathematical Modeling in Biology. NS, QS, R A first course applying mathematics to biological problems. Topics drawn from cell and molecular biology, molecular evolution, enzyme catalysis, biochemical pathways, ecology, systems biology, and developmental biology. Students in the Modeling Biological Systems Certificate Program may use this course as a substitute for Modeling Biological Systems 100S. Prerequisite: Mathematics 103 or equivalent. Instructor: Mercer. One course. C-L: Modeling Biological Systems 100A

106L. 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: Bio 25L or 19 or 102L, recommended. Not open to students who have taken Biology 26BL. Instructor: Motten. One course.

107. 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 26AL, 26B(L), or 106L. Instructor: Manos and Cunningham. One course.

108L. 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.

109. 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: Crowder and Orbach. One course. C-L: Environment 109, Marine Sciences, Marine Science and Conservation

110L. Ecology. NS, R One course. C-L: see Environment 110L

111L. Principles of Animal Morphology. NS, R Principles of animal structure, from three different perspectives: (1) function; (2) development and; (3) evolution. Prerequisites:
114L. Biological Oceanography. NS, R Physical, chemical, and biological processes of the oceans, emphasizing factors controlling distribution and abundances of organisms. The theory, methods, and limitations of biological oceanographic research. The laboratory teaches quantitative methods, experimental design, data acquisition, data processing, and data analysis and culminates in a research cruise where the students organize into a scientific party. One course (spring); one and one-half courses (summer). (Given at Beaufort) Prerequisite: AP Biology, Introductory Biology, or consent of the instructor. Instructor: Johnson. Variable credit. C-L: Environment 114L, Earth and Ocean Sciences 114L, Marine Sciences, Marine Science and Conservation

115. Cellular and Molecular Neurobiology. NS This course will cover the molecular and cellular components underlying nervous system function. Topics include the regulation of the neuronal cytoskeleton, process outgrowth and axon guidance, transport mechanisms, the generation and propagation of the action potential, components of the presynaptic and postsynaptic terminals, growth factors in development and regeneration, neuronal stem cells, and sensory signal transduction. Lectures by the instructor and expert guests, with regular readings of current and/or historical primary literature. Prerequisites: Biology 19 or 25L or 101L or equivalent, and Psychology 101RE. Instructor: Sherwood or Volkan. One course. C-L: Neuroscience 115

116. Fundamentals of Ecology and Evolution. NS, STS Fundamental principles of ecology and evolutionary biology. Interaction between biotic and abiotic forces in shaping the dynamics of ecological systems, and how those dynamics are influenced by human activities. Mechanisms of evolutionary change as an interplay between ecology and genetics. Evidence for, and consequences of, evolutionary change on both human and geological time scales. Prerequisite: Biology 25L. Not open to students who have taken Biology 110L or 120. Instructor: Bernhardt, Koelle, Mercer, Morris, Rausher, Uyenoyama, or Wilson. One course.

117. Cell and Organismal Physiology. NS Mechanisms and processes that organisms use to deal with the challenges posed by their physical, chemical, and ecological contexts. Structure-function relationships explored from molecules and cells to tissues and organ systems. Topics include cellular architecture, energy metabolism, molecular motors, motility/locomotion, sensory mechanisms/signal transduction, ionic/osmotic balance, gas exchange, thermal physiology. Constraints and adaptations related the evolution of eukaryotes and the evolution of multicellularity. Prerequisite: Biology 25L or 101L or equivalent. Not open to students who have taken Biology 110L or 120. Instructor: Bernhardt, Koelle, Mercer, Morris, Rausher, Uyenoyama, or Wilson. One course.

118. Genetics and Molecular Biology. NS, STS Explores flow of information from gene to phenotype. Social implications of modern genetic analysis and the genomic revolution. Topics include: organization and stability of genomes from bacteria to higher vertebrates (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 social implications of genetic knowledge including issues of genetic privacy, eugenics, genetically modified organism, and cloning. Prerequisite: Biology 25L or equivalent; Chemistry 31L or equivalent. Instructor: Bejsovec, Haase, Mitchell-Olds, Sun, or staff. One course. C-L: Modeling Biological Systems

119. 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 101L or 118. Instructor: Baugh, Chen, Kiehart, McClay, Pei, D. Sherwood, or staff. One course.

121. 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 19 or 25L or 102L. Instructor: McShea. One course.

122. 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. Prerequisite: Biology 19 or 25L or 102L or equivalent. Instructor: Uyenoyama. One course. C-L: Modeling Biological Systems

123. 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 123, Earth and Ocean Sciences 122, Marine Sciences, Marine Science and Conservation

124. Molecular Evolution. NS Evolutionary dynamics of genes in populations, molecular phylogenetics, evolutionary pattern and process at the molecular level and some of their consequences for organism-level evolution. Evolution of genomes, gene families, gene function, regulatory genes, and of developmental control genes. Prerequisite: Biology 25L or equivalent, and Biology 118 or 101L, and 102L or AP Biology, or consent of instructor. Instructor: Mercer. One course.

124L. 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 118 or 101L, and 102L or AP Biology. Instructor: Mercer. One course.

125. 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 Trinidad required. Prerequisite: Introductory Biology. Consent of instructor required. Instructor: Staff. One course. C-L: Environment 135, Marine Sciences, Marine Science and Conservation

125L. Biology and Conservation of Sea Turtles. NS, STS Laboratory version of Biology 125. Includes laboratory and field experience with animals and with their habitat requirements. (Given at Beaufort.) Prerequisite: Introductory Biology. Instructor: Staff. One course. C-L: Environment 135L, Marine Sciences, Marine Science and Conservation

126. 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 125, Marine Sciences, Marine Science and Conservation

126L. Marine Mammals. NS, R, STS Laboratory version of Biology 126. 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 125L, Marine Sciences, Marine Science and Conservation

127. 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: Crowder, Johnston. One course. C-L: Environment 127, Marine Sciences, Marine Science and Conservation

129L. 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 203L. (Given at Beaufort fall and summer.) Prerequisite: introductory biology. Instructors: Crowder, Kirby-Smith, or staff. One course. C-L: Environment 129L, Earth and Ocean Sciences 129L, Marine Sciences, Marine Science and Conservation

131. 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: Staff. One course. C-L: Environment 139L, Earth and Ocean Sciences 139L

134. 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.

134L. Fundamentals of Tropical Biology. NS, R Laboratory version of Biology 134. Field activities and independent field research projects. (Taught in Costa Rica, summer). Instructor: Staff. One course. C-L: Latin American Studies

135L. 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

136L. 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.

137. 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 10 or 25L or introductory ecology. Instructor: McClearn. One course. C-L: Environment 197

138L. Field Research in Savana Ecology. NS, R, W Field-based course stressing student design and implementation of research projects in savana 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 10 or 25L or introductory ecology or equivalent. Instructor: Staff. One course. C-L: Environment 198L


140L. Plant Diversity. NS Major groups of living plants, their evolutionary origins and phylogenetic relationships. Fee for field trip. Prerequisite: Biology 25L or 102L or equivalent. Instructor: Shaw. One course.

141L. 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.

142L. 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 19 or 25L or 102L. Field trips. Instructor: Pryer. One course.


145. 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 141

Biology (BIOLOGY) 195
146. 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. Instructor: Johnsen and Koelle. One course.

147. 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: Benfey. One course. C-L: Genome Sciences and Policy

148. Genome Sciences and Society. EI, NS, SS, STS One course. C-L: see Genome Sciences and Policy 148

149S. 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 53 or equivalent. Instructor: Staff. One course.

150L. 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 31L. Instructor: Forward. Variable credit. C-L: Environment 150L, Marine Sciences, Marine Science and Conservation

151L. Principles of Animal Physiology. NS, R, W 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. Laboratories and independent investigations. Research proposal and class presentation required. Prerequisites: Biology 19 or 25L or 101L and Physics 53L and Chemistry 31L. Instructor: Grunwald or Johnsen. One course.

152. Molecular Plant Physiology. NS Principal physiological processes of plants, including respiration, photosynthesis, water relations, and factors associated with plant morphogenesis. Prerequisites: Biology 19 or 25L or 101L and Chemistry 31L; organic chemistry is desirable. Instructors: Pei, Siedow, and Sun. One course.

154. Fundamentals of Neuroscience. NS, STS One course. C-L: see Psychology 135; also C-L: Neuroscience 114, Neurosciences

155L. Biochemistry of Marine Animals. NS, R, W The molecular basis of behavioral and physiological responses of organisms. Evolution of molecular endocrinology and signal transduction pathways. Focus on the theory 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 31L. Instructor: Rittschof. Variable credit. C-L: Environment 155L, Marine Sciences, Marine Science and Conservation

156L. 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 31L. Instructor: Rittschof. One course. C-L: Marine Sciences, Marine Science and Conservation, Neurosciences

160. Population Ecology. NS, QS, STS Processes affecting births and deaths of organisms and the way these processes determine the distribution and abundances of populations. Animal behavioral decisions; mating; one-, two-, and many-species systems; stochastic processes; evolutionary ecology; and fundamentals of community ecology. Examples of human population dynamics, and concepts of population regulation. Human impacts on animal populations. Mathematical techniques, including matrix models, differentiation, and differential equations, will be developed. Prerequisite: Mathematics 31 or equivalent. Not open to students having taken Biology 110L. Instructor: Wilson. One course. C-L: Modeling Biological Systems

166. Evolution of Animal Behavior. NS, R, STS, W How animal behavior is shaped by natural selection, historical factors, and ecological constraints. These factors considered in the context of mating systems, parental care, foraging, and other current issues in behavior. Prerequisite: Biology 19 or 25L or 102L. Instructor: Alberts or Leal. One course.


167. Learning and Adaptive Behavior (B, C). NS One course. C-L: see Psychology 111

171. Primate Sexuality. NS, STS One course. C-L: Evolutionary Anthropology 171, Neurosciences

172S. 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 110L or 116 or other course in ecology or Environment 49S, or by permission. Instructor: Bernhardt. One course. C-L: Environment 173S

173. 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 174

174. Philosophy of Biology. CZ, NS, R, STS One course. C-L: see Philosophy 114; also C-L: Genome Sciences and Policy, Marine Science and Conservation

176L. 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 274L. 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: Kirby-Smith or staff. Variable credit. C-L: Environment 176L, Earth and Ocean Sciences 176L, Marine Sciences, Marine Science and Conservation

178L. 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 178L, Marine Sciences, Marine Science and Conservation

181LS. Terrestrial Field Ecology. NS 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 19 or 25L or 110L or 116 or other course in ecology or consent of instructor; Mathematics 31. Instructor: Wright. One course. C-L: Environment 183LS

182LS. Aquatic Field Ecology. NS 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 19 or 25L or 110L or 116 or other course in ecology or consent of instructor; Mathematics 31. Instructor: Bernhardt. One course. C-L: Environment 184LS

184L. 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 101L or 118 or 119. Instructor: Armaleo. One course. C-L: Neurosciences

187. Evolutionary Genetics and Genomics. NS Introduction to the principles of evolutionary genetics. Genetic variation, neutral theory, natural selection, human population genetics, phylogenetic reconstruction, evolutionary genomics, and evolutionary bioinformatics. Prerequisites: Biology 19 or 25L or 102L. Instructor: Mitchell-Olds or Noor. One course. C-L: Genome Sciences and Policy, Modeling Biological Systems

188L. 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: Staff. One course. C-L: Environment 188L, Marine Sciences, Marine Science and Conservation

190. 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. Open to all qualified students with consent of supervising instructor and director of undergraduate studies. Instructor: Staff. Variable credit. C-L: Marine Sciences, Marine Science and Conservation

191. 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 297. Instructor: Staff. One course. C-L: Marine Sciences, Marine Science and Conservation, Neurosciences
193T. Tutorial. For junior and senior majors with consent of director of undergraduate studies and supervising instructor. Instructor: Staff. One course. C-L: Marine Sciences

194FCS. 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, 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 19 or the equivalent. Instructor: Willard. One course. C-L: Genome Sciences and Policy

195. Topics in Biology. NS Occasional topics in the biological sciences. Instructor: Staff. One course.

195S. Seminar in Biology. NS Instructor: Staff. One course. C-L: Neurosciences

197T. Tutorial. For junior and senior majors with consent of director of undergraduate studies and supervising instructor. Instructor: Staff. Half course. C-L: Marine Sciences

199S. Current Research in Biology. EI, NS, STS, W Students selected for funding for independent research from the Trinity College Research Forum in Biology write and review research proposals, discuss ethical issues in the conduct of biological and biomedical research, and present and discuss their own research projects. Consent of instructor required. Instructor: Roth. One course.

205LS. 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 immunochemical localization, in situ hybridization, polymerase chain reaction, genetic screening, embryo micromanipulation, microscopic imaging, and mutant analysis. Prerequisite: Biology 101L or 118; recommended, prior or concurrent registration in Biology 119. Instructor: Spance. One course.


207AL. 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

207BL. 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 129L and consent of instructor. Instructor: Crowder. Half course. C-L: Marine Sciences

207EL. 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

208S. 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 108L or 205L or Evolutionary Anthropology 133L or equivalent. Permission of instructor required. Instructor: Smith and Wall. One course. C-L: Evolutionary Anthropology 208LS

211L. 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 19 or 25L or 103L or 101L or 118 or consent of instructor. Instructor: Vilgalys. One course.

214. Biophysics in Cellular and Developmental Biology. NS One course. C-L: see Physics 214; also C-L: Modeling Biological Systems

215. Tropical Ecology. NS, STS One course. C-L: see Environment 217; also C-L: Latin American Studies


217. 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: Biology 110L or 116 or introductory ecology. Instructor: Jackson. One course.

220L. Mycology. NS Survey of the major groups of fungi with emphasis on life history and systematics. Field and laboratory exercises. Instructor: Vilgalys. One course.

222L. Entomology. NS The biology of insects: diversity, development, physiology, and ecology. Field trips. Prerequisite: Biology 19 or 25L or 102L or equivalent. Instructor: H. Nijhout. One course.

223S. Biology of Mammals. NS The biology of mammals: diversity, evolutionary history, morphology, and aspects of physiology and ecology. Local field trips. Prerequisite: Biology 19 or 25L or 102L or equivalent. Instructor: Roth. One course.

224L. 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 25L or equivalent. Instructor: Leal. One course.

234S. Problems in the Philosophy of Biology. NS, STS One course. C-L: see Philosophy 234S


237L. Systematic Biology. NS Laboratory version of Biology 237. Theory and practice of identification, species discovery, phylogeny reconstruction, classification, and nomenclature. Prerequisite: Biology 25L or 102L or equivalent. Instructors: Lutzoni and Swofford. One course.
240. **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 101L or 118 and Biology 115. Instructor: Volkan. One course. C-L: Neuroscience 245

241S. **Biology of Nervous System Diseases.** 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 114 or 115 or Biology 119 or consent of instructor. Instructor: Sherwood, Nina. One course. C-L: Neuroscience 242S, Psychology 211S

244. **Principles of Immunology.** NS, R One course. C-L: see Immunology 244

252. **Marine Conservation Biology.** NS Ecological effects of fishing, the major threat to marine biodiversity, examined through selected case studies. Conservation strategies and ways that science and policy can be integrated to solve real-world problems. Field trip to Hawaii required. (Taught at Beaufort.) Instructor: Read. One course.

254. **Vertebrate and Invertebrate Endocrinology.** NS, STS Comparative study of the major pathways of hormonal regulation from the organismal to the molecular level in vertebrate and invertebrate models. Applications of endocrinology in pharmaceuticals, cosmetics, and environmental issues. Prerequisites: AP Biology or introductory biology or consent of instructor and Chemistry 152L. A biochemistry course recommended. (Given at Beaufort.) Instructor: Rittschof. One course. C-L: Marine Sciences, Marine Science and Conservation

256S. **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.

259S. **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.

260. **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, stem cells, and metastasis. Prerequisites: Biology 101L and 102L or Biology 118. Recommended: Biology 117 or 119. Instructor: Bejsovec. One course.

262S. **Molecular Genetic Analysis.** NS Application of genetic techniques to basic problems in cell and developmental biology. Readings in the primary literature will focus on model systems such as C. elegans and Drosophila. Topics will include: forward and reverse genetic screen strategies, mosaic analysis and transgenesis. Prerequisite: Biology 118 or Biology 101L and 102L or equivalent. Instructor: Bejsovec. One course.

267L. **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 257L

268L. **Models for Environmental Data.** NS Formulation of environmental models and applications to data. Topics include physiology, population growth, species interactions, disturbance, and ecosystem dynamics. Model development, analysis, and interpretation. Discussions focus on classical and current primary literature. Lab focuses on analysis of data

271L. 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 101L or 118 or consent of instructor. Instructor: Spana. One course. C-L: Genome Sciences and Policy

272. 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 31L or equivalent; Recommended: Chemistry 32L. Instructor: Bernhardt. One course. C-L: Environment 282

274. Genomic Perspectives on Human Evolution. NS, R, STS 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 101L and 102L or 118 or equivalent course. Instructor: Wray. One course. C-L: Evolutionary Anthropology 274, Genome Sciences and Policy

275S. 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.

277S. 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.

278S. 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

279S. Developmental and Stem Cell Biology Colloquium. NS Lectures, seminars, and discussion of current topics in developmental biology. Prerequisites: Biology 101L or 118 and/or 119 or equivalent. Consent of instructor required. Instructor: Sherwood. One course.

280S. 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 101L or 118 and 119 or consent of instructor. Instructor: Sun. One course. C-L: Genome Sciences and Policy

281S. 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. C-L: Modeling Biological Systems
284. 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.

287S. 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 25L, 26L, 102L, or other course in plant or animal diversity; recommended, Biology 116 or equivalent. Instructor: Roth. One course. C-L: Evolutionary Anthropology 287S

288S. 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 116 or 102L and one course in ecology. Instructor: Noor. One course.

289S. Advanced Topics in Genome Science Research. NS, QS, STS, W 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 101L or 194FCS or 118, 119 or 271, 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

292. 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: Biology 110L or 116 or introductory ecology or equivalent. Instructor: Morris and/or Wilson. One course.

293. Simulating Ecological and Evolutionary Systems. NS Computer programming using C within a UNIX environment applied to ecological and evolutionary problems. The relationship between simulation and analytic modeling. Knowledge of programming or work within the UNIX computer environment not expected. Consent of instructor required. Instructor: Wilson. One course.

295. Topics in Biology. NS Lecture course on selected topic. Offerings vary each semester. Instructor: Staff. One course.

295S. Special Topics Seminar. NS Seminar on a selected topic. Offerings vary each semester. Consent of instructor required. Instructor: Staff. One course.

296. Topics in Biology. NS Lecture version of Biology 296S. Offerings vary each semester. Instructor: Staff. Half course.

296S. Special Topics Seminar. NS Seminar on a selected topic. Offerings vary each semester. Consent of instructor required. Instructor: Staff. Variable credit.

297. Research Independent Study. R Continuation of Biology 191. 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. May be repeated. Instructor: Staff. One course. C-L: Marine Sciences, Marine Science and Conservation
299S. 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. 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 A.B. 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 B.S. degree. A minimum of thirteen courses is required for this major.

Prerequisites. Chemistry 31L or equivalent.

Corequisites. Mathematics 25 and 26, or equivalent.

Major Requirements. Two gateway courses: one in molecular biology (Biology 101L) and one in genetics and evolution (Biology 102L). 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 Biology Department, not including the above corequisites or courses specified not for science majors; two of these courses must include related laboratory experience at the 100-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 100 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 200-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.

For the B.S. 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 31L or equivalent.

Corequisites: Chemistry 151L; Mathematics 31 or 31L, either Calculus II (32, 32L, or 41) or Statistics 102 or above. Physics or 53L or 61L. 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 101L) and one in genetics and evolution (Biology 102L). 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 Biology Department, not including the above corequisites or courses specified not for science majors; two of these courses must include related laboratory experience at the 100-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 100 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 200-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 systematics. 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 19); the five courses may include any course numbered 100 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.

**Areas of Concentration**

Students may elect to complete the requirements for the minor in specified areas of concentration. Currently available areas in the biology minor are: anatomy, physiology and biomechanics; animal behavior; biochemistry; cell and molecular biology; ecology; evolutionary biology; genetics; genomics; marine biology; neurobiology; pharmacology; and plant systematics. For more information on the courses approved for each area of concentration see the director of undergraduate study.

**Biomedical Engineering**

For courses in biomedical engineering, see “Pratt School of Engineering” on page 667.

**Canadian Studies (CANADIAN)**

Professor Moss, Director; Professor Kelly, Associate Director; Professors Gereffi (sociology), Goodwin (economics), O'Barr (cultural anthropology), Thompson (history), Vidmar (law); Associate Professors Fenn (history), Mayer (public policy studies and
political science), Peck (history); Professors Emeriti Cahow (history), Kornberg (political science), Smith (history), Tiryakian (sociology), and Wood (history); 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.

**49S. First Year Seminar in Canadian Studies.** Topics vary each semester offered. Instructor: Staff. One course.

**50. Duke-Administered Study Abroad: Special Topics in Canadian Studies.** Topics differ by section. Instructor: Staff. One course.


**100. Duke-Administered Study Abroad: Advanced Special Topics in Canadian Studies.** Topics differ by section. Instructor: Staff. One course.

**103S. Geography of Canada.** CCI, SS A regional geography of Canada; its physical features, topography, climate; the historic economic and social development of the regions; economic and cultural interactions among the regions. Instructor: Staff. One course. C-L: International Comparative Studies 151ES

**150. Special Topics in North American Issues.** Topics vary each semester. Instructor: Staff. One course.

**160S. Special Topics in Canadian Studies.** Topics vary each semester offered. Instructor: Staff. One course.

**170S. Special Topics in Québec Studies.** CCI Topics vary each semester offered. 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**
138S. Francophone Literature

**Asian & Middle Eastern Studies**
168S. Francophone Literature

**Cultural Anthropology**
110. Advertising and Society: Global Perspective

**Economics**
265S. International Trade
268S. Current Issues in International and Development Economics

**French**
135. France's Cultural Legacy in the New World: Quebec
161S. Francophone Literature
169. North of the Border: The Novel in French Canada
371. Topics in Migration, Literature, Transnational Writers, and Postnational Literature

**History**
162S. Francophone Literature
183S. Canada from the French Settlement

**International Comparative Studies**
THE MAJOR

Prerequisite: Canadian Studies 98.
Corequisite: Completion of another major; two years of college-level French.
Major Requirements. Ten courses with Canadian content, including Canadian Studies 98 and 184S and eight additional courses, seven of which must be at the 100 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 100 level or above; courses must include Interdisciplinary Canadian Studies 98 (Introduction to Canada) and 184S (Canadian Issues). 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 188) and Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates (on page 453)

Chemistry (CHEM)

Professor Warren, Chair: Associate Professor MacPhail, Associate Chair and Co-Director of Undergraduate Studies; Professor Bonk, Co-Director of Undergraduate Studies; Lecturer Roy, Associate Director of Undergraduate Studies and Supervisor of First-Year Instruction; Professor Baldwin, Director of Graduate Studies; Professors Baldwin, Beratan, Bonk, Crumbliss, Liu, McCafferty, McClendon, Ramsay-Shaw, Simon, Therien, Toone, Vo-Dinh, Warren, Widenhoefer, and Yang; Associate Professors Craig, Fitzgerald, and MacPhail; Assistant Professors Charbonneau, Coltart, Franz, Hong, and Wiley; Professors Emeriti Arnett, Chesnut, Lochmüller, McPhail, Palmer, Quin, Wells, and Wilder; Research Assistant Professors Brana, Chen, Fischer, Ke, and LaBean; Secondary Appointments: Professors Agre, Chilkoti, and Reichert; Associate Professors Oas and Zhou; Assistant Professor Stapleton; Adjunct Professor Langley; Senior Lecturing Fellow Woerner; Instructors Box, Lyle, and Parise

A major or minor is available in this department.

18. 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 43L, but a student may choose to take Chemistry 31L without loss of credit. Instructor: Staff. One course.

19. 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 151L, but a student may choose to take Chemistry 43L without loss of credit. Instructor: Staff. One course.

20D. 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 31L. Not open to students who have credit for Chemistry 18, 19 or 31L. Instructor: Staff. One course.

26S. 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 31L, or 43L, or 18, or 19. Instructor: Staff. One course.

31L. 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.

32L. 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 CHEM 31L or 43L, 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 31L or 43L. Instructor: Staff. One course.

43L. 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 31L and 43L. Instructor: Staff. One course.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.


83. 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 nonmajors. Instructor: Staff. One course. C-L: Energy and the Environment

93FCS. Special Topics in Chemistry. Focus version of Chemistry 93. Instructor: Staff. One course.

93S. Special Topics in Chemistry. Seminar on special topics in chemistry and chemistry related areas. Content varies by semester. Instructor: Staff. One course.
100. Duke-Administered Study Abroad: Advanced Special Topics in Chemistry. NS, STS
Four week course on Chemical Biology and Drug Discovery at Duke-NUS Graduate and Medical School in Singapore. Special topics include the identification of druggable targets, sources of small molecules, including natural product isolation and library screening, animal models of human disease, preclinical medicinal chemistry, including lead optimization and synthetic organic chemistry, toxicology, adsorption distribution metabolism and excretion (ADME), and the regulatory approval process. Excursions to local research facilities, pharmaceutical research centers, and the animal research station at Bintan, Indonesia. Prerequisites: CHEM 151 and CHEM 152. Recommended Course: BCH 227. Instructor: Toone. One course.

105S. 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.

109. 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 31L, or 43L, or 18, or 19. Instructor: Lyle. One course.

110. Chemical Information Retrieval. NS, W Techniques for manual and on-line searching of the major sources of chemical information, and their application to writing a review article. Instructor: Staff. Half course.

117. Inorganic Chemistry. NS Bonding, structures, and reactions of inorganic compounds studied through physical chemical concepts. Prerequisite: Chemistry 161 or 166. Instructor: Staff. One course.

131. Analytical Chemistry. NS Fundamentals of qualitative and quantitative measurement with emphasis on chemometrics, quantitative spectrometry, electrochemical methods, and common separation techniques. Corequisite: Chemistry 133L. Prerequisite: Chemistry 163L or 167L. Instructor: Staff. One course.

133L. Analytical Chemistry Laboratory. NS Laboratory experiments designed to accompany Chemistry 131. Corequisite: Chemistry 131. Instructor: Staff. Half course.

151L. 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 31L, or 43L, or 19. Instructor: Staff. One course.

152L. Organic Chemistry. NS, STS Continuation of Chemistry 151L. Prerequisite: Chemistry 151L. Instructor: Staff. One course.

161. Elements of Physical Chemistry. NS Survey of physical chemistry including quantum chemistry, molecular structure, molecular spectroscopy, thermodynamics, and kinetics. Prerequisites: Chemistry 32L; or Chemistry 18 plus 31L; or Chemistry 18 plus 43L; or Chemistry 19; Mathematics 32L, and Physics 42L or 54L or 62L or consent of instructor. Instructor: Staff. One course.

163L. Physical Chemistry Laboratory. NS, W Laboratory experiments designed to accompany Chemistry 161. Includes instruction and practice in writing the laboratory notebook and formal laboratory reports. Prerequisite: (or corequisite) Chemistry 161. Instructor: Staff. Half course.

165. Physical Chemistry. NS Fundamentals of physical chemistry. Emphasizes quantum chemistry, molecular structure, and molecular spectroscopy. Chemistry 167L should be taken concurrently with Chemistry 165. Prerequisites: Chemistry 32L; or Chemistry 18 plus...
31L; or Chemistry 18 plus 43L; or Chemistry 19; Mathematics 103, Physics 42L or 54L or 62L or consent of the instructor. Instructor: Staff. One course.

166. Physical Chemistry. NS Continuation of Chemistry 165. Fundamentals of physical chemistry. Emphasizes thermodynamics and kinetics. Chemistry 168L should be taken concurrently with Chemistry 166. Prerequisite: Chemistry 165 or consent of instructor. Instructor: Staff. One course.

167L. Physical Chemistry Laboratory. NS, W Laboratory experiments designed to accompany Chemistry 165. Includes instruction and practice in writing the laboratory notebook and formal laboratory reports. Prerequisite: (or corequisite) Chemistry 165. Instructor: Staff. Half course.

168L. Physical Chemistry Laboratory. NS, W Laboratory experiments designed to accompany Chemistry 166. Prerequisite: (or corequisite). Chemistry 166 or consent of instructor. Instructor: Staff. Half course.

176. Biophysical Chemistry. NS The physical chemical principles of and experimental methods employed in the study of biological macromolecules. Students may not receive credit for both Chemistry 176 and 196S. Prerequisite: Chemistry 161 or 165, or Biochemistry 227 (or Chemistry 175) or consent of instructor. Instructor: Staff. One course.

180L. 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 117. Instructor: Staff. Half course.

191A. 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. Half course.

191B. 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.


197. Introduction to Research Independent Study. NS Includes research methodology, retrieval techniques for, and use of, the chemical literature, safety in the research laboratory, and the ethical conduct of research. Co-requisite: registration for a first course in research independent study in chemistry (191B) or a related area. Lecture/discussion. Satisfactory/Unsatisfactory grading only. Staff: Instructor. Half course.

198. 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. Staff: Instructor. Half course.

198S. Graduation with Distinction Seminar. Seminar for seniors 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. Pass/fail grading only. Instructor: Staff. Half course.

For Seniors and Graduates

275. Advanced Studies. NS (1) Analytical chemistry, (2) inorganic chemistry, (3) organic chemistry, and (4) physical chemistry. Open to especially well-prepared undergraduates by consent of director of undergraduate studies. Instructor: Staff. One course.

276. Advanced Studies. NS Same as Chemistry 275, except carries only half course credit. Instructor: Staff. Half course.

For the A.B. Degree

Prerequisites. Chemistry 31L-32L, or 18 plus 31L or 43L, or 19. Mathematics 31L-32L (or 41L). Physics 41L-42L or 53L-54L or 61L-62L.

Major Requirements. Chemistry 131 and 133L, 151L, 152L, 161 (or 165, 166) and 163L (or 167L) plus one of the following three course options:
1. Three of the following: Chemistry 117, 166, 176, Biochemistry 227, 228.
2. One of the following: Chemistry 117, 166, 176, Biochemistry 227, plus Chemistry 191B and 192 or the equivalent in an approved chemistry-related discipline.
3. One of the following:
   a. Physics emphasis. Chemistry 166 (or 176) plus two of the following: Physics 143L, Physics 181, Physics 182.
   b. Mathematics emphasis. Chemistry 166 (or 176) plus either of the following pairs of courses: Mathematics 104 and Mathematics 131, or Mathematics 107 and Mathematics 108.
   c. Biology emphasis. Biochemistry 227 plus two of the following: Biology 118, Biology 119, Biology 151L, Biology 152, Biology 184L, Biology 185L, Biology 244.

In certain cases, substitutions may be made for courses outside the chemistry department with consent of the director of undergraduate studies.

Recommendations. Computer Science 6 or Engineering 51, Mathematics 103 (for options one and two), and Chemistry 166 (or 176). Students planning graduate study are advised to take these recommended courses and to consult with advisors regarding appropriate additional courses.

For the B.S. Degree

Prerequisites. Chemistry 31L-32L, or 18 plus 31L or 43L, or 19. Mathematics 31L-32L or 41L, 103. Physics 41L-42L or 53L-54L or 61L-62L.

Major Requirements. Chemistry 117, 131, 133L, 151L, 152L, 165, 166, 167L, 168L, 180L, 191B (or its equivalent in a chemistry-related discipline), plus two additional courses selected from the following: Biochemistry 227*, Chemistry 176, 192 (or its equivalent in a chemistry-related discipline)*, and 275 (or its equivalent in a chemistry-related discipline).

The Concentration in Biochemistry

In cooperation with the Department of Biochemistry in the School of Medicine, the Chemistry Department offers both an A.B. and a B.S. degree in chemistry with concentra-
tion in biochemistry. Certification of this concentration is designated on the official transcript.

**For the A.B. Degree with Concentration in Biochemistry**

*Prerequisites.* Chemistry 31L-32L, or 18 plus 31L or 43L, or 19. Mathematics 31L-32L or 41L. Physics 53L-54L or 61L-62L. Biology 25L.

*Major Requirements.* Chemistry 131/133L, 151L, 152L, 161 (or 165, 166), 163L (or 167L); Biochemistry 227, 228; plus one of the following: Chemistry 191B or Biochemistry 210.

**For the B.S. Degree with Concentration in Biochemistry**

*Prerequisites.* Chemistry 31L-32L, or 18 plus 31L or 43L, or 19. Mathematics 31L-32L or 41L. Physics 53L-54L or 61L-62L. Biology 25L.

*Major Requirements.* Chemistry 117, 131/133L, 151L, 152L, 161, (or 165*), 163L (or 167L**), 176 (or 166**); Biochemistry 227, 228; Biology 118, 119; plus one of the following: Chemistry 191B, Biology 191, or Biochemistry 210.

*Recommendations.* Mathematics 103; Chemistry 180L**, 192; Biology 184L, 192; advanced courses in biochemistry.

**The Concentration in Pharmacology**

In conjunction with the Department of Pharmacology in the Duke Medical Center, the Chemistry Department offers both an A.B. and a B.S. degree in chemistry with a Concentration in Pharmacology. Certification of the concentration is designated on the official transcript.

**For the A.B. Degree with Concentration in Pharmacology**

*Prerequisites.* Chemistry 31L-32L, or 18 plus 31L or 43L, or 19; or 41L and 42L; or 23L; or 19. Mathematics 31, 32 (or 31L, 32L or 41); Physics 41L, 42L or 51L, 52L (or 53L, 54L or 61L, 62L); Biology 25L, Biochemistry 227.

*Major requirements:* Chemistry 131/133L, 151L, 152L, 161 (or 165, 166), 163L (or 167L); Pharmacology 150 and 160; plus 2 semesters of independent study involving some aspect of pharmacology (Chemistry 191B, 192 or Pharmacology 297, 298).

**For the B.S. Degree with Concentration in Pharmacology**

*Prerequisites.* Chemistry 31L-32L, or 18 plus 31L or 43L, or 19. Mathematics 31L-32L or 41L. Physics 53L-54L or 61L-62L. Biology 25L. Biochemistry 227.

*Major Requirements:* Chemistry 117, 131/133L, 151L, 152L, 161 (or 165**), 163L (or 167L**), 176 (or 166**); Pharmacology 150 and 160; plus 2 semesters of independent study (Chemistry 191B, 192 or Pharmacology 297, 298).


**The Concentration in Environmental Chemistry**

In conjunction with the School for the Environment of Duke University, the Chemistry Department is pleased to offer both an A.B. and a B.S. degree in Chemistry with

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* Majors who wish to earn a B.S. in chemistry that is certified by the American Chemical Society must include Chemistry 165, 166, 167L, 168L, 180L, 197, and Biochemistry 227. Note: Chemistry 165 has a prerequisite of Mathematics 103.
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 A. B. Degree with Concentration in Environmental Chemistry

**Prerequisites.** Chemistry 31L-32L, or 18 plus 31L or 43L, or 19. Mathematics 31L-32L or 41L. Physics 53L-54L or 61L-62L. Biology 25L. Environment 160 or Civil Engineering 120L.

**Major Requirements.** Chemistry 131, 133L, 151L, 152L, 161/163L (or 165***/167L, 166); Plus two of the following: Environment 179, 240, 242, 243; Plus one of the following: Chemistry 191B* or Environment 191 or Civil Engineering 197.

For the B.S. Degree in Chemistry with Concentration in Environmental Chemistry

**Prerequisites.** Chemistry 31L-32L, or 18 plus 31L or 43L, or 19. Mathematics 31L-32L or 41L. Physics 53L-54L or 61L-62L. Biology 25L. Environment 160 or Civil Engineering 120L.

**Major Requirements.** Chemistry 117, 131/133L, 151L, 152L, 161/163L, 176 (or 165/167L, 166**); Any two of the following: Environment 179, 240, 242; 243; plus one of the following: Chemistry 191B***, Environment 191 or Civil Engineering 197.

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 198 (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 31L or 43L or 19; any four of the following courses: Chemistry 32L; any chemistry courses at the 100-level or above; Biochemistry 227, 228; Biology 155L; Environment 240, 241, 242; Pharmacology 150, 160, 233.

Children in Contemporary Society (CCS)

Assistant Research Professor Muschkin, Director

A certificate, but not a major, is available in this program.

The goal of the certificate in Children in Contemporary Society 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 will allow students the opportunity to study issues by incorporating the perspectives of numerous disciplines, including psychology, sociology, public policy, economics, and education. The certificate will culminate in an empirical research seminar, in which the students will work closely with a faculty member to produce an original, scholarly research paper. Examples of topics that could be pursued with this

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* The independent study project must involve some aspect of environmental chemistry.

** Majors who wish to earn a B.S. in chemistry that is certified by the American Chemical Society must include Chemistry 165, 166, 167L, 168L, 180L, 197, and Biochemistry 227. Note: Chemistry 165 has a prerequisite of Mathematics 103.

*** The independent study project must involve some aspect of environmental chemistry.
Certificate include social and economic inequalities in schooling, the pervasiveness of gang violence in high schools, or the economic costs of childhood obesity.

CERTIFICATE REQUIREMENTS

In order to complete the certificate, students must take six courses: the cornerstone course Children in Contemporary Society 150, the capstone course Children in Contemporary Society 210S, two electives, one research course, and one methods course. The research course is an independent study: students may register for Children in Contemporary Society 190S 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 Social Science Policy Research (cross-listed as Public Policy 183S and Psychology and Neuroscience 160S) or a methods course in the student’s home department. Both the research course and the methods course must be approved by the program director. The two electives may be drawn from a list of pre-approved electives. No more than two courses that are counted towards this certificate may also be used to satisfy the requirements of any major, minor, or other certificate program. In addition, no more than three of the courses that count toward the certificate may originate in a single department or program. More information is available at www.childandfamilypolicy.duke.edu/certificate.

49S. First-Year Seminar. SS Topics vary each semester offered. Open only to first year students. Instructor: Staff. One course.

150. Children in Contemporary Society. 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 Children in Contemporary Society, but open to all undergraduate students. One course. C-L: Public Policy Studies 124

155S. Research on Policy and Practice in Schools. R, SS Students conduct independent research on issues related to education policy and practice. Course objective: develop an understanding of real-world problems in education by conducting research and communicating findings to decision-makers in public schools. Students paired with a client from the public schools (e.g., principal, teacher, school board member) and assigned a topic of mutual interest. Instructor consent required. Instructor: Babinski. One course. C-L: Public Policy Studies 195CS

190S. Research Seminar: Children in Contemporary Society. R, SS Original research on a specific project with a faculty mentor culminating in a scholarly written project. Required for the certificate program Children in Contemporary Society. Consent of the Director of the Children in Contemporary Society certificate program required. Instructor: Gibson-Davis. One course.

195. Selected Children in Contemporary Society 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 Children in Contemporary Society certificate. Instructor: Staff. One course.


210SA. Multidisciplinary Approaches to Contemporary Children's Issues. R, SS, W Two-semester course during which students will identify a problem facing children in contemporary society and learn how to analyze its historical, political, economic, psychological and sociological contributions. They will learn how to conduct a policy
analysis and translate their scholarship to policy solutions. Students will learn how to present
their analyses in oral, academic, and lay-public forums. Research intensive. Required for
Children in Contemporary Society certificate program. Consent of instructor required.

264. Advanced Children in Contemporary Society Topics. SS
Topics vary but pertain to the
development and social and economic well-being of children and their families. Interdisci-
plinary in nature and drawing material from disciplines such as sociology, psychology,
public policy, economics, and education. An elective course for students pursuing Children
in Contemporary Society certificate. Instructor: Staff. One course.

264S. Advanced Children in Contemporary Society Seminar Topics. SS
Seminar version of
Children in Contemporary Society Topics 264. Instructor: Staff. One course.

ELECTIVES

Students will choose two electives from the following list of pre-approved courses. If a
student wishes to take a course for Certificate credit that is not on the pre-approved list, then
the Certificate director will decide on the appropriateness of that course on a case-by-case
basis.

Regularly Scheduled Courses

African and African American Studies
116. Comparative Race and Ethnic Studies
134. Psychology of Ethnicity and Context
147. Urban Education

Economics
208S. Economics of the Family

Education
112S. Children, Schools and Society
118. Educational Psychology
121S. Infancy, Early Childhood, and Educational Programs
125S. Unrecognized Talent: Minority Children and Gifted Education
137. Contemporary Issues In Education
147. Urban Education
148S. Learning to Read

Linguistics
153S. Issues in Language Development

Psychology
108A. Educational Psychology
119B. Child Clinical Psychology
131. Social Development
133. Psychology of Ethnicity and Context
137. Adolescence
145S. Learning to Read
153S. Issues in Language Development
154S. Achievement Motivation
174S. Infancy
183B. Child Observation
205S. Children's Peer Relations
206S. Pediatric Psychology

Public Policy Studies
109S. Children, Schools and Society
271S. Schools and Social Policy

Sociology
11. Contemporary Social Problems
116. Comparative Race and Ethnic Studies
117. Childhood in Social Perspective
118. Sex, Gender, and Society
119. Juvenile Delinquency
127. The Latino Population in the United States
136. Urban Education
150. The Changing American Family
Women's Studies
208S. Economics of the Family

SPECIAL TOPICS COURSES OFFERED PERIODICALLY

Psychology and Neuroscience
160S. Social Science and Policy Research

Public Policy Studies
195S. Children, Poverty, and Public Policy
196. Child Development and Public Policy
183S. Social Sciences and Policy Research

Chinese
For courses in Chinese, see “Asian and Middle Eastern Studies (AMES)” on page 171.

Civil and Environmental Engineering
For courses in civil and environmental engineering, see “Pratt School of Engineering” on page 667.

Classical Studies (CLST)
Professor Boatwright, Chair; Professor Janan, Director of Undergraduate Studies; Professors Antonaccio, Boatwright, Burian, Davis, Janan, and Johnson; Associate Professors Sosin and Woods; Assistant Professors Atkins and González; Professors Emeriti Clay, Newton, Richardson, Riggsby, and Stanley

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.

CLASSICAL STUDIES (CLST)

11S. 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 53/153. Instructor: Staff. One course.

12S. 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 54/154. Instructor: Staff. One course.

45S. Focus Program Topics in Classical and Medieval Culture. Topics in Classical and Medieval Culture. Open only to students in the Focus Program. One course.

49S. First-Year Seminar. CCI Topics in classical literature and/or art and archaeology vary each semester. Instructor: Staff. One course.

50. Duke-Administered Study Abroad: Special Topics in Classical Studies. CCI Topics in classical literature and/or art and archaeology differ by section. Instructor: Staff. One course.

85FCS. Good and Evil in Imagined Worlds. ALP, CCI Exploration of ancient and medieval underpinnings of popular virtual-world building tropes around good and evil as found in video games, films, and novels. What pre-modern texts underlie the persistent connection
between fantasy/sci-fi and our contemporary cultural practices? How do modern societies "consume" the past, rework it, and remodel it through various media for contemporary audiences? Open only to students in the Focus Program. Instructor: Woods. One course.

86FCS. Ancient and Modern Liberty. CCI, CZ, EI, SS One course. C-L: see Political Science 85GFC5

87FCS. 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. Open only to students in the Focus Program. Instructor: Burian. One course.

100. History of Ancient Philosophy. CCI, CZ One course. C-L: see Philosophy 100

105. 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: Gonzalez, Janan, or staff. One course. C-L: Medieval and Renaissance Studies 105

106. Drama of Greece and Rome. ALP, CCI 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 influence on later European drama. Instructor: Burian or staff. One course. C-L: Theater Studies 117, Visual Studies 108A

107. Power and Evidence: Greece. CCI, CZ Close study of one or more Greek personalities who captured contemporary and lasting fame (e.g., Socrates, Pericles, Alexander the Great). Explores primary sources of information for him/her, and the creation of history and biography. Instructor: Sosin or Staff. One course. C-L: History 109A

109. Power and Evidence: Rome. CCI, CZ Close study of one or more Roman personalities who captured contemporary and lasting fame (e.g., Julius Caesar, Agrippina the Younger, Constantine the Great), the course explores the primary sources of information for him/her, and the creation of history and biography. Instructor: Boatwright or Staff. One course. C-L: History 109B

112. 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: Staff. One course. C-L: Religion 112

113. Aristotle. CZ, EI One course. C-L: see Philosophy 123

114S. 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: Staff. One course. C-L: Women's Studies 114S

116S. The Pagan World of the Divine Comedy. ALP, CCI Dante's Commedia and the texts that place it in a context: the history of thirteenth-century Florence and Dante's life; his other major works (Vita Nuova, De Monarchia); the pagan poets whom Dante incorporated into his Commedia (Vergil, Ovid, Lucan, and Statius) and the Christian theory of biblical criticism that gave St. Augustine his perspective on pagan poets. Instructor: Clay. One course. C-L: Medieval and Renaissance Studies 116S
120. **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.

123. **Early Greek Archaeology: From the Fall of Mycenae to the Persian Wars.** ALP, CCI, CZ, W
Greek material culture in its social, economic, and historical contexts, 1200 to 480 BCE. Instructor: Antonaccio. One course. C-L: Art History 123

124. **Greek Art and Archaeology II: Classical to Greco-Roman.** ALP, CCI, CZ, W
Architecture, sculpture, painting, and mosaics from the classical to the Greco-Roman period (fourth century B.C. to first century A.D.). Instructor: Antonaccio or staff. One course. C-L: Art History 124

126. **Art and Archaeology of Ancient Athens.** ALP, CCI, CZ
One course. C-L: see Art History 125A

128. **The Art of Greece and Rome.** ALP, CCI, CZ
One course. C-L: see Art History 128

132. **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 or Staff. One course. C-L: Medieval and Renaissance Studies 132

134. **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 178B

135S. **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, Sosin, or Staff. One course. C-L: History 119A

136S. **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: Sosin. One course.

137S. **Special Studies in Roman History.** CZ
Investigation into a topic chosen from Roman history from Romulus to Justinian. Topics might include the 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: Boatwright or Staff. One course. C-L: History 199BS

138S. **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: Janan, Woods, or staff. One course.

139. **The Living Middle Ages.** ALP, CCI, CZ
One course. C-L: see Medieval and Renaissance Studies 114; also C-L: Art History 139, History 116

140. **Roman Spectacle.** ALP, CCI, CZ, EI
One course. C-L: see Visual Studies 150

145. **Rome: History of the City (Study Abroad).** ALP, CCI, CZ
On-site study of the development of Rome's urban plan and its major monuments through the ages; the influence
147. 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.

148. 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 148A and 148B. Instructor: Staff.

148A. Art and Archaeology. ALP, CCI Instructor: Staff (Study Abroad). One course.

148B. Political, Social, and Cultural Context. CCI, CZ Instructor: Staff (Study Abroad). One course.

149. Venetian Civilization and Its Mediterranean Background. ALP, CCI, CZ Formation and development against the background of earlier, dominant Mediterranean cultures. Interpretation of literary texts with a Venetian setting: Shakespeare, Goldoni, Mann. (Taught in Venice.) Instructor: Davis. One course. C-L: International Comparative Studies 141G

151S. The Discovery of the Old World: Utopias, Ancient and Modern. ALP, CCI, CZ, EI One course. C-L: Medieval and Renaissance Studies 198S

153. 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 11S and/or Classical Studies 53. This course was previously taught as Classical Studies 53. Instructor: Sosin or staff. One course. C-L: History 121B

154. Roman History. CCI, CZ 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 12S or Classical Studies 54. This course was previously taught as Classical Studies 54. Instructor: Boatwright. One course. C-L: History 121A

155. The Aegean Bronze Age. ALP, CCI, CZ Application of archaeological techniques and procedures to problems in the development of the Minoan and Mycenaean civilizations. Instructor: Antonaccio or staff. One course. C-L: Art History 114

157D. Ancient Political Theory. EI, SS, W One course. C-L: see Political Science 150D; also C-L: Ethics

180. Special Topics in Classical Studies. CCI Aimed at first and second-year students. Instructor: Staff. One course.


191. 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.

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 and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

193. 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.

194. 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.

196S. Junior-Senior 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. One course.

203. Ancient Political Philosophy. CCI, EI, SS One course. C-L: see Political Science 223; also C-L: Ethics

207. Ancient Greek Religion: 1200 - 300 B.C. ALP, CCI, CZ, R Greek religion from the Bronze Age to the Hellenistic period through literary, epigraphic, and archaeological sources. Prerequisite: some background in Greek history, art, or myth. Consent of instructor required. Instructor: Antonaccio or staff. One course.

211S. Plato. CZ One course. C-L: see Philosophy 211S

212S. 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: Staff. One course.

213S. 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: Sosin. One course.

214S. Roman History from Romulus to Augustus. CCI, CZ Study of Roman history form 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.

215S. 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: Staff. One course.

217S. Aristotle. CZ One course. C-L: see Philosophy 217S

220S. Greek Art and Society: Archaic To Classical. ALP, CCI, CZ, R One course. C-L: see Art History 201S


224. 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 263

225. 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 264
228. 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 228

231S. Greek Sculpture. ALP, CCI, CZ, R. Free-standing, relief, and architectural sculpture from the Archaic period to the Hellenistic age, representing changing aesthetic, social, and political aims. Instructor: Dillon. One course. C-L: Art History 238S

232S. Greek Painting. ALP, CCI, CZ, R. From the Late Bronze Age to the fourth century B.C. with emphasis on archaic and classical Athenian vase painters. Instructor: Staff. One course. C-L: Art History 237S


240. Greek Art and Society: Hellenistic. ALP, CCI, CZ. One course. C-L: see Art History 204S


GREEK (GREEK)

1. Elementary Greek. FL. Structure of the language (grammatical forms, syntax, vocabulary, and pronunciation); introduction to reading. Instructor: Burian or staff. One course.

2. Elementary Greek. FL. Second half of Greek 1, 2. Prerequisite: Greek 1. Instructor: Burian or staff. One course.


63. Intermediate Greek. CZ, FL. Readings in classical Attic prose literature. Prerequisite: Greek 2 or equivalent. Instructor: Staff. One course.


76. Advanced Intermediate Greek. CZ, FL. Introduction to Athenian Drama. Prerequisite: Greek 63 or the equivalent. Instructor: Staff. One course.


100. Duke-Administered Study Abroad: Advanced Special Topics in Greek. CCI, FL. Topics differ by section. Instructor: Staff. One course.


102SRE. 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). Instructor: Sosin or Staff. One course.

103SRE. 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.

105S. 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.

106S. 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.

107S. 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.

108S. Greek Oratory and Rhetoric. ALP, CCI, 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, I. Demosthenes, Gorgias, Aristotle, Ps.-Longinus, Demetrios' On Style, and/or others. Must have 2 years of Greek (or equivalent). Instructor: González, Sosin, or Staff. One course.

191. 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.

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 and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

193. Research Independent Study. R Individual research in a field of special interest under the supervision of a faculty member, culminating in 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.

194. 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.

200. Survey of Greek Literature. ALP, CCI, FL Instructor: Staff. One course.

201. Readings in Greek Literature. ALP, CCI, FL Instructor: Staff. One course.
203. 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: Burian or González. One course.

204S. 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: Burian, Gonzalez or Staff. One course.

207. 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: Burian. One course.

222. 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: Sosin or Staff. One course.

280S. 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.

281S. 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: Sosin or Staff. One course.

LATIN (LATIN)

1. 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.

2. Elementary Latin. FL Second half of Latin 1, 2. Prerequisite: Latin 1. Instructor: Staff. One course.

63. Intermediate Latin. CZ, FL Politics and thought in the late Republic: Caesar and Cicero. Instructor: Boatwright or staff. One course.


76. Advanced Intermediate Latin. CZ, FL The culture of Augustan Rome: readings in Vergil's "Aeneid." Prerequisite: Latin 63 or equivalent. Instructor: Staff. One course.


85. 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.

91. Transition to Advanced Latin. CZ, FL For first-year and sophomore students who have received credit for Latin 85 and are enrolling in their first college Latin course. Literature and life in the Roman Empire: selections from the epigrams of Martial and the letters of Pliny the Younger, combined with extensive grammar review. Instructor: Staff. One course.


102SRE. 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.

103SRE. Latin Epic. ALP, CCI, FL Readings in Roman Epic with attention to genre, language, meter, characterization, narrative structure, ancient and modern interpretation, 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: Janan or staff. One course.

104S. 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. C-L: Medieval and Renaissance Studies 104S

105SRE. 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.

106SRE. Latin Novel. ALP, CCI, CZ, FL Readings in Latin novel, with special attention to the form's literary predecessors and 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 or staff. One course.

108SRE. 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 or staff. One course.

109SRE. 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.

112S. Roman Comedy. ALP, CCI, FL Representative plays of Plautus and Terence with studies of the genre and its Greek forebears. Instructor: Staff. One course.

130SRE. 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, Sosin, or staff. One course.

133S. 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, Woods or staff. One course.

136S. 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: Boatwright, Woods or staff. One course.

139S. 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.

140S. Nero and His Time. CCI, CZ, FL, W Historical texts focusing on Nero and illuminating his age (Suetonius, Life of Nero; Tacitus, Annals 14) discussed with other readings from and about the era. Instructor: Boatwright. One course.

170. 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.

191. 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.

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 and/or artistic product. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

193. 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.

194. 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.

201. Survey of Latin Literature from its Beginnings to Late Antiquity. ALP, CCI, FL Instructor: Staff. One course.

202S. 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: Boatwright or Staff. One course.

**203S. 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.

**205S. 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: Davis, Janan or Staff. One course.

**217S. 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.

**240S. Special Topics in Latin Literature of the Middle Ages and Renaissance.** Topics change each semester offered. Instructor: Woods or Staff. One course. C-L: Medieval and Renaissance Studies 239S

**284S. 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 284S

**THE MAJOR**

Students may major in classical languages and classical civilization. Those contemplating graduate study in classics or related disciplines should consider completion of three college years of one ancient language and two years of the other, or equivalents, as a minimum. They are also reminded that reading knowledge of German and French is a requirement for advanced degrees in this field.

Majors are eligible for nomination to one semester of study, typically during the junior year, at the Intercollegiate Center for Classical Studies in Rome, which Duke manages, or at the College Year in Athens or Arcadia University study program in Greece. Courses in Greek, Latin, ancient history, and archaeology taken at these institutions are counted toward major requirements. The cost of a semester at either institution is comparable to that of Duke. Financial assistance usually can be transferred, and arrangements are made through the university. For students not able to spend a semester abroad, Duke regularly offers summer programs in Greece and Italy. The department also facilitates participation in archaeological digs in Greece and Italy. For further information on opportunities for study abroad, see the section on Off Campus Opportunities in this bulletin.

**Classical Languages (Greek and Latin)**

**Major Requirements.** Minimum of ten courses, of which eight must be at the 100 level or above. Knowledge of both Greek and Latin through the second-year level (Greek 76 and Latin 76 or the equivalent) with a total of at least eight courses in Greek and/or Latin, of which six will be at or above the 100 level; two courses in classical studies at or above the 100 level, one of which will be the capstone course (Classical Studies 195S or 196S). For double majors in classical languages and classical civilization, no more than two courses in Greek and/or Latin may be counted toward both majors.

**Classical Civilization (Ancient History, Culture, Literature, Archaeology)**

**Prerequisites.** Classical Studies 11S or 53/153 and 12S or 54/154, or two courses in Greek or Latin below the 100 level.

**Major Requirements.** Eight classical studies courses at or above the 100 level, including the capstone course (Classical Studies 195S or 196S). Courses must be in at least three separate areas (literature, in translation or in the original language at or above the 100 level; history; philosophy; art and archaeology). For double majors in classical civilization and
classical languages, no more than two courses in Greek and/or Latin 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 an honors research course (193 or 194) the candidate writes a major research paper. A committee of three faculty members votes on awarding Distinction, High Distinction, or Highest Distinction for the work. Majors interested in applying are encouraged to 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 the 100 level or above, and at least three in the Classical Studies Department.

**Classical Civilization**

*Requirements.* Five courses in the Classical Studies Department, at least three at the 100 level or above; the courses must be in at least two areas (literature in the original language at the 100 level or above in translation; history; philosophy; art and archaeology).

**Greek**

*Requirements.* Five courses in ancient Greek, at least three at the 100 level or above.

**Latin**

*Requirements.* Five courses in Latin, at least three at the 100 level or above.

**Comparative Literature**

For courses in comparative literature, see the listing in this chapter under “Literature Program (LIT)” on page 421.

**Computational Biology and Bioinformatics (CBB)**

**200. Independent Study.** Faculty directed experimental or theoretical research. Instructor: Staff. Variable credit.

**209. Special Topics in Computational Biology.** Instructor: Staff. One course.

**210S. 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.

**211. Journal Club/Research in Progress.** NS, R A weekly series of discussions led by students that focus on current topics in computational biology. Topics of discussion may come from 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. Instructor: Furey.

**220. 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

**221. Computational Gene Expression Analysis.** QS This course covers topics spanning the technological and computational areas of modern gene expression analysis, developing
computational methods in important and current problems of clinical and physiological phenotyping, including custom computation and algorithmic development. Prerequisites: Statistics 213, or 214 or 216. Instructor: Staff. C-L: Statistical Science 278, Molec Genetics & Microbiology 221

223. Computational Immunology. Course will integrate empirical and computational perspectives on immunology and host defense. Students are expected to have significant preparation in either biomedicine or a quantitative science. Topics covered are intended to provide an entree into the use of computational methods for research and practice in immunology and infectious disease, from basic science to medical applications. Consent of instructor required. Instructors: Kepler and Cowell. One course. C-L: Immunology 213S

225. Core Concepts Bridging Genomic and Computational Biology. Advances in the biological sciences are often the result of multi-disciplinary teams of investigators. Successful collaboration requires effective communication, which in turn is facilitated by the construction of a hierarchical "concept map" that spans both disciplines and can be used as the basis of new shared insights and analysis. This course will use important publications that resulted from the successful alignment of biological and computational investigations to help students develop such concept maps and use them to enhance their cross-disciplinary communication. At each session, two faculty representing the appropriate disciplines will be present. Instructor: Staff. Half course.

230S. Modeling of Biological Systems. QS, R One course. C-L: see Mathematics 214S; also C-L: Modeling Biological Systems 214S

240. 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 Statistics 213. Instructor: Mukherjee. One course. C-L: Statistical Science 270

241. 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 271, Genome Sciences and Policy

250. Computational Structural Biology. QS, R One course. C-L: see Computer Science 263B; also C-L: Statistical Science 277

Computer Science (COMPSCI)

Professor Agarwal, Chair; Associate Professor of the Practice Lucic, Associate Chair; Professor of the Practice Astrachan, Director of Undergraduate Studies; Associate Professor J. Yang, Director of Graduate Studies; Professors Agarwal, Chase, Donald, Edelsbrunner, Hari, Henriques, Lebeck, Lenoir, Maggs, Reif, Rose, Sun, Tomasi, and Trivedi; Associate Professors Board, Ferrari, Hartemink, Kedem, Parr, Sorin, J. Yang; Assistant Professors Babu, Conitzer, Cox, Dwyer, Maggioni, Mukherjee, Munagala, Ohler, Roy Choudhury, and X. Yang; Professors Emeriti Biemann, Ellis, Gallie, Loveland, Patrick, Ramm, Starmer and Wagner; Professors of the Practice Astrachan and Rodger; Associate Professor of the Practice Lucic; Assistant Professor of the Practice Forbes; Research Professor LaBean; Assistant Research Professor Furey; Adjunct Professors Arge, Lombardi, and Pitsianis; 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 either Computer Science 1, 4, or 6.

1. Principles of Computer Science. QS, STS An overview for students not intending to major in computer science. Computer programming, algorithms, symbolic and numeric computation, computer systems, basic theoretical foundations, and the effects of computer and information technology on society. Not open to students having credit for Computer Science 6 or higher. Instructors: Forbes. One course. C-L: Information Science and Information Studies

4. 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

4FCS. 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

6. Introduction to Computer Science. 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

6L. 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, Duvall, Forbes, or Rodger. One course.

18S. Introduction to Problem Solving. QS Techniques for solving computational problems in groups and individually. Topics vary every semester the course is offered. Course may be repeated once. Consent of instructor required. Co-requisite: Enrollment in Computer Science 4 or Computer Science 6. Instructor: Rodger. Half course.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course. C-L: Information Science and Information Studies

72. Artificial Life, Culture, and Evolution. QS, SS, STS One course. C-L: see Information Science and Information Studies 72; also C-L: Visual Studies 72A

82. Technical and Social Analysis of Information and the Internet. EI, QS, STS 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. Analysis of issues from a technical perspective with an emphasis on the role of software and the relationship of standards to social and ethical issues. Not open to students who have taken Computer Science 82s or 182s. Instructor: Astrachan, Forbes. One course.

89S. Computer Science Education Research Seminar. EI, QS, STS A project-based course involving computer science education, issues on computer science curricula, and educational techniques in general. Students should have experience in teaching or tutoring Computer Science. May be repeated. Consent of instructor required. Instructor: Forbes. One course. C-L: Education 89S


96. Topics in Computer Science. QS Instructor: Staff. One course.

96S. Topics in Computer Science. QS Seminar version of Computer Science 96, topics from various areas of computer science, changing each year. Instructor: Staff. One course.

97S. Minds and Computers: Foundations of Artificial Intelligence. QS, R The project of Artificial Intelligence (AI) and the idea of understanding the mind/brain as a computing machine. Elementary ideas both in computational theory and in programming (for example, LISP). Examination of neural network models built to understand the workings of the brain, and major AI projects in knowledge representation, game playing and autonomous robotics, issues in the philosophical foundations of AI, such as the idea of Turing Test, and evaluation of debates between AI researchers and their critics. Open only to students in the Focus Program. Instructor: Staff. One course. C-L: Information Science and Information Studies


100E. Program Design and Analysis II. QS Same as Computer Science 100, for students who have taken Engineering 53. Overview of advanced data structures and analysis of algorithms, data abstraction and abstract data types, object-oriented programming, proofs of correctness, complexity, and computability. Instructor: Astrachan, Duvall, Forbes, or Rodger. One course.

102. 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: Mathematics 31 and 32; Computer Science 6. Instructor: Agarwal, Edelsbrunner, Forbes, Reif, or Tomasi. One course.

104. Computer Organization and Programming. QS Computer structure, machine language, instruction execution, addressing techniques, and digital representation of data. Computer systems organization, logic design, microprogramming, and interpreters. Symbolic coding and assembly systems. Prerequisite: Computer Science 100 or consent of instructor. Instructor: Kedem or Lebeck. One course. C-L: Modeling Biological Systems

108. 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 100. Instructor: Astrachan or Duvall. One course. C-L: Information Science and Information Studies, Modeling Biological Systems
110. 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 Engineering 153. Prerequisites: Computer Science 100 and 104. Instructor: Chase, Cox, or Maggs. One course. C-L: Modeling Biological Systems


114. Introduction to Computer Networks. QS, R Networking and distributed systems. Network infrastructure support for distributed applications ranging from email to web browsing to electronic commerce. Principles underlying the design of our network infrastructure and the challenges that lie ahead. The socket API, security, naming network file systems, wireless networks, Internet routing, link layer protocols (such as Ethernet), and transport protocols (TCP). Hands-on programming assignments covering issues in distributed systems and networking. Prerequisites: Computer Science 108 and 110 or equivalent. Instructor: Maggs or X. Yang. One course. C-L: Information Science and Information Studies

116. Introduction to Database Systems. QS, R 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 100, recommended: Computer Science 108. Instructor: Babu or J. Yang. One course. C-L: Information Science and Information Studies

120L. Introduction to Switching Theory and Logic Design. QS Techniques for the analysis and design of combinational and sequential networks. Discrete mathematical systems, binary arithmetic, Boolean algebra, minimization of functions, synchronous and fundamental mode sequential circuit design, design with MSI and LSI components, and special properties of switching functions are covered. Selected laboratory work. Also taught as Electrical Engineering 151L. Instructor: Cramer or Marinos. One course.

122S. Constructing Immersive Virtual Worlds. QS One course. C-L: see Information Science and Information Studies 170S; also C-L: Visual Studies 120CS

124. Computer Graphics. QS Overview, motivation, and history; OpenGL and OpenInventor; 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, SGI reality engine, Pixel 5; animation, levels of detail. Prerequisites: Computer Science 108 and Mathematics 104. Instructor: Agarwal or Duvall. One course. C-L: Visual Studies 109A, Modeling Biological Systems

130. 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 100 and 102. Instructor: Edelsbrunner, Mungala, or Reif. One course. C-L: Modeling Biological Systems

140. 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 100 and Mathematics 103. Instructor: Reif or Rodger. One course. C-L: Modeling Biological Systems

148. Logic and Its Applications. QS One course. C-L: see Mathematics 188; also C-L: Philosophy 150


150. 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 6; Mathematics 31; 32; 104 or 111. Instructor: Rose or Sun. One course. C-L: Modeling Biological Systems

150S. Introduction to Numerical Methods and Analysis. QS Seminar version of Computer Science 150. One course.

160. 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

170. 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 100. Instructor: Parr. One course. C-L: Information Science and Information Studies, Modeling Biological Systems

173. 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 Statistics and 100-level Mathematics or consent of instructor. Instructor: Conitzer. One course.

181S. Computer Science Seminar. QS, R, W In-depth exploration of specific areas in computer science. The methods of critical inquiry and scholarly research reinforced with regular written analysis, seminar-style presentations and collaborative research projects. Prerequisites: Computer Science 100 and 104. Instructor: Staff. One course. C-L: Information Science and Information Studies, Markets and Management Studies

182S. Technical and Social Analysis of Information and the Internet. EI, QS, R, SS, W Technical version of Computer Science 82S. Requires a significant technical project. 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. Meets as a seminar with an additional weekly meeting to accommodate guest lectures. Not open to students who have taken Computer Science 82S. Prerequisites: Computer Science 108 and recommended Computer Science 116. Instructor: Astrachan and Forbes. One course. C-L: Information Science and Information Studies

232 Courses and Academic Programs
189S. Computer Science Education Research Seminar. A project-based course involving computer science education, issues on computer science curricula, and educational techniques in general. Students should have experience in teaching or tutoring Computer Science. May be repeated. Consent of Instructor required. Half Course. Instructor: Staff. Half course.


191. 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.


193. 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.

195. Computer Science Internship. Open to computer science majors engaged in industrial work experience only. A faculty member will supervise a program of study related to the work experience, including a substantive paper containing significant analysis and interpretation on a computer science-related topic. Consent of director of internship programs required. Prerequisites: Computer Science 104 and 108. Instructor: Staff. One course.

196. Topics in Computer Science. QS Topics from various areas of computer science, changing each year. Prerequisite: Computer Science 100 or equivalent. Instructor: Staff. One course.

196S. Topics in Computer Science. QS Seminar version of Computer Science 196. Instructor: Staff. One course.

197. 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 100. Instructor: Staff. One course.

210. 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.

212. 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 110 or 210 and Computer Science 214, or consent of the instructor. Instructor: Chase, Cox, or Maggs. One course.


216. 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 116 or an introductory database course or consent of instructor. Instructor: Babu or J. Yang. One course. C-L: Computational Biology and Bioinformatics 233, Computational Biology and Bioinformatics 265

219. Statistical Data Mining. QS One course. C-L: see Statistical Science 218

220. 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 104 or Electrical and Computer Engineering 152 or equivalent. Instructors: Board, Kedem, Lebeck, or Sorin. One course. C-L: Electrical and Computer Engineering 252, Modeling Biological Systems

221. Advanced Computer Architecture II. QS Parallel computer architecture design and evaluation. Design topics include parallel programming, message passing, shared memory, cache coherence, cache coherence, memory consistency models, symmetric multiprocessors, distributed shared memory, interconnection networks, and synchronization. Evaluation topics include modeling, simulation, and benchmarking. Prerequisite: Computer Science 220 or Electrical and Computer Engineering 252 or consent of instructor. Instructor: Lebeck or Sorin. One course. C-L: Electrical and Computer Engineering 259, Modeling Biological Systems


226. Probability for Electrical and Computer Engineers. One course. C-L: see Electrical and Computer Engineering 255; also C-L: Information Science and Information Studies, Modeling Biological Systems

230. Design and Analysis of Algorithms. QS Design and analysis of efficient algorithms. Algorithmic paradigms. Applications include sorting, searching, dynamic structures, graph algorithms, randomized algorithms. Computationally hard problems. NP completeness. Prerequisite: Computer Science 100 or equivalent. Instructor: Agarwal, Edelsbrunner, Munagala, or Reif. One course.

232. 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.

234. Computational Geometry. 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 230 or equivalent. Instructor: Agarwal or Edelsbrunner. One course. C-L: Computational Biology and Bioinformatics 234, Computational Biology and Bioinformatics 264, Modeling Biological Systems

235. Topics in Data Compression. QS Emphasis on the redundancies found in textual, still-frame images, video, and voice data, and how they can be effectively removed to achieve compression. The compression effects in information processing. Additional topics may include information theory, the vulnerability of compressed data to transmission errors, and
the loss of information with respect to the human visual system (for image data). Available compression technologies and the existing compression standards. Prerequisites: Computer Science 130 and 208 or Computer Science 254 or Electrical Engineering 282. Instructor: Reif or Sun. One course.

236. 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 230. Instructor: Edelsbrunner or Harer. One course. C-L: Mathematics 264


240. 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 140 or equivalent. Instructor: Agarwal or Reif. One course.


258. 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.

261. 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 230 or equivalent), probability and statistics (Statistics 213 or equivalent), molecular biology (Biology 118 or equivalent). Alternatively, consent instructor. Instructor: Hartemink or Ohler. One course. C-L: Computational Biology and Bioinformatics 261

262. 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 230 or equivalent), probability and statistics (Statistics 213 or equivalent), molecular biology (Biology 118 or equivalent), and computer programming. Alternatively, consent of instructor. Instructor: Hartemink or Ohler. One course. C-L: Computational Biology and Bioinformatics 262, Genome Sciences and Policy

263. 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 pharmaceuticals, NMR and X-ray data, and protein-ligand docking. Prerequisites: basic knowledge of algorithm design (Computer Science 230 or equivalent), probability and statistics (Statistics 213 or equivalent), molecular biology (Biology 118 or equivalent), and computer programming. Alternatively, consent of instructor. Instructor: Donald. One course. C-L: Computational Biology and Bioinformatics 263, Structural Biology and Biophysics 263

263B. 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 Bioinformatics 230 or equivalent), probability and statistics (Statistics 213 and 244 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 250, Statistical Science 277

264. Nonlinear Dynamics. QS, R One course. C-L: see Physics 213; also C-L: Modeling Biological Systems

270. 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 100 and Computer Science 130. Instructor: Conitzer or Parr. One course.


274. 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 104 or 107; Mathematics 135 or Statistics 104; Computer Science 6. Instructor: Tomasi. One course.

296. Advanced Topics in Computer Science. QS Instructor: Staff. One course.

297. Advanced Topics in Computer Science. QS, R Advanced 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. Instructor: Staff. One course.
THE MAJOR

For the A.B. Degree

Prerequisites. Computer Science 6, Mathematics 31, 32.

Major Requirements. Computer Science 100, 104, 108, 110, and 130. Computer Science 102 or both Mathematics 135 and one of Mathematics 124 or Math 187. Two 100- or 200-level electives: one in Computer Science (not an independent study course) and one in Computer Science, Electrical Engineering, Mathematics, Statistics, or in a related area approved by the director of undergraduate studies.

For the previous curriculums, see: http://www.cs.duke.edu/cseducation/undergrad/ba.html

For the B.S. Degree

Prerequisites. Computer Science 6, Mathematics 31, 32, 103, 104.

Major Requirements. Computer Science 100, 104, 108, 110, 130, 140, and 150. Computer Science 102 or both Mathematics 135 and one of Mathematics 124 or Mathematics 187. Three 100- or 200-level electives: one in Computer Science (not an independent study course) and two in Computer Science, Electrical Engineering, Mathematics, Statistics, or in a related area approved by the director of undergraduate studies.

For the previous curriculums, see: http://www.cs.duke.edu/cseducation/undergrad/ba.html.

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 100. 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 200 level.

THE MINOR

Computer Science

Five courses in computer science (including the prerequisite), at least four of which must be at the 100 level or above.

Prerequisites. Computer Science 100E, or both Computer Science 6 and Computer Science 100.

Requirements. Computer Science 104; additional courses from the following: Computer Science 108, 110, 130, 150, 170, or any 200-level course.

Computational Biology and Bioinformatics

Prerequisites. Mathematics 31, 32, and 100-level statistics course.
Requirements. Five courses at the 100 level (not including the prerequisites); three from Computer Science and two from Biology, as follows: Computer Science 111, Computer Science 160, Biology 118; one biology course from the following: 119, 124, 184L, 205L, 237, 238, 270S, 271 or as approved by the director of undergraduate studies in computer science in consultation with the director of undergraduate studies in biology; one computer science course from the following: 100/100E, 150, 170, or any 200-level computer science 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.

INTERNET PROGRAM
The Computer Science Internship Program (CSIP) provides undergraduate computer science majors the opportunity to apply knowledge gained in the classroom to a job, and to build on this knowledge upon their return. The internship period is a two-semester leave consisting of one summer plus the spring semester before or the fall semester following. This period can be extended by one additional semester. One credit can be earned in the semester following the internship period through the independent study course Computer Science 195.

To participate in the CSIP program, students must take Computer Science 104 and 108, and declare computer science as their first major. An application for the CSIP program should be completed at the beginning of the semester prior to the internship period to allow time for interviewing with companies. Approval for Computer Science 195 must be obtained before the internship begins, and a faculty mentor associated with this course must be designated at this time. For further information, contact the director of the Internship Program, Department of Computer Science.

Cultural Anthropology (CULANTH)

Professor Starn, Chair; Professor Nelson, Director of Undergraduate Studies; Professors Allison, Baker, Nelson, O’Barr, Silverblatt, and Starn; Associate Professors Litzinger, Meintjes, Piot, Stein; Assistant Professor Makhulu; Professors Emeriti Apte, Friedl, and Quinn; Secondary Appointments: Professors Andrews (Slavic languages), Mignolo (romance studies), and Reddy (history); Associate Professor Tettel (English) and Wilson (Women’s Studies); Assistant Professors Holsey (African and African American Studies); Lecturer Thompson (documentary 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.

20S. 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.
49S. **First-Year Seminar.** Topics vary each semester offered. Instructor: Staff. One course.

50. **Duke-Administered Study Abroad: Introductory Special Topics in Cultural Anthropology.** CCI Topics differ by section. Instructor: Staff. One course.

80FCS. **Special Topics in Focus.** Selected topics vary each semester. Open only to students in the Focus Program. Instructor consent required. Instructor: Staff. One course.

81FCS. **Muslim World: Transformations and Continuities.** CCI, CZ, SS, W The diversity of social practices within the community of Islam. Particular emphasis on gender relations, diaspora communities, religious movements, and social change. Open only to participants in Focus. Instructor: Ewing. One course.

94. **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 90B

94D. **Introduction to Cultural Anthropology.** CCI, CZ, SS Same as Cultural Anthropology 94 except instruction is provided in lecture and discussion group each week. Instructor: Staff. One course. C-L: International Comparative Studies 90BD, International Comparative Studies

100. **Duke-Administered Study Abroad: Special Topics in Cultural Anthropology.** CCI Topics differ by section. Instructor: Staff. One course.

101. **Introduction to the Civilizations of Southern Asia.** CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 160; also C-L: History 193, Religion 144, International Comparative Studies

101A. **Global Chinese Cities through Literature and Film.** ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 133; also C-L: Literature 165L, Visual Studies 105J, International Comparative Studies 121H

101BS. **Discourse of Disease and Infection.** ALP, CCI, CZ, STS One course. C-L: see Asian & Middle Eastern Studies 134S; also C-L: Literature 165MS, International Comparative Studies 104CS, Visual Studies 105KS

102S. **Introduction to Theoretical Linguistics.** R, SS One course. C-L: see English 113S; also C-L: Linguistics 104S

103A. **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: Ewing. One course.


104D. **Anthropology and Film.** SS Same as Cultural Anthropology 104 except instruction is provided in lecture and discussion group each week. Instructor: Litzinger. One course. C-L: Arts of the Moving Image

105. **Sport As Performance.** ALP, CCI, SS One course. C-L: see Theater Studies 105; also C-L: Sociology 105

106. **Life in America: Identity and Everyday Experience.** CCI, CZ, SS How American culture shapes the everyday lives of people in the United States. Focus on two themes: cultural differences as well as similarities within and between ethnic groups, and the impact of history, large institutions, and global relations on all Americans. Instructor: Baker. One course. C-L: International Comparative Studies 151A
107. Introduction to Linguistics (DS4). CCI, SS One course. C-L: see Linguistics 101; also C-L: International Comparative Studies
107A. The Law and Language. CCI, CZ, EI, SS One course. C-L: see Linguistics 113; also C-L: English 113B
109. Anthropology and the Motion Picture. ALP, CCI, CZ Study of the representation of non-US cultures in the genre of major motion pictures (as opposed to ethnographic film). Focus will be on films about Kenya, Italy, and the South Pacific. Examination of motives for foreign travel and experiences of living abroad as depicted in films. Consideration of how other cultures are romanticized and Orientalized in movies. Films about each of the cases to be screened. Discussions focus on critical film reviews, issues of anthropological theory and the theory of representation, as well as students' own insights. Instructor: O'Barr. One course. C-L: Visual Studies 110C
110. 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 120, Visual Studies 110E, Canadian Studies, International Comparative Studies, Arts of the Moving Image, Markets and Management Studies, Policy Journalism and Media, Women's Studies
110D. Advertising and Society: Global Perspective (DS4). CCI, SS Same as Cultural Anthropology 110 except instruction is provided in lecture and discussion group each week. Instructor: O'Barr. One course. C-L: Sociology 160D, Linguistics 120D, Visual Studies 110DE, Markets and Management Studies
111. Anthropology of Law. CCI, 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.
112. Current Topics in Linguistics. SS Advanced study of an area of linguistics or grammar. Instructor: Staff. One course.
113. 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 101E, Women's Studies 117, Study of Sexualities, Women's Studies
114. Languages of the World. CCI, SS One course. C-L: see Linguistics 102; also C-L: Russian 117, International Comparative Studies 102E
116S. 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: Markets and Management Studies, Policy Journalism and Media, Women's Studies

117. 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, Litzinger, Piot, or Starn. One course. C-L: Visual Studies 110G, International Comparative Studies


120B. Thinking About God: The Nature of Religious Belief at the Crossroads of Judaism, Christianity, & Islam. CCI, CZ, EI One course. C-L: see Philosophy 135; also C-L: Religion 161V, International Comparative Studies 102F, Turkish 136

121. 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: International Comparative Studies

122. Culture and Politics in Africa. CCI, CZ, SS One course. C-L: see African and African American Studies 122; also C-L: Visual Studies 104B, International Comparative Studies


122B. Africa and the Slave Trade. CCI, EI, SS One course. C-L: see African and African American Studies 183S

122C. Representing Slavery. ALP, CCI, EI, SS One course. C-L: see African and African American Studies 151; also C-L: Visual Studies 104E, International Comparative Studies 110F

122D. Development and Africa. CCI, CZ, SS One course. C-L: see African and African American Studies 160; also C-L: Public Policy Studies 196J, International Comparative Studies

123. 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. C-L: International Comparative Studies 104E


125. Comparative Approaches to Global Issues (B, D). CCI, CZ, SS One course. C-L: see International Comparative Studies 125; also C-L: History 137, Political Science 125, Religion 183, Sociology 125

126. Muslim World: Transformations and Continuities. CCI, SS The diversity of social practices within the community of Islam. Particular emphasis on gender relations, religious

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128. 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 130A, Documentary Studies

128A. The Idea of Latin America. CCI, CZ One course. C-L: see Spanish 127; also C-L: Literature 162B, Latin American Studies

129A. West African Rootholds in Dance. ALP, CCI, CZ One course. C-L: see Dance 110L; also C-L: African and African American Studies 110A, Asian & Middle Eastern Studies 110A, Religion 161A


132. Representing the Middle East. CCI, CZ, SS Diverse representations of the Middle East by communities inside and outside the region. Travelogues, films, photography, literature, newspapers/media and memoir from the late nineteenth-century Ottoman context to the modern Middle East. Readings on identity, orientalism, violence, gender, and (post) colonialism. Instructors: Goknar and Stein. One course. C-L: Asian & Middle Eastern Studies 132, History 131B, Turkish 132, International Comparative Studies 141B, Visual Studies 110H, Islamic 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 131S

134CS. Documenting Black Experiences. ALP, CCI One course. C-L: see Documentary Studies 139S; also C-L: African and African American Studies 133S, Arts of the Moving Image 105AS, Public Policy Studies 196KS


135. Muslims in the West. CCI, CZ, SS The varieties of Muslim experience in Europe and North America, with particular attention to local debates and controversies focused on Muslims, especially post 9-11. How the various situations of Muslim minorities can contribute to anthropological understandings of identity, ethnicity, and diaspora. How Muslim practices can affect Western common, unexamined understandings of religion, secularism, and the nature of human rights. Includes visits to local mosques. Instructor: Ewing. One course. C-L: Religion 161T

135S. What's Lost in Translation? Latin American Theater in English. ALP, CCI, CZ One course. C-L: see Spanish 129S; also C-L: Theater Studies 127S, International Comparative Studies 132S

136. Introduction to African Studies (DS3 or DS4). ALP, CCI, CZ One course. C-L: see African and African American Studies 107; also C-L: History 115C, Political Science 174

137. Cities and City Life in Italy. ALP, CCI, CZ One course. C-L: see Italian 136; also C-L: History 175B, International Comparative Studies 128


139. Marxism and Society. SS One course. C-L: see Literature 181A; also C-L: Education 139, History 186, Sociology 139, International Comparative Studies

140AS. Cidanania, Cultura e Participacao/Citizenship, Culture and Participation. ALP, CCI, CZ, EI, R One course. C-L: see Portuguese 141S; also C-L: African and African American Studies 140S, Public Policy Studies 103S, International Comparative Studies 130HS
140BS. Geographies of the Erotic: Brazilian Literature in Translation. ALP, CCI, CZ, EI One course. C-L: see Portuguese 121S; also C-L: International Comparative Studies 131FS, Latin American Studies 121S, Literature 162FS

140CS. Portugal, Portuguese-Speaking Africa, and Brazil: Old Problems, New Challenges. CCI, CZ One course. C-L: see Portuguese 139S; also C-L: International Comparative Studies 131DS

141. Self and Society. 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: Ewing. One course. C-L: Psychology 113A, Women's Studies


142A. Traffic in Women: Cultural Perspectives on Prostitution in Modern China. ALP, CCI, SS One course. C-L: see Asian & Middle Eastern Studies 138; also C-L: Literature 162G, International Comparative Studies 122C, Women's Studies 138, Study of Sexualities 138

142B. Trauma and Space in Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 153; also C-L: Literature 153

143. Cyborgs. CCI, SS, STS 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 115

143B. Gender and Digital Culture. ALP, STS, W One course. C-L: see Information Science and Information Studies 145S; also C-L: Visual Studies 120BS, Women's Studies 145S

144. 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 144

145A. World Music: Aesthetic and Anthropological Approaches. ALP, CCI, CZ One course. C-L: see Music 136; also C-L: International Comparative Studies, Documentary Studies

145B. Music, Social Life, and Scenes. ALP, CCI, CZ, R, W One course. C-L: see Music 137; also C-L: Documentary Studies

147. Introduction to Islamic Civilization. CCI, CZ, EI One course. C-L: see Religion 146; also C-L: History 101G, Medieval and Renaissance Studies 146A, International Comparative Studies 141A, Ethics, Information Science and Information Studies

148. Introduction to Islamic Civilization. CCI, CZ, EI One course. C-L: see Religion 147; also C-L: History 102G, Medieval and Renaissance Studies 147A, International Comparative Studies, Ethics

149. Dance and Dance Theater of Asia. ALP, CCI, CZ One course. C-L: see Dance 149; also C-L: Theater Studies 133, Asian & Middle Eastern Studies 149, Religion 161C, International Comparative Studies 170C

149A. Gender in Dance and Theatre. ALP, CCI, CZ One course. C-L: see Dance 175; also C-L: Women's Studies 111, Theater Studies 132, Asian & Middle Eastern Studies 176, International Comparative Studies 170E

149B. History and Practice of the Dance and Dance-theatre of India. ALP, CCI, CZ One course. C-L: see Dance 147; also C-L: Religion 161J, Theater Studies 134, Asian & Middle Eastern Studies 154

149C. Dance and Religion in Asia and Africa. ALP, CCI, CZ One course. C-L: see Dance 158; also C-L: Asian & Middle Eastern Studies 136, Religion 161N, African and African American Studies 158, International Comparative Studies 102A
150. Religions of the African Diaspora. CCI, CZ, SS One course. C-L: see African and African American Studies 150; also C-L: Religion 160, International Comparative Studies

151. 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: Ewing. One course. C-L: Asian & Middle Eastern Studies 146

152. The Turks: From Ottoman Empire to European Union. ALP, CCI, CZ, EI, R One course. C-L: see Turkish 135; also C-L: Religion 161F, History 141A, International Comparative Studies 162A, Islamic Studies

153. Magical Modernities. CCI, SS One course. C-L: see African and African American Studies 153

154D. The History of Emotions. CCI, CZ, R, W One course. C-L: see History 154CD

154E. Capstone Seminar: Imperialism & Islamism. CZ, R, SS One course. C-L: see History 195HS

155. Palestine, Israel, Arab-Israeli Conflict. CCI, EI, SS Introduction to Israeli and Palestinian culture, politics, society and the central historical events of the Israel/Palestinian conflict. From early Zionist settlement in Palestine in the late nineteenth century and concluding with the 'Peace Process' of the 1990s, the second Palestinian uprising (Intifada), and the Israeli military reoccupation of the Palestinian territories. Ethics of both the Israeli occupation and the Palestinian resistance struggles against occupation. Instructor: Stein. One course. C-L: Asian & Middle Eastern Studies 159, Jewish Studies 155, Islamic Studies

156D. Global France. ALP, CCI, CZ, EI One course. C-L: see French 164D; also C-L: History 165D

156E. Haitian Creole for the Recovery in Haiti. CZ One course. C-L: see French 199; also C-L: Latin American Studies 190, African and African American Studies 187, Linguistics 198

156S. Anthropology and Education. CCI, EI, SS One course. C-L: see Education 156S


157S. Mayas, Aztecs and Incas: The World According to the Indigenous People of Latin America. CZ, EI, FL, R One course. C-L: see Spanish 155S; also C-L: International Comparative Studies 131BS, Latino/a Studies in the Global South 155S

160D. The History of Romantic Love. ALP, CCI, CZ, EI, W One course. C-L: see History 160D

161. Contemporary Israeli Cinema. ALP, CCI, EI One course. C-L: see Asian & Middle Eastern Studies 161; also C-L: Arts of the Moving Image 111H, Literature 112M, Jewish Studies 140, Women's Studies 151

161A. World of Korean Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 175; also C-L: Literature 112G, Arts of the Moving Image 111G, Visual Studies 105F


162AS. Documenting Religion. CCI, CZ One course. C-L: see Documentary Studies 168S; also C-L: Religion 161QS, Visual Studies 103GS

162S. Farmworkers in North Carolina: Roots of Poverty, Roots of Change. CCI, SS One course. C-L: see Documentary Studies 162S; also C-L: Latino/a Studies in the Global South

163. Themes in Chinese Culture and History. CCI, CZ, SS An interdisciplinary approach to explore political, social, and cultural issues, both historical and contemporary, in China. (Taught in China) Instructor: Staff. One course. C-L: History 163G, Political Science 100G, International Comparative Studies

163A. 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.

163BS. 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 non-governmental groups. Instructor consent required. Instructor: Litzinger. One course. C-L: Global Health Certificate 173S, International Comparative Studies 121JS, Political Science 100GS, Ethics

163CS. Health Policy in Transition: Challenges for China. CCI, 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. Instructor: Guo. One course. C-L: International Comparative Studies 122GS, Global Health


164S. The Anthropology of Hinduism: From Encounter to Engagement. ALP, CCI, CZ, R One course. C-L: see Religion 164S; also C-L: Documentary Studies, Ethics

165. Psychological Anthropology (C, D, P). 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: Ewing or Quinn. One course. C-L: Psychology 113B, Early Childhood Education
166. Cross-Cultural Perspectives on Human Development: A View from Modern day Japan and Asia (C,D). CCI, SS One course. C-L: see Psychology 132B; also C-L: International Comparative Studies 101G

168AS. Politics of Food: Land, Labor, Health, and Economics. ALP, CCI, EI, R One course. C-L: see Documentary Studies 167S; also C-L: Public Policy Studies 112


174AS. Global Russia. CCI, CZ, EI, SS One course. C-L: see Russian 185S; also C-L: International Comparative Studies 161JS, Public Policy Studies 196LS

175. African American Intellectual History, Twentieth Century. CCI, CZ, W Ideas about race, culture, and identity still shape strategies for African American empowerment and securing the ideals of democracy in the United States. "Classic" texts from each decade of the twentieth century. Explore the location of the authors' work within its historical and political contexts. Attention given to the texture of (debates within) the African American intellectual community. Instructor: Baker. One course. C-L: African and African American Studies 178, History 176B

179S. Visual Cultures of Medicine. ALP, STS One course. C-L: see Visual Studies 184S; also C-L: Information Science and Information Studies 179S

180. Current Issues in Anthropology. Selected topics in methodology, theory, or area. Instructor: Staff. One course.

180S. Current Issues in Anthropology. Same as Cultural Anthropology 180 except instruction is provided in seminar format. Instructor: Staff. One course.

182. Contemporary European Issues. CCI, CZ, FL One course. C-L: see Spanish 133S; also C-L: International Comparative Studies

183. 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.

186A. 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.

186B. 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.


190. 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

191AS. 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 158S, Literature 163MS

191BS. 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 143BS, Women's Studies 182S


191ES. 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 new theoretical writing on the relationship between humans, technology, capital, and nature. Instructor: Litzinger. One course. C-L: Information Science and Information Studies

191FS. The Inca Empire and Colonial Legacies. CCI, CZ, SS Focus on the history of the Inca empire, its complex economic organization, ecologically sensitive use of environmental resources, sophisticated political and religious structures, and magnificent architecture and material culture. How the empire's descendents accommodated and challenged the forces of Spanish colonialism. Instructor: Silverblatt. One course. C-L: History 179BS

191H. The African Diaspora. CCI, CZ, SS One course. C-L: see African and African American Studies 192H; also C-L: International Comparative Studies

191J. 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 189, International Comparative Studies 130B, Latin American Studies, Study of Sexualities

191M. 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.

191N. 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,

191OS. 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.

191P. 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 101H

191QS. Travel, Gender, and Power. CCI, SS Nineteenth-century travel and imperialism; contemporary tourism; the relationship between leisure and power, globalization and consumption, the role of gender, sex and exploitation. Instructor: Stein. One course. C-L: Asian & Middle Eastern Studies 157S, Literature 132BS, Women's Studies 181S

191R. Globalizing Consumer Cultures. CCI, SS The global spread of forms of consumer culture and their local appropriations, particularly the phenomenon of a globalizing middle-class culture and its local variations world wide. The historic emergence of a middle class in the United States and elsewhere in the world. The way local requirements for social respectability and "normalcy" are increasingly defined by the imagined lifestyles of average citizens in so-called first world countries. Instructor: Fehervary. One course.


191VS. 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: Mathers. One course. C-L: International Comparative Studies 101BS, Public Policy Studies 130S

192S. 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 194S

193. Asians in the United States. CCI, EI, SS Exploration of contours of Asian migration to the U.S. against the backdrop of the social and political transformations in American society from the mid-19th century to the present. Considers how Asian Americans have been constituted by world-historical processes and have constituted themselves as social and political actors. Instructor: Subramanian. One course.

193A. 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. Instructor: Subramanian. One course. C-L: Religion 199

194. 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 100 Duke in Ghana Anthropological Field Research. Instructor: Staff. One course. C-L: Religion 199

195S. Senior Seminar Distinction Program Sequence. R No credit for Cultural Anthropology 195S without satisfactory completion of Cultural Anthropology 196S. Consent of director of undergraduate studies required. Instructor: Staff. One course.

196S. Senior Seminar Distinction Program Sequence. W Continuation of Cultural Anthropology 195S, and required for credit for 195S. Consent of director of undergraduate studies required. Instructor: Staff. One course.

198S. Special Topics in Linguistics. CCI, SS Same as Linguistics 199 except instruction is provided in a seminar format. Instructor: Staff. One course.

199H. Andean Anthropology. CCI, SS Theoretical and methodological guidelines for the construction of a genuine Andean anthropology according to contemporary sociocultural rules. Taught in Bolivia. Instructor: Staff. One course.

199J. Workshop on Popular Culture. CCI, FL, SS Popular culture in Bolivia examined through documentary study and field work, especially using oral history. (Taught in Bolivia.) Instructor: Staff. One course.

For Seniors and Graduates


202. Semiotics of Culture (DS4). ALP, CCI, CZ, R One course. C-L: see Russian 202; also C-L: Linguistics 204

203S. African Modernities. CCI, SS One course. C-L: see African and African American Studies 213S; also C-L: International Comparative Studies

207S. 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: Reddy. One course. C-L: History 210S

208S. Language Evolution and Acquisition. R, SS One course. C-L: see Linguistics 203S; also C-L: English 203S

213S. Linguistics and Law (DS4). SS One course. C-L: see Linguistics 213S; also C-L: English 213S

236S. Experimental Communities. ALP, CCI, CZ, EI One course. C-L: see Visual Arts 236S; also C-L: Sociology 236S

249S. 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 249S


264S. 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. C-L: International Comparative Studies 221BS

279S. Race, Racism, and Democracy. CCI, SS, W The paradox of racial inequality in societies that articulate principles of equality, democratic freedom, and justice for all. Instructor: Baker. One course. C-L: African and African American Studies 279S

280. Selected Topics. Special topics in methodology, theory, or area. Instructor: Staff. One course.

280S. Seminar in Selected Topics. Same as Cultural Anthropology 280 except instruction provided in seminar format. Instructor: Staff. One course.

281S. 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: Ewing. One course. C-L: Women's Studies 281S

284S. 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.

286S. 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.

287S. 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 287BS, Literature 287BS

288S. Seminar in Asian and Middle Eastern Cultural Studies. CZ One course. C-L: see Asian & Middle Eastern Studies 200S; also C-L: African and African American Studies 200S, Literature 200S


299S. Special Topics in Linguistics. CCI, SS Same as Linguistics 299 except instruction is provided in a seminar format. Instructor: Staff. One course.

THE MAJOR

Major Requirements. A total of ten courses distributed in the following manner: Cultural Anthropology 94, 190, and 194; six courses at the 100 level or above, including at least one at the 191 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 195S and Cultural Anthropology 196S, in the fall and spring of their senior year, where they will learn about research methods and prepare a thesis. Credit for Cultural Anthropology 195S and Cultural Anthropology 196S 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. It should consist of three faculty members who offer the student advice and support in preparing the thesis. At least two of the members must be faculty from the cultural anthropology department. Due in April of the senior year, the thesis must be judged of at least \( B^+ \) quality by the supervisory committee to receive distinction. In addition, 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 94; three courses at the 100 level or above; and one additional course at any level (this may include courses taken in the Focus Program).

**Dance (DANCE)**

Associate Professor of the Practice Khalsa, *Director of the Program*; Professor of the Practice Dickinson, *Director of Undergraduate Studies*; Associate Professor of the Practice of Ballet Walters; Associate Professor of the Practice Shah; Assistant Professors of the Practice Vinesett, and Woods Valdés; 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 dance in New York City.
Appropriate courses taken at New York University may fulfill a requirement of the major
or minor.

Courses in Technique and Performance (half-credit courses)

60. **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.

61. **Modern Dance II.** Prerequisite: Dance 60 or equivalent. Instructor: Dickinson, Khalsa,
Woods Valdés, or staff. Half course.

62. **Modern Dance III.** Increased complexity of movement sequences and greater emphasis
on clarity of expression and quality of performance. Prerequisite: Dance 61 or equivalent.
Instructor: Dickinson, Khalsa, Woods Valdés, or staff. Half course.

63. **Modern Dance IV.** Continuation of Dance 62. Prerequisite: Dance 62 or equivalent.
Instructor: Dickinson, Khalsa, Woods Valdés, or staff. Half course.

64. **Modern Dance V.** Prerequisite: Dance 63 or equivalent. Instructor: Dickinson, Khalsa,
Woods Valdés, or staff. Half course.

66. **Ballet Fundamentals.** Basic classical ballet technique, body alignment, vocabulary, and
musicality for the absolute beginner. Barre and center exercises included. Instructor:
Walters. Half course.

67. **Intermediate/Advanced Tap Dance.** Prerequisite: previous training at the intermediate
level. Instructor: Medler. Half course.

68. **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: Walters. Half course.

69. **Jazz Dance I.** No previous dance experience required. Instructor: Wheeler. Half course.

70. **Ballet II.** Barre work concentrating on body alignment and correct placement within the
ballet vocabulary followed by center adagio and allegro sequences. Prerequisite: Dance 68
or equivalent. Instructor: Walters. Half course.
71. Ballet III. Greater complexity of barre and center sequences with increased emphasis on correctness of style and quality of performance. Prerequisite: Dance 70 or equivalent. Instructor: Walters or staff. Half course.

72. Jazz Dance II. Prerequisite: Dance 69 or equivalent. Instructor: Wheeler. Half course.

73. Ballet IV. Progression of Dance 71 with increased emphasis on line, style, and performance-level quality and technique. Diverse batterie, pirouettes, and tours included in allegro combinations. Prerequisite: Dance 71 or equivalent. Instructor: Walters or staff. Half course.

74. Ballet V. Continuation of Dance 73. Daily training for the performing student at the advanced/professional level. Prerequisite: Dance 73 or equivalent. Instructor: Walters or staff. Half course.

76. Somatic Methods. Somatic Methods and Experiential Anatomy. An introduction to exploring anatomical parts of the body by moving and initiating movement through space. Investigations include postural and limitation concerns, interpretation and expression, qualities of movement and being, inner and outer awareness, and the use of different Somatic methods including Laban Movement Analysis, Qi Gong, Alexander Technique, Pilates, Body-Mind Centering and Ideokinesis. Useful to students of dance, music and theater and as a basis for inspiration and improvisation. Instructor: Staff. Half course.

77. Kathak: Classical Dance of North India. An introduction to Kathak, which, like all classical dances of India, synthesizes physical energy and spiritual power. Fundamentals of Kathak's facial expressions, graceful movements of the arms and torso, and intricately complex footwork which creates rhythmic sound patterns using ankle bells. Instructor: Shah. Half course.

78. 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: Vinesett, Johnson, or staff. Half course.

79. African Dance Technique II. Continuation of Dance 78. Dances from selected African ethnic groups providing increasingly complex movement sequences and rhythmic structures. Emphasis on greater technical proficiency, clarity of expression and quality of performance. Taught in the context of their social, occupational and religious functions. Prerequisite: Dance 78 or consent of instructor. Instructor: Vinesett. Half course.

80. Individual Dance Program: Special Topics. An individualized program of study of dance technique from existing class sessions. Consent of instructor required. Half course.

81. 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.

82. Repertory: Ballet. 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: Walters or staff. Half course.


85. 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.

86. 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.
87. Hip-Hop. Hip-Hop, as inner-city culture that has created its own art, language, fashion, music and dance styles. Using dance as a time-line the course explores the history, development and core elements of hip-hop dance culture. Instructor: Staff. Half course.


181L. Special Topics. ALP Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

Theory Courses

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

95FCS. The Art of Transformation: A Workshop in Movement and Theater. ALP One course. C-L: see Theater Studies 95FCS

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 104A

104. Music and Movement. ALP Exploration of elements of music, music structures, and their relationship to movement and dance. Practical emphasis on rhythmic analysis, musicality, notation, mindful listening, and choreography/composition. Daily movement, rhythm and/or choreographic exercises, along with written assignments. Useful for dance students and others interested in the dance/music connection. Instructor: Hanks. One course.

106S. 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 135S. Instructor: Woods Valdes. One course. C-L: Documentary Studies 134S, Arts of the Moving Image 147S

110L. 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: Vinesett. One course. C-L: African and African American Studies 110A, Asian & Middle Eastern Studies 110A, Cultural Anthropology 129A, Religion 161A

111. Dance Science: An Evolutionary Approach to Functional Anatomy. ALP, NS, R One course. C-L: see Evolutionary Anthropology 111

114. T'ai Chi and Chinese Thought. CCI, CZ One course. C-L: see Religion 114

128. 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 128

129. 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 Walters. One course.

130. 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.

131S. Iconoclasts and Visionaries: Modern Dance, 1890-1950. 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.

132S. The Victory of the Iconoclasts: Postmodern Dance, 1950-2000. ALP 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.

135S. 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.

136T. Advanced Dance Composition. ALP, R Continuation of the basic elements of movement, choreographic devices and forms explored in 135S. The use of props, sets, lighting and costume; the relationship of music to dance. Choreographing and directing ensembles. Prerequisite: Dance 135S or consent of instructor. Instructor: Dickinson or Khalsa. One course.

140S. Solo Performance. ALP, W One course. C-L: see Theater Studies 140S

147. History and Practice of the Dance and Dance-theatre of India. ALP, CCI, CZ National and regional forms of dance and dance-theatre of India. Ancient treatises on Indian dramaturgy, and the expressive interpretation of the poetics in the traditional forms of performance. Rasa theory of aesthetic rapture and audience reception. Social forms of entertainment in their cultural context. Colonialism and nationalism in relation to classical dance; dance as an integral component of the national and regional identity of the people;

149. 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: Cultural Anthropology 149, Theater Studies 133, Asian & Middle Eastern Studies 149, Religion 161C, International Comparative Studies 170C

151. 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.

154S. Performance & 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 groups of middle and high school students to develop and perform interactive Forum theater. Instructors: Khalsa and Royals. One course. C-L: Theater Studies 154S


158. 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: Asian & Middle Eastern Studies 136, Cultural Anthropology 149C, Religion 161N, African and African American Studies 158, International Comparative Studies 102A

159S. 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. Instructor: Dickinson and Walters. One course.

162S. Movement for the Theater. ALP One course. C-L: see Theater Studies 152S

175. 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-

181. Special Topics. ALP Content to be determined each semester. Instructor: Staff. One course.

181S. Special Topics. ALP Content to be determined each semester. Instructor: Staff. One course.

182T. Choreography. ALP, R Advanced study in dance composition designed to develop the student's personal mode of expression. Prerequisites: Dance 135S, Dance 136T, and consent of instructor. Instructor: Dickinson or Khalsa. One course.


191. 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.


199S. 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, choreography/practice, and therapy. Methods of 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 200T. 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.

200AT. Senior Project. ALP, R, W Choreographic project to be researched, created, produced, and performed at the end of term; an accompanying written research paper that presents the themes of the choreographic project, the process of creation in accordance with the guiding metaphor that drives the choreography, and the place of the work within contemporary artistic trends. 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.

200T. Senior Project. ALP, R A research paper, project, or 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.
THE MAJOR

Major Requirements: To major in Dance, a student must take a minimum of twelve courses.

I. Theory courses - 10 course credits
   A. 101. Introduction to Dance
   B. 135S. Dance Composition
   C. 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).
      110L. West African Rootholds in Dance
      128. The Art and Cultural History of Flamenco
      129. Ballet, Science and Technology; The First 400 Years
      130. Ballet Masterworks of the Twentieth Century
      131S. Iconoclasts and Visionaries: Modern Dance, 1890-1950
      147. History and Practice of Dance of India
      149. Dance and Dance Theater of Asia
      158. Dance and Religion in Asia and Africa
      175. Gender in Dance and Theatre
      188S. The Diaghilev Ballet, 1909-1929
   D. 104. Music and Movement
   E. Two courses chosen from one of the following three concentrations:
      1. Dance of the Twentieth and Twenty-first Centuries
         95FCS. The Art of Transformation (Focus Program)
         130. Ballet Masterworks of the Twentieth Century
         131S. Iconoclasts and Visionaries: Modern Dance, 1890-1950
         154S. Performance and Social Change
         188S. The Diaghilev Ballet, 1909-1929
      2. Dance and Human Movement in its Cultural Context
         110L. West African Rootholds in Dance
         114. Tai Chi and Chinese Thought.
         128. The Art and Cultural History of Flamenco
         147. History and Practice of Dance of India
         149. Dance and Dance Theater of Asia
         155. Kundalini Yoga and Sikh Dharma
         158. Dance and Religion in Asia and Africa
         175. Gender in Dance and Theatre
      3. Choreography and Performance
         106S. Dance for the Camera
         111. Dance Science: An Evolutionary Approach to Functional Anatomy
         136T. Advanced Dance Composition
         140S. Solo Performance
         151. Functional Anatomy for Dancers
         159. Beyond Technique: The Art of Performance
         182T. Choreography
   F. 199S. Research Methods in Dance Studies and Choreographic Performance
   G. 200T. Senior Project
   H. Two additional full-credit courses in dance.

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**

A. Two courses (one in each of two different dance forms) in dance technique at the second level or above (e.g., Modern Dance II, African Dance II, Ballet II, Jazz II).

B. Two courses in repertory chosen from Dance 81, 82, 83, 84, and 88.

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 81, 82, 83, 84, and 88 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 100 level or above.

**Courses in dance history, theory or world cultures of dance:**

- 110L. West African Rootholds in Dance
- 128. The Art and Cultural History of Flamenco
- 129. Ballet, Science and Technology: The First 400 Years
- 130. Ballet Masterworks of the Twentieth Century
- 131S. Iconoclasts and Visionaries: Modern Dance, 1890-1950
- 147. History and Practice of Dance of India
- 149. Dance and Dance Theater of Asia
- 158. Dance and Religion
- 175. Gender in Dance and Theatre
- 188S. The Diaghilev Ballet, 1909-1929

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 (DOCST)

**Associate Professor of the Practice Rankin and Lecturer Thompson, Co-Directors**

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, African and African-American Studies, Art, Cultural Anthropology, Film/Video/Digital, 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 farmworker 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 co-director should facilitate the completion of the final project.

**49S. First Year Seminar.** Topics vary each semester offered. Instructor: Staff. One course.

**100S. Children and the Experience of Illness.** SS An exploration of how children cope with illness, incorporating the tools of documentary photography and writing. Students will work outside class with children who are ill and teach them how to use a camera, working toward an exhibit of photographs at the end of the semester. Permission required. Required participation in service learning. Instructor: Moses. One course. C-L: Public Policy Studies 100S, Visual Studies 103IS

**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 Studies 103A

**102. Visual Culture and Photography.** ALP One course. C-L: see Visual Studies 193

**103. Special Topics in Sound Technology.** ALP Topics focusing on technical basis and aesthetic motivation of sound recording and sound exploitation. Technical demonstration and student exercises explore the mechanics and dramatic and psychological implications of formats, microphone placement, mixing, acoustic signature, digital recording, double system, and sound editing, leading to an individually produced sound design for live action or animation film/video. Prerequisite: Theater Studies 174, English 101A, Literature 110. Instructor: Staff. One course. C-L: Information Science and Information Studies


**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 FVD 105S. Consent of instructor required. Instructor: Hawkins. One course. C-L: Cultural Anthropology 134S, Arts of the Moving
107. Introduction to Documentary Film. ALP, CCI One course. C-L: Arts of the Moving Image 102, Art History 122, Literature 120E, Visual Studies 117C

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 128S

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 101ES


113S. A Digital Approach to Documentary Photography: Capturing Transience. ALP Investigates subjects in transition, with focus on changing physical and social landscapes of North Carolina. Digital darkroom techniques include digital capture, film scanning, Photoshop, ink-jet printing, as well as other methods of dissemination offered in digital age. Digital photographic impermanence as well as social transience discussed in unison. Service-learning environment consisting of fieldwork photography in collaboration with community organization. Consent of instructor required. Instructor: Post-Rust. One course. C-L: Visual Arts 112S, Visual Studies 103JS, Information Science and Information Studies

114S. Large Format Photography. ALP Advanced black and white photography course exploring unique creative latitude of large negative format. Includes advanced printing/toning techniques and alternative processes such as platinum/palladium. Prerequisite: DOCST 115, Visual Arts 115, or its equivalent. Consent of instructor required. Instructor: Satterwhite. One course. C-L: Visual Arts 114S, Visual Studies 103KS

115. Introduction to Photography. ALP Foundation class in black-and-white photographic process as the basis for using photography as a visual language. Class learns to make a printable exposure using black-and-white film, make a "proper proof" and an 8 x 10 enlargement. Assignments include portraits, alternative techniques, landscape, and a final portfolio that embodies a single visual idea. Consent of instructor required. Instructor: Hunter. One course. C-L: Visual Arts 115, Visual Studies 103L

117. 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 117, Visual Studies 103M


119S. Magazine Journalism. SS, W One course. C-L: see Public Policy Studies 119S; also C-L: Visual Studies 125CS

120S. Documentary Research Methods. ALP, R Introduction to documentary research methods for film, photography, audio, narrative. Fieldwork with community resources, documents, oral histories, photographs, artifacts, archives. Collaborative project about North Carolina's past and independent project on student's own research interests. Instructor: Staff. One course. C-L: History 150CS


123S. Phototography 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 142S, Visual Studies 131BS


126S. 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 161AS, African and African American Studies 123S


132. 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 131
133S. Adapting Literature -- Producing Film. ALP One course. C-L: Arts of the Moving Image 133S, Visual Arts 138S, Information Science and Information Studies

134S. Dance for the Camera. ALP, R, STS One course. C-L: see Dance 106S; also C-L: Arts of the Moving Image 147S

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: Information Science and Information Studies

139S. 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 133S, Arts of the Moving Image 105AS, Cultural Anthropology 134CS, Public Policy Studies 196KS

141S. Editing the TV Documentary: From Creativity to Collaboration to Negotiation. ALP One course. C-L: Arts of the Moving Image 141S, Visual Studies 117LS


146S. 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 152S, Visual Studies 103RS

147S. 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 choosing. Instructor consent required. Instructor: Staff. One course. C-L: Visual Arts 147S, Visual Studies 103TS

148S. 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 140S, Visual Studies 103US, Information Science and Information Studies

149S. Editing for Film and Video. ALP One course. C-L: Arts of the Moving Image 148S, Information Science and Information Studies 148S
**150S. Intermediate Documentary Filmmaking.** One course. C-L: Arts of the Moving Image
152S, Public Policy Studies 182S, Visual Studies 103VS, Information Science and Information Studies

**151S. Producing Docu-Fiction.** ALP One course. C-L: Arts of the Moving Image 149S

**155S. 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: Biewen. One course. C-L: Information Science and Information Studies

**158S. 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 158S, Public Policy Studies 158S, Visual Studies 103WS

**162S. 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 162S, Latino/a Studies in the Global South

**164S. 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 168S

**167S. 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 168AS, Public Policy Studies 112

**168S. Documenting Religion.** CCI, CZ Exploration of how religious communities interpret and live out such themes as sacred spaces, hope, power, pilgrimage, identity, commitment, evil, gifts, bodies, death, and regeneration. Student participation in, and documentation of, a religious community of the student's choosing. Fieldwork off campus required. Instructor: Thompson. One course. C-L: Religion 161QS, Cultural Anthropology 162AS, Visual Studies 103GS

171S. Visiting Filmmaker Master Courses: Special Topics. ALP One course. C-L: Arts of the Moving Image 162S, Visual Arts 164S
172S. Environmental Conservation and Documentary Photography. ALP, EI, R One course. C-L: see Environment 172S; also C-L: Marine Science and Conservation
173S. Islam and the Media. CCI, SS One course. C-L: see Public Policy Studies 148S
177S. Advanced Documentary Photography. ALP, SS An advanced course for students who have taken Public Policy Studies 176S 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 118S, Public Policy Studies 176S, or consent of instructor. Instructor: Harris, Rankin, or staff. One course. C-L: Visual Arts 119S, Public Policy Studies 177S, Visual Studies 103YS, Arts of the Moving Image, Policy Journalism and Media Studies
180S. 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 180S, Public Policy Studies 184S
181S. Our Culinary Cultures. ALP, CCI 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.
190S. Special Topics in Documentary Studies. Selected topics in methodology, theory, or area in seminar format. Instructor: Staff. One course.
193S. 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 168S
194S. Multimedia Documentary: Editing, Production, and Publication. ALP A production course for students who have undertaken a substantial documentary fieldwork project over the summer, such as DukeEngage students, recipients of the John Hope Franklin Student Documentary Awards, or other students working on independent projects. Edit and shape fieldwork material into a Web-based multimedia presentation. Learn current technologies and techniques for multimedia publications. Examine unique storytelling strategies for online presentations and compare this medium to traditional venues for documentary work such as exhibitions, books, and broadcast. Consent of instructor required. Instructor: Sims. One course. C-L: Visual Arts 194S, Visual Studies 131AS

196S. 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 mediums (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.

PROGRAM COURSES

African and African American Studies
145A. Africans in America to the Civil War
145B. African Americans Since the Civil War

Art History
199. History of Photography, 1839 to the Civil War

Arts of the Moving Image
138S. Documentary Film/Video Theory and Practice
143S. Sound for Film and Video

Asian & Middle Eastern Studies
137. Contemporary Culture in South Asia

Cultural Anthropology
104. Anthropology and Film
108. Fantasy, Mass Media, and Popular Culture
128. Culture and Politics in Latin America
131S. Documentary Film/Video Theory and Practice
145A. World Music: Aesthetic and Anthropological Approaches
145B. Music, Social Life, and Scenes
164S. The Anthropology of Hinduism: From Encounter to Engagement

History
145A. Africans in America to the Civil War
145B. African Americans Since the Civil War

International Comparative Studies
101C. Anthropology and Film
103E. Fantasy, Mass Media, and Popular Culture
130A. Culture and Politics in Latin America

Music
136. World Music: Aesthetic and Anthropological Approaches
137. Music, Social Life, and Scenes

Philosophy
162. Human Rights in Theory and Practice

Political Science
162. Human Rights in Theory and Practice

Public Policy Studies
123S. Watchdogs and Muckrakers: Investigative Journalism and Public Policy
125. News as Moral Battleground
162. Human Rights in Theory and Practice

Religion
164S. The Anthropology of Hinduism: From Encounter to Engagement
184. Religion and Film

Visual Arts
106. Digital Imaging
Early Childhood Education Studies

Early Childhood Education Studies
Assistant Professor of the Practice Stephens, Director

A certificate, but not a major, is available in this program.

The six-course Early Childhood Education Studies Certificate Program allows students to develop a specialization in early childhood development and the conditions of early childhood by pursuing studies in psychology, sociology, cultural anthropology, public policy, and education, and by participating in a supervised internship experience with child care centers, preschools, and families. The certificate requires two specific courses: Education 121 and the capstone internship seminar, Education 160S. The first provides a comprehensive view of early childhood education, its history, programs, and current issues; the second provides direct experience under supervision in an approved early childhood program combined with bi-weekly group discussions with a Duke internship supervisor. No more than three courses that originate in a single academic unit may be taken; the internship is open only to students seeking the certificate.

The certificate in Early Childhood Education Studies will help qualify students to work in a variety of early childhood fields which may include research, child care service, and providing leadership to raise standards in communities for improved early childhood programs. The program helps students to identify an area for postbaccalaureate study. Students with interests in social work, education, child psychology, pediatrics, and policy issues will enhance their understanding of these areas through study in this program. For additional information consult the Program in Education.

Candidates need six (6) courses.

I. Two required courses from the Education Department:
   121S. Infancy, Early Childhood, and Educational Programs
   160S. Early Childhood Internship

II. Four elective courses, only one of which may be a Program in Education course; additionally, a limit of three courses may be taken from any one of the remaining departments. The four electives may be chosen from the following two categories.

Two (2) Development of the Child elective courses from the following list:

Documentary Studies
144S. Children's Self Expression: Literacy Through Photography

Education
118. Educational Psychology
144S. Children's Self Expression: Literacy Through Photography

Human Development
124. Human Development
180. Psychosocial Aspects of Human Development

Linguistics
153S. Issues in Language Development

Psychology
103RE. Developmental Psychology: Introduction and Survey
108A. Educational Psychology
119B. Child Clinical Psychology
124. Human Development
130. Psychosocial Aspects of Human Development
131. Social Development
153S. Issues in Language Development
159S. Biological Psychology of Human Development
183B. Child Observation
205S. Children's Peer Relations
206S. Pediatric Psychology

**Sociology**
124. Human Development

**Visual Studies**
103FS. Children's Self Expression: Literacy Through Photography

Two (2) Conditions of Childhood elective courses from the following list:

**Cultural Anthropology**
165. Psychological Anthropology

**Education**
112S. Children, Schools and Society

**Public Policy Studies**
109S. Children, Schools and Society

**Sociology**
111. Wealth, Power, and Inequality
117. Childhood in Social Perspective
118. Sex, Gender, and Society
150. The Changing American Family
169. Psychosocial Aspects of Human Development
215. Basic Demographic Methods

**Earth and Ocean Sciences (EOS)**

Professor Lozier, Chair; Professor Corliss, Director of Undergraduate Studies; Professors Baker, Boudreau, Corliss, Haff, Jackson, Kay, Klein, Lozier, and Pratson; Associate Professors Murray, and Vengosh; Assistant Professor Cassar, Li; Professors Emeriti Barber, Heron, Livingstone, Perkins, and Pilkey; Instructor Glass

A major or a minor is available in this division.

The Division of Earth and Ocean Sciences offers introductory and advanced courses in coastal geology, environmental geology, hydrology, geochemistry, geomorphology, oceanography, paleontology, petrology, sedimentology, and marine geology. 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 environmental sciences. A Bachelor of Arts degree is offered for those students who do not intend to pursue the earth sciences professionally, but wish to understand more fully local and global environmental issues. Additional information about the division can be found on the divisional Web site (http://www.nicholas.duke.edu/eos).

11. 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: Baker, Klein, Murray, Glass. One course.

12. 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. Required fee for trip. Instructors: Corliss, Glass. One course. C-L: Biology 53, Marine Science and Conservation

**49S. First-Year Seminar.** Topics vary each semester offered. Instructor: Staff. One course.

**100. Duke-Administered Study Abroad: Advanced Special Topics in Earth and Ocean Sciences.** Topics differ by section. Instructor: Staff. One course.


**102. Ocean and Atmosphere Dynamics.** NS, R Introduction to the dynamics of ocean and atmospheric circulations, with particular emphasis on the global climate cycle. Prerequisites: Mathematics 31 and 32, Physics 53L or consent of instructor. Instructor: Lozier. One course. C-L: Marine Science and Conservation

**103S. The Surface of the Earth.** NS Fundamental earth surface processes involving weathering, soils, hillslopes, rivers, wind, glaciers, and tectonic activity. Humans as agents of landscape change. The future of landscape. Prerequisites: Earth and Ocean Sciences 11 or 12. Instructor: Haff or Murray. One course. C-L: Visual Studies 111AS


**114L. Biological Oceanography.** NS, R Variable credit. C-L: see Biology 114L; also C-L: Environment 114L, Marine Sciences, Marine Science and Conservation

**115. 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. Includes a field trip with a required fee for the trip. Instructor: Murray. One course. C-L: Marine Science and Conservation

**116. 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 115/215 or consent of instructor. Also taught as Earth and Ocean Sciences 202. Instructor: Murray. Half course. C-L: Marine Sciences

**120. Environmental Geology.** NS, STS A case history, field and lab exercise, and quantitative model approach to the role of geological materials and processes in environmental assessment studies. The quantitative and qualitative impact of rock type, faulting, folding, volcanism, weathering, erosion, flooding, and underground fluid flow on the human environment. An introduction to quantitative probabilistic hazard analysis and its application to establishing monetary cost/benefit ratios. The basics of engineering geology in environmental studies. Cases taken from current and past geological studies of environmentally sensitive sites. Consent of instructor required. Instructor: Staff. One course. C-L: Earth and Ocean Sciences 224

**122. Analysis of Ocean Ecosystems.** NS One course. C-L: see Biology 123; also C-L: Environment 123, Marine Sciences, Marine Science and Conservation

**123. Hydrogeology.** EI, NS, STS An overview of the hydrologic cycle and its impact on global climate and local environmental problems. Examines ethical dilemmas encountered in communicating environmental analysis to the public. Prerequisite: Mathematics 32 and
Chemistry 31L or equivalent, or consent of the instructor. Instructor: Vengosh. One course.

C-L: Marine Science and Conservation

125. The Future. NS, STS Introduction to the future as a continuation of the geological, biological, and technological evolution of the Earth. Topics include developments and trends in computation, the internet, nanotechnology, space exploration, artificial intelligence, robots and biotechnology and their effects in society. Prerequisite: Earth and Ocean Sciences 11 or 12. Instructor: Haff. One course.

126S. 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. One course. C-L: Environment 126S

129L. Marine Ecology. NS, R, W One course. C-L: see Biology 129L; also C-L: Environment 139L, Marine Sciences, Marine Science and Conservation

130. Energy and the Environment. NS, SS, STS One course. C-L: see Environment 130; also C-L: Energy and the Environment

131. World Trade in Energy and Mineral Resources. EI, SS, STS One course. C-L: see Environment 131; also C-L: Energy and the Environment

141. 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. Required fieldtrip to the Museum of Natural History in Raleigh. Prerequisite: Prior course work in Earth and Ocean Sciences or Biology or consent of instructor. Instructor: Glass. One course. C-L: Biology 145

151S. Global Environmental Change. NS 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, and human impact on coastal zone ecosystems. Instructor consent required. Instructor: Baker. One course.

155. Global Warming. NS, STS Broad, interdisciplinary course on the science of global warming, its predicted impact, and various policy and technology options that have been proposed to mitigate its effect. Includes a short introduction to climate theory and models, discussions on important greenhouse gas, and model projections for the twenty-first century and beyond. Instructor: Glass. One course. C-L: Energy and the Environment

159. Fundamentals of GIS and Geospatial Analysis. NS, QS One course. C-L: see Environment 159

168. Biogeography in an Australian Context. NS, STS One course. C-L: see Biology 131; also C-L: Environment 168

170. Introduction to Physical Oceanography. NS, QS, STS One course. C-L: see Environment 170; also C-L: Marine Sciences, Marine Science and Conservation

172. 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. Half course.


176L. Marine Invertebrate Zoology. NS, R Variable credit. C-L: see Biology 176L; also C-L: Environment 176L, Marine Sciences, Marine Science and Conservation

180S. 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 11 recommended. Consent of instructor required. Instructor: Boudreau. One course.

181S. 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 11, and consent of instructor. Instructor: Haff or Murray. One course.

187S. Marine Geology of South Florida. NS, R Spatial and temporal analysis of geology of south Florida. Includes class discussions, required spring break field trip to South Florida, trip presentation, post-trip research paper. Examination of 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 11 or 12, or consent of instructor. Instructor: Dwyer. One course. C-L: Marine Science and Conservation

189S. 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.

191. 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

192. Research Independent Study. R See Earth and Ocean Sciences 191. 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

193. 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

194. Independent Study. See Earth and Ocean Sciences 193. 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

195. Independent Study for Nonmajors. Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a term paper containing significant analysis and interpretation of a previously approved topic at end of semester.
Open to qualified juniors and seniors upon approval of the departmental faculty. Instructor: Staff. One course. C-L: Marine Sciences


209S. 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.

210S. 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.

211. 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.

212. 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: EOS 211. Instructor: Li. One course.

215. Introduction to Physical Coastal Processes. NS, R, STS Nearshore physical processes responsible for the evolution of beaches and barrier islands. Various problems and possible solutions arising from human development of retreating shorelines. Involves a field trip and research paper. One course. C-L: Marine Science and Conservation

220. 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 recommend- ed. Instructor: Lozier. One course.

225. 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.

226S. 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.

272 Courses and Academic Programs
227. 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.


242S. 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.

243S. 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 11 or consent of instructor. Instructor: Haff and Pratson. One course.

244. 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.

245S. The Neoenvironment. 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.

251S. 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.

267. 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.

269. Thermodynamics of Geological Systems. NS Introductory thermodynamics applied to geologic problems through understanding of phase equilibrium. Prerequisites: Earth and Ocean Sciences 101L; and Mathematics 32 or consent of instructor. Instructor: Boudreau. One course.

271. 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 32L and Mathematics 32. Instructor: Baker or Vengosh. One course.

273S. 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.

275S. Mineral Resources. NS Introduction to the mineralogy, geological setting, and genesis of metallic and non-metallic 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.


THE MAJOR
The Division of Earth and Ocean Sciences offers one A.B. degree and one B.S. degree.

For the A.B. Degree
The A.B. 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. It is not intended for students who plan to pursue advanced education in the earth and ocean sciences, or to become professional geologists or environmental scientists.

Required courses include Earth and Ocean Sciences 11, or 12, plus any six earth and ocean sciences courses of which five must be 100 level or higher, plus three additional 100-level or higher courses in either earth and ocean sciences or related fields (physics, mathematics, biology, evolutionary anthropology, environment), 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 B.S. Degree
The B.S. 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 11 and 12; Chemistry 31L and either Chemistry 32L or 151L, or equivalents; Mathematics 31L and 32L; Physics 53L (or Physics 51L); Biology 102L.

Major requirements. Earth and Ocean Sciences 101L, 102, 103S, and 107L, plus five additional earth and ocean sciences courses at the 100 level, including one field-oriented class. Up to two courses from a related field (biology, chemistry, physics, environment, or mathematics) 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, NC, which often includes 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 191, 192) 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 11 or 12, plus any four additional earth and ocean sciences courses, of which three must be 100-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 A.B. 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.

Economics (ECON)

Professor Bayer, Chair; Associate Professor Timmins, Director of Economics Center for Teaching; Associate Professor of the Practice Fullenkamp, Director of Undergraduate Studies; Visiting Assistant Professor Falba, Associate Director of Undergraduate Studies; Professors Anton, Ariely, Bansal, Bollerslev, Burnside, Clotfelter, Cohen, Coleman, Darity, De Marchi, Fang, Gallant, Goodwin, Grabowski, Graham, Hoover, Hotz, Hsieh, Kelley, Kimbrough, Kramer, Kranton, Kuran, Ladd, Lewis, Marx, McElroy, Munger, Nechyba, Peretto, Sanders, Sloan, Tauchen, Taylor, Thomas, Tower, and Weintraub; Associate Professors Abdulkadiroglu, Arcidiacono, Conrad, Frankberg, Hamilton, Khan, Mazzocco, McAdams, Patton, Pfaff, Rossi, Rubio-Ramirez, Smith, Timmins, Vigdor and Yildirim; Assistant Professors Ananat, Bellemare, Beresteianu, Bianchi, Bugni, Conitzer, Ellickson, Ilut, Khwaja, Leventoglu, Lopomo, Ridley, Rigotti, Roberts, Sadowski, Sweeting, Tarozzi,
A major or a minor is available in this department.

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 103, 104, 131, and 139.

1A. Introductory Macroeconomics. Credit for Advanced Placement on the basis of a score of 4 or 5 on the Advanced Placement Macroeconomics examination. One course.

2A. Introductory Microeconomics. Credit for Advanced Placement on the basis of a score of 4 or 5 on the Advanced Placement Microeconomics examination. One course.

48. Introduction to Political Economy. EI, SS One course. C-L: see Political Science 75; also C-L: Politics, Philosophy, and Economics

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.


51. 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: De Marchi, Fullenkamp, or Leachman. One course.

55D. Intermediate Microeconomics I. SS Introduction of the concepts of preferences and technologies. Intermediate, non-calculus based 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. Intended as replacement for Economics 2D and 52D. Prerequisites: Economics 1A and 2A or Economics 1D or 51D; and Mathematics 25 and 26, or Mathematics 31, 32, 41, 102, 103 or higher level math. Instructor: Mazzacco, Nechyba, Rasiel, or Timmins. One course. C-L: Health Policy


99S. Selected Topics In Economics. Topics vary each semester offered. Instructor: Staff. One course.
99FCS. Focus Program Topics in Economics. SS Open only to students in the Focus Program. Topics vary each semester offered. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Economics. CCI Topics differ by section. Prerequisite: Economics 55D. Instructor: Staff. One course.

100S. Duke-Administered Study Abroad: Advanced Special Topics in Economics. CCI Seminar version of Economics 100. Topics differ by section. Prerequisite: Economics 55D. Instructor: Staff. One course.

103. Prisoner’s Dilemma and Distributive Justice (A, C-N). EI, SS One course. C-L: see Political Science 103; also C-L: Philosophy 146, Ethics, Information Science and Information Studies

104. Politics, Philosophy, and Economics Capstone (A, C-N). R, SS One course. C-L: see Political Science 165; also C-L: Philosophy 165

105D. Intermediate Microeconomics II. QS, SS Calculus-based generalization of the theory of demand and supply developed in Economics 55D. 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 55D; Mathematics 102 or Mathematics 103 or any higher-level mathematics course with Mathematics 103 as a prerequisite. Student Instructor: Arcidiacano, Leventoglu, Taylor, or Yildirim. One course.

110D. Intermediate Macroeconomics. QS, SS, STS Intermediate level treatment of macroeconomic models, fiscal and monetary policy, inflation, unemployment, economic growth. Prerequisite: Economics 55D, Economics 105D, and Math 102 or Math 103 or Math 105; Economics 105D may be taken as co-requisite. Instructor: Staff. One course.

112. Engineering Systems Optimization and Economics. SS One course. C-L: see Engineering 115; also C-L: Modeling Biological Systems

122D. American Business History. CCI, CZ, R, W One course. C-L: see History 158AD; also C-L: Markets and Management Studies

130S. Economics of Creative Goods. R, SS Creative industries (especially the arts, entertainment) often distinguished 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 55D or instructor's consent. Instructor: De Marchi. One course.

132. 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 55D. Instructor: Craig or staff. One course. C-L: History 130B

133. 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 51D or 1A and 2A or instructor consent. Instructor: Kuran. One course. C-L: Political Science 129, Islamic Studies

134S. Islam and the State: Political Economy of Governance in the Middle East. Introduction to political history of Middle East from the advent of Islam to modern era. Examine institutions responsible for characteristics of political development in the region; consider selected cases relating to mechanisms of political development, including democratization; investigate religion's role in shaping the region's political trajectory; identify social forces, especially economic, driving contemporary rediscovery and
reinterpretation of Islam's political organization and requirements, by both Islamists and secular political actors. Instructor: Kuran. One course. C-L: Political Science 119

135S. 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: ECON 55D. Instructor: De Marchi. One course.

137. The Philosophy and Methodology of Economics. EI, SS One course. C-L: see Philosophy 145; also C-L: Study of Ethics 115

138. The International Economy, 1850-2000: 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 1A and 2A or Economics 1D or 51D; and Mathematics 25 and 26, or Mathematics 31, 32, 41, 102, 103 or higher level math. Instructor: Toniolo. One course. C-L: History 153B

139D. Introduction to Econometrics. QS, R Data collection, estimation, and hypothesis testing. Use of econometric models for analysis and policy. Prerequisites: Economics 55D; and Mathematics 32, 41, 102, 103, or higher; and Statistics 103, 104, 113, or 114 or Mathematics 135 or 136. Instructor: Ellickson, Sweeting, or Tarozzi. One course. C-L: Information Science and Information Studies, Modeling Biological Systems

141. Applied Econometrics in Macroeconomics. QS, R Basic econometric methods useful in empirical economic research and forecasting. Topics include multiple regression analysis under nonstandard conditions; probit, logit, and other limited dependent variables; count data; simultaneous equation systems; and basic models with panel data. Macroeconomic applications. Prerequisite: Economics 139D or 239D. Instructor: Rossi or staff. One course. C-L: Modeling Biological Systems

142. 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. Prerequisite: Economics 139D or 239D. Instructor: Beresteanu. One course.

143. The Art Market. ALP, R, SS A 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. Recommended: Economics 55D. Instructor: De Marchil. One course. C-L: Art History 157


146. 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 148 desirable prior to taking this course. Prerequisites: Economics 55D. Instructor: De Marchi. One course. C-L: History 146A, International Comparative Studies

147. 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 55D. Instructor: McElroy or staff. One course. C-L: Women's Studies 147


150. 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. Combined with Economics 148, this course may yield a written product suitable for submission for graduation with distinction. Prerequisites: Economics 55D. Instructor: Goodwin. One course.

151. 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. Does not count for B.S. degree. Economics 151 is not open to students who have taken Economics 157, 168, 181, and/or 200ES. Only Economics 151 or Economics 181 (not both) may be taken for credit within the major. Prerequisites: Economics 51D; and Statistics 103, 104, 113, 114, and Mathematics 102 or higher. Instructor: Fullenkamp. One course. C-L: Information Science and Information Studies, Markets and Management Studies


153. Monetary Economics. 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 110D. Instructor: Leachman, Kimbrough, or Staff. One course.

154. Racial and Ethnic Economic Inequality; A Cross National Perspective. CCI, EI, SS One course. C-L: see Public Policy Studies 152; also C-L: African and African American Studies 154

155. Labor Economics: Analysis and Measurement. 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 105D; and Statistics 103, 104, 113, 114, or Mathematics 135 or 136. Instructor: McElroy or Sloan. One course.

156. 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: Econ 105D or PubPol 110 or 128. Instructor: Falba, Sloan or staff. One course. C-L: Public Policy Studies 156, Health Policy

157. 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 105D or Economics 172; and Statistics 103, 104, 113 or 114, or Mathematics 135 or 136. Instructor: Bollerslev, Rasiel, or staff. One course. C-L: Visual Studies 112A

158. Applied Financial Economics. QS, R, SS Tools mastered in microeconomics, macroeconomics, calculus, algebra, and statistics applied to problems in financial economics and used to empirically investigate financial data using PCs. Application of asset pricing theories to control risks. Students working in teams develop their own portfolio management strategies for common stocks using various optimization techniques, tested with out-of-sample financial data. Prerequisites: Economics 105D; Economics 110D; and Statistics 103, 104, 113 114, or Mathematics 135 or 136. Instructor: Staff. One course.

158D. Applied Financial Economics. QS, R, SS Same as Economics 158 but has a discussion section. Prerequisites: Economics 105D; Economics 110D; and Statistics 103, 104, 113 114, or Mathematics 135 or 136. Instructor: Staff. One course.


163. 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. Prerequisite: Economics 105D and Statistics. Instructor: Timmins. One course. C-L: Environment 163, Health Policy, Marine Science and Conservation, Energy and the Environment

164. 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 110D. Instructor: Hoover. One course.

165. American International Economic Policy. 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. Economics majors may not count both Economics 165 and 167 or their crosslists toward major requirements. Prerequisites: Economics 55D. Instructor: Leachman or staff. One course. C-L: Public Policy Studies 165, Markets and Management Studies


167. Multinational Management. SS Impact of national economic, political, and legal environments on managerial issues, such as the dynamics of the organization, coordination of employees, administration, and shareholder rights. (Taught only in Duke-In-France Program.) Prerequisite: Economics 105D. Instructor: Staff. One course.

168. Asset Pricing and Risk Management. QS, SS Pricing models for major asset classes including bonds and equities, as well as derivative securities including futures and options on equity indices, currencies and commodities. Portfolio risk analysis, speculation and hedging techniques. Prerequisites: Economics 105D; and Statistics 103, 104, 113, 114, or Mathematics 135 or 136. Instructor: Rasiel. One course.

170. 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 172 or 105D and 110D. Instructor: Burnside or staff. One course.


175. 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 105D required; Economics 139D (Econometrics) strongly recommended. Instructor: Bayer. One course.

180. 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 105D. Instructor: Graham, Knoeber, or staff. One course.

181. 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
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182. Financial Accounting. QS, SS The accounting model of the firm, transaction analysis, the use of accounting information by management. Topics include procedures to process accounting data, income determination, financial statement analysis, cost behavior, budgeting, and short-run decisions. The construction and interpretation of corporate financial reports. How a firm's performance is presented in the income statement, and how different revenue and expense recognition practices affect this performance measure. Does not count for economics major or minor requirements. Instructor: Skender. One course.


185. 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. Discuss 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. Discuss policy implications in each case. Prerequisites: Economics 105D and 139D; or Public Policy 128D and Statistics 103 or 114; or consent of the instructor. Instructor: Thomas. One course.

186. Public Economics. 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 105D or Pub Policy 128. Instructor: Falba or staff. One course.

187. 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 105D. Instructor: Beresteanu, Khan, or Yildirim. One course.

188. Business and Government. QS, SS Public policies which most directly affect the operation of competition in the business world. The economic basis for an evaluation of antitrust policy, public utility regulation, and public enterprise. Prerequisite: Economics 55D; and Statistics 103, 104, 113 or 114 or Mathematics 135 or 136 or consent of instructor. Instructor: Staff. One course.

190S. 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 55D. This course is only open to Juniors and Seniors; Sophomores may register with instructor's consent. Instructor: Weintraub. One course.
191. 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 55D. Instructor: Staff. 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. Consent of instructor and director of undergraduate studies required. Prerequisite: Economics 55D. Instructor: Staff. One course.

193. Research Independent Study. R Same as Economics 191, but for second-semester juniors and seniors. Consent of director of undergraduate studies required. Prerequisite: Economics 105D; and Economics 110D. Instructor: Staff. One course.

194. 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 105D and Economics 110D. Instructor: Staff. One course.

195. Selected Topics in Economics. Topics vary by semester. Prerequisites: Economics 105D and 110D. Instructor: Staff. One course.

195FCS. Focus Program Topics in Economics. SS Open only to students in the Focus Program. Topics vary each semester offered. Instructor: Staff. One course.

195GS. Capstone Seminar: Clothing and U.S. History. CZ, R, SS, W One course. C-L: see History 196GS; also C-L: Public Policy Studies 196CS

195MS. Capstone Seminar: Regulating American Business: Historical Perspectives. CZ, EI, R, SS, W One course. C-L: see History 196MS; also C-L: Public Policy Studies 196MS

195S. Selected Topics in Economics. Seminar version of Economics 195. Prerequisites: Economics 105D and 110D. Instructor: Staff. One course.

196. Selected Topics in Economics. Topics vary by semester. Instructor: Staff. One course.

196S. Selected Topics in Economics. Seminar version of Economics 196. Instructor: Staff. One course.

197S. 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 55D. This course is only open to Juniors and Seniors; Sophomores must obtain instructor consent. Instructor: Weintraub. One course.

For Advanced Undergraduates and Graduates

207. Models of Conflict and Cooperation. SS Cooperative and noncooperative game theory with applications to trading, imperfect competition, cost allocation, and voting. Prerequisite: Economics 105D. Instructor: Graham. One course.

207S. Models of Conflict and Cooperation. QS, SS Cooperative and non-cooperative game theory with applications to trading, imperfect competition, cost allocation, and voting. Extensive use of quantitative models requiring familiarity with multivariate calculus, optimization, and probability theory. Prerequisite: Economics 105D. Instructor: Graham. One course.

208S. Economics of the Family. QS, R, SS, W Economic functions of families including home production gains from marriage, the demand for children, marriage and divorce, child support and alimony, labor supplies of women and men, the distribution of resources within families ('rotten kid theorems' and cooperative and noncooperative games). Applications to
marriage and divorce law, day care, United States welfare policy, mortality, and farm efficiency in developing nations. Research project required. Prerequisite: Economics 105D; Economics 139D; and Statistics 101, 103, 104, 112, 113 or 114, or Mathematics 135 or 136. Instructor: McElroy. One course. C-L: Women's Studies 208S, Children in Contemporary Society

214S. Economy, Society, and Morality in Eighteenth-Century Thought. R, SS One course. C-L: see Political Science 214S

218. Macroeconomic Policy and International Finance. SS One course. C-L: Public Policy Studies 218

220. 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 139D) plus a course in Linear Algebra or consent of the instructor. A course in macroeconomics (Economics 110D) is very useful but not strictly enforced. Instructor: Rossi. One course.

221S. The Society and Economy of Europe, 1400 - 1700. CCI, CZ, R One course. C-L: see History 221AS; also C-L: Medieval and Renaissance Studies 220AS

225. Mathematical Finance. QS One course. C-L: see Mathematics 215

231S. Law, Economics, and Organizations. SS One course. C-L: see Public Policy Studies 231S

232S. Microeconomics of International Development Policy. SS One course. C-L: see Public Policy Studies 232S

244S. Art and Markets. ALP, CCI, R, SS One course. C-L: see Visual Studies 252AS; also C-L: Medieval and Renaissance Studies 245S


251S. Regulation of Vice and Substance Abuse. R, SS, W One course. C-L: see Public Policy Studies 251S; also C-L: Health Policy

253. International Trade and Policy. SS One course. C-L: see Public Policy Studies 204

261. Evaluation of Public Expenditures. SS One course. C-L: see Public Policy Studies 261; also C-L: Environment 272, Health Policy


265S. International Trade. R, SS International trade, investment and migration, commercial policy, and the political economy of trade. Prerequisite: Economics 105D; and Economics 110D. Instructor: Kimbrough or Tower. One course. C-L: Canadian Studies


267. Data Methodology and Business Economics I. Graduates from economics masters programs are expected to be familiar not only with economic theory at an advanced level, but also the applied techniques used to assess predicted behavior. This course is designed to give students expertise in working with datasets commonly used in various aspects of economics and business. Emphasis is placed upon applications of econometrics in business and non-academic research settings. Students will collect, analyze, and report on findings
in oral and written presentations. Statistical software used will include SAS, STATA and EXCEL. Instructor: Wood. One course.

267S. Global Responses to the Rise of China. CCI, SS One course. C-L: see Sociology 290S

268S. 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 105D; and Economics 110D. Instructor: Tower. One course. C-L: International Comparative Studies 201BS, Canadian Studies

269S. Social Change, Markets, and Economy in China. CCI, SS One course. C-L: see Sociology 293S

270. Resource and Environmental Economics. SS One course. C-L: see Environment 270; also C-L: Public Policy Studies 272, Health Policy, Marine Science and Conservation

270L. Resource and Environmental Economics (Lecture). One course. C-L: see Environment 270L; also C-L: Public Policy Studies 272L, Health Policy, Marine Science and Conservation


273. Economic Analysis of Resource and Environmental Policies. SS One course. C-L: see Environment 271

283. Advanced Macroeconomics II. Course considers macroeconomic models and computational tools. Will benefit those interested in going to doctoral program, as the course covers underlying tools for PhD macroeconomics. Basic Dynamic Stochastic General Equilibrium macro models reviewed and used to learn numerical and empirical approaches. Course emphasizes real business cycle theory and sticky price models for monetary policy; linearization around steady states; and Bayesian estimation of DSGE models. How modern monetary policy research is implemented in practice. First half of course focuses on numerical analysis; second half devoted to empirical analysis and sticky price models. Instructor: Kim. One course.

284S. Financial Development and History. CCI, SS Development of financial institutions and markets across civilizations and time. The political, economic, and institutional factors which influenced that evolution and the theoretical implications for contemporary emerging markets. Prerequisite: Economics 151, 181 or consent of instructor. Instructor: Toniolo. One course.

286. Economic Growth and Development Policy. SS, STS, W One course. C-L: see Public Policy Studies 286; also C-L: International Comparative Studies

291. European Economic History. CCI, SS Covers period since the late eighteenth century. Topics include: modern economic growth in historical perspective, the industrial revolution, the standard-of-living debate, patterns of European growth (with case studies of France, Germany, Italy, and Russia), the classical gold standard, the economic consequences of World War II, the great depression, postwar reconstruction, and the European "miracle" of the 1950s and 1960s. Prerequisites: Economics 105D; and Economics 110D. Instructor: Toniolo. One course.

295. Selected Topics in Economics. SS Instructor: Staff. One course.

295S. Selected Topics in Economics. SS Seminar version of Economics 295. One course.

296. Selected Topics in Economics. SS Instructor: Staff. One course.
296S. Selected Topics in Economics. SS Seminar version of Economics 296. Instructor: Staff. One course.

Honors Seminars
Courses intended for students pursuing an honors thesis in economics and designed to provide exposure to current research in economics, guidance toward independent research, and a deepening of a chosen line of research with the aim of shifting students from consumption of, to active participation in, research. More information provided in Departmental Graduation with Distinction section after this economics courses listing.

198S. 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 199S. Prerequisites: Economics 105D and 110D. Instructor: Connolly, Kimbrough, or Staff. One course.

199S. Honors Seminar II. R, SS, W Following Economics 198S, iterative forum for conducting original research culminating in a substantive research project suitable for submission as an honors thesis. Prerequisites: Economics 105D and 110D. Consent of instructor required. Instructor: Connolly, Kimbrough, or staff. One course.

201AS. Honors Junior Research Workshop in Macroeconomics. QS, R, SS Guided research in macroeconomics. Development of individual research topic from within three applied areas to vary with instructor's interest. Topics drawn from areas in macroeconomics and open economy macroeconomics including monetary policy, government spending and debt policy, current account dynamics, exchange rate behavior, consumption and investment spending. Requires substantive research project. Prerequisites: Economics 105D and 110D. Consent of instructor required. Instructor: Kimbrough. One course.

201FS. 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 103, Statistics 103, Economics 105D, 110D, 139D and one finance course (Economics 157, 158, 181). Economics 139D and finance may be taken concurrently. Consent of instructor required. Instructors: Bollerslev and Tauchen. One course.

201HS. Honors Junior Research Workshop: History of Economics and Economic Thought. CZ, R, SS Discussion of research in history of economic thought or economic history, including: examination of archival materials, biographical writings and oral testimony on the history of economics; relationship between macro and microeconomics and theoretical and empirical macroeconomics; interaction of economics with other disciplines and in the construction of public policy. Students specify a topic for thesis research, identify an adviser, and conduct a relevant literature review. Prerequisites: Economics 105D and 110D. Consent of instructor required. Instructor: Goodwin. One course.

201IS. Honors Junior Research Workshop in Microeconomics. QS, R, SS Introduction to original research in microeconomic theory. Development of substantive individual research proposal, including literature review and building of theoretical model to capture salient aspects of relevant issue in microeconomics. Topics may include competitive individual research by firms, incentive mechanisms in organizations, campaign strategies in elections, collective decision-making in committees, and fundraising by charities. A strong background in calculus and intermediate microeconomics required. Familiarity with game theory (e.g. Nash's equilibrium) highly recommended. Prerequisite: Economics 105D. Consent of instructor required. Instructor: Yildirim. One course.
202AS. Honors Senior Research Workshop in Macroeconomics. QS, R, SS, W Continuation of Economics 201AS. Prerequisites: Economics 201AS and Mathematics 102 or 103 and Statistics 103. Consent of instructor required. Instructor: Kimbrough. One course.


202IS. Honors Senior Workshop in Microeconomics. QS, R, SS, W Continuation of Economics 201IS. Prerequisites: Economics 201IS and Mathematics 103 or 105 and Statistics 103. Consent of instructor required. Instructor: Yildirim. One course.

204. 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 105D and Economics 110D. Consent of instructor and Director of Undergraduate Studies required. 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 A.B. Degree

Prerequisites: Economics 1A and 2A; or 51. Economics 55D. Mathematics 32 and 102; or 103 or any higher-level mathematics course with Mathematics 103 as a prerequisite. Statistics 103, Statistics 104/Mathematics 135, Statistics 112, Statistics 113 or Statistics 114/Mathematics 136. Statistics is a prerequisite for Economics 139D and many other 100-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 pass/fail.

Requirements: Three core courses: Economics 105D, Economics 110D, and Economics 139D. Students are encouraged to complete these classes no later than the spring of their sophomore year. Five electives chosen from any additional non-core economics courses at the 100 level or above, with the exception of Economics 151, Economics 182, and Economics 888. 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 122D/History 158AD, Economics 130S, Economics 132/History 130B, Economics 137/Philosophy 145, Economics 138/History 153B, Economics 146/History 146A, Economics 148/History 141B, Economics 150, Economics 164, Economics 190S or Economics 197S, or other courses with the approval of the Director of Undergraduate Studies).

For the B.S. Degree

Students who contemplate graduate study in economics are urged to develop skills in intermediate calculus (Mathematics 103), linear algebra (Mathematics 104), differential equations (Mathematics 131), and advanced calculus (Mathematics 139).

Prerequisites: Economics 1A and 2A; or 51. Economics 55D. Mathematics 32 and 102; or 103 or any higher-level mathematics course with Mathematics 103 as a prerequisite. Statistics 103, Statistics 104/Mathematics 135, Statistics 112, Statistics 113 or Statistics 114/Mathematics 136. Statistics is a prerequisite for Economics 139D and many
100-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 pass/fail.

Requirements: Three core courses: Economics 105D, Economics 110D and Economics 139D. Students are encouraged to complete these classes no later than the spring of their sophomore year. Five electives chosen from any additional non-core economics courses at the 100 level or above, with the exception of Economics 151, Economics 182, and Economics 888.

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.)

The Department of Economics maintains online resources to guide economics majors and minors: [http://www.econ.duke.edu/ecoteach/undergrad/](http://www.econ.duke.edu/ecoteach/undergrad/)

**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:

1. A minimum grade point average of 3.3 in the major and 3.3 overall;
2. Completion of five electives commensurate with an undergraduate A.B. or B.S. degree;
3. 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 paths 2 or 3, 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 B.S. degree.

To be considered for Graduation with Distinction in economics, students must pursue one of three paths outlined below.

1. Students may take, in the spring of their junior year, an Honors Junior Research Workshop (Economics 201S) in one of four areas of study (Finance, History, Macroeconomics, and Microeconomics). They may then take, in the fall of their senior year, an Honors Senior Research Workshop (Economics 202S) in their area of study, through which they
may complete their honors thesis. Students do not necessarily have to qualify for Graduation with Distinction in order to enroll in the Honors Research Workshops, nor will completion of these workshops guarantee Graduation with Distinction. Still, the workshops are selective and are a possible path to 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 or 3. In such a case, the requirements for the new chosen path would need to be satisfied in order to receive honors.

Path 1 is a new path designed to create more opportunities for students to experience research in Economics. It is because of this research initiative that the major has been restructured so as to provide the proper educational background and training for students to be able to undertake novel research. Hence, the department now requires that all economics majors take econometrics before taking field courses in sub-disciplines. This enables students to read and understand advanced empirical papers in their area of interest. Further, if students then choose to undertake a research project, they will have the tools with which to complete proper empirical analysis.

The department determined that the best setting in which to foster the research process is a two-semester workshop, resembling graduate workshops. This concept is based on the idea that 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. These research workshops begin in a student's junior year for two reasons: firstly, to initiate students into a culture of research earlier in their college careers so as to have a greater impact; and secondly, to allow students to continue their research over the summer of their junior year since they will already have completed a prospectus as part of the Honors Junior Research Workshop. 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.

2. Students who do not enter one of the Honors Junior Research Workshops or have not developed a topic of interest with an individual faculty mentor may enroll in Honors Seminar I (Economics 198S) in the fall semester of their senior year and Honors Seminar II (Economics 199S) in the spring semester of their senior year.

3. Students may also pursue Graduation with Distinction by enlisting 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 in his/her senior year in an independent study format to produce an honors thesis. Students choosing this path enroll in a Research Independent Study (Economics 193) in the fall of their senior year, under the instruction of the mentoring faculty member. In the spring of their senior year, students may enroll in either Honors Research Independent Study (Economics 204) or Honors Seminar II (Economics 199S) with the signature of their faculty mentor and the
approval of the 199S instructor (which is gained by submission of a satisfactory thesis proposal).

**Proposed Flow of Courses for Economics Major Seeking to Graduate with Distinction**

<table>
<thead>
<tr>
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<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td><strong>First-year</strong></td>
<td>Economics 51, or 1A and 2A</td>
<td>Economics 55D</td>
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<tr>
<td><strong>Sophomore</strong></td>
<td>Economics 105D</td>
<td>Economics 110D</td>
</tr>
<tr>
<td></td>
<td>Statistics 103</td>
<td>Economics 139D</td>
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<tr>
<td><strong>Junior</strong></td>
<td>Two Field Course Electives</td>
<td><strong>PATH 1</strong>: Economics 201S. Honors Junior Research Workshop</td>
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<tr>
<td><strong>Senior</strong></td>
<td><strong>PATH 1</strong>: Economics 202S. Honors Senior Research Workshop</td>
<td><strong>PATH 2</strong>: Economics 198S. Honors Seminar I OR <strong>PATH 2</strong>: Economics 199S. Honors Seminar II OR <strong>PATH 3</strong>: Economics 193. Research Independent Study PATH 3: Economics 204. Honors Research Independent Study (or Economics 199S. Honors Seminar II)</td>
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All honors theses are due April 15.

**THE MINOR**

*Requirements:* Economics 1A and 2A; or 1D or 51. Economics 55D. Three additional 100 level or above economics courses (excluding Economics 182 and 888). Substitution of similar courses in other departments at Duke for courses in the Department of Economics used toward major requirements is not permitted.

**Education (EDUC)**

Associate Professor of the Practice Riggsbee, *Director of the Program*; Associate Professor of the Practice Malone, *Director of Undergraduate Studies*; Associate Professor Di Bona; University Distinguished Service Professor Emeritus O’Barr; Assistant Professors of the Practice Grant, Jentleson, Stephens, and Wynn; Instructors Ahern-Dodson and Sikes; Professor of the Practice Emeritus Ballantyne; *Joint Appointments*: Professor Cooper; Assistant Professor Linnenbrink-Garcia; Associate Professor of the Practice Bookman; *Affiliated Faculty*: Adjunct Professor Eubanks and Trask; Adjunct Associate Professors Heisler and Wilson; Adjunct Assistant Professors Crumley and Teasley; Adjunct Associate Professors of the Practice Airall, Lattimore, and Thomas; Adjunct Assistant Professors of the Practice Carboni, Hammer, and Prillaman; Adjunct Instructor Hill; Adjunct Lecturers Chafe and Wasiolk; Visiting Lecturers Alden and Brown; Research Scholar Ewald

A minor, but not a major, is available in this department.

**49S. First-Year Seminar.** Topics vary each semester. Instructor: Staff. One course.

**50. Duke-Administered Study Abroad: Special Topics in Education. CCI** Topics differ by section. Instructor: Staff. One course.

**82FCS. Civic Engagement, Service, and Social Ideals. CCI, EI, SS** Civic engagement and service learning as pedagogical approaches in both K-12 and college settings. The ways civic engagement experiences may impact students' perspectives of race, class, gender.
Education as a transformative experience. Includes a service learning experience focused on literacy issues in K-12 schools in which students write reflections on ethical issues. Open only to students in the Focus Program. Instructor: Malone. One course.

96S. Special Topics. Topics vary each semester. Instructor: Staff. One course.

100. Social and Philosophical Foundations of Education. CCI, EI, SS Interdisciplinary examination of issues confronting American education, incorporating historical, political, economical, philosophical, and social perspectives. Exploration of ways cultural influences and differences have shaped public schools. Students participate in structured service learning experience in which they reflect on ethical issues related to schooling. Required participation in service learning. Instructor: Jentleson, or Wynn. One course. C-L: Ethics

101. Duke-Administered Study Abroad: Advanced Special Topics in Education. CCI Topics differ by section. Instructor: Staff. One course.


108S. 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. Instructor: Riggsbee. One course. C-L: Ethics

109S. 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. One course.

110S. 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.

112S. 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 109S, Children in Contemporary Society, Early Childhood Education, Ethics

118. Educational Psychology (C, D). CCI, EI, SS Principles of developmental, social, and cognitive psychology as applied to education, with a focus on how children learn. Examination of the impact on learning of race, class, gender, and ethnicity, including a comparative analysis of cultural differences in American schools. Through structured service learning experiences in local schools, students reflect through writing on ethical issues in teaching. Required service learning. Instructor: Linnenbrink-Garcia, Malone. One course.
120. Elementary Education: Internship. EI Engage in a teaching internship in elementary schools, in active classroom research projects by designing, implementing, and evaluating units of instruction. Creation of a portfolio 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. Two courses.

121S. 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: Children in Contemporary Society, Early Childhood Education

123. Motivation and At-Risk Students. CCI, SS Explores current motivational theories and how these theories can be applied in motivating at-risk students. Includes multicultural issues in teaching at-risk students. Instructor: Staff. One course.

125S. Unrecognized Talent: Minority Children and Gifted Education. CCI, EI, SS Investigation of society, counselors, teachers, parents, and self in the social, emotional, and academic development of the minority gifted child. Focus on cultural comparisons relating to the manifestation of giftedness, ways of reversing under-representation of minority students in programs for the gifted, and ethical issues relating to the use of tests in identifying giftedness as it relates to minority students. Instructor: Stephens. One course. C-L: Children in Contemporary Society

126S. Issues of Education and Immigration. CCI, FL One course. C-L: see Spanish 106CS

133S. 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.

137. 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: DiBona. One course. C-L: Children in Contemporary Society, Ethics

139. Marxism and Society. SS One course. C-L: see Literature 181A; also C-L: Cultural Anthropology 139, History 186, Sociology 139, International Comparative Studies

140. The Psychology of Work. CCI, SS, STS An interdisciplinary examination of career choice and development with particular focus on ways work may change in the future, including the impact on work of major developments in science and technology. Comparative analysis of work across cultures and within American society. Instructor: Staff. One course.

144S. Children's Self Expression: Literacy Through Photography. EI, SS One course. C-L: see Documentary Studies 144S; also C-L: Visual Studies 103FS, Early Childhood Education

146S. Gender At Duke. CCI, EI, R, SS Gender systems at Duke, with emphasis on gender differences in the University's culture and ideals. Historical examination of the ethical arguments about institutional policies. Student research based on documents in University archives. Instructor: O'Barr. One course.
147. Urban Education. CCI, SS One course. C-L: see African and African American Studies
147; also C-L: Sociology 136, Children in Contemporary Society

148S. Learning to Read (C, D). R, SS One course. C-L: see Psychology 145S; also C-L:
Children in Contemporary Society

149S. 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 130S, Ethics

151S. Literacy and Service Learning. CCI, EI, SS Recent research on the role of service
learning in promoting literacy development in children; the impact of service learning,
volunteering, and school-based tutoring programs on students in K-12 schools; literacy
issues such as phonics versus whole language; cognitive approaches to developing reading
comprehension; methods of teaching beginning reading; reading learning disabilities; and
the impact of cultural diversity on literacy. Includes a service-learning component in the
local schools. Required participation in service learning. Instructor: Malone. One course. C-
L: Early Childhood Education, Ethics

152S. Civic Engagement and the Duke-Durham Partnership. CCI, EI, R, SS The impact
university-community partnerships have on the community and participating university
students. Effective models of collaboration between universities and their surrounding
communities. Whether university efforts to develop partnerships with local communities
result in meaningful social change. Includes a service-learning component in which students
turn in weekly reflections on the ethical issues and social justice concerns they encounter.
Consent of instructor required. Instructor: Ahern-Dodson. One course. C-L: Ethics

153S. Research in Service Learning. CCI, EI, R, SS Community-based research including
design, implementation, evaluation of research in community settings. Examination of
existing models of collaboration on research projects between universities and communities.
Includes student participation in community-based service learning and research, writing
about the ethical issues that emerge. Instructor: Stocking. One course.

155S. 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.

156S. 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. This course requires that students participate in a service learning
experience. Instructor: Airall. One course. C-L: Cultural Anthropology 156S

159. Educating Diverse Learners Through Community Collaboratives. CCI, EI, SS
Exploration of research-based pedagogies with an emphasis on how middle school students
learn. Role of parents and the community in the schooling process will be examined. Using
Durham as a case study, students will examine educational issues from historical, political,
economic, psychological, and social perspectives. This course requires a service learning
component. Instructor: Riggsbee. One course.

160S. 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. For Early Childhood Education Studies Certificate Students only.
Instructor: Chafe or staff. One course. C-L: Early Childhood Education
162T. Freshman-Sophomore Tutorials. 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.

163. 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. Instructor consent required. Instructor: Wynn. One course.

166. 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: EDUC 100, EDUC 118 OR EDUC 112. Instructor consent required. Instructor: Stephens. Half course.

168. 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 196K


170S. Selected Topics. Selected topics seminar. Instructor: Staff. One course.

171T. Junior-Senior Tutorials. 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.

172T. Junior-Senior Tutorials. Small group discussions of significant authors and ideas in education. Different courses indicated by letter. May be repeated. Consent of instructor required. Instructors: Staff. Half course.

185. Capstone Seminar in Latin American Studies. CCI, CZ One course. C-L: see Latin American Studies 198S; also C-L: International Comparative Studies 130ES

190S. 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: Ethics

191. 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.
192. 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.

195. 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.

For Seniors and Graduates

205S. Selected Topics. Selected topics seminar. Instructor: Staff. One course.

209. 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: Di Bona. One course.

214. 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: Wynn or Crumley. Half course.


216. Secondary Education: Internship. R Supervised internship in a teaching center in a senior high school involving some full-time teaching. Students also complete an action research project focused on an important issue in classroom teaching. For student teachers only. Consent of instructor required. Instructor: Staff. Two courses.

217S. Schooling and Social Stratification. CCI, SS One course. C-L: see Public Policy Studies 217S; also C-L: African and African American Studies 217S

220. 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.

221. 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.

270S. 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 100; Education 118; 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, carry the CCI code, and involve a field-based experience in public schools). The fourth and fifth courses are electives that must be Education courses at the 100 level or above. Only one of the five courses may be taken at an institution other than Duke.

UNIVERSITY PROGRAM FOR PREPARATION FOR TEACHING

The Duke University Teacher Preparation Programs offer 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 is required by most public school systems and is 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 (A. B. or B. S. 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 preparation program.

Interested undergraduate students may apply to the secondary school teaching program in the spring of their sophomore year or the fall of their junior 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 completion of the senior year spring semester internship, and the four-year Trinity College undergraduate degree, students may apply for licensure.

**Elementary School Teaching (A. B. or B. S. degree)**

Undergraduate students who plan to teach young children (kindergarten through grade six) 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, seminars, 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 completion of the senior year spring semester internship and the four-year Trinity College undergraduate degree, students may apply for licensure.

**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 “Pratt School of Engineering” on page 667.

**Energy and the Environment**

Professor Laursen and Professor Klein, Co-Directors

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, non-profit, 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.

Energy use is a multi-faceted 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 certificate requires three integrative courses.

**Two introductory courses:**
- Civil and Environmental Engineering 24L
- Environment 130

**One Capstone Project Course**
- Environment 190L/Engineering

In this course, teams of students explore the feasibility of a new or modified energy resources or technology. Three elective courses are also required, with one from each area (Markets and Policy, Environment, and Energy Technology) taken from the below list. The most up-to-date version of this list can be found on the program’s Web site: [http://www.nicholas.duke.edu/programs/undergrad/energycert.html](http://www.nicholas.duke.edu/programs/undergrad/energycert.html)

**CORE COURSES (required)**
- Civil and Environmental Engineering 24L. Introduction to Environmental Engineering and Science
- Earth and Ocean Sciences/Environment 130. Energy and the Environment

**ELECTIVES (one from each area)**

**Markets And Policy**
- Economics
  - 163. Economics of the Environment
- Environment
  - 149. United States Environmental Policy
  - 163. Economics of the Environment
- Public Policy Studies
  - 149. United States Environmental Policy

**Special Topics Courses Offered Periodically**
- Environment

**Environment**
- Chemistry
  - 83. Chemistry, Technology, and Society
- Civil Engineering
  - 120L. Chemical Principles in Environmental Engineering
  - 124L. Biological Principles in Environmental Engineering
- Earth and Ocean Sciences
  - 131. World Trade In Energy and Mineral Resources
  - 155. Global Warming
- Environment
  - 25. Introduction to Environmental Sciences and Policy
  - 131. World Trade In Energy and Mineral Resources
  - 160. Environmental Chemistry and Toxicology
  - 179. Atmospheric Chemistry: From Air Pollution to Climate Change

**Energy Technology**
- Mechanical Engineering
  - 121 Energy and the Environment

**Special Topics Courses Offered Periodically**
- Environment
  - 298 Energy Technology and the Environmental Impact

**CAPSTONE PROJECT COURSE (required)**
- Environment
  - 190L. Energy and Environment Design
Engineering
For courses in engineering, see “Pratt School of Engineering” on page 667.

English (ENGLISH)

Professor Tennenhouse, Chair; Associate Professor Sussman, Director of Undergraduate Studies; Professors Aers, Aravamudan, Armstrong, Baucom, Beckwith, Clum, Davidson, Ferraro, Holloway, Khanna, Moi, Pfau, Pope, Porter, Price, Quilligan, Smith, Strandberg, Tennenhouse, Torgovnick, and Wald; Associate Professors Harris, Holland, Jones, Mitchell, Moten, Moses, Psomiades, Somerset, Sussman, Tetel, Wallace, and Willis; Assistant Professors Baran and Metzger; Professor of the Practice Hijuelos; Associate Professor of the Practice Hillard; Lecturers Askounis, Carlson-Hijuelos, and Donahue; Adjunct Professors Ruderman and Wolfram; Senior Lecturing Fellow Gopen

A major or a minor is available in this department.

20. Literature and Composition. Credit for Advanced Placement on the basis of the College Board examination in literature and composition. One course.

26S. Studies in Literary Topics. ALP, W May be taken twice. Instructor: Staff. One course.

26S. Folklore And Oral Storytelling. One course.

29. Composition and Language. Credit for Advanced Placement on the basis of the College Board examination in composition and language. One course.

49BS. 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.


52. Representative American Writers. ALP, W Continuation of English 51. Selections and complete works. James, Frost or Robinson, Crane or Dreiser, O'Neill, Faulkner, Hemingway, and others. Instructor: Staff. One course.

53. Duke-Administered Study Abroad: Special Topics in English. CCI Topics differ by section. Instructor: Staff. One course.

63S. Introduction to Creative Writing. ALP, W Instructor: Staff. One course.

64S. Topics in Documentary Writing. ALP Topics in documentary writing. Selected topics. Instructor: Staff. One course.

80FCS. Focus Program Seminar on Writing or Language. Topics vary each semester offered. Instructor: Staff. One course.

81FCS. Focus Program Seminar on Literature. ALP Topics vary each semester offered. Instructor: Staff. One course.

89FCS. 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.

90AS. 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.
90BS. 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.

90CS. 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.

100AS. Writing: Fiction. ALP, W  Instruction in the writing and study of fiction. Recommended for students before they take English 103S, 104S, 201S, 202S, or 203S. Instructor: Staff. One course.

100CS. Writing: Poetry. ALP, W  Instruction in the writing and study of poetry. Recommended for students before they take English 105S or 106S. Instructor: Staff. One course.

101A. Introduction to Film (DS4). ALP  One course. C-L: see Literature 110; also C-L: Theater Studies 171, Arts of the Moving Image 101, Visual Studies 121A, Policy Journalism and Media Studies

101B. Introduction to Cultural Studies (DS4). ALP  One course. C-L: see Literature 100; also C-L: Visual Studies 121E, Arts of the Moving Image

101ES. Documentary Writing: Creative Nonfiction Through Fieldwork. ALP, R, W  One course. C-L: see Documentary Studies 111S

102S. Screenwriting. ALP, W  One course. C-L: see Theater Studies 137S; also C-L: Arts of the Moving Image 131S

103S. Introduction to Writing Short Stories. ALP, W  Intensive writing of the short story, with students completing a minimal of thirty pages of finished and presumably publishable fiction. Discussion of students' manuscripts and individual conferences with the instructor, taking into consideration questions of the aesthetics, ethics, and morality of fiction, as well as procedures for its publication. Instructor: Staff. One course.

104S. Advanced Writing: Short Stories. ALP, W  See English 103S. Recommended for, but not limited to, students who have taken English 100A. Instructor: Staff. One course.

105S. Advanced Writing of Poetry. ALP, W  Meter, image, tone, and dramatic organization in traditional and modern poems as a basis for original composition. Recommended for, but not limited to, students who have taken English 100C. Instructor: Staff. One course.

106S. The Writing of Poetry. ALP, W  See English 105S. Recommended for, but not limited to, students who have taken English 100C. Instructor: Staff. One course.

107S. Dramatic Writing. ALP, W  One course. C-L: see Theater Studies 135S; also C-L: Arts of the Moving Image

108AS. Advanced Dramatic Writing. ALP, W  One course. C-L: see Theater Studies 136S; also C-L: Arts of the Moving Image

108BS. Transforming Fiction for Stage and Screen. ALP, W  One course. C-L: see Theater Studies 138S; also C-L: Arts of the Moving Image 116S

109FCS. Special Focus Topics in Writing. ALP  Topics vary each semester offered. Open only to students in the Focus program. Instructor: Staff. One course.

109S. Special Topics in Creative Writing. ALP, W  Topics vary each semester. Instructor: Staff. One course.

110A. Introduction to Old English. 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 106A

112. 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 112

113B. The Law and Language. CCI, CZ, EI, SS One course. C-L: see Linguistics 113; also C-L: Cultural Anthropology 107A

113S. Introduction to Theoretical Linguistics. R, SS Introduction to the theoretical issues that inform the study of linguistics and languages. Topics include: history of linguistics, development of meta-language and the integration of linguistic theory with the latest findings in neuroscience and evolutionary theory. Instructor: Staff. One course. C-L: Linguistics 104S, Cultural Anthropology 102S

116AS. Scientific Writing. ALP, W Prerequisite: Writing 20. Instructor: Staff. One course.


117CS. Creative Non-Fiction: Writing for Publication. ALP, W Prerequisite: Writing 20. Instructor: Staff. One course. C-L: Policy Journalism and Media

117ES. Creative Non-Fiction: Writing Humor. ALP, W Includes analysis of works of humorous writers from several centuries; study of various comic forms and techniques. Creation of original essays. Prerequisite: Writing 20. Instructor: Staff. One course.

117FS. Creative Non-Fiction: Spiritual Autobiography. ALP, CZ, EI, W An exploration of narratives from diverse traditions and periods. Writers may include Augustine, Gandhi, Simone Weil, Thomas Merton, Malcolm X and others. Students maintain a daily journal, write weekly responses to readings, and embark on their own narratives. Prerequisite: Writing 20. Consent of instructor required. Instructor: Staff. One course.


119FCS. Focus Program Seminar on Linguistics. SS Topics vary each semester. Instructor: Staff. One course. C-L: Linguistics 140FCS

119S. Special Topics in Linguistics. CCI, R, SS Instructor: Staff. One course.

121A. 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 121A

121B. 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 121B

121C. Middle English 1100-1500. 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 Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 121C

123A. Seventeenth-Century English Literature. ALP May include work by such authors as Jonson, Donne, Tourneur, 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 123A

123B. 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.

123FD. Women Writers of the Renaissance: Spain and England. ALP, CCI, CZ One course. C-L: see Spanish 152D; also C-L: Medieval and Renaissance Studies 152D

126A. **Victorian Literature (DS3).** 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.

126B. **Victorian Poetry.** ALP Works by such poets as Tennyson, Browning, Barrett, Browning, Arnold, the Rossettis, Swinburn, Morris, and others. Satisfies Area II requirement for English majors. Instructor: Staff. One course.

127. **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.

128. **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.


129G. **Introduction to Shakespeare.** ALP, W Introduction to the major works of Shakespeare. Exploration of the author's central themes and contexts. Satisfies Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 129A

131. **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.

131S. **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.


132ES. **Topics in Nineteenth-Century British Literature.** ALP 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.

134. **The Melancholy of Art: Passages of Time in European Literature and Cinema, 1819-2000 (DS3).** ALP, CCI Nineteenth and early twentieth-century fiction, philosophy, and film as these formalize the psychological effects of history change. Instructor: Pfau. One course. C-L: German 174, Literature 151G


137. **Nineteenth-Century British Novel.** ALP Novels by such authors as Scott, Austen, Dickens, Thackeray, Trollope, the Bront's, George Eliot, Meredith, Collins, Hardy, and others. Satisfies Area II requirement for English majors. Instructor: Staff. One course.

139AS. **Special Topics in Medieval English Literature to 1500.** ALP A major author, topic, or theme of the Anglo-Saxon and Middle English periods (excluding Chaucer). Satisfies the Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 139AS
139BS. Special Topics in Seventeenth-Century English Literature. ALP A major author, topic, or theme of seventeenth-century literature. Satisfies the Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 139BS

139CS. Special Topics in Eighteenth-Century English Literature. ALP A major author, topic, or theme of eighteenth-century literature. Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

139ES. Special Topics in English Literature: 1900 to present. ALP A major author, topic, or theme of twentieth-century to present English Literature. Satisfies Area III for English majors. Instructor: Staff. One course.

140S. 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 140BS


142. Duke-Administered Study Abroad: Advanced Special Topics in English. CCI Topics differ by section. Instructor: Staff. One course.

143. Shakespeare Before 1600. ALP, EI, R Examination of twelve plays by Shakespeare written before 1600. Satisfies Area I requirement for English majors. Instructor: Staff. One course. C-L: Theater Studies 109, Medieval and Renaissance Studies 182

144. Shakespeare after 1600. ALP, EI, R Examination of ten plays by Shakespeare written after 1600. Not open to students who have taken Theater Studies 116. Satisfies Area I requirement for English majors. Instructor: Staff. One course. C-L: Theater Studies 110, Medieval and Renaissance Studies 183


147. Modernist Classics (DS4). ALP, CCI One course. C-L: see Literature 155; also C-L: Theater Studies 124

148B. 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: Pfau. One course. C-L: Sociology 148, Political Science 148, German 181, Romance Studies 148, Literature 148A, Ethics


151. 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.

152. Classics of American Literature, 1820 to 1860 (DS3). 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.

153. Classics of American Literature, 1860 to 1915. ALP, CCI, W Prose and poetry by such authors as Cather, Chesnutt, Chopin, Crane, Dickinson, DuBois, Freeman, Gilman, James, Jewett, Twain, Washington, Wharton. Satisfies Area III requirement for English majors. Instructor: C. Davidson, Jones, Wald, or Wallace. One course.


158BS. 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.

161. Special Topics in a 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.

161S. Special Topics in a Single American Author. ALP Seminar version of 161. Area requirements (Area I, II, or III) for English majors will be determined by the Director of Undergraduate Studies. Instructor: Staff. One course.

162B. American Drama and Film: 1945-1960 (DS4). ALP One course. C-L: see Theater Studies 102; also C-L: Visual Studies 128B


163BS. Studies in American Women Writers. ALP Major American women writers. Includes such areas as methods of interpretation, shaping of critical reputation, and impact of cultural movements on development of voice and literary approaches. Area requirements (Area I, II, and III) for English majors will be determined by the Director of Undergraduate Studies. Instructor: Staff. One course.

163CD. Types of Recent Fiction. ALP One course. C-L: see Literature 151HD

163ES. 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.

164A. 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 173

164B. 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 174


168S. 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.

169AS. Special Topics in American Literature to 1820. ALP Satisfies Area I for English majors. Instructor: Staff. One course.


169CS. Special Topics in American Literature: 1945 to the Present. ALP Satisfies the Area III requirement for English majors. Instructor: Staff. One course.

169E. Special Topics in American Literature IV (DS4). ALP Lecture version of 169CS. Can be counted as 1860--Present course for the diversified study requirement. Instructor: Staff. One course.

170. Special Topics in Genre (DS1/DS2,DS3,DS4, or elective) determined by Dir. of Undergrad. Studies. ALP Instructor: Staff. One course.

170S. Poetry, Medicine, and Healing Arts (DS4), 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. Instructor: Pope. One course.


171BS. Popular Fictions (DS4). ALP One course. C-L: see Literature 151BS; also C-L: Women's Studies 172S

171C. Selected Topics in Feminist Studies. ALP Satisfies the Area III requirement for English majors. Instructor: Staff. One course.

171ES. The Human Genome in Literature, Film, and the News (DS4). ALP, CZ, EI Structured around the challenges to the collective sense of what it means to be human posed by the genome sciences. Study how popular culture and mass media register and shape the public's response to social and cultural change. Special attention to how language, stories, pictures and visual technologies structure our experiences. Instructor: Wald. One course.

171GS. Existentialism Between Cultures. ALP, CCI, EI One course. C-L: see Literature 182AS

172AS. Special Topics in the History of Theory. CCI Topics 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.

172BS. Special Topics 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.

172ES. Ordinary Language Philosophy. ALP One course. C-L: see Literature 185S
173. 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.

173FCS. Focus Program Seminar on Literature. ALP Topics vary each semester offered. Open only to students in the Focus Program. Instructor: Staff. One course.

173S. 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.

176B. Theater in London: Text. ALP One course. C-L: see Theater Studies 116
176BS. Theater in London: Text (DS2, DS3, or DS4). ALP, CCI One course. C-L: see Theater Studies 116S

176C. Theater in London: Performance. ALP One course. C-L: see Theater Studies 151
176CS. Theater in London: Performance (DS4). ALP, CCI One course. C-L: see Theater Studies 151S

177. 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. C-L: International Comparative Studies 102B

178. 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.

179AS. Special Topics in Literary Genre I. ALP Satisfies the Area I requirement for English majors. Instructor: Staff. One course.

179CS. Special Topics in Literary Genre II. ALP Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

179ES. Special Topics in Literary Genre III. ALP Satisfies the Area III requirement for English majors. Instructor: Staff. One course.

179FS. Special Topics in Criticism, Theory, or Methodology. ALP Satisfies the Criticism, Theory, or Methodology (CTM) for English majors. Instructor: Staff. One course.

181. 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.

181AS. Making Media. ALP, STS 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: Staff. One course.


181C. 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 126

181E. 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 126A

181GS. Arts Management, Media, Publishing, and Cultural Policy in Durham and Research Triangle. ALP, R: Arts, media, publication, and other cultural venues in Durham and their interaction with the Research Triangle Park area more widely. Comparisons to New York and to European models. Readings such as Cultural Master Plan for Durham, Downtown Development Plan, Cultural Policy (Core Cultural Theorists series), and Selections from Critical Cultural Policy Studies: A Reader; guest speakers from the Durham area on campus; a few, selected site visits. Instructor: Torgovnick or Staff. One course.


185. Studies in Film History (DS4). ALP Close examination of a particular issue, period, national cinema, or technological development. Instructor: Clum, Gaines, or Jameson. One course. C-L: Theater Studies 172, Literature 116, Visual Studies 115A

186C. American Film Comedy. ALP One course. C-L: Arts of the Moving Image 107, Literature 120G, Visual Studies 117G


189. Special Topics in Film. ALP A lecture version of 189S. Satisfies the Area III requirement for English majors. Instructor: Staff. One course. C-L: Arts of the Moving Image

189S. 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

191. 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.

192. 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.
195T. Tutorial (DS1, DS2, DS3, DS4, 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.

197A. Critical Independent Study. ALP, R, W Open to those whose thesis will be a critical paper or piece of other research (for example, in linguistics). Consent of instructor required. Instructor: Staff. One course.

197BS. Distinction Program Sequence. ALP, W Open to those whose thesis will be in the field of creative writing. Application and consent of Program Director/instructor required. Instructor: Staff. One course.

198A. Distinction Critical Independent Study. ALP Open to those whose thesis will be a critical paper or piece of other research (for example, in linguistics). Consent of instructor required. Instructor: Staff. One course.

198B. Distinction Program Sequence: Independent Study. ALP Continuation of English 197B,S. Open to those whose thesis will be in the field of creative writing. Consent of instructor required. Instructor: Staff. One course.

For Juniors, Seniors, and Graduates

201S. 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: Pope. One course.


207A. 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 207A

212S. Special Topics is Middle English Literature: 1100 to 1500. ALP, CCI, R Selected topics. Satisfies the Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 209S

213S. 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 213S

214S. Special Topics in Seventeenth-Century Literature. ALP, R Topics vary by semester. Satisfies the Area I requirement for English majors. Instructor: Staff. One course.

215S. Linguistics and Law (DS4). SS One course. C-L: see Linguistics 213S; also C-L: Cultural Anthropology 213S

220S. Shakespeare: Special Topics. ALP, R Satisfies the Area I requirement for English majors. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 220S

221S. 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 221BS

231S. Domesticity, Gender and Realism in the Twentieth Century American Drama. ALP One course. C-L: see Theater Studies 231S

235. Special Topics in Restoration and Eighteenth-Century Literature. ALP Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

241S. Romantic Literature: 1790 to 1830. ALP Selected topics. Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

245. Special Topics in Victorian Literature. ALP Selected topics. Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

245S. Special Topics in Victorian Literature. ALP, R, W Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

250S. Music in Literature and Philosophy: 1800-1945 (DS3). ALP, CCI, R One course. C-L: see German 280S; also C-L: International Comparative Studies 280CS

251. British Literature since 1900. ALP Selected topics. Satisfies the Area III requirement for English majors. Instructor: Staff. One course.

262. American Literature to 1820. ALP Selected Topics. Satisfies the Area II requirement for English majors. Instructor: Staff. One course.

271BS. Special Topics Seminar I. ALP Seminar version of 288. 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.

271C. Selected Topics in Feminist Studies (DS3 or DS4 as determined by instructor). ALP Instructor: Staff. One course.

271CS. Special Topics Seminar III (DS3). ALP Seminar version of 288. Subjects, areas or themes that cut across historical eras, several national literatures, or genres. Can be counted as a 1660-1860 course for the diversified study requirement. Instructor: Staff. One course.

271ES. Special Topics Seminar III. ALP Seminar version of 288. 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.

271FS. 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.

272S. Wittgensteinian Perspectives on Literary Theory. ALP One course. C-L: see Literature 272S

280. Twentieth-Century Reconceptions of Knowledge and Science (DS4). ALP, STS One course. C-L: see Literature 260; also C-L: Information Science and Information Studies


288A. Special Topics I (DS1). ALP Subjects, areas, or themes that cut across historical eras, several national literatures, or genres. Can be counted as a pre-1500 course for the diversified study requirement. Instructor: Staff. One course.

288B. 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.

288C. 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.

288E. 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.

288F. Special Topics in Criticism. ALP Satisfies the Criticism, Methodology, Theory (CTM) requirement for English majors. Instructor: Staff. One course.

299S. Special Topics in Linguistics. CCI, SS 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.

For students matriculating in the fall 2010 semester and thereafter, the requirements for the major are 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:

- English 90AS. Readings in Genre
- English 90BS. Reading Historically
- English 90CS. Reading Thematically

Each student must take at least nine additional courses at the 100 level or above. Four of these courses must satisfy the following requirements:

A.) **Diversified Study**

Students must select at least one course in each of the following areas. 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)
- Area II (Eighteenth and Nineteenth Centuries)
- Area III (Modern to Contemporary)

B.) **Criticism, Theory, Methodology**

Students must select one course on criticism, theory, or methodology. The following courses satisfy this requirement: English 112 (Historical Linguistics), English 172 (Literary Theory), English 179FS (Special Topics in Criticism, Theory, or Methodology). In addition, English courses designated as CTM will satisfy this requirement.

**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

**Requirements.** Five courses at or above the 100 level; or English 90AS, 90BS, or 90CS plus four courses at or above the 100 level. One of the 100-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 111, 112, 115, 119, 205, 208, or 209), 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.

Departmental Graduation with Distinction

The graduation with distinction program is designed for the department's most serious students, whose coursework and achievements have prepared them for a sustained and significant writing project. The program consists of two courses—either independent studies taken over successive terms or a “home seminar” (see below) to be followed by an independent study. The completed honors thesis is typically a sustained, well-researched, and carefully revised piece of writing (approximately 45-70 pages or more).

Whereas the standard major in English asks for a total of ten courses, students pursuing honors in English will take nine courses plus two independent studies/seminars for the honors thesis. The department encourages students to commence with an honors project in the spring term of their junior year. Research and mentoring support may be available through the department and Trinity College during the intervening summer. Students beginning during the spring semester of their junior year will conclude their thesis project by the end of the fall term of their senior year. Alternatively, students may use both terms of their senior year to undertake an honors project.

Home Seminar. As an alternative to the independent study, students wanting to write an honors thesis should consider approaching a faculty teaching a seminar (100-level or higher) on a topic that is clearly related to their proposed thesis project. With the permission of the faculty member, the student may enroll in that seminar and, under the guidance of the instructor, conduct research and write a long chapter (approximately 35 pages) towards their thesis project rather than the standard writing assignments.

In order to be admitted to the distinction program, students must provide two copies of the following materials and meet the criteria below:

- A 3.5 or higher G.P.A. in the major
- A writing sample from an English course (approximately 10 pages)
- Application cover sheet; see http://www.duke.edu/web/english/undergraduate/forms.htm.
- A letter of recommendation from a full-time English faculty member with whom the student has taken a class; see http://www.duke.edu/web/english/undergraduate/forms.htm.
- A project description and basic bibliography (1 page single-spaced)
- Copies of these materials must be submitted both to the director of undergraduate studies and to the faculty member who is to direct the first installment of the
guided research/independent study by Nov. 15 (for a Spring-to-Fall honors project) or March 31 (for a Fall-to-Spring honors project).

Upon approval by the instructor, a copy of the completed honors thesis is to be submitted to the director of undergraduate studies by December 1 (for a Spring-to-Fall honors project) or March 10 (for a Fall-to-Spring honors project) of the senior year. The earlier deadline during the Spring term is necessary so as to ensure that all distinction projects can be considered for university-wide prizes. The director of undergraduate studies and his/her advisory committee will evaluate all honors theses and award distinction, high distinction, highest distinction, or none of these if the work is unsatisfactory. Levels of distinction are based on the quality of the completed work. Theses awarded distinction will be bound and deposited in Perkins Library. Students who have done satisfactory work in the seminars but whose thesis is denied distinction will simply receive graded credit for their seminars and/or independent studies.

The Distinction Program in Creative Writing. The Distinction Program in Creative Writing is designed for the department's best and most serious writers whose coursework at Duke has prepared them to make a sustained and successful commitment to a distinction project in creative writing. The program consists of one seminar, English 197BS, taken in the fall semester and one independent study, English 198BS, taken with the thesis advisor in the spring semester. English 197BS varies in content and format according to the interests of the instructor and students. It will provide a forum in which to discuss work-in-progress. English 198BS will involve substantial independent work toward completing the thesis, and regular conferences with the instructor.

To be eligible to apply, students must have completed, by the beginning of the senior year, at least five 100-level courses in English and must have a minimum 3.5 average in their English courses. In addition, applicants must submit a writing sample and two recommendations from members of the English Department faculty. Applicants for the Distinction Program in Creative writing will be expected to have taken preparatory coursework from Duke's creative writing faculty.

The thesis must be submitted near the end of the spring semester. Appropriate faculty will evaluate the theses and award distinction. A student who has done satisfactory work in the seminars but whose thesis is denied distinction will receive graded credit for the two-course distinction program, but not distinction. Please note that neither of the two courses may count toward the English major. Theses awarded distinction will be bound and deposited in Perkins Library.

Environmental Sciences and Policy Program (ENVIRON)

Professor Klein, Director of Undergraduate Programs

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 and 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 undergraduate directors and advisory committees representing the various areas and cooperating departments. For additional information, consult the program Web site, at www.nicholas.duke.edu/programs/undergrad.

ENVIRONMENTAL SCIENCES AND POLICY (A.B. 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 A.B. 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/humanities and sciences/engineering areas.

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 and emphasizes the connections among their courses. The program encourages close relationships between faculty and students with convergent interests.

Independent Study, Internship, or Field Experience. Students pursuing the A.B. degree complete either an independent study, internship, or a field experience related to their proposed course of study. The director's office, in collaboration with Duke's Career Center, maintains information on available internships. Field experiences may include a semester or summer session at the Duke University Marine Laboratory, participation in field-oriented study abroad programs, or studies at approved field laboratories.

ENVIRONMENTAL SCIENCES (B.S. 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 pre-medical requirements. The prerequisites for the B.S. 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 their advisor to form a concentration area.

25. 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: Christensen or Meyer. One course. C-L: Marine Science and Conservation, Energy and the Environment

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

50. Duke-Administered Study Abroad: Special Topics in Environmental Sciences and Policy. Topics differ by section. Instructor: Staff. One course.

99FCS. Topics in Environment. Topics vary semester to semester. Only open to students in the Focus Program. Consent of Instructor required. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Environmental Sciences and Policy. Topics differ by section. Instructor: Staff. One course.
101. 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 25 or consent of instructor. Instructor: Miranda. One course. C-L: Marine Science and Conservation

103D. 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 socioeconomic 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.

105S. Ethical Challenges in Environmental Conservation. EI, SS, W 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. Case studies on local and global issues, especially on the intersection of science and policy. Instructor: Vidra. One course. C-L: Marine Science and Conservation

106LS. Introductory Field Methods in Biodiversity. NS, R Biodiversity is altered by global and local environmental change. How do we assess this ecological impact? This field course introduces ecological concepts using basic field methods to investigate species interactions in our local environment. Introduction to techniques for mapping and monitoring plants and animal populations, energy exchange. Topics include how plants grow in a changing environment, impacts on plants-animals interactions, competition among species, and species diversity at the urban/rural interface. Students will learn to develop and execute a research plan and interpret their data through exercises at local field sites and a field project of their own design. Instructor: Reid. One course.

109. 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: Crowder and Orbach. One course. C-L: Biology 109, Marine Sciences, Marine Science and Conservation

110L. Ecology. NS, R Physical, chemical, and biological processes that determine the distribution and abundance of plants and animals, emphasizing physiological responses, population dynamics, species interaction, biogeography, nutrient cycling, and energy flow through food webs. Laboratory includes fieldwork. Prerequisites: Biology 25L and Mathematics 31. Instructor: Reid. One course. C-L: Biology 110L

114L. Biological Oceanography. NS, R Variable credit. C-L: see Biology 114L; also C-L: Earth and Ocean Sciences 114L, Marine Sciences, Marine Science and Conservation

115. Environment as Community. SS One course. C-L: see Sociology 115

118. Politics of Nature. EI, SS One course. C-L: see Cultural Anthropology 118
123. Analysis of Ocean Ecosystems. NS One course. C-L: see Biology 123; also C-L: Earth and Ocean Sciences 122, Marine Sciences, Marine Science and Conservation

124L. 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: Biology 25L and Physics 41L or 53L (or equivalent Introductory Biology and Physics courses) or instructor consent. Instructor: Piniak. One course. C-L: Marine Sciences, Marine Science and Conservation

125. Marine Mammals. NS, STS One course. C-L: see Biology 126; also C-L: Marine Sciences, Marine Science and Conservation

125L. Marine Mammals. NS, R, STS One course. C-L: see Biology 126L; also C-L: Marine Sciences, Marine Science and Conservation

126S. Field Methods in Earth and Environmental Sciences. NS, R, W One course. C-L: see Earth and Ocean Sciences 126S

127. Marine Megafauna. NS, STS One course. C-L: see Biology 127; also C-L: Marine Sciences, Marine Science and Conservation

128. 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.

129. 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. C-L: International Comparative Studies 103C

130. Energy and the Environment. NS, SS, STS Overview of the challenges confronting humanity as a consequence of our reliance on energy. Challenges include dwindling supplies, rising demand and environmental degradation. Realistic responses require an understanding of the complexity of the energy system, including energy resources, uses, and impacts, in the context of social, political and economic imperatives. Lectures will be augmented by presentations from guest speakers from industry, government and non-profit organizations. Instructor: Pratson. One course. C-L: Earth and Ocean Sciences 130, Energy and the Environment

131. World Trade In Energy and Mineral Resources. EI, SS, STS Exploration of the physical, economic and geopolitical flow of energy and mineral resources around the world. Topics include examination of economically important energy and mineral resources, their uses, geologic/geographic distribution, and influence on the economic and political organization of and interaction between nations. The trade of energy and mineral resources explored in light of current demand, remaining supplies, technical and geopolitical accessibility, refining and distribution systems, and pricing, as well as the environmental impacts and future challenges facing continued use of these resources. Prerequisite: Earth and Ocean Sciences 11 or 12 or Environment 25. Instructor: Pratson. One course. C-L: Earth and Ocean Sciences 131, Energy and the Environment

135. Biology and Conservation of Sea Turtles. NS, STS One course. C-L: see Biology 125; also C-L: Marine Sciences, Marine Science and Conservation
135L. Biology and Conservation of Sea Turtles. NS, STS One course. C-L: see Biology 125L; also C-L: Marine Sciences, Marine Science and Conservation
138S. Plant Diversity: a Field Approach. NS One course. C-L: see Biology 139S
139L. Marine Ecology. NS, R, W One course. C-L: see Biology 129L; also C-L: Earth and Ocean Sciences 129L, Marine Sciences, Marine Science and Conservation
140S. Science and The Media. SS, STS One course. C-L: see Public Policy Studies 141S
146S. Science and Technology Policy. SS, STS Review of major political, international, and technical factors which led to current world leadership of the United States in research and development. Examination of trends in federal and industry funding. Reasons for the federal government funding research, ways federal funds should be allocated, relationships among industry, government, and academia. Several current policy issues selected for in-depth analysis. Instructor: Ahearne. One course. C-L: Public Policy Studies 164S
149. 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. Consent of instructor required. Instructor: Gallagher, Miranda or staff. One course. C-L: Public Policy Studies 149, Health Policy, Energy and the Environment
150L. Physiology of Marine Animals. NS, R, W Variable credit. C-L: see Biology 150L; also C-L: Marine Sciences, Marine Science and Conservation
151L. 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
152S. 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 167S, Political Science 152S, Marine Science and Conservation
153S. Urban Environmental Restoration and 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 innovative design examples such as Singapore’s water conservation efforts and Freiburg, Germany’s quest to become the most sustainable city in the world. Instructor: Schauman. One course.
155L. Biochemistry of Marine Animals. NS, R, W Variable credit. C-L: see Biology 155L; also C-L: Marine Sciences, Marine Science and Conservation
159. 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. Prerequisite: an introductory statistics course. Instructor: Halpin. One course. C-L: Earth and Ocean Sciences 159

160. 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 25L; Chemistry 31L and 32L; Chemistry 151L; Mathematics 31. One course. C-L: Energy and the Environment

161. Science and Policy of Natural Catastrophes. NS, SS, STS One course. C-L: see Engineering 60; also C-L: Public Policy Studies 107

162. Natural Catastrophes: Rebuilding from Ruins. NS, SS, STS One course. C-L: see Engineering 61; also C-L: Public Policy Studies 109

163. Economics of the Environment. SS, STS One course. C-L: see Economics 163; also C-L: Health Policy, Marine Science and Conservation, Energy and the Environment

168. Biogeography in an Australian Context. NS, STS One course. C-L: see Biology 131; also C-L: Earth and Ocean Sciences 168

170. 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, one year of physics, or permission of instructor. Instructor: Hench. One course. C-L: Earth and Ocean Sciences 170, Marine Sciences, Marine Science and Conservation

171. 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 172

172S. 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. Taught at the Center for Documentary Studies using state of the art camera and audio recording equipment and methods for web and gallery exhibition. Seminar, studio, and study of photography in university archives and field trips. Consent of Instructor required. Instructor: Satterwhite. One course. C-L: Documentary Studies 172S, Marine Science and Conservation

173S. Ecosystem Ecology for a Crowded Planet. EI, NS, STS One course. C-L: see Biology 172S

174. People, Plants and Pollution: Introduction to Urban Environments. NS, STS One course. C-L: see Biology 173

175. 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
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at Beaufort.) Instructor: Orbach. One course. C-L: Marine Sciences, Marine Science and Conservation

176L. Marine Invertebrate Zoology. NS, R Variable credit. C-L: see Biology 176L; also C-L: Earth and Ocean Sciences 176L, Marine Sciences, Marine Science and Conservation

177. Conservation of Mammals: Challenges and Opportunities on Land and at Sea. NS, STS Comparison of mammalian conservation in marine and terrestrial environments. Lecture topics include introduction to ecology and conservation, current hot topics in conservation, methods and tools used in conservation research and practice, challenges and opportunities in mammalian conservation, and social conflicts that may be encountered. Students will communicate fundamental principles of conservation and field research methodology to 8th graders and reflect on the role of community outreach in conservation. Multiple field trips with 8th graders required. (Given at Beaufort.) Prerequisite: introductory biology. Instructor: Burns and Soldevilla. One course. C-L: Marine Sciences, Marine Science and Conservation

178L. Marine Ichthyology. NS, STS One course. C-L: see Biology 178L; also C-L: Marine Sciences, Marine Science and Conservation

179. Atmospheric Chemistry: From Air Pollution to Climate Change. NS, STS Integrated scientific background for the impact of humans on the natural environment. Topics covered include greenhouse gases and climate, local and regional ozone pollution, long-range pollution transport, acid rain, atmospheric particulate matter pollution, and stratospheric ozone depletion. Pre-requisites: Chemistry 31L. One course. C-L: Energy and the Environment

181. Special Topics in Environmental Sciences and Policy. Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

181S. Special Topics in Environmental Sciences and Policy. Same as Environ 181, taught as seminar. Instructor: Staff. One course.

182. Special Topics in Environmental Sciences and Policy. Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

183LS. Terrestrial Field Ecology. NS One course. C-L: see Biology 181LS

184LS. Aquatic Field Ecology. NS One course. C-L: see Biology 182LS

185. 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.

186S. Marine Science and Conservation Leadership Capstone: From Water to Washington and Back. NS, SS, STS Exploration of complex interactions among academic research, public policy and environmental management. Examination of process by which marine conservation research is translated into public policy in the United States and how policy in turn affects the marine environment. Students will lead discussions in class and online, research marine conservation and policy issues, and learn to communicate in both academic and policy-relevant language. Includes a trip to Washington D.C. Serves as capstone for the Marine Science and Conservation Leadership Certificate. Instructor: Staff. One course. C-L: Public Policy Studies 187S, Marine Sciences, Marine Science and Conservation

187. 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, Marine Science and Conservation

188L. Research Methods in Marine Science. NS, R, W One course. C-L: see Biology 188L; also C-L: Marine Sciences, Marine Science and Conservation

189. 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 119, Marine Sciences, Marine Science and Conservation

190L. 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: Pratson. One course. C-L: Energy and the Environment

191. 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


192. 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

197. South African Ecosystems and Diversity. NS, STS One course. C-L: see Biology 137

198L. Field Research in Savana Ecology. NS, R, W One course. C-L: see Biology 138L

200. Integrated Case Studies. A group of two to four students may plan and conduct integrated research projects on a special topic, not normally covered by courses or seminars. A request to establish such a project should be addressed to the case studies director with an outline of the objectives and methods of study and a plan for presentation of the results to the school. Each participant's adviser will designate the units to be earned (up to six units) and evaluate and grade the work. Instructor: Staff. Variable credit.

201. Forest Resources Field Skills. Introduction to field techniques commonly used to quantify and sample forest resources: trees, soils, water, and animal resources. Dendrology, vegetation sampling, soil mapping, river flow estimation, field water quality sampling, surveying, and use of compass. Instructor: Richter.

203. Conservation Biology: Theory and Practice. 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 socioeconomic
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 semiwild productive ecosystems like forests. Three field trips. Prerequisite: one ecology course or consent of instructor. Instructor: Pimm.

205L. Ecological Management of Forest Systems (Silviculture). The aim of the course is to equip future resource managers and environmental consultants with knowledge allowing them to propose lower impact practices to individuals and organizations who need to balance wood production with maintenance of environmental quality. Underlying principles of growth, from seed to mature trees, and stand dynamics are explored. Various alternative methods of manipulating growth, stand structure and development, ranging from little to large perturbations of forest systems, are presented and assessed in terms of their effect on resource quality. Includes laboratory. Instructor: Oren.

206. Forest Vegetation Sampling. Theory and application of forest vegetation sampling. Direct and indirect estimation methods that range from timber cruising and inventory to sampling for species composition. Laboratory applications in Duke Forest to include over- and understory vegetation. Instructor: Doggett.


207L. Forest Health Management. Fundamentals of forest fire management, entomology and plant pathology (including air pollution and chemical damage) related to understanding their impacts on forest productivity and forest management. Regional case examples and complexes are evaluated in terms of pest-population, forest-stand dynamics; economic and societal constraints; treatment strategies; monitoring systems; and benefit-cost analysis. Approach seeks to develop predictive capabilities in long range pest management and decision making. Field oriented lab focuses on diagnostics and impact analysis. Instructor: Doggett.

210. Applied Data Analysis for Environmental Sciences. QS Graphical and exploratory data analysis; modeling, estimation, and hypothesis testing; analysis of variance; random effect models; nested models; regression and scatterplot smoothing; resampling and randomization methods. Concepts and tools involved in data analysis. Special emphasis on examples drawn from the biological and environmental sciences. Students to be involved in applied work through statistical computing using software, often S-plus, which will highlight the usefulness of exploratory methods of data analysis. Other software, such as SAS, may be introduced. Instructor: Qian. C-L: Statistical Science 240, Modeling Biological Systems

211. Energy and Environment. NS, SS, STS Overview of the challenges confronting humanity as a consequence of our reliance on energy. Challenges include dwindling supplies, rising demand and environmental degradation. Realistic responses require an understanding of the complexity of the energy system, including energy resources, uses, and impacts, in the context of social, political and economic imperatives. Lectures will be augmented by presentations from guest speakers from industry, government and non-profit organizations. Instructor: Pratson.

212. 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.

213. 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.


217. 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 215, Latin American Studies

221L. Soil Resources. Emphasis on soil resources as central components of terrestrial ecosystems, as rooting environments for plants, and as porous media for water. Soil physics and chemistry provide the basis for the special problems examined through the course. Laboratory emphasizes field and lab skills, interpretive and analytical. Instructor: Richter.


231L. Models for Environmental Data. NS C-L: see Biology 268L; also C-L: Information Science and Information Studies, Modeling Biological Systems


238. 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 Certificate 238, Public Policy Studies 237
239. 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 and McMasters.

240. 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 Engineering 240

242. Environmental Aquatic Chemistry. C-L: see Civil Engineering 242

243. Respiratory Proteins and the Environment. NS C-L: see Cell Biology 243; also C-L: Marine Sciences, Marine Science and Conservation

244S. Collective Action, Environment & Development. SS C-L: see Public Policy Studies 223S

245. Economic Evaluation of Sustainable Development. EI, SS C-L: see Public Policy Studies 227


248. Solid Waste Engineering. C-L: see Civil Engineering 248

249. 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

251D. 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

256S. 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. C-L: Marine Sciences

257L. Biodiversity Science and Application. NS, R C-L: see Biology 267L

264. Applied Differential Equations in Environmental Sciences. General calculus and analytic geometry review; numerical differentiation and integration; analytic and exact methods for first and second order ordinary differential equations (ODE); introduction to higher order linear ODE, numerical integration of ODEs and systems of ODEs; extension of Euler's method to partial differential equations (PDE) with special emphasis on parabolic PDE. Example applications include population forecasting, soil-plant-atmosphere water flow models, ground water and heat flow in soils, and diffusion of gases from leaves into the atmosphere. Prerequisite: Mathematics 31 or equivalent or consent of instructor. Instructor: Katul. C-L: Modeling Biological Systems

270. Resource and Environmental Economics. SS The application of economic concepts to private- and public-sector decision making concerning natural and environmental resources. Intertemporal resource allocation, benefit-cost analysis, valuation of environmental goods and policy concepts. Prerequisite: introductory course in microeconomics. Instructor: Bennear or Smith. C-L: Economics 270, Public Policy Studies 272, Health Policy, Marine Science and Conservation

271. Economic Analysis of Resource and Environmental Policies. SS Case and applications oriented course examining current environmental and resource policy issues. Benefits and costs of policies related to sustaining resource productivity and maintaining environmental quality will be analyzed using economic and econometric methods. Topics include benefit-cost analysis, intergenerational equity, externalities, public goods, and property rights. Prerequisite: Environment 270 or equivalent; Economics 149 recommended. Instructor: Vincent. C-L: Economics 273

272. Evaluation of Public Expenditures. SS C-L: see Public Policy Studies 261; also C-L: Economics 261, Health Policy

273. Marine Fisheries Policy. EI, SS Principles, structure, and process of public policymaking 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: Orbach. C-L: Marine Sciences, Marine Science and Conservation

274. Environmental Politics. SS C-L: see Public Policy Studies 274; also C-L: Health Policy


280. 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.

282. Biogeochemistry. NS, STS One course. C-L: see Biology 272

285. Land Use Principles and Policy. SS C-L: see Public Policy Studies 285
296. 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.

298. Special Topics. Content to be determined each semester. May be repeated. Instructor: Staff. Variable credit.

298S. Special Topics. Seminar version of 298. Instructor: Staff. Variable credit.


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 and Earth Sciences.

For the A.B. 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 prerequisite to some upper-level courses in this major.

- Environment 25, Introduction to Environmental Sciences and Policy
- Biology 101L or 102L, Gateway to Biology
- Biology 26A(L) or 26B(L), Diversity of Life; or 140, Plant Diversity; or 176, Marine Invertebrate Zoology; or Environment 103D
- Chemistry 31L, Advanced General Chemistry, or equivalent
- Economics 51D, Economic Principles, or equivalent
- Earth and Ocean Sciences 11, The Dynamic Earth; or Earth and Ocean Sciences 12, The Dynamic Oceans (C-L: Biology 53)
- Mathematics 31L and 32L, Introductory Calculus, or equivalent.

Major Requirements.

1. Intermediate Core Course: Environment 101
2. Environmental Policy. One course from an approved list of environmental policy courses. Approved courses include:
   - Political Science 102. Introduction to Political Inquiry
   - Environment 152S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding
   - Environment 149/Public Policy Studies 149. United States Environmental Policy
   - Public Policy 147/Political Science 147. Environmental Politics and Policies in the Developing World
   - Political Science 148/Public Policy Studies 143. Environmental Policies Beyond Borders
   - Public Policy Studies 297/Environment 276. Marine Policy
   - Environment 273. Marine Fisheries Policy
3. Probability and Statistics. One course from an approved list dealing with statistical inference and probability theory. Approved courses include:
   - Political Science 138. Quantitative Political Analysis
Political Science 138D. Quantitative Political Analysis I  
Statistics 101. Data Analysis and Statistical Inference  
Statistics 102. Introductory Biostatistics  
Statistics 102B. Statistics in the Courtroom  
Statistics 103. Probability and Statistical Inference  
Statistics 113. Probability and Statistics in Engineering  
Economics 139. Introduction to Econometrics  
Psychology 117. Statistical Methods

4. **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.env.duke.edu/programs/undergrad/ab-es-reqs.html](http://www.env.duke.edu/programs/undergrad/ab-es-reqs.html). One course must be either an upper-level seminar, a senior capstone course, or a 200-level course. 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.

5. **Independent Study/Internship/Field Experience**: Students complete an approved independent study, internship, or field experience which may or may not include course credit toward upper-level requirements. A letter must be submitted to the director of undergraduate studies from the faculty member, advisor, or supervisor verifying completion of the requirement.

**Focused Study in Marine Science and Policy**

An exciting area in environmental science and policy is the study of the oceanic realm, including the ecology of marine animals and plants, the dynamics of marine ecosystems, marine policy and management, and environmental monitoring. Majors in environmental science and policy may fulfill much of their focused study requirement with courses in marine science and policy by studying at the Duke Marine Laboratory on the coast in Beaufort, NC, which often includes fieldwork excursions to other areas of the world (e.g., Hawaii, Trinidad, Singapore). Popular courses include: Marine Mammals; Marine Ecology; Marine Policy; Biology and Conservation of Sea Turtles; Urban Tropical Ecology (see full course listings at: [www.nicholas.duke.edu/marinelab/programs](http://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.

**For the B.S. 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 101L or 102L, Gateway to Biology
- Chemistry 31L and either Chemistry 32L or 151L or equivalents. Advanced General Chemistry
- Physics 41L and 42L; or Physics 51L and 52L; or Physics 53L and 54L (Chemistry 151L may be substituted for the second semester of Physics)
- Mathematics 31L and 32L, or equivalent. Introductory Calculus
- Environment 25. Introduction to Environmental Sciences and Policy, or Earth and Ocean Sciences 11. The Dynamic Earth, or Earth and Ocean Sciences 12. The Dynamic Oceans (C-L: Biology 53)

**Major Requirements**

1. Five Core Courses selected from the following six courses or course lists:
   A. The Fluid Earth (Earth and Ocean Sciences 102)
   B. Environmental Chemistry and Toxicology (Environment 160)
C. History of the Earth (Earth and Ocean Sciences 107L)
D. Hydrogeology (Earth and Ocean Sciences 123)
E. One course from an approved list of ecology courses. Approved course list includes:
   Environment/Biology 110. Ecology
   Biology 116. Ecology and Evolution
   Biology 129L/Environment 139L. Marine Ecology
   Biology 114L/Environment 114L. Biological Oceanography
   Biology 123/Environment 123. Analysis of Ocean Ecosystems
F. One course from an approved list of courses that focus on the interface between humans and the environment. Approved course list includes:
   Environment 101. Introduction to Environmental Sciences and Policy
   Environment 103D. Conserving the Variety of Life on Earth
   Environment 149/Public Policy Studies 149. United States Environmental Policy
   Biology 109. Conservation Biology and Policy (Beaufort)
   Economics 163. Economics of the Environment.
   Philosophy 115. Applied Environmental Ethics
2. Probability and Statistics (Statistics 101, 102, 103, or equivalent)
3. 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.

Focused Study in Marine Science
An exciting area in environmental science is the study of the oceanic realm, including the ecology of marine animals and plants, the dynamics of marine ecosystems, marinetoxicology and environmental monitoring. Majors in environmental science and may fulfill their focused study requirement with courses in marine science by studying at the Duke Marine Laboratory on the coast in Beaufort, NC, which often includes fieldwork excursions to other areas of the world (e.g., Hawaii, Trinidad, Singapore). Popular courses include: Marine Mammals; Marine Ecology; Biological Oceanography; Analysis of Ocean Ecosystems; Biology and Conservation of Sea Turtles; Urban Tropical Ecology (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.

THE MINOR
Environmental Sciences and Policy
Requirements: Five courses: two core courses (Environment 25 and Environment 101); the remaining three courses selected from 100-level or above Environment courses, which may include one substitution of a course in another department.

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 faculty evaluation committee, consisting of a primary faculty advisor who has agreed to supervise the research, and two additional faculty members. Participants write a substantial paper describing their completed research, which is evaluated by the faculty committee. For additional information and an application form, contact the director.
Note: Students may not use more than six professional school course credits toward the Bachelor of Arts or Bachelor of Science degree. This six-course restriction applies to all courses offered through the Business School, the Divinity School, the Law School, the Medical School, the Pratt School of Engineering, and any Environment courses at or above the 200 level in the Nicholas School of the Environment and Earth Sciences.

Study of Ethics (ETHICS)

Visiting Professor Brown, 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 such as those found within the disciplines of philosophy and theology, as well as a sense of how ethical issues have been framed across history and cultures, and how ethical challenges are being conceptualized and negotiated in practice by policy-makers, researchers, doctors, journalists and others. But 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. That is why certificate students are required to take one course each in philosophical ethics, practical ethics, religious ethics, and ethics in historical and cultural context in addition to the introductory course and the capstone research seminar. The additional two EI (Ethical Inquiry) courses required provide an opportunity for students to concentrate in one of these areas. Since a serious student of ethics needs to be part of a community of concern and inquiry, to create and sustain such a community, the program includes intellectual/social occasions for each cohort, providing supplementary advising and special opportunities to meet as a group with visitors sponsored by the Kenan Institute.

Eight courses are required for completion of the certificate program:

- Ethics 100D. The Challenges of Living an Ethical Life (introductory course)
- One course in Philosophical Ethics from the list below of approved courses
- One course in Practical Ethics from the list below of approved courses
- One course in Religious Ethics from the list below of approved courses
- One course in Ethics in Historical and Cultural Context from the list below of approved courses
- Two additional courses with an EI (Ethical Inquiry) designation (approval required)
- Capstone Research Seminar in Ethics.

The Ethics Certificate curriculum is currently under revision. For a complete current course listing, visit: [http://Kenan.ethics.duke.edu/education/ethics-certificate-program/curriculum/](http://Kenan.ethics.duke.edu/education/ethics-certificate-program/curriculum/).

ETHICS COURSES

90FCS. 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.

99FCS. The Limits of Obligation? World Refugee Policy and International Law. CCl, EI, SS One course. C-L: see Sociology 99FCS

100D. 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 107D

115. Applied and Environmental Ethics. CZ, EI, STS One course. C-L: see Philosophy 115; also C-L: Marine Sciences, Marine Science and Conservation

129FCS. Acting Globally, Thinking Normatively. EI, SS One course. C-L: see Philosophy 129FCS

150. Feminist Ethics. CCI, EI, SS One course. C-L: see Women's Studies 167

150S. Feminist Ethics. CCI, EI, SS One course. C-L: see Women's Studies 167S

161. The Arts And Human Rights. ALP, EI, SS One course. C-L: see Cultural Anthropology 161C; also C-L: Music 131, Political Science 162D, Public Policy Studies 196E

166S. Civic Engagement: Reflection & Transformation. CCI, CZ, EI, SS One course. C-L: see Religion 163S; also C-L: Public Policy Studies 196IS

170. Business Ethics: The Debate Over Corporate Social Responsibility. EI, SS One course. C-L: see Philosophy 170; also C-L: Markets and Management Studies

180. Special Topics in Ethics. EI, SS Topics vary. One course.

190FCS. Special Topics in FOCUS. EI Topics vary. Topics course. Instructor: Staff. Half course.

192. 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 to be substantive work or written report containing significant analysis and interpretation of a previously approved topic. Instructor: Shanahan. One course.

200. 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.

202S. 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 world-wide. Instructor: Pickus. One course. C-L: Political Science 225S, Sociology 202S, Public Policy Studies 203S

280S. Special Topics in Ethics. EI Topics vary. Instructor: Staff. One course. C-L: Global Health Certificate 279S

PHILOSOPHICAL ETHICS

Students must take one course from the following list that provides an overview of systematic approaches to moral philosophy.

Regularly Scheduled Courses

**Philosophy**

107. Political and Social Philosophy

117. Ancient and Modern Ethical Theory

**Political Science**

123. Introduction to Political Philosophy

**Special Topics Courses Offered Periodically**

**Philosophy**

116. Systematic Ethics
Students must choose a course from the following list either for its relevance to applied ethics in the professions or to contemporary public policy issues.

**Regularly Scheduled Courses**

**Classical Studies**
- 157D. Ancient Political Theory
- 203. Ancient Political Philosophy

**Economics**
- 103. Prisoner's Dilemma and Distributive Justice

**Education**
- 100. Social and Philosophical Foundations of Education
- 108S. Teaching Practices in Elementary Language Arts and Social Studies
- 112S. Children, Schools and Society
- 118. Educational Psychology
- 137. Contemporary Issues In Education
- 149S. Women and the Professions
- 151S. Literacy and Service Learning
- 152S. Civic Engagement and the Duke-Durham Partnership
- 190S. Secondary School Issues: Pedagogy, Culture, and Methods

**Engineering**
- 108S. Ethics in Professions: Scientific, Personal and Organizational Frameworks

**Human Development**
- 180. Psychosocial Aspects of Human Development

**Philosophy**
- 106. Philosophy of Law
- 118. Philosophical Issues in Medical Ethics
- 123FCS. Introduction to Political Philosophy
- 146. Prisoner's Dilemma and Distributive Justice
- 162. Human Rights in Theory and Practice

**Political Science**
- 103. Prisoner's Dilemma and Distributive Justice
- 104. Politics and Literature
- 109. Left, Right, and Center: Competing Political Ideals
- 109D. Left, Right, and Center: Competing Political Ideals
- 123D. Introduction to Political Philosophy
- 123FCS. Introduction to Political Philosophy
- 126. Theories of Liberal Democracy
- 128. Multiculturalism and Political Theory
- 131. Introduction to American Political Thought
- 147D. Environmental Politics and Policies in the Developing World
- 150D. Ancient Political Theory
- 159. Ambition and Politics
- 162. Human Rights in Theory and Practice
- 175BS. Distributive Justice
- 183. Ecological Crisis and Political Theory
- 186. Civilians in Path of War
- 188. Comparative Health Care Systems
- 218S. Political Thought in the United States
- 223. Ancient Political Philosophy
- 224S. Modern Political Theory
- 229S. Contemporary Theories of Liberal Democracy

**Psychology**
- 108A. Educational Psychology
- 130. Psychosocial Aspects of Human Development

**Public Policy Studies**
- 109S. Children, Schools and Society
- 116. Policy Choice as Value Conflict
- 126. Information, Policy, and Ethics
- 136. Civic Participation and Community Leadership
- 144S. Social Enterprise Development
- 145. Leadership, Policy, and Change
- 147D. Environmental Politics and Policies in the Developing World
162. Human Rights in Theory and Practice
175. Distributive Justice
178. Comparative Health Care Systems

**Sociology**
130S. Women and the Professions
169. Psychosocial Aspects of Human Development
171. Comparative Health Care Systems

**Special Topics Courses Offered Periodically**
African and African American Studies
299. Economics of Reparations
Economics
295. Economics of Reparations
Public Policy Studies
264. Ethics and International Relations
264. Responsible Genomics
264. Human Rights
264. Economics of Reparations
Political Science
2005. Ethics and International Relations

**Theater Studies**
129S. Ethical Stages

**RELIGIOUS ETHICS**

Students must take one course from the following list that familiarizes them with the religious foundations of ethical thought, so that they learn how ethical questions are addressed within religious traditions and the ways in which the relationship between the human and sacred frame ethical inquiry judgment and practices.

**Cultural Anthropology**
164S. The Anthropology of Hinduism: From Encounter to Engagement

**History**
156A. The Reformation of the Sixteenth Century
156B. History of the Christian Church

**International Comparative Studies**
120A. Taoism and Chinese Religion
141C. Jewish Mysticism
141E. Islamic Mysticism: Perso-Indian (Eastern) Traditions
181H. The Reformation of the Sixteenth Century

**Jewish Studies**
100. The Old Testament/Hebrew Bible
106. Jewish Mysticism
118. Jewish Ethics

**Medieval and Renaissance Studies**
134C. Jewish Mysticism
156A. The Reformation of the Sixteenth Century

**Religion**
100. The Old Testament/Hebrew Bible
107A. Taoism and Chinese Religion
108. The Life and Letters of Paul
111. The Historical Jesus
115BS. Buddhist Ethics
116A. Gender and Morality: Indian Perspectives
118. Jewish Ethics
120. History of the Christian Church
124. Religion in American Life
134. Jewish Mysticism
152B. Islamic Mysticism: Perso-Indian (Eastern) Traditions
158. The Reformation of the Sixteenth Century
164S. The Anthropology of Hinduism: From Encounter to Engagement
167. Ethics in South Asia
168S. Muslim Ethics and Islamic Law: Issues and Debates
184. Religion and Film
186. The Theology and Fiction of C. S. Lewis
Women's Studies
112. Gender and Morality: Indian Perspectives

ETHICS IN HISTORICAL AND CULTURAL CONTEXT
Students must take one course from the following list that explores how ethical ideas, visions, and practices change over time and across cultures; how historical crises have been a consequence or cause of symptom or substance of crises in ethical life and thought.

Regularly Scheduled Courses

African and African American Studies
113B. Europe's Colonial Encounter, 1492-1992
163. The Civil Rights Movement

Art History
168. Experimental Art and Its Ethics since 1945

Cultural Anthropology
147. Introduction to Islamic Civilization
148. Introduction to Islamic Civilization
163BS. Environment, Health and Development in China

English
148B. Secularization and Modernity: Cross-Disciplinary Readings 1750-1914

German
170. The Devil's Pact: Faust and the Faust Tradition

Global Health Certificate
173S. Environment, Health and Development in China

History
101G. Introduction to Islamic Civilization
102G. Introduction to Islamic Civilization
113B. Europe's Colonial Encounter, 1492-1992
134C. Jewish History, 1492 to the Present
163E. The Civil Rights Movement
188A. Genocide in the Twentieth Century
228S. Twentieth Century Social Movements in America

International Comparative Studies
101A. Experimental Art and Its Ethics since 1945
121JS. Environment, Health and Development in China
141A. Introduction to Islamic Civilization

Jewish Studies
147. Jewish History, 1492 to the Present

Literature
133B. Experimental Art and Its Ethics since 1945
163G. The Devil's Pact: Faust and the Faust Tradition

Medieval and Renaissance Studies
146A. Introduction to Islamic Civilization
147A. Introduction to Islamic Civilization

Philosophy
163. Chinese Philosophy

Political Science
100G. Environment, Health and Development in China

Religion
146. Introduction to Islamic Civilization
147. Introduction to Islamic Civilization

Sociology
141. Consuming Passions

Women's Studies
177. Experimental Art and Its Ethics since 1945

Special Topics Courses Offered Periodically

History
196S. Political Violence and the Ethics of Liberty
Evolutionary Anthropology (EVANTH)

Associate Professor Pusey, Chair; Professor of the Practice Digby, Director of Undergraduate Studies; Professors Glander, Kay, Myers (biomedical engineering), Smith (biology), Terborgh (biology), Yoder (biology), and Wray (biology); Associate Professors Alberts (biology), Brannon (Psychology), Churchill, Drea, Major (radiology and surgery), Pratt (neuroscience), Roth (biology), Schmitt, and Taylor (physical therapy); Assistant Professor Hare; Professors Emeriti Hylander and Simons; Research Professor Cartmill; Associate Research Professor Wall; Associate Professor of the Practice Digby; Adjunct Professor van Schaik; Adjunct Associate Professor Ankel-Simons, Brockman, Brown, Lambert, and Williams; Adjunct Assistant Professors Bergl and Rasmussen; Adjunct Assistant Research Professor Chatrath; Adjunct Senior Research Scientist Brink; Research Scientists Pope and Struhsaker; Research Associates Carreno, Griffen, Horvath, and Madden

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 have three general focuses: primate behavior, ecology, and cognition; primate paleontology; and functional and comparative anatomy. Significant opportunities for independent research are found at the Duke Lemur Center, which houses a unique and diverse range of nonhuman primates, especially prosimians from Madagascar. Advanced students can study original fossils and casts at the division of fossil primates (Duke Lemur Center) and in the department's laboratories, which also afford opportunities to study comparative anatomy from an adaptive and evolutionary perspective.

40. Next of Kin: Understanding the Great Apes. NS, STS Survey of ape (gibbons, orangutans, chimpanzees, bonobos, and gorillas) morphology, ecology and behavior. Topics include evolutionary history, locomotion, social interactions, mating systems, reproduction, parental care, infanticide, medicinal use of plants, cooperative hunting, alliances, warfare, conflict resolution, and cross-species measures of intelligence. Intended for non-majors. Instructor: Digby or staff. One course.

45. How We Once Did Things. NS, STS The body-machine interface in human history and prehistory. How biological factors have determined the use of tools and weapons, designed clothing, shelters, and water-craft, domesticated animals and arranged farms and cities. Intended for nonmajors and majors. Instructors: Churchill and Vogel. One course.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

51. 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.


80FCS. Focus Program Special Topics. NS Special topics seminar open only to students in the Focus Program. Instructor: Staff. One course.

93. 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. One course.

**93D. 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. Lecture is the same as Evolutionary Anthropology 93, but adds a 50 minute discussion section with hands-on access to fossil casts, etc. Instructor: Staff. One course.


**108. Introduction to the Evolution of Human Culture, Behavior and Institutions.** CCI, CZ, SS One course. C-L: see Philosophy 108

**111. 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 111

**120. 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. Instructor: Glander. One course.

**122. 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 93 or Psychology 92. Instructor: Hare. One course. C-L: Psychology 129

**131S. 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.

**132. 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 93 or equivalent. Instructor: Churchill or staff. One course.

**132S. Human Evolution Seminar.** NS, W A writing-intensive seminar version of Evolutionary Anthropology 132. Prerequisite: Evolutionary Anthropology 93 or equivalent. Instructor: Churchill or Staff. One course.

**133L. The Human Body.** NS Human gross anatomy seen from a functional and evolutionary perspective. Laboratory involving study of prospected cadavers and other anatomical preparations. Prerequisite: Evolutionary Anthropology 93. Not open to students who have taken Evolutionary Anthropology 150 Instructor: Wall or staff. One course.
134L. Anthropology of the Skeleton. 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 (archeological treatment of burials; determination of gender, populational affinities, stature; paleopathological analysis; medicolegal applications). Prerequisite: Evolutionary Anthropology 93 or Biology 25L. Instructor: Churchill or Staff. One course.

135. 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 93 and 133L or 134L. Instructor: Churchill or Staff. One course.

136. 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. Prerequisite: Evolutionary Anthropology 93 or Biology 25L. Instructor: Staff. One course.

137. 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 archeological and fossil evidence for the evolution of human subsistence behavior. Prerequisite: Evolutionary Anthropology 93 or Biology 25L. Instructor: Churchill. One course.

143. Primate Ecology. NS, R The study of ecology using primates as examples. Primate diversity and biogeography; dietary specializations, use of space; plant-animal interactions, community ecology; the concept of the niche and methods used in ecology. The basics of human ecology and the role of ecology in conservation. Includes occasional labs. Prerequisite: Evolutionary Anthropology 93 or Biology 25L. Instructor: Digby or staff. One course.

144L. 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; writing of formal research papers. Prerequisite: Evolutionary Anthropology 93 or Biology 25L. Instructor: Digby. One course.

146. 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 93 or Biology 25L. Instructor: Digby. One course.

146S. Sociobiology Seminar. NS, STS Sociobiological theory reviewed and applied to the social behavior of nonhuman primates, hominids, and humans. A seminar version of Evolutionary Anthropology 146. Prerequisite: Evolutionary Anthropology 93 or Biology 25L. Instructor: Digby. One course.

147. 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.

150. Human Anatomy. NS Survey of human anatomy in lecture format. Focus on evolutionary and functional approach to anatomy. Occasional visits to the Gross Anatomy Lab. Prerequisite Evolutionary Anthropology 93; not open to students who have taken Evanth 133L. Instructor: Staff. One course.


156. 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 100-level statistics course. Instructor: Wall. One course.

171. 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 and Anatomy 93(D) or Biology 25L. Instructor: Drea. One course.

172L. Primate Anatomy. NS The comparative anatomy of primates from the perspective of adaptation and phylogeny. Laboratory includes some dissection or prospection of human and nonhuman primates. Prerequisite: Evolutionary Anthropology 93. Instructor: Williams. One course.

173L. 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 93. Instructor: Williams. One course.

180. Current Issues in Evolutionary Anthropology. NS Selected topics in methodology, theory, or area. Instructor: Staff. One course.

180L. Current Issues in Evolutionary Anthropology. NS Same as Evolutionary Anthropology 180 except in laboratory format. Instructor: Staff. One course.

180S. Current Issues in Evolutionary Anthropology. NS Same as Evolutionary Anthropology 180 except in seminar format. Instructor: Staff. One course.

182S. Thought in Action: The Origins of Human Tool Use (B, C). NS, R, SS, STS One course. C-L: see Psychology 144S

183S. 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.

184S. Primate Conservation. EL, 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 93 recommended. Instructor: Staff. One course.

192. 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. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

193. Research Independent Study. 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 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.

For Seniors and Graduates

222S. Topics in 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.

234L. 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.

238S. 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: 100-level anatomy or morphology course and consent of instructor. Instructor: Williams. One course.

240S. Hominid Socioecology. NS, R Analysis of how socioecological studies of human foragers and nonhuman primates can inform the interpretation of the hominid fossil/archaeological record. Summary of documented historical changes during hominid evolution, and identification of approaches required to develop testable reconstructions. Models for the evolution in hominids of bipedalism, ranging and foraging, hunting, food sharing, intersexual relationships and sexual division of labor, communication (including language), culture, technology, life history, parental care, and social organization, as well as their mutual relationships. Prerequisite: Evolutionary Anthropology and Anatomy 93(D) and 132. Instructor: Staff. One course.

243S. Comparative Primate Ecology. NS, R Advanced readings and discussion of current papers and monographs in primate ecology with special emphasis on comparative studies. Prerequisites: Evolutionary Anthropology 93, 100-level ecology course. Instructor: Glander. One course.

244L. 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 93; 100-level behavior or ecology course. Instructor: Glander. One course.
245S. **Primate Social Evolution.** NS, R Ecological determinants of, and biological constraints on, social strategies and systems, with an emphasis on primates. Prerequisite: Evolutionary Anthropology 93 and 100-level behavior course. Instructor: Staff. One course.

246. **The Primate Fossil Record.** NS A survey of fossil primates including early humans. The diversity, anatomy, and behavior of primates as related to the origin and spread of past primates. The radiation of each main group of primates in the succession leading to humans illustrated with slides, casts, and fossils. Topics include geochemical dating, timing of molecular clocks, and various procedures for classifying primates. Prerequisite: Evolutionary Anthropology 93 and 100-level paleontology or anatomy course. Instructor: Simons or Staff. One course.

247. **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 hominid paleontology. Prerequisite: Evolutionary Anthropology 93 and 132, or consent of instructor. Instructor: Simons or Staff. One course.

274. **Genomic Perspectives on Human Evolution.** NS, R, STS One course. C-L: see Biology 274; also C-L: Genome Sciences and Policy

280L. **Special Topics Laboratory.** NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

280S. **Seminar in Selected Topics.** NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

281L. **Special Topics Laboratory.** NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

281S. **Seminar in Selected Topics.** NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

287S. **Macroevolution.** NS One course. C-L: see Biology 287S

289L. **Comparative Mammalian Anatomy.** NS A practical survey of anatomical diversity in mammals. An emphasis on dissections of a broad variety of mammals. A broader perspective on specific anatomical features provided in the lectures. Consent of instructor required. Instructor: Staff. One course.

292. **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.

293S. **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 propososals, 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.

**THE MAJOR**

For the A.B. Degree

Prerequisite. Evolutionary Anthropology 93 or 93D.

Corequisite. Biology 102L.

Major Requirements. Nine courses are required (not including the above prerequisite) of which eight courses must be 100-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 pre-approved list of electives or with pre-approval 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 B.S. Degree

**Prerequisite.** Evolutionary Anthropology 93 or 93D.

**Corequisites.** Biology 101L and 102L; Chemistry 31L and 151L; Mathematics 31; Physics 53L; introductory statistics (any level). Equivalent courses can be approved by the director of undergraduate studies.

**Major Requirements.** Eight courses numbered 100 or above are required (not including the above corequisites) of which one course must be a capstone course (see pre-approved 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 pre-approved 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. Students who choose to pursue a concentration must complete all of the requirements for the A.B. or the B.S. degree and the following requirements (the courses listed below would count toward three of the five required Evolutionary Anthropology courses). Note that students can petition to use special topics courses (Evolutionary Anthropology 180 or 280) as appropriate for a given concentration.

1. **Anatomy and Paleoanthropology Concentration**
   **Requirements.** Three courses from the following list: Evolutionary Anthropology 131S, 132 (S), 133L, 134L, 135, 136, 147, 150, 151, 172L, 173L, 208LS, 234L, 238, 239L, 240, 246, 247, 248S, 287S, 289L.

2. **Behavior, Ecology, and Cognition Concentration**
   **Requirements.** Three courses from the following list: Evolutionary Anthropology 108, 120, 122, 137, 143, 144L, 146(S), 171, 182S, 183S, 184S, 222, 243S, 244L, 245S.

**Departmental Graduation with Distinction**

To qualify for the graduation with distinction program, students must have a G.P.A. 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 Evolutionary Anthropology 193, 292, or 293. 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 93 or 93D; one course in primate/human paleontology or anatomy; one course in primate behavior or ecology; two elective courses numbered 100 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 188.

Film/Video/Digital

See “Arts of the Moving Image (AMI)” on page 163.

Focus Program (FOCUS)

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.

99FCS. 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 “Romance Studies (ROMST)” on page 582.

Genetics

See the Program in Genetics and Genomics in “Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates” on page 453, and the information under “Biology (BIOLOGY)” on page 188 about the Biology Major and Minor with a concentration in Genetics.

Genome Sciences and Policy (GENOME)

Professor Willard, Director

A certificate, but not a major, is available in this program.

The Genome Sciences and Policy Certificate Program provides a coherent course of study within the comprehensive 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 perceptions and approaches taken by various disciplines to the study of genomics, the Genome Sciences and Policy Certificate Program will cultivate the interdisciplinary perspectives necessary to address current and future implications for science, health, and society. The Genome Sciences and 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 (5) courses and two research experiences (at least one of which is credit-bearing):

• Genome Sciences and Policy Certificate Program core course (Genome 48/Biology 48/Public Policy 48 or Genome 148 when appropriate);
• Three elective courses from the lists below, with at least one course chosen from
the Genome Ethics/Law/Policy elective course list and taking into account that no more than three courses for the certificate may originate in any one department;
• Two 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 198S capstone course to be taken in the senior year.
No more than two courses that are counted toward this certificate may satisfy the requirements of any major, minor, or other certificate program.

One course. C-L: see Biology 48; also C-L: Marine Science and Conservation

98FCS. 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. C-L: Genome Sciences and Policy

138S. 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 133S, Genome Sciences and Policy

148. Genome Sciences and Society. EI, NS, SS, STS
Parallels Genome 48. 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 101L/102L or Biology 194FCS or consent of instructor. Instructor: Willard or staff. One course. C-L: Biology 148

158S. 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 159S, Genome Sciences and Policy

178S. Special Topics in Social Impacts of Genomics. Topics in social impacts of genomics. Topics will vary. Instructor: Staff. One course. C-L: Genome Sciences and Policy

188S. Special Topics in Genome Sciences. Topics in genome sciences and policy. Instructor: Staff. One course. C-L: Genome Sciences and Policy

191. Research Independent Study. R
Individual research in a genome sciences and/or 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 significant analysis and interpretation of a previously approved topic. Meets the research experience requirement for the Certificate in Genome Sciences and Policy as well as the general requirement of a curriculum research (R). Open to all qualified students with consent of supervising instructor and IGSP Director of Undergraduate Studies. May be repeated. Instructor: Staff. One course.
198S. Genome Sciences and Policy Capstone. EL, 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: Willard or staff. One course.

PROGRAM COURSES

Genome Ethics/Law/Policy Elective Courses

African and African American Studies
159S. Race, Genomics, and Society

Biology
174. Philosophy of Biology

Computational Biology and Bioinformatics
212. Responsible Genomics

Information Science and Information Studies
270. Body Works: Medicine, Technology, and the Body in Early Twenty-first Century America

Literature
262. Body Works: Medicine, Technology, and the Body in Early Twenty-first Century America

Philosophy
95FCS. The Human Enhancement Project: Ethical Issues in Genomics
114. Philosophy of Biology
118. Philosophical Issues in Medical Ethics
270. Body Works: Medicine, Technology, and the Body in Early Twenty-first Century America

Public Policy Studies
133S. Influential Scientists and Policy Leaders in Science Policy
240. Responsible Genomics

Genome Sciences Elective Courses

Biology
147. Systems Biology: An Introduction for the Quantitative Sciences
187. Evolutionary Genetics and Genomics
194FCS. Genomes, Biology and Medicine
271L. Genomics Laboratory
274. Genomic Perspectives on Human Evolution
278S. Genetic Basis of Behavior
280S. Genetic Engineering and Biotechnology
289S. Advanced Topics in Genome Science Research

Biomedical Engineering
258L. Genome Science & Technology Lab (GE, MC)

Computational Biology and Bioinformatics
220. Genome Tools and Technologies
222. Genome Science & Technology Lab (GE, MC)
241. Statistical Genetics
262. Computational Systems Biology

Computer Science
4FCS. Introduction to Computational Genomics and Computer Science
160. Introduction to Computational Genomics
262. Computational Systems Biology

Evolutionary Anthropology
274. Genomic Perspectives on Human Evolution

Philosophy
238S. Problems in the Philosophy and Policy of Genomics

Psychology
203S. Genetics and Environment in Abnormal Behavior
215S. Developmental Behavior Genetics

Statistics and Decision Sciences
271. Statistical Genetics
SPECIAL TOPICS COURSES OFFERED PERIODICALLY

Genome Ethics/Law/Policy Elective Courses

**English**
173. New Media, Literature, and Genes
173. Evolution in Science and Culture

**Philosophy**
291S. Ethics of Biotechnology Policy
291S. Political Philosophy and Public Policy in Genomics

**Public Policy Studies**
81FCS. Social & Political History of Genomics
196S. Science in the Media

**Religion**
89FCS. American Protestantism, Scientific Progress, National Identity

Genome Sciences Elective Courses

**Biomedical Engineering**
265. Model and Engineering Gene Circuits

**Biology**
49S. Biotechnology and the New Genetics
194FCS. Genomics, Biology, and Medicine

Germanic Languages and Literature (GERMAN)

Associate Professor Donahue, Chair; Assistant Professor Norberg, Director of Undergraduate Studies; Assistant Professor of the Practice Kahnke, Director of the Language Program; Professors Pfau, Rasmussen; Associate Professors Donahue, Morton; Assistant Professor Norberg; Professors Emeriti Alt and Rolleston; Assistant Professor Emerita Bessent; 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; Post-doctorate Lecturing Fellow Gellen;

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 (see the section below for Courses Taught in English).

COURSES TAUGHT IN GERMAN

1. **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.

2. **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.

14. **Intensive First-Year German. FL** Intensive introduction to German language and culture. Combines in one semester the work of German 1-2. Designed for students with some prior knowledge of German. Consent of instructor required. Instructor: Staff. Two courses.

15. **Intensive First-Year German. FL** Intensive introduction to German language and culture. Combines in one semester the work of German 1-2. Taught only in the Duke-in-Berlin Fall Semester Program. Instructor: Staff. Two courses.

60. **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 1 and 2 (or equivalent). Enrollment in German 65 or 66 encouraged but not necessary. Does not satisfy the foreign
language requirement, or requirements for German major/minor. Instructor: Staff. Half course.

65. 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 1-2, 14, or equivalent. Instructor: Staff. One course.

66. Intermediate German II. CZ, FL (See description of German 65 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 65, or appropriate placement test score, or consent of instructor. Instructor: Staff. One course.

67. 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 1-2, 14, or equivalent. Instructor: Staff. Two courses.

68. 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 2, 14, or equivalent. Instructor: Staff. One course.

69. 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 65 and 66.) Prerequisite: German 1-2, 14, or equivalent. Instructor: Staff. Two courses.

76. 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 65 or equivalent. Taught in the Duke Summer in Berlin program. One course.

99. Advanced Placement in German. One course credit for Advanced Placement in German. One course.

100S. 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.

110. 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 66 (or equivalent). Does not satisfy the foreign language requirement, or requirements for German major/minor. Instructor: Staff. Half course.

115S. 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 66 or equivalent.
May substitute for German 117S or 118S to fulfill major requirement. Taught only in the Duke Summer in Berlin program. Instructor: Staff. One course.

**117S. 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.

**118S. 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 117S or equivalent. Instructor: Staff. One course.

**119S. 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 66, 67, 69, or equivalent. Fulfills major requirement for German 117S and German 118S. Instructor: Wohlfeil. Two courses.

**121S. Introduction to German Literature I. ALP, CCI, FL** Principal authors, genres, concepts, and works of German literature: Middle Ages to the Baroque. Instructor: Morton or Rasmussen. One course. C-L: Medieval and Renaissance Studies 111ES

**122S. Introduction to German Literature. ALP, CCI, FL** Continuation of German 121S: Enlightenment to the present. Instructor: Donahue, Morton, or Norberg. One course.

**126S. Masters of the Modern: Great Writers of the 20th Century. ALP, FL, W** Studies in four giants of twentieth-century German literature: Rilke, Kafka, Mann, and Hesse. May also include short works by Bertolt Brecht and Nobel prize winners Heinrich Böll and Guenter Grass. Defining "world literature" and the shaping of "modern" Western thought by these major literary figures. Readings explore major twentieth-century themes: modernism, totalitarian politics, Eastern spirituality, German identity and the situation of Germany within Europe. Regular written exercises, readings, and discussion in German. Instructor: Donahue, Morton, or Rolleston. One course. C-L: International Comparative Studies

**133S. 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, Morton, or Walther. One course. C-L: Theater Studies 123S, International Comparative Studies

**141S. 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 111C, Visual Studies 118BS

**142S. 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: Norberg. One course. C-L: Visual Studies 118ES

144S. Berlin History and 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.

148S. Special Topics in German Literature and Culture. ALP, FL Focus on aspects of German literature and cultural studies. Topics vary. Instructor: Staff. One course.

151S. 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 117S or 118S, but offered only in the Berlin semester program. Instructor: Staff. One course.

152S. 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

153. 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

155. 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

191. 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.

192. 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.

201. 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. Not open for credit to undergraduate students who have taken Intermediate German (65, 66, 69, or equivalent). Does not count toward the major or minor, or toward the fulfillment of the Foreign Language Requirement. Instructor: Staff. One course.

202. 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 201. Not open for credit to undergraduate students who have taken Intermediate German (65, 66, 69, or equivalent). Does not count toward the major or minor, or toward the fulfillment of the Foreign Language Requirement. Instructor: Staff. One course.

204S. German Business / Global Contexts. CCI, FL, SS Current German economic and business debates and events. Germany's position in the global marketplace and on 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.

209S. 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 201S

210S. Sex, Gender, and Love in Medieval German Literature. ALP, CCI, FL Historical contexts for emergence of courtly love and the role of desire and interpretation in Gottfried von Strassburg's Tristan und Isolde, courtly love lyric, 'maere.' Instructor: Rasmussen. One course. C-L: Medieval and Renaissance Studies 203S

211S. Theory and Practice of Literary Translation. ALP, CCI, W One course. C-L: see Literature 211S; also C-L: Islamic Studies

221S. Literary Guide to Italy. ALP, CCI, CZ One course. C-L: see Italian 221S; also C-L: Literature 280S

225S. Introduction to Goethe. ALP, FL, R Major works of lyric, narrative, drama, and theory, throughout Goethe's career. Readings and discussions in German. Instructor: Morton. One course.

226S. Goethe's Faust. ALP, EI, FL, R Goethe's masterpiece and life's work, conceived as a summation of Western literature and mythology for the modern age. Readings and discussions in German. Instructor: Morton. One course.

245S. German Literature and Culture 1900-1945. ALP, CCI, EI, FL Radical social shifts and their disruption of German culture and literary conventions during the first half of the 20th century. From the poetry, film, manifestos, and revolutionary theater of Expressionism, to the high modernism of Rilke, Kafka, Hesse, and Mann, to the didactic literary program of Brecht and his circle, including Kurt Weill and Marieluise Fleisser, to the internationalist goals of the Frankfurt School of Social Research. Emphasis on relations between text and history, from WWI to Weimar to the persecutions and systematic destructions of the Nazi era. Instructor: Donahue or Rolleston. One course. C-L: International Comparative Studies

247S. German Literature and Culture Since 1945. ALP, FL, R Major German literary, filmic, and cultural works since 1945. Topics vary: representations of National Socialism and the Holocaust in German culture; "Vergangenheitsbewältigung" (dealing with the past) in German literature and culture; history, memory, and national identity in German, Austrian, and Swiss literature. Instructor: Donahue or Norberg. One course. C-L: International Comparative Studies

258S. Special Topics in German Literature and Cultural Studies. ALP, FL Instructor: Staff. One course.
272S. Fin-de-siècle and Interwar Vienna: Politics, Society, and Culture. CCI, CZ, R, SS One course. C-L: see History 272S

COURSES TAUGHT IN ENGLISH

49S. First-Year Seminar. Topics may vary each semester offered and are described in the First-Year Seminars booklet. Instructor: Staff. One course.

87FCS. Literary Imaginings of the Good Life. ALP, EI, W Seminar on the ways in which literature shapes and is shaped by our quest for social ideals. Open only to students in the Focus Program. Instructor: Rasmussen. One course.

88FCS. Berlin in the Twentieth Century. ALP, CCI, CZ, EI Uses literature, film, art, architecture, and history to trace the periods of Berlin's development in the twentieth century (Imperial, Weimar Republic, Nazi, Communist, Berlin Republic) in order to understand both the rich cultural and intellectual heritage and the troubling legacies that mark the new Berlin. Special attention to ethical questions posed by the Holocaust. Provides background for understanding the historical dimensions to recent developments such as Christo's Wrapped Reichstag; the Jewish Museum and the debate on the German Holocaust Memorial; the Neue Wache; the Potsdamer Platz; and the film Run Lola Run. Taught in English. Open only to students in the Focus Program. Instructor: Donahue. One course. C-L: Visual Studies 88FCS

103A. Environmental Policy in Europe: Duke in Berlin. CCI, SS One course. C-L: see Political Science 100A; also C-L: Public Policy Studies 102, International Comparative Studies


104. Economics of a United Europe. CCI, SS One course. C-L: see Economics 60; also C-L: International Comparative Studies

158. Berlin: Architecture, Art and the City, 1871-Present. ALP, CCI, CZ Development of urban Berlin from the Grunderzeit (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 190, International Comparative Studies

165S. 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 165S

168. 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 Studies 118GS, Arts of the Moving Image

168D. 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. One course. C-L: Arts of the Moving Image 111I, Visual Studies 118GD

170. 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: Literature 163G, Ethics

172S. The Romance of King 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 172S

173. Romantic Fairy Tales: Literary and Folk Fairy Tales from Grimms to Disney (DS3). 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 151E, International Comparative Studies 183A

174. The Melancholy of Art: Passages of Time in European Literature and Cinema, 1819-2000 (DS3). ALP, CCI One course. C-L: see English 134; also C-L: Literature 151G

180. Poetics of Murder: Detective Fiction. 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. One course. C-L: Literature 151N

182. Classics of Western Civilization: The German Tradition, 1750-1930 (DS3). 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 179A, Political Science 134, Literature 163B


184. 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 172B, Literature 112N, International Comparative Studies 183C, Visual Studies 118H, Arts of the Moving Image

186D. 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 186D, Literature 186AD, Political Science 195D

187. 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 163J, Jewish Studies 162

188. 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: Literature 163N, Jewish Studies 164, International Comparative Studies

189. Terror and German Cinema. ALP, CCI, CZ Cinematic (film and television) responses to the terror that plagued Germany in the 1970s and 1980s. Red Army Faction (RAF) and other violent groups of extreme left compared with contemporaneous groups in the United States (e.g., Black Panthers) as well as terror at present. How German culture imagines, explains, and remembers terror perpetrated by its own citizens. Taught in English. Instructor: Donahue. One course. C-L: Literature 112L, Visual Studies 118C

196A. Art and Architecture of Berlin, Fifteenth to the Twentieth Century. ALP, CCI, CZ One course. C-L: see Art History 190B


196C. 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 163, Literature 163K, International Comparative Studies

198. Special Topics in German Studies. ALP, CZ Aspects of German culture and civilization. Topics vary. Taught in English. Instructor: Staff. One course.

198S. Special Topics in German Studies. ALP Aspects of German culture and civilization. Topics vary. Taught in English. Instructor: Staff. One course.


261S. Second Language Acquisition and Applied Linguistics. SS Introduction to the fields of second language acquisition and applied linguistics. Investigation of competing theories of language acquisition and learning, and various aspects of applied linguistics, including language and cognition, language and power, bilingualism, language and identity, and
intercultural communication. Taught in English. Instructor: Walther. One course. C-L: Linguistics 261S


270. Consciousness and Modern Society. CCI, CZ, EI The German tradition of political theory conceptualizing social transformation through consciousness both of alienation and of ethical ideals; the ongoing debate between activist and radically critical perspectives. Marx, Nietzsche, Lukacs, Freud, Benjamin, Adorno, Marcuse, and Habermas. Taught in English. Instructor: Rolleston. One course. C-L: Literature 270, International Comparative Studies

275S. Hegel's Political Philosophy. EI, R, SS One course. C-L: see Political Science 236S; also C-L: Philosophy 236S

276S. Nietzsche's Political Philosophy. CZ, EI, SS One course. C-L: see Political Science 226S; also C-L: Philosophy 237S


298S. Special Topics in German Studies. ALP Special topics in German literature and cultural studies. Taught in English. Instructor: Staff. One course.

299S. 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. C-L: International Comparative Studies 280ES

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 programs of study abroad, 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.

1. 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 courses, which may include two courses below the 100 level. Eight of the ten courses must be at the 100 level or above, including at least two at the 200 level. These must normally include the advanced conversation and composition courses, German 117S and 118S (or the equivalents taught in Berlin: German 115S, one course credit, or
German 119S, two course credits) and one of the literary survey courses, German 121S or 122S. Of departmental courses taught in English, only one may count toward the major.

Note: Duke-in-Berlin economics, history, political science, and art history courses taught in German may also count toward this major concentration.

2. German Studies

This is an interdisciplinary concentration that develops language proficiency and cultural knowledge, while allowing 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 religion.

Requirements. Ten courses, which may include two courses below the 100 level. Courses below the 100 level may include German or other Germanic language courses, or courses taught in other departments that evince a clear focus on German culture, society, and history. Other courses must normally include German 117S and 118S (or the equivalent taught in Berlin: German 119S, two course credits), and at least two courses at the 200 level. A maximum of four courses may be 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 taken in other departments must be approved by the director of undergraduate studies in the German department.

Note: Duke-in-Berlin economics, history, political science, and art history courses taught in German may also 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 100 level or above, only one of which may be taught in English.

Note: Duke-in-Berlin economics, history, political science, and art history courses taught in German may also count toward the German minor.

Global Health (GLHLTH)

Associate Professor of the Practice Broverman, Director

A certificate, but not a major, is available in this program.

The Global Health Certificate Program is an interdisciplinary certificate that aims to provide future leaders with tools both to synthesize current knowledge in new ways and to formulate innovative solution to achieve improvement in the quality of health for underserved populations. These individuals will make a significant contribution to the current challenges facing the world today, as the certificate program will capitalize on Duke's diverse strengths in medicine, law, nursing, and business, as well as its broad arts and sciences base. Specifically, the goals of the certificate program are: 1) to develop an integrated course of study that focuses on the comprehensive nature of global health, drawing on the research and experience of Duke University and Medical Center faculty; 2) to provide students with the theoretical understanding of the determinants of health through their exposure to a variety of disciplines; 3) to develop students' analytical skills, enabling them to apply the knowledge arising from each of these fields towards global health solutions both in an empirical manner and in a mandatory field experience, addressing
health disparities first-hand; and 4) to prepare students for a future in which they influence research and policy surrounding global health.

The program draws upon established research programs relating to global health centered in anthropology, biology, economics, history, law, medicine, philosophy, political science, psychology, public policy, religion, and sociology.

CERTIFICATE REQUIREMENTS

To meet the requirements of the certificate students must complete the prescribed combination of six courses:

- Public Policy Studies 154/254, Multidisciplinary Approaches to Global Health (introductory course)
- One course in Ethics from the list below of approved courses
- Global Health 163, Research Methods in Global Health
- Two elective courses from the list below of approved courses
- Capstone Research Seminar in Global Health

Students will also be required to complete a fieldwork experience, approved by the Director of the Global Health Certificate Program. No more than three of the six courses taken to satisfy the requirements of the certificate may originate in a single department or program; moreover, no more than two courses used to satisfy Global Health Certificate requirements may also be used to satisfy the requirements of any major, minor, or other certificate program. Appropriate courses may come from the list given below or may include other courses (new courses, special topics courses, and independent study) as approved by the director.

GLOBAL HEALTH COURSES

90FCS. 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.

99IFCS. Gender, Poverty, and Health. EI, SS One course. C-L: see Sociology 99IFCS

112. Gender, Poverty, and Health. SS One course. C-L: see Sociology 112

150. Multidisciplinary Approaches to Global Health. SS, STS One course. C-L: see Public Policy Studies 154

151. 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: Public Policy Studies 155

159. Social Determinants of U.S. Health Disparities. SS One course. C-L: see Sociology 161

160. Behavior, Biases, and Interventions in Global Health. CCI, R, SS Apply multidisciplinary social science research to global health issues. Examine how people think, the cultural, contextual, and cognitive influences to health behavior and decisions, and the influences behind the acceptance or rejection of different interventions. Discuss current global health issues. Explore how to change small details of intervention programs to make them more effective. Investigate ways to effectively address barriers to health promotion. Instructor: Ariely. One course. C-L: Psychology 109E
161. 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.

163. Research Methods in Global Health. 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.

164. 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 164

165FCS. 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.

171. 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.

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.

173S. Environment, Health and Development in China. CCI, EI, SS, STS
One course. C-L: see Cultural Anthropology 163BS; also C-L: International Comparative Studies 121JS, Political Science 100GS, Ethics

180. 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.

180S. 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.
184. Global Health Supply, Organization and Financing. QS One course. C-L: see Economics 184

185. Economics of Global Health. QS, R, SS One course. C-L: see Economics 185

191. Medical Anthropology. CCI, EI, SS, STS One course. C-L: see Cultural Anthropology 191T

191U. Medical Anthropology. EI, SS, STS, W One course. C-L: see Cultural Anthropology 191U

195. 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.

196. 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.

220S. Global Nutrition: Over and Undernutrition in Developing Countries. EI, NS Nutrition problems of developing countries. Epidemiological, biological, and behavioral consequences of both overnutrition (e.g., obesity) and undernutrition (e.g., malnutrition). Emphasizes physiology of infectious disease (HIV, TB, malaria, diarrhea) of children and perinatal health outcomes (e.g., 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. Instructor: Benjamin. One course.

238. Global Environmental Health: Economics and Policy. SS, STS One course. C-L: see Environment 238; also C-L: Public Policy Studies 237

251. Global Health Ethics: Interdisciplinary Perspectives. EI, SS Same as Global Health 151 but requires an additional paper; not open to students who have taken Global Health 151. Department consent required. Instructor: Whetten. One course. C-L: Public Policy Studies 256


279S. Special Topics in Ethics. EI One course. C-L: see Study of Ethics 280S

280. 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.

280S. 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.

295. 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 by consent of instructor and director of Global Health Certificate program. Instructor: Staff. One course.

ETHICS COURSES (one of the following)

Engineering
108S. Ethics in Professions: Scientific, Personal and Organizational Frameworks

**Philosophy**
162. Human Rights in Theory and Practice

**Political Science**
162. Human Rights in Theory and Practice

**Public Policy Studies**
155. Global Health Ethics: Interdisciplinary Perspectives
162. Human Rights in Theory and Practice

**ELECTIVE COURSES (2 of the following)**

- **African and African American Studies**
  134. Psychology of Ethnicity and Context

- **Biology**
  46. AIDS and Other Emerging Diseases
  92FCS. Global Diseases
  103L. General Microbiology

- **Civil Engineering**
  193. Integrated Environmental Design

- **Cultural Anthropology**
  163CS. Health Policy in Transition: Challenges for China
  194. Fieldwork Methods: Cultural Analysis and Interpretation

- **Engineering**
  108S. Ethics in Professions: Scientific, Personal and Organizational Frameworks

- **International Comparative Studies**
  122GS. Health Policy in Transition: Challenges for China

- **Political Science**
  188. Comparative Health Care Systems

- **Psychology**
  133. Psychology of Ethnicity and Context
  185D. Research Methods in Psychopathology and Psychotherapy

- **Public Policy Studies**
  55D. Introduction to Policy Analysis
  178. Comparative Health Care Systems
  263S. Public Health Research Methods and Issues

- **Sociology**
  161. Social Determinants of U.S. Health Disparities
  164. Death and Dying
  171. Comparative Health Care Systems

**Greek**

For courses in Greek, see Classical Studies on page 216.

**Health, Wellness, and Physical Education (PHYSEDU)**

Associate Professor of the Practice Yakola, Chair; Professor LeBar, Director of Undergraduate Studies; Professors Buehler and LeBar; Assistant Clinical Professor Alpin; Professor of the Practice Dale; Associate Professor of the Practice Yakola; Assistant Professor of the Practice Hampton; Instructors Apple, Beguinet, Bowen, Brame, Daffron, Dexel, Dobkins, Forbes, Jindra, Kaufmann, King, McNally, Miller, Nelson, Ogilvie, Orr, Rollins, Serenelli, Spector, Wasielewski, Welsh, Wilbourn, Worden, and Wort

Courses in this program do not count toward distributional requirements.

**ACTIVITY COURSES**

Each activity course listed below carries a half-course credit and is given on a pass/fail basis. The maximum amount of credit that counts for the undergraduate degree is one full course, but additional courses may be taken without credit toward graduation. Students may repeat activity courses.


15A. **Weight Training.** Progressive, cumulative, and measurable physical conditioning. Instructor: Staff. Half course.

15B. **Weight Training.** Continuation of Physical Education 15A. Instructor: Staff. Half course.

16. **Endurance Swimming.** Individualized programs to improve skills and fitness. Instructor: Ogilvie or Adams. Half course.


19. **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.

20. **Beginning Swimming.** Propulsion techniques, water safety, introduction to the five basic strokes. Instructor: Ogilvie or Adams. Half course.


22. **Lifeguard Training.** American Red Cross course that prepares an individual to qualify as a lifeguard. Preventative lifeguarding, emergencies, health and sanitation, water rescue and special situations, search and recovery operations, weather and environmental conditions. Instructor: Adams or Ogilvie. Half course.

26. **Army Physical Fitness.** Half course. C-L: see Military Science (Army ROTC) 26

27. **Kayaking.** Basic skills for kayaking in whitewater. Open to juniors and seniors only. Instructor: Dexel. Half course.

28. **Advanced Army Physical Fitness.** Half course. C-L: see Military Science (Army ROTC) 28

30. **Beginning Golf.** Instructor: Miller. Half course.


34. **Pilates Mat and Ball.** System of movement emphasizing strong back and abdominal muscles. Stability ball for balance and strength. Instructor: Jindra. Half course.

35. **Beginning Racquetball.** Instructor: Staff. Half course.

38. **Speed and Conditioning Training.** Introduction to applied principles which develop speed and speed endurance in athletics. Instructor: Howser. Half course.


40. **Beginning Tennis.** Instructors: Hampton or Staff. Half course.

42. Advanced Tennis. Stroke development with emphasis on strategy. Instructor: LeBar. Half course.

44. 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: Ogilvie and Worden. Half course.

45. 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: Worden. Half course.


51. Approaches to Stress Management. Designed to help students deal effectively with the stress of living and learning at the university. Instructor: Staff. Half course.


57. 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.


64. 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 63. Instructor: Bowen. Half course.

65. Yoga. Traditional hatha yoga combined with balanced structural alignment to develop strength, flexibility, and mental concentration. Instructor: Orr or Spector. Half course.

66. 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 65 or previous hatha yoga experience. Instructors: Orr or Spector. Half course.

67. 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.
68. **Intermediate Tai Chi.** Building on fundamentals taught in P.E. 58 (P.E. 138). Includes full long form of Chen style Tai Chi, the 78-count "Laojia." Instructor: Kaufmann. Half course.

69. **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 stability ball, medicine ball, and exercise band. Instructor: Bowen. Half course.

72. **Social Dancing.** Waltz, foxtrot, tango, cha-cha, rumba, jitterbug, rock, disco, and others. Instructor: Daffron. Half course.


75. **Latin Dance.** Salsa, cha-cha, rumba, merengue, samba, mambo, and others. Instructor: Daffron. Half course.

76. **Advanced Latin Dance.** Merengue, salsa, tango, rumba and cha-cha. Prerequisite: Latin dance experience or consent of instructor. Instructor: Daffron. Half course.

77. **Swing Dancing.** Introduction to East Coast Swing, West Coast Swing, Jive, Lindy Hop, and Jitterbug. Instructor: Daffron. Half course.

79. **Beginning Equitation.** Introduction to horseback riding: basic horsemanship; walk, trot, and canter. Instructor: Rollins. Half course.


95. **Wilderness Skills.** Basic and/or intermediate outdoor camping and leadership skills: orienteering, navigation, campcraft, equipment, trip planning, first aid and safety, with emphasis on "learning by doing." Instructor: Staff. Half course.

96. **Basketball.** Development of individual and team skills. Instructor: Nelson or Welsh. Half course.

97. **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: Dexel. Half course.

99. **Soccer.** Basic soccer skills. Instructor: King. 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 towards their undergraduate degree. Theory classes are general electives.

49S. **First-Year Seminar.** Topics vary each semester offered. Instructor: Buehler. One course.

111. **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.

112. **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.

120. **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.


152. **Women's Health Issues.** Lifetime fitness, nutrition, body image, self esteem, health issues, realistic social norms, and healthy coping mechanisms. Instructors: Hampton and McNally. One course.

160. **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.

170. **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.


174. **Sports Marketing.** The multi-faceted elements associated with marketing within the sports industry. Instructor: Yakola. One course.

180. **Performance Enhancement in Sport and Physical Activity.** 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.

182. **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.

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.

**Health Policy (HTHPOL)**

Associate Professor Whetten, Director

A certificate, but not a major, is available in this program.

The Center for Health Policy, based at Duke University’s Global Health Institute, offers an interdisciplinary certificate in health policy.

Courses in the Health Policy Certificate Program address three interrelated goals: (1) to investigate the machinery of contemporary health policy-making and to understand the broad political dynamics that have conditioned U.S. health policy, past and present; (2) to familiarize students with the institutional and economic complexity of the U.S. health care system through the study of the interaction between the key players in health care financing and organization—employers, private insurance carriers, government regulators, health care providers, and consumers; and, (3) to explore the cultural and ideological underpinnings...
of modern conceptions of health and the recurrent ethical dilemmas facing health care providers, patients, and policymakers.

The program draws upon established research programs relating to health services centered in public health, economics, political science, public policy, and sociology but recognizes the inspired contributions to health care debates originating in the disciplines of anthropology, history, law, medical arts, philosophy, psychology, and religion.

CERTIFICATE REQUIREMENTS

The Health Policy Certificate Program is open to all undergraduates. Successful candidates must complete the prescribed combination of six courses: an introductory course; any one methods course; two courses drawn from the core set of health policy course offerings; any one additional elective course; and the capstone course. No more than three of the six courses taken to satisfy the requirements of the certificate may originate in a single department or program; moreover, no more than two courses used to satisfy Health Policy Certificate requirements may also be used to satisfy the requirements of any other major, minor, or other certificate program. Appropriate courses may come from the list below or may include other courses (new courses, special topics courses, independent study, and, under special circumstances, courses offered through the UNC School of Global Public Health*) as approved by the director.

For further information on requirements and courses visit the program Web site at http://globalhealth.duke.edu/chp/education-student_certificate-prog.php.

INTRODUCTORY COURSE (required)

111. Introduction to the United States Health Care System. SS One course. C-L: see Public Policy Studies 111

CAPSTONE COURSE (required)


Other Health Policy Courses

295. Topics in Health Policy. Topics vary by semester. Instructor: Staff. One course.

METHODS COURSES (any one course):

Economics
261. Evaluation of Public Expenditures

Environment
272. Evaluation of Public Expenditures

Public Policy Studies
55D. Introduction to Policy Analysis
261. Evaluation of Public Expenditures
263S. Public Health Research Methods and Issues

CORE COURSES (any two courses):

Regularly Scheduled Courses

Economics
55D. Intermediate Microeconomics I
156. Health Economics

Political Science
188. Comparative Health Care Systems
249. The Politics of Health Care

Public Policy Studies
156. Health Economics
157. Health Policy
178. Comparative Health Care Systems
253. The Politics of Health Care

Sociology

* Subject to regulations governing interinstitutional course registration. Note that the UNC School of Global Public Health semesters and daily schedules differ from those of Arts and Sciences at Duke.
Special Topics Courses, Offered Periodically (counting as Core Courses)

Public Policy Studies
264S. Getting Value for Money in Health Care: Rationing in Theory and Practice

Sociology
227S.C. Proseminar in Medical Sociology. Organization and Financing of Health Care. (May not be counted toward certificate if Sociology 227S.D is counted.)

ELECTIVE COURSES (any two courses)

Regularly Scheduled Courses

Economics
163. Economics of the Environment
251S. Regulation of Vice and Substance Abuse
270. Resource and Environmental Economics

Environment
149. United States Environmental Policy
163. Economics of the Environment
270. Resource and Environmental Economics
274. Environmental Politics

History
123. Madness and Society in Historical Perspective
189B. History of Public Health in America

Philosophy
118. Philosophical Issues in Medical Ethics

Psychology and Neuroscience
109A. Health Psychology

Public Policy Studies
149. United States Environmental Policy
251S. Regulation of Vice and Substance Abuse
272. Resource and Environmental Economics
274. Environmental Politics

Religion
182. Medicine and Religion in American Society

Sociology
163. Aging and Health

Hebrew

For courses in Hebrew, see Asian and Middle Eastern Studies on page 171.

Hindi

For courses in Hindu, see Asian and Middle Eastern Studies on page 171.

History (HISTORY)

Professor Reddy, Chair; Associate Professor Fenn, Director of Undergraduate Studies; Professors Brown, Chafe, Deutsch, L. Dubois, Edwards, English, French, Gaspar, Gavins, Ho, Humphreys, Koonz, Kuniholm, MacLean, Martin, Mauskopf, M. Miller, Ramaswamy, Reddy, Robisheaux, Shatzmiller, and Thompson; Associate Professors Balleisen, Ewald, Fenn, Hacohen, Huston, Mazumdar, Neuschel, Olcott, Partner, Peck, Thorne, and Sigal; Assistant Professors Bonker, Hall, Krylova, Lentz-Smith, Malegam, Sachsenmaier, and Stern; Professors Emeriti Cahow, Colton, Davis, Durden, Goodwyn, Herrup, Holley, Roland, Scott, Witt, Wood, and Young; Associate Professor Emeritus Nathans; Adjunct Professors Roberts and Wilson; Adjunct Assistant Professors Jakubs, Morrow, and Troost; Visiting Associate Professors Y. Miller and Shapiro; Visiting Assistant Professors Andrews, Bell, Carter, Douglas, K. Dubois, Freeman, Hart, Kaiwar, Moran, and Zanalda; Visiting Scholars G. Lerner and Perry

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.

21D. 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.

22D. Europe from the Eighteenth Century. CCI, CZ Development and world impact of European civilization, critical evaluation of historical interpretations, and investigation of history from primary sources. Instructor: Staff. One course.

25. 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

26. Introduction to World History: Since 1700. CCI, CZ Establishment of European political, economic, and cultural hegemony; non-Western responses; the decline of Western hegemony. Instructor: Staff. One course. C-L: International Comparative Studies

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

72D. 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.

75. Topics on the Third World and the West. 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 70, International Comparative Studies, Latin American Studies

76. Topics on the Third World and the West. CCI, CZ Continuation of History 75. Instructor: Staff. One course. C-L: African and African American Studies 71, International Comparative Studies, Latin American Studies

89FCS. Special Topics in Focus. CZ Open only to students in the Focus Program. Current list of courses available in the Focus program brochure. Instructor: Staff. One course.

91D. American History to 1876. CZ History of what is now the United States from pre-Columbian times to 1876. Covers exploration, colonization, Native American responses, the rise of race slavery, the American Revolution, Anglo-American expansion, slave life and culture, industrialization, reform, disunion, the Civil War, emancipation, and Reconstruction. Emphasis on social developments, conflicting political and economic visions, and tensions between ideals and reality. Instructor: Staff. One course.

92D. America from 1877 to the Present. CZ, EI American history from the end of Reconstruction to the present. The impact of industrialization, immigration, urbanization, and the rise of mass culture in the United States; the effect of depressions and wars on American society and politics; and the roots and results of reform movements ranging from populism and progressivism to the civil rights, women's, and environmental movements. Ongoing debates about the government's proper economic and social role; changing views of ethnicity, race, and gender in America; and the determinants of United States foreign policy. One course.

93. 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 93, International Comparative Studies 103G

98. Introduction to Canada. SS One course. C-L: see Canadian Studies 98; also C-L: Political Science 98, Sociology 98, International Comparative Studies 98


100. A-R, U-W. Duke-Administered Study Abroad: Advanced Special Topics in History. CCI, CZ Register for course by designated suffix indicating the specific country. Courses numbered 100 with a letter suffix (100A, 100B...100W) 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 100-level lecture course in the history department. One course.

100A. Duke in Madrid: Special Topics on History. CCI, CZ Instructor: Staff. One course.

100E. Duke in China: Special Topics on History. CCI, CZ Instructor: Staff. One course.

100F. Duke in France: Special Topics on History. CCI, CZ Instructor: Staff. One course.

100H. Duke in Andes: Special Topics on History. CCI, CZ Instructor: Staff. One course.

100I. Duke in Italy: Special Topics on History. CCI, CZ Instructor: Staff. One course.

100J. Duke in Russia: Special Topics on History. CCI, CZ Instructor: Staff. One course.

100K. Duke in Australia: Special Topics on History. CCI, CZ Instructor: Staff. One course.

100L. Duke in Germany: Special Topics on History. CCI, CZ Instructor: Staff. One course.

100MS. Duke in Oxford: Special Topics on History. CCI, CZ Instructor: Staff. Two courses.

100N. Duke in Istanbul: Special Topics on History. CCI, CZ 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. One course.

100O. Duke in Vienna: Special Topics on History. CCI, CZ Instructor: Staff. One course.

100R. Duke in Venice: Special Topics on History. CCI, CZ Instructor: Staff. One course.

100S. Study Abroad: Seminar on Historical Topics. CCI, CZ Register for country by the section designated in the Official Schedule of Courses. Instructor: Staff. One course.

100W. Duke in South Africa: Special Topics on History. CCI, CZ Instructor: Staff. One course.


101ES. 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: M. Miller. One course.

101F. Rome: History of the City (Study Abroad). ALP, CCI, CZ One course. C-L: see Classical Studies 145; also C-L: Art History 126A

101G. Introduction to Islamic Civilization. CCI, CZ, EI One course. C-L: see Religion 146; also C-L: Cultural Anthropology 147, Medieval and Renaissance Studies 146A, International Comparative Studies 141A, Ethics, Information Science and Information Studies
102G. Introduction to Islamic Civilization. CCI, CZ, EI One course. C-L: see Religion 147; also C-L: Cultural Anthropology 148, Medieval and Renaissance Studies 147A, International Comparative Studies, Ethics

103. Lectures in Special Topics. CZ Individual courses in this series may be taught more than once or on a one-time basis only. Instructor: Staff. One course.

104. Lectures in Special Topics. CZ Individual courses in this series may be taught more than once or on a one-time basis only. Instructor: Staff. One course.

105. Gateway Lecture: Topics in History. CZ, R Introduction to historical analysis and research in a small lecture setting (limited to 25 students). Students learn how to formulate research questions, evaluate existing scholarship, interpret historical evidence, craft historical argument orally and in writing. Different topics are offered each semester. Either History 105S or 105 is required for the major. One course.

105A. Gateway Lecture: Inquisition & Society in the Early Modern World. CCI, CZ, EI, R, SS Introduction to the inquisitions in Europe and the New World, with some attention also to Goa, in the early modern period. Examination of legal manuals, trial transcripts, confessions, and descriptions of public rituals associated with the courts. Transcontinental focus, with emphasis on use of inquisitorial sources as a basis for understanding diverse cultures. Instructor: Martin. One course.

105AS. 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 ethicity 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.


105BS. 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.


105CS. Gateway Seminar: The United States & 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.

105E. Gateway Lecture: Native American History through Autobiography. CCI, CZ, R, SS, W Uses Native American history to examine issues of narrative, authority, and perspective in historical writing, as well as to examine and historicize identity formation, rights, and United States history from the mid-nineteenth to the mid-twentieth century. Instructor: Deutsch. One course.

105ES. Gateway Seminar: Male & 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.

105FS. 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: Hutson. One course.


105HS. Gateway Seminar: Civil Rights & 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 106, African and African American Studies 105HS

105KS. 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.

105S. Gateway Seminar: Topics in History. CZ, R 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.

106S. Seminar in Selected Topics. CZ Instructor: Staff. One course.


107B. 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. C-L: International Comparative Studies 180F

108E. 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: Staff. One course.

109A. Power and Evidence: Greece. CCI, CZ One course. C-L: see Classical Studies 107
109B. Power and Evidence: Rome. CCI, CZ One course. C-L: see Classical Studies 109
110A. Religion in China. CCI, CZ One course. C-L: see Religion 110
111A. North America to 1760. CCI, CZ, SS Early oceanic explorations, European invasion of North America, the evolution of race slavery, and the responses of the native American peoples. Instructor: Fenn or Wood. One course. C-L: International Comparative Studies
111B. 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: Fenn or Wood. One course.
111C. 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: Staff. One course.
111D. 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. One course.
111E. The Gilded Age and the Progressive Era: The United States from 1870 to 1913. 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. One course.
111F. Modern America: The United States from 1930 to present. CZ, SS The upheavals of recent United States history, including the New Deal, World War II, the Civil Rights Movement, and other movements for social change, the Vietnam War, the development of a global economy, the political realignments of the 1980s, and the nation's new role on the world stage. One course.
111G. The Origins of Modern America: United States, 1914-1941. CCI, CZ 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, Thompson, and staff. One course.
112A. Modern Political Thought in China and Europe. CCI, CZ, SS Development of political thought in different parts of the world, with focus on Europe and China. How some ideologies such as nationalism or communism turned into powerful movements in China and parts of the West. Central aspects of modern Chinese and Central European History. Instructor: Sachsenmaier. One course. C-L: Asian & Middle Eastern Studies 182
113A. 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: Kornbluh. One course. C-L: Public Policy Studies 113
113B. 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 113B, Ethics
114A. 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 internation-
al 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 150A


115B. History and Modern Africa. CCI, CZ, SS Presents the long-term historical dynamics behind three important situations in contemporary Africa. Recent examples include ethnic warfare in Darfur; oil exploitation and environmental degradation in the Niger Delta; misgovernment in Zimbabwe. Topics might change from year to year. The courses aims at helping students become intelligent commentators on contemporary Africa. Instructor: Ewald. One course. C-L: African and American Studies 115B, International Comparative Studies, Women's Studies

115C. Introduction to African Studies (DS3 or DS4). ALP, CCI, CZ One course. C-L: see African and African American Studies 107; also C-L: Cultural Anthropology 136, Political Science 174

115E. Modern Africa through Film. ALP, CCI, CZ African and non-African feature films as introduction to themes in the history of nineteenth- and twentieth-century Africa, including precolonial kingdoms; Islamic militancy; European colonialism; independent African states and societies. Analysis of film as historical source and the creation of images of Africa. Not open to students who have taken this course as History 104. One course. C-L: African and American Studies 115E, International Comparative Studies 140E


115G. 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 171B, International Comparative Studies 103H, African and American Studies 115G

116. The Living Middle Ages. ALP, CCI, CZ One course. C-L: see Medieval and Renaissance Studies 114; also C-L: Art History 139, Classical Studies 139

118B. 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: Staff. One course.

118C. History of the World Wars. CZ, EI, R, STS An examination of the origins, course, and consequences of the world wars of twentieth century. Close attention is paid to impact of warfare on society and the ensuing moral and political controversies. One course.

118F. Western Warfare since 1789. CCI, CZ, SS 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: Bonker. One course.

119A. Special Studies in Greek History. CZ One course. C-L: see Classical Studies 135S

120. 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: Thompson. One course.

121A. Roman History. CCI, CZ One course. C-L: see Classical Studies 154
121B. Greek History. CCI, CZ One course. C-L: see Classical Studies 153

122. Protestant Traditions. CZ, EI One course. C-L: see Religion 127

123. 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: M. Miller. One course. C-L: International Comparative Studies, Health Policy


125B. Modern American 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, Edwards or Kornbluh. One course.

125D. 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.

126A. 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.

126B. 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.

127A. 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


128S. Introduction to Oral History. CZ, R One course. C-L: see Documentary Studies 110S

129S. Behind the Veil: Methods. CCI, CZ, R One course. C-L: see Documentary Studies 125S; also C-L: African and African American Studies 125S

130B. Introduction to Economic History, CCI, CZ, SS One course. C-L: see Economics 132

131B. Representing the Middle East. CCI, CZ, SS One course. C-L: see Cultural Anthropology 132; also C-L: Asian & Middle Eastern Studies 132, Turkish 132, International Comparative Studies 141B, Visual Studies 110H, Islamic Studies

133C. British Isles in the Middle Ages. CCI, CZ, EI From the fifth through the fourteenth centuries. Not open to students who have taken History 134. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 133B

134B. History of Jews in the Late Middle Ages. CCI, CZ, R The period between the year A.D. 1000 and A.D. 1500. Jewish activity in western Europe; the church's attitude toward the Jews; their monetary activity and the history of their families and their private lives. Instructor: Shatzmiller. One course. C-L: Medieval and Renaissance Studies 134B, Jewish Studies 146

134C. 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, Sabbattianism, 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?. One course. C-L: Jewish Studies 147, Ethies

135A. Europe 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: Koonz. One course. C-L: International Comparative Studies 180G

135B. 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: Koonz. One course. C-L: Visual Studies 119A, International Comparative Studies

136A. 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, Olcott, or staff. One course. C-L: Latin American Studies 136, International Comparative Studies 132A

137. Comparative Approaches to Global Issues (B, D). CCI, CZ, SS One course. C-L: see International Comparative Studies 125; also C-L: Cultural Anthropology 125, Political Science 125, Religion 183, Sociology 125

138. 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: Heuscheland, Neuschel, and Robisheaux. One course. C-L: Medieval and Renaissance Studies 138, International Comparative Studies

139B. Modern South Asia. CZ, EI, W South Asian history from the rebellion of 1857 to independence and partition in 1947. Topics include the impact of colonial rule on the economy; politics and social formation of the subcontinent; the rise of nationalism; religion and politics; and the position of women. Rights for religious minorities, women, and lower caste people and the ethical/moral basis for new nations. Instructor: Kaiwar. One course. C-L: International Comparative Studies 170F

140. Historical Perspectives on Public Policy: The United States from 1945 to the Present. CZ, EI, SS One course. C-L: see Public Policy Studies 115D

141A. The Turks: From Ottoman Empire to European Union. ALP, CCI, CZ, EI, R One course. C-L: see Turkish 135; also C-L: Cultural Anthropology 152, Religion 161F, International Comparative Studies 162A, Islamic Studies

141B. History of Economic Thought. CCI, R, SS, W One course. C-L: see Economics 148; also C-L: International Comparative Studies

142. Dante's Divine Comedy: Hell, Purgatory and Paradise. ALP, CCI, CZ, EI One course. C-L: see Italian 143; also C-L: Medieval and Renaissance Studies 166, Religion 161G, Literature 154B, International Comparative Studies

143A. 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: Staff. One course. C-L: International Comparative Studies

143B. 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: Staff. One course. C-L: International Comparative Studies

144A. 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: Shatzmiller. One course. C-L: Medieval and Renaissance Studies 144C, Jewish Studies 148

144B. Tolstoy and the Russian Experience. ALP, CCI, CZ, EI One course. C-L: see Russian

145A. 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 145A, International Comparative Studies, Documentary Studies

145B. 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 145B, International Comparative Studies, Documentary Studies

145C. African American Women and History. CCI, CZ One course. C-L: see African and African American Studies 137; also C-L: Women's Studies 137

146A. Adam Smith and the System of Natural Liberty. SS, STS One course. C-L: see Economics 146; also C-L: International Comparative Studies

147. 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 147B

148A. Aspects of Renaissance Culture (DS2). ALP, CCI, CZ One course. C-L: see Medieval and Renaissance Studies 115; also C-L: Art History 149, Italian 134

148B. History of Medieval and Renaissance Italy. ALP, CZ The history and literature of the first early modern European culture and society. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 148B

149. World Military History. CZ, STS Comparative study of war as a social institution in different times and cultures. Topics include the origins of war and war in ancient China, classical Greece, the Middle Ages, early modern Europe, colonial America, nineteenth-century Japan, the cold war, and Vietnam. The impact of technological developments on war and the way in which the tools of war shaped conflict between societies. Instructor: Roland. One course. C-L: International Comparative Studies 102C


150CS. Documentary Research Methods. ALP, R One course. C-L: see Documentary Studies 120S

150E. 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: M. Miller. One course. C-L: Russian 150, Arts of the Moving Image 111N

150ES. Freedom Stories: Documenting Southern Lives and Writing. ALP, CCI, CZ One course. C-L: see Documentary Studies 112S; also C-L: African and African American Studies 112S

151A. 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 151A, International Comparative Studies

152. 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: Y. Miller. One course. C-L: Jewish Studies 149, Asian & Middle Eastern Studies 140, International Comparative Studies


153C. World War II and French Film. CCI, CZ, EI, FL One course. C-L: see French 156; also C-L: Arts of the Moving Image 117, Visual Studies 126F

154. Imperial Russia 1700-1917. CCI, CZ One course. C-L: see Russian 154

154CD. 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 154D

155. 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

156A. The Reformation of the Sixteenth Century. CCI, CZ, EI One course. C-L: see Religion 158; also C-L: Medieval and Renaissance Studies 156A, International Comparative Studies 181H, Ethics

156B. History of the Christian Church. CCI, CZ, EI One course. C-L: see Religion 120; also C-L: Ethics

156C. 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: Dubois. One course. C-L: Medieval and Renaissance Studies 156C, Religion 161Z

156S. Islam in the Americas. CCI, CZ, SS, W One course. C-L: see Religion 156S; also C-L: African and African American Studies 161S

157A. 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: Mauskopf. One course. C-L: Medieval and Renaissance Studies 157A


160D. 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 160D

161. 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: M. Miller. One course. C-L: International Comparative Studies

162S. Francophone Literature. ALP, CCI, FL One course. C-L: see French 161S; also C-L: African and African American Studies 138S, Asian & Middle Eastern Studies 168S, International Comparative Studies 110CS, Canadian Studies, Latin American Studies

163G. Themes in Chinese Culture and History. CCI, CZ, SS One course. C-L: see Cultural Anthropology 163; also C-L: Political Science 100G, International Comparative Studies

164AD. Love in the Western World. CCI, CZ The history of love, sex, and marriage in Western Europe from the Greeks to the late sixteenth century. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 164D

165D. Global France. ALP, CCI, CZ, EI One course. C-L: see French 164D; also C-L: Cultural Anthropology 156D

166A. The Insurgent South: Movements for Social Change Since the Civil War. CZ, SS One course. C-L: see Public Policy Studies 166

167A. United States Foreign Policy I: From World War II to Vietnam War. CCI, CZ, EI, SS One course. C-L: see Public Policy Studies 169A

167B. United States Foreign Policy II: From Vietnam War to the Present. CCI, CZ, SS One course. C-L: see Public Policy Studies 169B

168A. 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


169A. 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 139, Women's Studies

170B. 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

170C. Afro-Brazilian Culture and History. CCI, CZ, R Slavery and the post-emancipation trajectory of Afro-Brazilians in a racist society which officially proclaims itself a "racial democracy." Comparisons drawn with the Afro-American experience elsewhere in Latin America and the United States. Instructor: French. One course. C-L: African and African American Studies 170, Portuguese 170C, Latin American Studies

171S. The Spanish Civil War: History, Literature, and Popular Culture. ALP, CZ, EI, FL, R One course. C-L: see Spanish 173S

172B. China and the West. CCI, CZ Survey course with overview of the pre-nineteenth-century Western contacts with China (for example, the French Physiocrats and European idealization of China, early American and English trade). Focus on nineteenth-century topics such as the Opium Wars, British and French imperialism, the efforts to import western technology into China by Westerners, and twentieth-century matters such as the impact of
the Russian Revolution and Euro-American foreign policy towards China, concluding with Nixon's visit to China in 1972 and the re-establishment of Sino-American foreign relations.

Instructor: Mazumdar. One course. C-L: Asian & Middle Eastern Studies 169

172C. 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 181

173. War and Society in Europe, 1000-1750. CCI, CZ, R The relationship of warfare to other aspects of European society and culture, from the rise of European civilization (ca. 1000) to the eve of the modern era. We study the reciprocal influences of warfare, on the one hand, and economic, political and social systems on the other. How warfare came to be justified as the ordinary business of nation-states will be one of our main concerns. We will also study the relationship between warfare and "high" culture - especially works of literature, music and art - and the links between warfare and culture in an anthropological sense. Instructor: Neuschel. One course.

174A. 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: Staff. One course. C-L: International Comparative Studies, Latin American Studies


175B. Cities and City Life in Italy. ALP, CCI, CZ One course. C-L: see Italian 136; also C-L: International Comparative Studies 128, Cultural Anthropology 137

176B. African American Intellectual History, Twentieth Century. CCI, CZ, W One course. C-L: see Cultural Anthropology 175; also C-L: African and African American Studies 178

177A. American Constitutional Development I. SS One course. C-L: see Political Science 177A

177B. Modern American Constitutional Development II. SS One course. C-L: see Political Science 177B

178B. Ancient Science and Technology. CZ, STS One course. C-L: see Classical Studies 134

179A. Classics of Western Civilization: The German Tradition, 1750-1930. ALP, CCI, CZ One course. C-L: see German 182; also C-L: Political Science 134, Literature 163B

179BS. The Inca Empire and Colonial Legacies. CCI, CZ, SS One course. C-L: see Cultural Anthropology 191FS

180A. 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.

182. 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 political movements, and popular perceptions of democracy, capitalism, market, and the West among Russian citizens. Instructor: Krylova. One course. C-L: Political Science 180, Slavic and Eurasian Studies 182
183S. Canada from the French Settlement. CCI, CZ, R An exploration of Canada's "limited identities" of ethnicity, race, and language. Instructor: Thompson. One course. C-L: Canadian Studies, International Comparative Studies

184S. Journey to Eurasia. ALP, CCI, CZ One course. C-L: see Slavic and Eurasian Studies 184S; also C-L: International Comparative Studies

185. Islam in Central Eurasia. CCI, CZ One course. C-L: see Russian 190; also C-L: Religion 165, International Comparative Studies

186. Marxism and Society. SS One course. C-L: see Literature 181A; also C-L: Cultural Anthropology 139, Education 139, Sociology 139, International Comparative Studies

187. 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 187

188A. 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: Koonz. One course. C-L: Ethics, Policy Journalism and Media

189B. 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. C-L: Health Policy

190A. 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 103 or 104. Instructor: English. One course.

190B. Chubby History: Obesity and Public Health. CCI, CZ, R, SS The obesity epidemic among children and adults in the United States, with focus on changes in food supply and consumption, agricultural policy, body image, exercise, federal food programs such as school lunch, food stamps, and food technology. Gender, racial, and socio-economic patterns of the epidemic. Not open to students who have taken this course as History 103 or 104. Instructor: English. One course.

190C. 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. One course.

191. Research Independent Study. R Independent Study is 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.


193. Introduction to the Civilizations of Southern Asia. CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 160; also C-L: Cultural Anthropology 101, Religion 144, International Comparative Studies
194S. Politics and Obligations of Memory. CCI, CZ, EI, SS One course. C-L: see Cultural Anthropology 192S

195CS. Capstone Seminar: 20th-Century South Africa through Biography/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 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 195CS

195ES. 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 which 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: Miller. One course. C-L: Jewish Studies 151S


195IS. Capstone Seminar: Globalization, Women and Development. CCI, CZ, R, SS, STS Uses a historical perspective on issues of development to examine globalization and its impact on women's lives. Examines ways in which social constructions of gender plays a role in economic development. Appraises consequences of the internet revolution, new technologies, and the war for resources, particularly the impact of the material demand of microprocessor chips on war and manufacturing. Case studies of countries such as China, Korea, South Africa and Democratic Republic of Congo examine social policy, the influence of the International Women's Movement, and women's activism on their own behalf as they struggle to improve the economic conditions in which they live. Instructor: Mazumdar. One course. C-L: African and African American Studies 195IS, International Comparative Studies 102S, Women's Studies 191S

195JS. Capstone Seminar: Images of the West in Chinese Politics, Literature, and the Media. CCI, CZ, R Focuses on Chinese visions of the West between the 17th century to the present, covering various historical stages Opium Wars, Cultural Revolution. Examination of how Chinese identities were entangled with images of the West. Instructor: Sachsenmaier. One course.

195KS. Capstone Seminar: Sex, Celibacy & 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' sexuality (or lack thereof). Additional examination of the place of politics and wealth in defining gender roles and expectations about sexuality. Instructor: Dubois. One course. C-L: Medieval and Renaissance Studies 195KS, Religion 195KS

195LS. Capstone Seminar: The Black Death & 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 195LS

195MS. 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 195MS


195S. 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(Hst 197S-198S) or to practice-teach in their senior year. Instructor: Staff. One course.

196CS. 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 190S

196ES. 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.

196FS. 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.

196GS. Capstone Seminar: Clothing and U.S. History. CZ, R, SS, W Examines U.S. history through the lens of clothing, providing insight into style, individual identity, and cultural change. Also addresses a broad range of other issues, including property, international relations, economic change, trade, technology, and labor. Instructor: Edwards. One course. C-L: Public Policy Studies 196CS, Economics 195GS

196IS. 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.

196JS. 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.

196KS. Capstone Seminar: Leadership in American History. CZ, EI, R Focuses on political, social, business and artistic leaders in American history and problems which have called for leadership. Instructor consent required. Instructor: Wilson. One course.

196MS. 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: Economics 195MS, Public Policy Studies 196MS

196NS. 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 196NS

196PS. Human Trafficking: Past and Present. CCI, CZ, EI, R, SS One course. C-L: see Public Policy Studies 196FS

196S. Capstone Seminars in Special Topics. CZ, R See History 195S. One course.

197S. 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 195S-196S seminar, two courses at the 200 level, or 191-192 independent study, supervised by an instructor. One course.

198S. Senior Thesis Seminar. CZ, R, W Continuation of History 197S. Instructor: Staff. One course.

199A. History of Modern Economics. R, SS, STS, W One course. C-L: see Economics 190S

199BS. Special Studies in Roman History. CZ One course. C-L: see Classical Studies 137S

For Advanced Undergraduates and Graduates


209S. 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 209S
210S. Anthropology and History. SS One course. C-L: see Cultural Anthropology 207S
211S. History of Poverty in the United States. CCI, CZ, SS One course. C-L: see Study of Ethics 211S; also C-L: Public Policy Studies 270S
220S. American Grand Strategy. CZ, SS One course. C-L: see Political Science 219S; also C-L: Public Policy Studies 219S
221AS. 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 220AS, Economics 221S
221BS. 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 220BS
222A. 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.
228S. Twentieth Century Social Movements in America. CCI, CZ, EI, SS Focus on the emergence of the women's movement and the civil rights movement, both concerned with issues of equality and justice, in the United States during the post-New Deal period. Instructor: Chafe. One course. C-L: Ethics
233AS. 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.
241S. Historical and Philosophical Perspectives on Science. CZ, STS One course. C-L: see Philosophy 241S; also C-L: Literature 241S, Cultural Anthropology 241S, Women's Studies 241S
255AS. Courts, Wars, Legacies of Wars. R, SS One course. C-L: see Political Science 238S
256. Modern Literature and History. ALP, CCI, CZ, FL One course. C-L: see French 256; also C-L: International Comparative Studies 280B
259. Archaic Greece. CCI, CZ, R One course. C-L: see Classical Studies 221
262S. 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.
263. The Roman Republic. CCI, CZ, R One course. C-L: see Classical Studies 224
264. The Roman Empire. CCI, CZ, R One course. C-L: see Classical Studies 225
272S. 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 272S

287BS. Ethnohistory of Latin America. CCI, CZ, R, SS One course. C-L: see Cultural Anthropology 287S; also C-L: Literature 287BS


296S. United States Policy in the Middle East. CCI, SS One course. C-L: see Public Policy Studies 257S; also C-L: International Comparative Studies

297S. Teaching Race, Teaching Gender. CCI, SS One course. C-L: see African and African American Studies 297S; also C-L: Women's Studies 297S, Literature 225S

299S. Special Topics. 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.

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 four geographic areas and in pre-modern as well as modern history. Depth is achieved through the requirement that students identify a primary field of study. Third, it develops the skills of historical thinking necessary for better understanding our own and other human societies. 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 100 level. One Advanced Placement credit may count toward meeting the ten-course history requirement but does not count towards meeting the area or primary field 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 Course** One course in the gateway course series (105 or 105S), usually by the end of the sophomore year.

• **Areas of History** One course each in ANY THREE of the four geographic or thematic areas listed below; two courses in the pre-modern era (see pre-1800 course list below).

• **Primary Field** At least four courses in the student’s primary field of history. A primary field may be chosen from any 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 primary field; primary field courses may count toward meeting the area and pre-modern distribution requirements.

• **Senior Capstone Seminar** Each major must take at least one senior research seminar (History 195S or 196S). This seminar is usually taken in the senior year, but may also be open to juniors. A 200-level course may be substituted for the capstone seminar if approved by the director of undergraduate studies and the course instructor. The senior thesis seminar (History 197S and 198S) substitutes for 195S and 196S for those students enrolled. Independent study courses (History
House Courses (HOUSECS) 381

191 or 192) may not substitute for either the gateway or the capstone seminar requirement.

Geographic Areas are: (1) United States and Canada (USC); (2) Europe and Russia (EUR); (3) Latin America and Caribbean (LAC); (4) Africa, Middle East, Asia (AMEA). In cases of global or comparative courses, consult the history major's handbook or contact the Office of Undergraduate Studies.

Thematic Areas include: 1) History of Medicine, Science, and Technology; 2) Military History; 3) History of Women and Gender; 4) African Diaspora.


Double counting: Courses can fulfill two or more requirements. For example, History 138 would count as both a pre-modern class and as a European field. For a student with primary focus on Europe, it would also count toward the primary field requirement.

Advanced Placement: One (1) Advanced Placement course (with a score of 4 or 5) in any field of history may count as one of the ten required courses for the history major. This AP credit does not count towards meeting the area or primary field 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 towards 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 a reading knowledge of one or more foreign languages is required.

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 an historical perspective.

Requirements: a minimum of five history courses, at least three of which must be at the 100-level or above. Cross-listed courses are acceptable regardless of the department through which the student enrolls. Courses taken pass/fail and Advanced Placement credits do not count toward the minor; one transfer course may count toward the requirements for the minor.

House Courses (HOUSECS)

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 and 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 pass/fail basis. Further details are available in 011 Allen Building.

79. House Course. Special topics course. Information about specific offerings each term available prior to the start of classes at the following Web site: http://trinity.duke.edu/house-courses. Satisfactory/Unsatisfactory grading only. Instructor: Staff. Half course.

Human Development (HUMANDEV)
Associate Professor Gold, Director; Assistant Professor Gustafson; Research Associate Maxson

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 (124 and 180) 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 124 (Human Development); and either Human Development 180 (Psychosocial Aspects of Development) or Psychology 159S (Biological Psychology of Human Development); Human Development 190 (Research Apprenticeship in Human Development); and Human Development 191S (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 pre-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 Web site; http://www.geri.duke.edu/educate/realundergrad.html. 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.

124. 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, Maxson, or staff. One course. C-L: Psychology 124, Sociology 124, Early Childhood Education

180. 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 130, Sociology 169, Early Childhood Education, Ethics
**190. 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.

**191S. 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.

**192S. Special Topics in Human Development. SS** Selected theoretical, methodological, and applied topics with emphasis on social change, psychological development, and policy issues in aging societies. Instructor: Gold. One course.

**OTHER COURSES**

**Psychology and Neuroscience**

159S. Biological Psychology of Human Development

164S. The Role of Race and Culture on Development

**Immunology**

For courses in immunology, see Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates on page 453.

**Information Science and Information Studies (ISIS)**

Assistant Research Professor Szabo (Art, Art History, and Visual Studies), Director; Associate Professor of the Practice Lucic (Computer Science), Director of Undergraduate Studies; Professor Lenoir, Kimberly J. Jenkins Chair for New Technologies and Society; Adjunct Associate Professor Brady (Computer Science); 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; issues of security, privacy, and property; and the history of science and technology. More information is available at the program Web site, at [http://isis.duke.edu/](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:

A. Information Science and Information Studies 100: Perspectives on Information Science and Information Studies.

B. For non-computer science and non-engineering majors, Information Science and Information Studies 140: Fundamentals of Web-based...
Multimedia Communications. For engineering and computer science majors, Engineering 150L or Computer Science 196.

C. Three 100- or 200-level electives selected from a list of ISIS-approved courses.

D. Information Science and Information Studies 200: Capstone Seminar.

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.


87FCS. Visual Representation and Visual Culture. ALP, SS, STS Understanding of human perception, visualization, and computer graphics techniques. Basic principles of perception like lightness, brightness, contrast, constancy, color theory, and visual attention. Use of current visualization techniques in graph tools, volume rendering, surface rendering, use of glyphs, and animation to see their strengths, weaknesses, and visual artifacts. Lectures and readings on theoretical foundation of particular techniques. Course projects on the practical application of techniques to real-world datasets. Represent student data in several ways and determine the best method. Open only to students in the Focus Program. Instructor: Brady. One course. C-L: Visual Arts 87FCS

100. Perspectives on Information Science and Information Studies. CZ, STS Survey of topical issues pertaining to Information Technology and its impact on our world, society, and our daily lives. A variety of intellectual modules exploring the understanding of information systems, information technology in the arts and humanities, the physical nature of information, ethical/policy implications, and ownership and control of information. Instructor: Brady, Lucic, Szabo. One course. C-L: Visual Studies 120A

108. Virtual Form and Space. One course. C-L: see Visual Arts 108; also C-L: Arts of the Moving Image 137

108FCS. Virtual Form and Space. ALP One course. C-L: see Visual Arts 108FCS; also C-L: Arts of the Moving Image 137FCS

110FCS. 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.

110S. 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.
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.

114S. Media Theory. STS One course. C-L: see Literature 114AS; also C-L: Arts of the Moving Image 118S, Visual Studies 121HS

120. Special Topics in Information Science and Information Studies. Topics vary by semester. Instructor: Staff. One course.

120S. Special Topics in Information Science and Information Studies. Topics vary per semester. Instructor: Staff. One course.


125S. 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.


135. Espionage, Propaganda and Cryptology. SS, STS Explores practices of state level intelligence agencies and their adversaries. Looks at spies and their tradecraft, psychological operations, and codes & ciphers in their cultural context. Influence of intelligence communities on the origins of computation. Historic and contemporary issues through the Internet, readings, video and hands-on work with propaganda leaflets, cryptanalysis and cryptographic machines. Presentations on approved research topics of their choice. No prerequisites. Instructor: Gessler. One course.

140. 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 150 or Computer Science 196. Instructor: Lucic or Szabo. One course. C-L: Visual Studies 120E, Arts of the Moving Image 167


148S. Editing for Film and Video. ALP One course. C-L: Arts of the Moving Image 148S, Documentary Studies 149S


developing digital narratives and creating digital critiques. No specific digital media authoring experience required. Instructor: Staff. One course.

**155S. 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 Studies 120HS

**165. 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 Studies 120G

**170FCS. 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.

**170S. Constructing Immersive Virtual Worlds. QS** Theory, practice, and 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, and 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. No prerequisites - some programming experience helpful. Consent of instructor required. Instructors: McCahill and Lombardi. One course. C-L: Computer Science 122S, Visual Studies 120CS

**173. Gaming the System: Pervasive Gaming as Art. ALP, STS** One course. C-L: see Visual Studies 102B

**175. Global Performance Art: History/Theory from 1950's to Present. ALP, CCI, CZ, EI** One course. C-L: see Visual Studies 181; also C-L: Literature 133C, Theater Studies 175A, Women's Studies 176

**179S. Visual Cultures of Medicine. ALP, STS** One course. C-L: see Visual Studies 184S; also C-L: Cultural Anthropology 179S

**183. Cultural History of the Televisual. ALP, CZ, STS** One course. C-L: see Visual Studies 183; also C-L: Arts of the Moving Image 128


**194CL. Interactive Graphics: Critical Code. ALP, QS** One course. C-L: see Visual Arts 183L; also C-L: Arts of the Moving Image 168
198. 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.

199. 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.

200S. Research Capstone. R, SS 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.

207. New Media, Memory and the Visual Archive. ALP, STS One course. C-L: see Visual Studies 270S

210S. 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: Arts of the Moving Image

225S. Chinese Media and Pop Culture. ALP, CCI, R One course. C-L: see Asian & Middle Eastern Studies 250S

240S. Technology and New Media: Academic Practice. SS, STS How information technology and new media transform knowledge production in academic practice through hands-on work. Critique of emergent digital culture as it impacts higher education; assessing impact of integrating such tools into scholarly work and pedagogical practice. Modular instruction with guest specialists assisting with information technology tools and media authorship theory. Topics may include: web development, information visualization, time-based media, databases, animations, virtual worlds and others. Theoretical readings; hands-on collaboration; ongoing application to individual student projects. Knowledge of basic web development, personal computer access recommended. Instructor: Szabo. One course. C-L: Art History 240S, Visual Studies 250BS


260S. Exploring the Metaverse: Mirror, Hybrid, and Virtual Worlds. ALP, SS, STS History, theory, criticism, practice of creating digital places and spaces with maps, virtual worlds, and games. Links to "old," analog media. Virtual environment and world-building and historical narrative, museum, mapping, and architectural practices. Project-based seminar course w/ critical readings, historical and contemporary examples, world-building. Class exhibitions, critiques, and ongoing virtual showcase. Projects might include: web and
multimedia, GPS and handheld data and media capture, 2D & 3D mapping, screen-based sims and game-engine based development, sensors and biometrics, and multimodal, haptic interfaces. Instructor: Szabo. One course.

263S. Post-Digital Architecture. ALP, R One course. C-L: see Literature 263S

265S. Emergent Embodied Interface Design. ALP, STS One course. C-L: see Visual Studies 265S; also C-L: Arts of the Moving Image 201S

266S. The Human as Electrochemical Computer - Toward a New Computational and Aesthetic Paradigm. ALP, NS, R, STS One course. C-L: see Visual Arts 266S; also C-L: Arts of the Moving Image 202S

270. 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 262, Philosophy 270, Genome Sciences and Policy

291. Special Topics in Information Science + 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.


298. 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 graduate studies is required. Instructor: Staff. One course.

299. 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.

ELECTIVES

Arts of the Moving Image
130S. Introduction to Production
133S. Adapting Literature – Producing Film
135S. Film Animation Production
140S. Planning the Documentary Film: From Concept to Treatment
143S. Sound for Film and Video
152S. Intermediate Documentary Filmmaking
160S. Special Topics in Film and Digital Video Production

Biology
268L. Models for Environmental Data

Computer Science
1. Principles of Computer Science
4. Programming and Problem Solving
6. Program Design and Analysis I
49S. First-Year Seminar
97S. Minds and Computers: Foundations of Artificial Intelligence
100. Program Design and Analysis II
108. Software Design and Implementation
114. Introduction to Computer Networks
116. Introduction to Database Systems
170. Introduction to Artificial Intelligence
181S. Computer Science Seminar
182S. Technical and Social Analysis of Information and the Internet
226. Probability for Electrical and Computer Engineers

**Cultural Anthropology**
147. Introduction to Islamic Civilization
191ES. Global Environmentalism and the Politics of Nature

**Documentary Studies**
103. Special Topics in Sound Technology
113S. A Digital Approach to Documentary Photography: Capturing Transience
133S. Adapting Literature -- Producing Film
135S. Introduction to Audio Documentary
148S. Planning the Documentary Film: From Concept to Treatment
150S. Intermediate Documentary Filmmaking
155S. Hearing is Believing: Intermediate Audio Documentary

**Economics**
103. Prisoner’s Dilemma and Distributive Justice
139D. Introduction to Econometrics
151. Basic Finance and Investments

**Electrical and Computer Engineering**
142. Introduction to Robotics and Automation
152. Introduction to Computer Architecture
156. Computer Network Architecture
157. Computer Network Analysis and Design
158. Web Technologies
189. Digital Image and Multidimensional Processing
255. Probability for Electrical and Computer Engineers
257. Performance and Reliability of Computer Networks
258. Artificial Neural Networks

**English**
280. Twentieth-Century Reconceptions of Knowledge and Science

**Environment**
231L. Models for Environmental Data

**History**
101G. Introduction to Islamic Civilization

**Linguistics**
103. Symbolic Logic
107. Language Technologies and Culture Acquisition
108. Philosophy of Mind

**Literature**
145S. Special Topics in Science and Culture
260. Twentieth-Century Reconceptions of Knowledge and Science

**Mathematics**
128S. Number Theory
135. Probability
136. Statistics

**Mechanical Engineering and Materials Science**
142. Introduction to Robotics and Automation

**Medieval and Renaissance Studies**
146A. Introduction to Islamic Civilization

**Music**
153. Electronic Music: Introduction to Digital Synthesis
153S. Electronic Music: Introduction to Digital Synthesis
154S. Computer Music

**Philosophy**
103. Symbolic Logic
104. Foundations of Scientific Reasoning
110. Knowledge and Certainty
112. Philosophy of Mind
146. Prisoner’s Dilemma and Distributive Justice (A, C-N)
238S. Problems in the Philosophy and Policy of Genomics

**Physics**
171L. Electronics

**Political Science**
103. Prisoner’s Dilemma and Distributive Justice (A, C-N)
276. Media in Post-Communist Societies
Psychology
128. The Creative Mind
223S. Learning and Cognition: A Neural Network Approach (B, C)

Public Policy Studies
118S. Television Journalism
126. Information, Policy, and Ethics
163S. Telecommunications Policy and Regulation
182S. Intermediate Documentary Filmmaking
221. Media and Democracy
243. Media in Post-Communist Societies

Religion
146. Introduction to Islamic Civilization

Russian
109. Language Technologies and Culture Acquisition
246. Media in Post-Communist Societies

Sociology
114. Cybernetworks and the Global Village
156. Global Contexts of Science and Technology
170. Mass Media

Statistics and Decision Sciences
101. Data Analysis and Statistical Inference
102. Introductory Biostatistics
103. Probability and Statistical Inference
104. Probability
113. Probability and Statistics in Engineering
114. Statistics

Theater Studies
173S. Introduction to Production

Visual Arts
106. Digital Imaging
112S. A Digital Approach to Documentary Photography: Capturing Transience
138S. Adapting Literature -- Producing Film
165S. Film Animation Production

Visual Studies
103JS. A Digital Approach to Documentary Photography: Capturing Transience
103US. Planning the Documentary Film: From Concept to Treatment
103VS. Intermediate Documentary Filmmaking
113B. Digital Image and Multidimensional Processing
117AS. Introduction to Production
117IS. Film Animation Production
122B. Philosophy of Mind
125BS. Television Journalism
191. Digital Imaging
251A. Media and Democracy

International Comparative Studies (ICS)
Associate Professor Gheith, Director; Lecturer Kirk, Associate Director; Associate Professor Hasso; Lecturer Need; Instructor Litle

A major or a minor is available in this program.

The undergraduate major in international comparative studies offers a Bachelor of Arts degree to students interested in the interdisciplinary study of societies and cultures in a particular region of the world. Students complement their primary concentration with the comparative study of international themes or problems. The major allows a student to combine language study with courses in a variety of disciplines. As in area studies programs elsewhere, the result is a sustained focus on a single world area tailored to fit the student's interest.

International Comparative Studies at Duke, however, is distinct from other area studies programs in several respects. The primary concentration encourages study in the social sciences and humanities as well as analysis of their social, historical, economic, and political roots and problems. The broader global issues courses impart breadth of focus and a
cross-regional perspective to the course of study, while the required course on comparative methods ensures an analytic perspective that is multidisciplinary as well as global.

Students in the program are currently studying Latin America, North America, Africa, the Middle East, Russia, South Asia, East Asia, and Eastern and Western Europe. Many International Comparative Studies majors double-major in International Comparative Studies and in such fields as art history, cultural anthropology, history, political science, Spanish, and French. The program is unique in that it conjoins the social sciences and humanities. It is specifically designed for those with career objectives in academia, government (especially the Foreign Service), international business, international law, health and environmental programs, the United Nations and international agencies, and private international religious or service organizations.

The major draws its offerings from courses taught by over 130 Duke professors in fourteen cooperating departments. Interdisciplinary and intercultural courses have been designed specifically for majors in the program to help place those societies chosen for specialization in a broad comparative and global perspective. These courses stress the interrelationship of developed and underdeveloped societies and probe the difficulties and advantages of comparative, interdisciplinary, and intercultural research. The program is administered by its directors and advisory committee representing the various areas and cooperating departments.

Advising. Students must identify the area of their primary concentration. Faculty members with expertise in each area are available to provide advice concerning selection of an area and appropriate coursework in the major. Selection of area is normally done by the end of the sophomore year. The program tries to foster close relationships between faculty and students working in similar areas.

Study Abroad. The program encourages qualified and interested students to engage in sustained study abroad in their chosen area for a semester or for an academic year. Up to three courses taken in a non-Duke semester abroad program may be counted toward the requirements in the major. Duke students are eligible for a variety of programs now operating in Africa, Asia, Canada, Latin America, Russia, and Eastern and Western Europe. Students can also take advantage of internship programs with international agencies. Occasionally summer internships become available for qualified students.

Grants and Awards. International Comparative Studies runs a program of grants and awards for majors. Summer stipends for travel and research abroad are also offered to selected rising senior majors planning to enroll in the honors seminar. The author of the best research paper submitted to the honors seminar is recognized by an award for excellence in comparative analysis.

The courses listed on the following pages meet requirements for the major as introductory courses, area courses, and comparative/global issue courses. Basic language courses and courses at the 100 and 200 level taught in the foreign language satisfy the foreign language corequisite; such courses are not listed. Only advanced language and literature courses meeting requirements for specific areas of the major are listed below. Selected non-listed upper-level and seminar courses offered by various departments and programs (including International Comparative Studies 140), the topics of which vary from semester to semester, may also be included if the topics covered fall within a particular area or focus on comparative/global issues. To determine if specific courses meet requirements for the major, consult the directors. For a complete description of each course, including cross-listings, consult the listing in the Duke University bulletin under the appropriate department or program.

**Introductory Courses:** 90A, 90B


**Area Courses—Africa:** 110A, 110CS, 103FS
Area Courses—East Asia: 120A, 120B, 120C, 120G, 120H, 121C, 121E, 121G, 221AS, 221BS


Area Courses—Middle East: 141A, 141B, 141C, 141E

Area Courses—North America: 98, 151A, 151ES

Area Courses—Russia and Eastern Europe: 160A, 161A

Area Courses—South Asia: 141A, 170B, 170C, 170E, 170F, 170G, 170H


49S. First Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

50. Duke-Administered Study Abroad: Special Topics in Comparative Area Studies. CCI Topics differ by section. Instructor: Staff. One course.

90A. Religions of Asia. CCI, CZ, EI One course. C-L: see Religion 45

90B. Introduction to Cultural Anthropology. CCI, CZ, SS One course. C-L: see Cultural Anthropology 94

98. Introduction to Canada. SS One course. C-L: see Canadian Studies 98; also C-L: History 98, Political Science 98, Sociology 98

100. Duke-Administered Study Abroad: Advanced Special Topics in Comparative Area Studies. CCI Topics differ by section. Instructor: Staff. One course.

101A. Experimental Art and Its Ethics since 1945. ALP, CCI, CZ, EI One course. C-L: see Art History 168; also C-L: Women's Studies 177, Literature 133B, Ethics

101BS. Doing Good: Anthropological Perspectives on Development. CCI, EI, R, SS One course. C-L: see Cultural Anthropology 191VS; also C-L: Public Policy Studies 130S

101C. Anthropology and Film. SS One course. C-L: see Cultural Anthropology 104; also C-L: Visual Studies 110A, Documentary Studies, Arts of the Moving Image

101E. Gender and Culture. CCI, SS One course. C-L: see Cultural Anthropology 113; also C-L: Women's Studies 117, Study of Sexualities, Women's Studies

101F. Muslim World: Transformations and Continuities. CCI, SS One course. C-L: see Cultural Anthropology 126; also C-L: Religion 119, Women's Studies

101G. Cross-Cultural Perspectives on Human Development: A View from Modern day Japan and Asia (C,D). CCI, SS One course. C-L: see Psychology 132B; also C-L: Cultural Anthropology 166

101H. Globalization and Anti-Globalization. CCI, CZ, SS One course. C-L: see Cultural Anthropology 191P

102A. Dance and Religion in Asia and Africa. ALP, CCI, CZ One course. C-L: see Dance 158; also C-L: Asian & Middle Eastern Studies 136, Cultural Anthropology 149C, Religion 161N, African and African American Studies 158

102B. Postcolonial Novel. ALP, CCI One course. C-L: see English 177

102C. World Military History. CZ, STS One course. C-L: see History 149

102E. Languages of the World. CCI, SS One course. C-L: see Linguistics 102; also C-L: Cultural Anthropology 114, Russian 117

102F. Thinking About God: The Nature of Religious Belief at the Crossrds of Judaism, Christianity, & Islam. CCI, CZ, EI One course. C-L: see Philosophy 135; also C-L: Cultural Anthropology 120B, Religion 161V, Turkish 136

102G. The Cognitive Science of Religion & Morality. CZ, EI, R, W One course. C-L: see Philosophy 132; also C-L: Religion 161U, Cultural Anthropology 120A, Turkish 133

102J. Gender and Language (DS4). CCI, R, SS One course. C-L: see Russian 174; also C-L: Cultural Anthropology 174, Women's Studies 174, Linguistics 174
102S. Capstone Seminar: Globalization, Women and Development. CCI, CZ, R, SS, STS
One course. C-L: see History 195IS; also C-L: African and African American Studies 195IS, Women's Studies 191S

103A. Ethnic Conflict. CCI, R, SS One course. C-L: see Political Science 173

103C. Environmental Science and Policy of the Tropics. EI, NS, SS, STS One course. C-L: Environment 129

103E. Fantasy, Mass Media, and Popular Culture. CCI, R, SS One course. C-L: see Cultural Anthropology 108; also C-L: Visual Studies 110B, Documentary Studies, Policy Journalism and Media Studies, Study of Sexualities

103FS. The Atlantic Slave Trade. CCI, CZ, R One course. C-L: see History 168BS; also C-L: African and African American Studies 168S, Latin American Studies

103G. Old Worlds/New Histories, 500-1500 CE. CCI, CZ, SS One course. C-L: see History 93; also C-L: African and African American Studies 93


104A. Introduction to Dance. ALP, CCI One course. C-L: see Dance 101

104BS. Transnational Feminism. CCI, EI, SS One course. C-L: see Women's Studies 169S

104CS. Discourse of Disease and Infection. ALP, CCI, CZ, STS One course. C-L: see Asian & Middle Eastern Studies 134S; also C-L: Literature 165MS, Cultural Anthropology 101BS, Visual Studies 105KS

104E. Culture and Politics in Contemporary Europe: Citizenship, Migration and National Belonging. CCI, CZ, EI, SS One course. C-L: see Cultural Anthropology 123

110A. Art, Architecture, and Masquerade in Africa. ALP, CCI, CZ, R One course. C-L: see Visual Studies 101F; also C-L: African and African American Studies 157

110B. From Apartheid to Democracy in South Africa. CCI, EI, SS One course. C-L: see Political Science 171; also C-L: African and African American Studies 171

110CS. Francophone Literature. ALP, CCI, FL One course. C-L: see French 161S; also C-L: African and African American Studies 138S, Asian & Middle Eastern Studies 168S, History 162S, Canadian Studies, Latin American Studies

110F. Representing Slavery. ALP, CCI, EI, SS One course. C-L: see African and African American Studies 151; also C-L: Cultural Anthropology 122C, Visual Studies 104E

110FCS. The Languages of Art. ALP, CCI, CZ One course. C-L: see Art History 131FCS

111A. Pigging Out: The Cultural Politics of Food. CCI, EI, SS One course. C-L: see African and African American Studies 169; also C-L: Sociology 179

120A. Taoism and Chinese Religion. CCI, CZ, EI One course. C-L: see Religion 107A; also C-L: Ethics

120B. Mahayana Buddhism. CCI, CZ One course. C-L: see Religion 117; also C-L: Asian & Middle Eastern Studies 119

120C. Trauma and Passion in Korean Culture. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 167; also C-L: Literature 165F

120E. Advanced Chinese. CCI, FL One course. C-L: Chinese 126

120F. Reading in Modern Chinese. ALP, CCI, FL One course. C-L: see Chinese 136

120G. Chinese Buddhist Art. ALP, CCI, CZ, R One course. C-L: see Art History 170

120H. Japanese Architecture. ALP, CCI, CZ One course. C-L: see Art History 182

121C. Contemporary Japanese Politics. CCI, SS One course. C-L: see Political Science 111

121G. Politics of East Asia. CCI, SS One course. C-L: see Political Science 154
121JS. Environment, Health and Development in China. CCI, EI, SS, STS One course. C-L: see Cultural Anthropology 163BS; also C-L: Global Health Certificate 173S, Political Science 100GS, Ethics

122A. Critical Inter-Asia: Rethinking Local and Global Connections. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 148; also C-L: Literature 165NS

122AS. Language and Society II. ALP, CCI, CZ, FL One course. C-L: Chinese 182S

122C. Traffic in Women: Cultural Perspectives on Prostitution in Modern China. ALP, CCI, SS One course. C-L: see Asian & Middle Eastern Studies 138; also C-L: Literature 162G, Cultural Anthropology 142A, Women's Studies 138, Study of Sexualities 138

122E. Vampire Chronicles: Fantasies of Vampirism in a Cross-cultural Perspective. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 141S; also C-L: Cultural Anthropology 142, Literature 151M, Women's Studies 131S, Study of Sexualities 131S

122F. Colonial Cinema and Postcolonial Reflections. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 177; also C-L: Literature 112D, Arts of the Moving Image 111J

122GS. Health Policy in Transition: Challenges for China. CCI, EI, SS, STS One course. C-L: see Cultural Anthropology 163CS; also C-L: Global Health

125. Comparative Approaches to Global Issues (B, D). CCI, CZ, SS Comparative and connective research and analysis in the social sciences and the humanities: strengths and weaknesses of cross-cultural comparison as developed by sociologists, historians, political scientists, anthropologists, and specialists in comparative literature and religion. Not open to students who have taken Religion 121. Instructor: Litle. One course. C-L: Cultural Anthropology 125, History 137, Political Science 125, Religion 183, Sociology 125

128. Cities and City Life in Italy. ALP, CCI, CZ One course. C-L: see Italian 136; also C-L: History 175B, Cultural Anthropology 137

130A. Culture and Politics in Latin America. CCI, CZ, EI, SS One course. C-L: see Cultural Anthropology 128; also C-L: Documentary Studies

130AS. Research Seminar in Citizenship and Culture. CZ, FL, R, W One course. C-L: see Portuguese 111S; also C-L: Latin American Studies

130B. Gender and Sexuality in Latin America. CCI, CZ, SS One course. C-L: see Cultural Anthropology 191J; also C-L: Women's Studies 189, Latin American Studies, Study of Sexualities

130ES. Capstone Seminar in Latin American Studies. CCI, CZ One course. C-L: see Latin American Studies 198S; also C-L: Education 185

130F. Dictators and Democrats in Modern Latin America. CCI, EI, R, SS One course. C-L: see Political Science 151

130G. Introduction to Brazilian Literature. ALP, CCI, FL, W One course. C-L: see Portuguese 113S; also C-L: Latin American Studies

130H. Introduction to Spanish-American Literature. ALP, CCI, FL One course. C-L: see Spanish 115; also C-L: Latin American Studies

130J. Performing Brazil: Issues of Performative Cultures. ALP, CCI One course. C-L: see Portuguese 143

130JS. Performing Brazil: Issues of Performative Cultures. ALP, CCI Seminar version of Portuguese 143. One course. C-L: Portuguese 143S

131B. Mayas, Aztecs and Incas: The World According to the Indigenous People of Latin America. CZ, EI, FL, R One course. C-L: see Spanish 155D; also C-L: Cultural Anthropology 157

131C. Latin-American Literature in Translation. ALP, CCI One course. C-L: see Spanish 121D; also C-L: Literature 163D, Latin American Studies

131CD. Latin American Literature in Translation. ALP, CCI One course. C-L: see Literature 161AD; also C-L: Spanish 121AD

131DS. Portugal, Portuguese-Speaking Africa, and Brazil: Old Problems, New Challenges. CCI, CZ One course. C-L: see Portuguese 139S; also C-L: Cultural Anthropology 140CS

131E. Elections and Social Protest in Latin America. CCI, CZ, SS One course. C-L: see Political Science 151E; also C-L: Latin American Studies 151E

131FS. Geographies of the Erotic: Brazilian Literature in Translation. ALP, CCI, CZ, EI One course. C-L: see Portuguese 121S; also C-L: Latin American Studies 121S, Cultural Anthropology 140BS, Literature 162FS

132A. Introduction to Contemporary Latin America. CCI, CZ One course. C-L: see History 136A; also C-L: Latin American Studies 136

132BS. 20th Century Latin American Photography. CCI, CZ, FL One course. C-L: see Spanish 177S; also C-L: Art History 177S, Visual Studies 126KS, Latin American Studies

132S. What's Lost in Translation? Latin American Theater in English. ALP, CCI, CZ One course. C-L: see Spanish 129S; also C-L: Theater Studies 127S, Cultural Anthropology 135S

140. Selected Topics in Comparative Area Studies. CCI Topics vary from semester to semester, focusing either on specific world regions or particular comparative/global issues. Instructor: Staff. One course.

140E. Modern Africa through Film. ALP, CCI, CZ One course. C-L: see History 115E; also C-L: African and African American Studies 115E

140F. Africa and Humanitarians. CCI, CZ, EI One course. C-L: see History 115F; also C-L: African and African American Studies 115F

140S. Selected Topics in Comparative Area Studies. CCI Seminar version of Comparative Area Studies 140. Instructor: Staff. One course.

141A. Introduction to Islamic Civilization. CCI, CZ, EI One course. C-L: see Religion 146; also C-L: Cultural Anthropology 147, History 101G, Medieval and Renaissance Studies 146A, Ethics

141AS. Advanced Modern Hebrew. ALP, CCI, FL One course. C-L: see Hebrew 126S; also C-L: Jewish Studies 126S

141B. Representing the Middle East. CCI, CZ, SS One course. C-L: see Cultural Anthropology 132; also C-L: Asian & Middle Eastern Studies 132, History 131B, Turkish 132, Visual Studies 110H, Islamic Studies

141C. Jewish Mysticism. CZ, EI One course. C-L: see Religion 134; also C-L: Medieval and Renaissance Studies 134C, Jewish Studies 106, Ethics

141E. Islamic Mysticism: Perso-Indian (Eastern) Traditions. CCI, CZ, EI One course. C-L: see Religion 152B; also C-L: Ethics, Islamic Studies

141G. Venetian Civilization and Its Mediterranean Background. ALP, CCI, CZ One course. C-L: see Classical Studies 149

142A. Advanced Arabic. ALP, FL One course. C-L: see Arabic 126

151A. Life in America: Identity and Everyday Experience. CCI, CZ, SS One course. C-L: see Cultural Anthropology 106

151B. The Caribbean in the Eighteenth Century. CCI, CZ One course. C-L: see History 127B; also C-L: African and African American Studies 127B, Latin American Studies

151C. Variety in Language: English in the United States. CCI, SS One course. C-L: see English 187; also C-L: Linguistics 187, Cultural Anthropology 187

151ES. Geography of Canada. CCI, SS One course. C-L: see Canadian Studies 103S
160A. Russian Stylistics and Conversation. ALP, CCI, FL, W One course. C-L: see Russian 199

160B. The Russian Fairy Tale and Its Cultural Legacy. ALP, CCI, CZ One course. C-L: see Russian 134; also C-L: Literature 151LS

160E. The New Russia: Reflections of Post-Soviet Reality in Literature & Film. ALP, CCI, EI One course. C-L: see Russian 136; also C-L: International Comparative Studies

160FS. National Dramas and Cabaret Nights: Theater in Modern Polish Culture. ALP, CCI, CZ One course. C-L: see Polish 184S; also C-L: Theater Studies 121S

160S. Topics in Polish Literature. ALP, CCI One course. C-L: see Polish 174S

161A. Advanced Russian: Readings, Translation, and Syntax. CCI, FL One course. C-L: see Russian 196


161C. Law and Constitutional Reform in Russia and the Former Soviet Union. CCI, CZ One course. C-L: see Russian 140; also C-L: Political Science 105

161E. Law and Globalization in Emerging Markets. CCI, SS One course. C-L: see Russian 139S; also C-L: Public Policy Studies 135S

161FCS. Law and Globalization in Emerging Markets. CCI, SS One course. C-L: see Russian 139FCS; also C-L: Public Policy Studies 135FCS

161JS. Global Russia. CCI, CZ, EI, SS One course. C-L: see Russian 185S; also C-L: Cultural Anthropology 174AS, Public Policy Studies 196LS

170A. Melodrama East and West. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 179; also C-L: Women's Studies 179, Literature 151J, Visual Studies 105E

170B. Advanced Hindi. ALP, CCI, FL One course. C-L: see Hindi 126

170C. Dance and Dance Theater of Asia. ALP, CCI, CZ One course. C-L: see Dance 149; also C-L: Cultural Anthropology 149, Theater Studies 133, Asian & Middle Eastern Studies 149, Religion 161C

170E. Gender in Dance and Theatre. ALP, CCI, CZ One course. C-L: see Dance 175; also C-L: Women's Studies 111, Theater Studies 132, Cultural Anthropology 149A, Asian & Middle Eastern Studies 176

170F. Modern South Asia. CZ, EI, W One course. C-L: see History 139B

170G. Religions of India. CCI, CZ One course. C-L: see Religion 140

170H. Kundalini Yoga and Sikh Dharma. ALP, CCI, CZ One course. C-L: see Dance 155; also C-L: Religion 161H, Asian & Middle Eastern Studies 135

180A. French Art and Visual Culture in the Early Modern Period. ALP, CCI, CZ, R One course. C-L: see Visual Studies 101C; also C-L: Medieval and Renaissance Studies 157

180B. Modern Architecture. ALP, CCI, CZ One course. C-L: see Art History 189A


180E. Tudor/Stuart Britain. CZ, R, W One course. C-L: see History 107A; also C-L: Medieval and Renaissance Studies 107A

180F. Modern Britain. CCI, CZ, W One course. C-L: History 107B

180G. Europe in the Twentieth Century. CCI, CZ One course. C-L: see History 135A

180H. Mozart and His Time. ALP, CCI, W One course. C-L: see Music 145

181CS. Italian Popular Culture. ALP, CCI, FL One course. C-L: see Italian 118S

181E. French Cinema. ALP, CCI, FL One course. C-L: see French 155; also C-L: Arts of the Moving Image 111B, Visual Studies 126E
181H. The Reformation of the Sixteenth Century. CCI, CZ, EI One course. C-L: see Religion 158; also C-L: History 156A, Medieval and Renaissance Studies 156A, Ethics
182B. Italian Women Writers. ALP, EI One course. C-L: see Italian 135; also C-L: Women's Studies
182C. Creole/Kreyòl Studies II. One course. C-L: see French 193; also C-L: African and American Studies 193
182CS. Italian Identities Between Europe and the Mediterranean. CCI, CZ One course. C-L: see Italian 160S
182FS. French for Current Affairs. CCI, FL One course. C-L: see French 104S
182GS. The Making of Barcelona: Introduction to Catalan Language and Culture. CCI, CZ, FL One course. C-L: see Spanish 106S
182H. Sex, Death, and a Little Love: Boccaccio’s Decameron. ALP, CCI, CZ, R One course. C-L: see Italian 144; also C-L: Medieval and Renaissance Studies 149
183A. Romantic Fairy Tales: Literary and Folk Fairy Tales from Grimms to Disney (DS3) (DS4). ALP, CCI, CZ One course. C-L: see German 173; also C-L: Literature 151E
183C. Existentialist Cinema. ALP, CCI, CZ, EI, STS One course. C-L: see German 184; also C-L: Theater Studies 172B, Literature 112N, Visual Studies 118H, Arts of the Moving Image
183E. French in the New World. ALP, CCI, CZ, FL One course. C-L: see French 132
189AD. Modern Architecture. ALP, CCI, CZ One course. C-L: see Art History 189AD
191. 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.
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. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.
193. 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.
194. 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.
195. At Home Abroad: Ways of Learning Through Study Abroad. CCI, R Challenges to cross-cultural communication and understanding, the dynamics of travel, and issues of identity for students studying abroad. Crafting research proposals in preparation for field investigation abroad. Attention to research techniques. Intended for students preparing to study abroad. Instructor: Gheith or Litle. Half course.
196. Coming Home: Processing Study Abroad Experience. CCI, CZ, R Evaluation of the study abroad experience with a focus on challenges to cross-cultural communication and understanding, the dynamics of travel, and issues of identity. Intended for students returning from study abroad, assisting them to evaluate their experiences abroad through the lens of research as well as of personal and social experience, how these may be related. Attention to research techniques. Instructor: Gheith or Litle. Half course.
197S. Senior Honors Seminar. CCI, CZ, R, SS, W Thesis design, research, and writing. First semester of a two course sequence. Open to seniors majoring in International Comparative Studies. Consent of instructor required. Instructor: Gheith or Litle. One course.

198S. Senior Honors Seminar. CCI, CZ, R, SS, W Continuation of International Comparative Studies 197S. Open to seniors majoring in International Comparative Studies. Consent of instructor required. Instructor: Gheith or Litle. One course.

200S. Capstone Seminar in International Comparative Studies. CCI, CZ, EI, SS Gives students the opportunity to review issues and concepts raised in previous major courses, and in related experiences (such as study or research abroad), through the lens of how to ethically manage cross-cultural communications as nations, organizations, and individuals. Addresses a wide range of issues, focusing in particular on identity and globalization, and the relationship between them. Open to seniors majoring in International Comparative Studies. Instructor: Gheith or Litle. One course.

201AS. Political Participation: Comparative Perspectives. CCI, SS One course. C-L: see Political Science 206S

201BS. Current Issues in International and Development Economics. SS, W One course. C-L: see Economics 268S; also C-L: Canadian Studies

201CS. International Environmental Regimes (B, D). EI, SS, STS One course. C-L: see Political Science 271S; also C-L: Public Policy Studies 258S

201E. Comparative Party Politics. CCI, R, SS One course. C-L: see Political Science 277; also C-L: Canadian Studies

202A. Comparative Legislative Politics. R, SS, W One course. C-L: see Political Science 280

221BS. Millennial Capitalisms: Global Perspectives. CCI, CZ, R, SS One course. C-L: see Cultural Anthropology 264S

280B. Modern Literature and History. ALP, CCI, CZ, FL One course. C-L: see French 256; also C-L: History 256

280CS. Music in Literature and Philosophy: 1800-1945 (DS3). ALP, CCI, R One course. C-L: see German 280S; also C-L: English 250S

280ES. Seminar in German Studies. CCI, CZ, R One course. C-L: see German 299S

281ES. Cinema and Literature in Italy. ALP, CCI One course. C-L: see Italian 225S; also C-L: Arts of the Moving Image

299. Selected Topics. Topics vary from semester to semester. Instructor: Staff.

299S. Seminar in Selected Topics. Topics vary from semester to semester. Instructor: Staff. One course.

INTRODUCTORY COURSES

African and African American Studies
70. Topics on the Third World and the West
71. Topics on the Third World and the West

Cultural Anthropology
145A. World Music: Aesthetic and Anthropological Approaches

History
25. Introduction to World History: To 1700
26. Introduction to World History: Since 1700
75. Topics on the Third World and the West
76. Topics on the Third World and the West

Italian
143. Dante's Divine Comedy: Hell, Purgatory and Paradise

Literature
98. Introduction to the Study of Literature and Society

Medieval and Renaissance Studies
166. Dante's Divine Comedy: Hell, Purgatory and Paradise

Music
136. World Music: Aesthetic and Anthropological Approaches
Political Science
92. Democracy, Development and Violence: Introduction to Comparative Politics
92D. Democracy, Development, and Violence: Introduction to Comparative Politics
149. Globalization and Public Policy

Public Policy Studies
185. Globalization and Public Policy

Religion
161G. Dante's Divine Comedy: Hell, Purgatory and Paradise

Visual Studies
110G. Global Culture

COMPARATIVE/GLOBAL ISSUES COURSES

Asian & Middle Eastern Studies
121. Introduction to Asian and African Literature

Cultural Anthropology
110. Advertising and Society: Global Perspective
117. Global Culture
139. Marxism and Society
190. Theoretical Foundations of Cultural Anthropology

Economics
148. History of Economic Thought
286. Economic Growth and Development Policy

Education
139. Marxism and Society

History
101C. The Foundations of Modern Terrorism
123. Madness and Society in Historical Perspective
141B. History of Economic Thought
186. Marxism and Society

Literature
141. International Popular Culture
165C. Introduction to Asian and African Literature
181A. Marxism and Society

Music
119S. Sound, Music, and the Moving Image
156S. Music History II: From 1650 to 1850
157. Music History III: After 1850

Political Science
116S. Post-World War II Europe and East Asia: A Comparative Perspective
147D. Environmental Politics and Policies in the Developing World
155. Political Economy of Development
231S. Crisis, Choice, and Change in Advanced Democratic States

Public Policy Studies
147D. Environmental Politics and Policies in the Developing World
178. Comparative Health Care Systems
286. Economic Growth and Development Policy

Russian
155. Special Topics in Russian and American Culture

Sociology
118. Sex, Gender, and Society
126. The Challenges of Development
139. Marxism and Society
142D. Organizations and Global Competitiveness
145. Nations, Regions, and the Global Economy
160. Advertising and Society: Global Perspective
160D. Advertising and Society: Global Perspective
170. Mass Media
171. Comparative Health Care Systems

Visual Studies
110E. Advertising and Society: Global Perspective
121F. International Popular Culture
169. Documentary Photography and Film of the Nuclear Age
AREA COURSES: AFRICA

African and African American Studies
115A. History of Africa: From Antiquity to Early Modern Times
115B. History and Modern Africa
122. Culture and Politics in Africa
150. Religions of the African Diaspora
270S. Topics in African Art

Art History
270S. Topics in African Art

Cultural Anthropology
122. Culture and Politics in Africa
122D. Development and Africa
150. Religions of the African Diaspora

History
115A. History of Africa: From Antiquity to Early Modern Times
115B. History and Modern Africa

Public Policy Studies
196J. Development and Africa

Religion
160. Religions of the African Diaspora

Visual Studies
104B. Culture and Politics in Africa

AREA COURSES: EAST ASIA

Art History
171. Chinese Art 1900 to Present
180B. Later Japanese Art
181A. Japanese Print Culture
272S. Topics in Chinese Art
274S. Topics in Japanese Art

Asian & Middle Eastern Studies
133. Global Chinese Cities through Literature and Film
141S. Vampire Chronicles: Fantasies of Vampirism in a Cross-cultural Perspective
144. Korea in the World: Global Perspectives
148. Critical Inter-Asia: Rethinking Local and Global Connections
162. The World of Japanese Pop Culture
163. Korean Literature in Translation
165. Arabic Culture and 9/11
253. East Asian Cultural Studies
262. The World of Japanese Pop Culture
288. Seminar on Chinese Cinema
288S. Seminar on Modern Chinese Cinema

Chinese
125. Advanced Chinese
183S. Topics in Modern Chinese
184S. Topics in Modern Chinese

Cultural Anthropology
163. Themes in Chinese Culture and History
254. East Asian Cultural Studies
260. The World of Japanese Pop Culture

History
143A. Ancient and Early Modern Japan
143B. The Emergence of Modern Japan
163G. Themes in Chinese Culture and History
184S. Journey to Eurasia
185. Islam in Central Eurasia

Japanese
183S. Topics in Japanese
184S. Topics in Japanese

Literature
254. East Asian Cultural Studies

Political Science
100G. Themes in Chinese Culture and History
International Comparative Studies (ICS) 401

169. Chinese Politics
182. China and the World (B, D)

Religion
165. Islam in Central Eurasia

Slavic and Eurasian Studies
184S. Journey to Eurasia
185. Islam in Central Eurasia

Visual Studies
173. Chinese Visual Culture

AREA COURSES: LATIN AMERICA

History
174B. Modern Latin America

Political Science
151A. Dictators and Democrats in Modern Latin America

Spanish
116. Introduction to Spanish-American Literature
144S. Duke in Andes: Special Topics
148A. Dictators and Democrats in Modern Latin America
175S. Hispanic Literature and Popular Culture

AREA COURSES: MIDDLE EAST

African and African American Studies
254. Justice, Law, and Commerce in Islam

Arabic
125. Advanced Arabic
183. Topics in Arabic
184. Topics in Arabic

Asian and Middle Eastern Studies
128. Orhan Pamuk and World Literature
140. The Modern Middle East
165. Arabic Culture and 9/11

Cultural Anthropology
148. Introduction to Islamic Civilization

Hebrew
125S. Advanced Modern Hebrew

History
102G. Introduction to Islamic Civilization
152. The Modern Middle East
296S. United States Policy in the Middle East

Jewish Studies
125S. Advanced Modern Hebrew
149. The Modern Middle East

Medieval and Renaissance Studies
147A. Introduction to Islamic Civilization
254. Justice, Law, and Commerce in Islam

Public Policy Studies
257S. United States Policy in the Middle East

Religion
147. Introduction to Islamic Civilization
254. Justice, Law, and Commerce in Islam
284. The Religion and History of Islam

Slavic and Eurasian Studies
145. Orhan Pamuk and World Literature

Turkish
145. Orhan Pamuk and World Literature

AREA COURSES: NORTH AMERICA

African and African American Studies
124S. Slave Society in Colonial Anglo-America: The West Indies, South Carolina, and Virginia
127A. The Caribbean, 1492-1700

History
111A. North America to 1760
124S. Slave Society in Colonial Anglo-America: The West Indies, South Carolina, and Virginia

International Comparative Studies (ICS) 401
127A. The Caribbean, 1492-1700
145A. Africans in America to the Civil War
145B. African Americans Since the Civil War
183S. Canada from the French Settlement

**AREA COURSES: RUSSIA**

**History**
161. From Tsars to Commissars: Russian Cultural History
201S. The Russian Intelligentsia and the Origins of the Revolution

**Political Science**
276. Media in Post-Communist Societies

**Public Policy Studies**
131. Law, Culture, and the Russian Legal Tradition
243. Media in Post-Communist Societies

**Russian**
103S. Studies in the Russian Language and Culture
104S. Studies in the Russian Language and Culture
135A. Contemporary Russian Media
149S. Russian Culture in the Era of Terror: A Reexamination
157. Law, Culture, and the Russian Legal Tradition
161. Masterpieces of Nineteenth-Century Russian Literature I
162. Masterpieces of Nineteenth-Century Russian Literature II
169. Women and Russian Literature
176. Dostoevsky
177S. Chekhov
178A. Russian Short Fiction
195. Advanced Russian
262. Masterpieces of Nineteenth-Century Russian Literature II
269. Women and Russian Literature

**Theater Studies**
122S. Chekhov

**Visual Studies**
127E. Contemporary Russian Media

**AREA COURSES: SOUTH ASIA**

**Asian and Middle Eastern Studies**
137. Contemporary Culture in South Asia
160. Introduction to the Civilizations of Southern Asia

**Cultural Anthropology**
101. Introduction to the Civilizations of Southern Asia
148. Introduction to Islamic Civilization

**History**
102G. Introduction to Islamic Civilization
193. Introduction to the Civilizations of Southern Asia

**Medieval and Renaissance Studies**
147A. Introduction to Islamic Civilization

**Religion**
144. Introduction to the Civilizations of Southern Asia
147. Introduction to Islamic Civilization

**Russian**
246. Media in Post-Communist Societies

**AREA COURSES: WESTERN EUROPE**

**Art History**
158. History of Netherlandish Art in a European Context
159. History of Netherlandish Art in a European Context
161. Art in an Age of Revolution: Europe 1760-1850
166. Art in Europe, 1850-1900
167. Modernism, Avant-gardism, and Visual Art, 1900-1945
190. Berlin: Architecture, Art and the City, 1871-to the Present

**Cultural Anthropology**
182. Contemporary European Issues

**Economics**
60. Economics of a United Europe
146. Adam Smith and the System of Natural Liberty

French
110S. Contemporary Ideas
142. France in the Making: Language, Nation, and Literary Culture in Premodern Europe
143S. Topics in Renaissance Literature and Culture
146. The French Enlightenment
196. Aspects of Contemporary French Culture

German
104. Economics of a United Europe
126S. Masters of the Modern: Great Writers of the 20th Century
133S. Introduction to German Drama
153. Current Issues and Trends in Germany
155. Advanced German Cultural Studies
158. Berlin: Architecture, Art and the City, 1871-Present
245S. German Literature and Culture 1900-1945
247S. German Literature and Culture Since 1945
270. Consciousness and Modern Society

History
135B. Weimar and Nazi Germany
138. Reformation Europe
146A. Adam Smith and the System of Natural Liberty

Italian
123. Aspects of Italian Literature
131. Topics of Italian Civilization
137. Modernism, Avant-gardism, and Visual Art, 1900-1945

Literature
270. Consciousness and Modern Society

Medieval and Renaissance Studies
138. Reformation Europe
140A. France in the Making: Language, Nation, and Literary Culture in Premodern Europe
158. History of Netherlandish Art in a European Context
159. History of Netherlandish Art in a European Context
160S. Topics in Renaissance Literature and Culture

Music
143. Beethoven and His Time
144. Bach and His Time

Political Science
135. Political Development of Western Europe
136. Comparative Government and Politics: Western Europe
231S. Crisis, Choice, and Change in Advanced Democratic States

Spanish
133S. Contemporary European Issues
137. Topics in Contemporary Spanish Culture
171. Literature of Contemporary Spain
280. Emigrants and Immigrants: Spain in the Sixties and Now

Theater Studies
123S. Introduction to German Drama

Visual Studies
119A. Weimar and Nazi Germany
158. History of Netherlandish Art in a European Context
159. History of Netherlandish Art in a European Context

THE MAJOR

Requirements
1. Two core global issues courses: International Comparative Studies 125, Comparative Approaches to Global Issues, best taken in the spring semester of the freshman or sophomore year. International Comparative
404 Courses and Academic Programs

Studies 200S, Advanced Topics, taken senior year. This is the capstone of the International Comparative Studies major.

2. Primary Area Courses:
   a. **Corequisite Foreign Language Requirement.** Four semester courses in a single language of the primary area are required. Students with advanced placement credits or other evidence of foreign language proficiency are not exempted from this requirement. However, if no language course is available at a sufficiently advanced-level students may substitute one or two courses in a second language to meet this requirement.
   b. Four semester courses in the geographical area of specialization, with a strong recommendation that students choose courses from a variety of disciplines. Areas and courses are listed above. Others may be selected with the consent of the director.

3. Selected global issues courses: Four semester courses selected from courses dealing with global issues in a comparative or connective framework or treating another region of the world. ICS 195 and 196 together can count as one of these four courses. No more than one course below 100 may be counted.

**Honors Seminar.** For Graduation with Distinction, the student must complete a research project in the senior year, through their participation in the ICS 197S-198S senior seminar. Candidates must apply in their junior year. Thesis students may count one credit towards the Primary Area requirement (part b) and one towards the Selected global issues course requirement. Selection criteria will include both the feasibility of the proposed topic, and the student's ability and skills to carry it out successfully. Inquiries should be addressed to the directors, Comparative Area Studies, 134 Franklin Center.

**THE MINOR**

Requirements

1. Three global issues courses, one of which must be ICS 125, Comparative Approaches to Global Issues. The other can be selected among ICS 200S, Advanced Topics, ICS 195-196, or other Comparative/Connective or Global Issues classes.

2. Primary Area Courses:
   a. Corequisite Foreign Language Requirement. Two semester courses in a single language of the primary area are required.
   b. Two courses in a primary geographic area

**Islamic Studies (ISLAMST)**

Professor Lawrence, *Director*

A certificate, but not a major, is available in this program.

The undergraduate certificate in Islamic Studies is administered by the Duke Islamic Studies Center (DISC). This interdisciplinary certificate is designed to provide students with comparative, historical, and cultural knowledge of the Muslim world; working knowledge of a Muslim language acquired through two years of language study; and cross-cultural exposure gained through a study abroad experience in a Muslim-majority country. The program allows students to draw on the strength and scope of Duke’s offerings in Islamic Studies, as well as on complementary courses offered at UNC-Chapel Hill, which also has a strong program in Middle Eastern/Islamic Studies. The program is 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 program is designed to be rigorous enough to ensure that students who fulfill its requirements will have language skills and a breadth of
knowledge about Islam and the Muslim world not possible within other majors or minors, yet broad and flexible enough to allow students to develop a sequence of courses that will complement their major field of study.

The approach to Islamic Studies at Duke represents a new paradigm for studying the Muslim world in which Islam is understood as a cosmopolitan tradition that is radically networked (i.e., connected across recognized boundaries). Thus, students pursuing a certificate in Islamic Studies are encouraged to investigate Islamic civilization through the rubric of Muslim networks that transcend geographic, linguistic, historical, sociocultural, and disciplinary boundaries. Participating departments include Asian and Middle Eastern Studies, Cultural Anthropology, International Comparative Studies, Economics, History, Literature, Political Science, Religion, Slavic and Eurasian Studies (Turkish and Persian), and Sociology.

In addition to coordinating the certificate program, 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.

**PROGRAM REQUIREMENTS**

Students interested in earning a certificate in Islamic Studies are encouraged (but not required) to declare it by their fifth semester.

To earn an undergraduate certificate in Islamic Studies, students must complete six (6) courses, as well as the foreign language and study abroad components described below:

A) an introductory course: Religion 146. Introduction to Islamic Civilization (seventh–sixteenth centuries) or Religion 147. Introduction to Islamic Civilization (seventeenth century–present).

B) a capstone seminar: Muslims in Global Contexts, taken as a junior or senior, which will include a significant research component. The capstone course will be offered in Religion in 2008 and in Economics in fall 2009.

C) Four (4) additional elective courses, two of which must be at the 100 level or above. In order to ensure that students develop an understanding of Islam as a global, networked tradition and of the interdisciplinary nature of Islamic Studies, at least three departments must be represented in the elective courses selected to fulfill certificate requirements. The elective course sequence must include at least one religion course and one social science course. No more than two (2) courses may be used to fulfill requirements for the certificate and the student’s major, minor, or other certificates. Appropriate courses may come from the list of approved elective courses below or may include other courses (new courses, special topics courses, independent study) with at least 50 percent of course content on Islam or the Muslim world. To determine if specific courses meet requirements for the certificate, students should consult the faculty director. New faculty have recently been hired in Economics, Cultural Anthropology, Sociology, History, and Political Science, so students should check for new Islamic Studies courses in those departments. The Duke Islamic Studies Center plans to regularly offer a “Muslim Cultures” Focus cluster in the spring semester (open to both first- and second-year students), and the two Focus seminars will count toward the Islamic Studies certificate. Students enrolled in the certificate program may take up to two (2) of their required electives for the certificate at UNC-Chapel Hill.

D) Language Requirement: In addition to the six required Islamic Studies courses, certificate recipients will be required to complete two years of study in an Islamic language (i.e., a language spoken in a majority-Muslim country). Students with enough language proficiency to place into a higher than elementary-level language course must take at least one applicable language course at the 100 level.
Muslim languages include Arabic, Turkish, or Persian (available at Duke) or Persian, Urdu, or Swahili (available at UNC-Chapel Hill).

E) Required study abroad in a majority-Muslim country. DukeEngage programs in majority-Muslim countries will also satisfy this requirement. To enroll in the certificate program, students should officially declare their intention to pursue the certificate through the Academic Advising Center (first- and second year students) or through the Office of the University Registrar (sophomores who have already declared a major, juniors and seniors) and then contact the Duke Islamic Studies Center.

REQUIRED COURSES

Core Course
One of the following two courses:
Religion 146. Introduction to Islamic Civilization (seventh–sixteenth centuries)
Religion 147. Introduction to Islamic Civilization (seventeenth century–present).

Capstone Course
Religion 195S. Muslims in Global Contexts

ELECTIVES

African and African American Studies
254. Justice, Law, and Commerce in Islam

Arts of the Moving Image
113. States of Exile and Accented Cinemas
114. Performance Traditions of the Middle East

Asian & Middle Eastern Studies
72. War, Gender, and Postcoloniality
127S. The City of Two Continents: Istanbul in Literature and Film
128. Orhan Pamuk and World Literature
132. Representing the Middle East
150S. Al-Qaeda’s Terrorism: Roots, Responses, and Ramifications
159. Palestine, Israel, Arab-Israeli Conflict
165. Arabic Culture and 9/11
173S. Gender Jihad: Muslim Women Writers
178. Introduction to Islamic Communities in North Carolina

Cultural Anthropology
132. Representing the Middle East
152. The Turks: From Ottoman Empire to European Union
155. Palestine, Israel, Arab-Israeli Conflict

Economics
133. Economic History and Modernization of the Islamic Middle East

German
211S. Theory and Practice of Literary Translation

History
131B. Representing the Middle East
141A. The Turks: From Ottoman Empire to European Union

International Comparative Studies
141B. Representing the Middle East
141E. Islamic Mysticism: Perso-Indian (Eastern) Traditions

Jewish Studies
155. Palestine, Israel, Arab-Israeli Conflict

Literature
113AS. States of Exile and Accented Cinemas
118. Performance Traditions of the Middle East
163HS. The Middle East through Historical Literature
211S. Theory and Practice of Literary Translation

Medieval and Renaissance Studies
254. Justice, Law, and Commerce in Islam

Political Science
118. Introduction to Middle East Politics
118FCS. Introduction to Middle East Politics
129. Economic History and Modernization of the Islamic Middle East

**Program in Arts of the Moving Image**
113. States of Exile and Accented Cinemas
114. Performance Traditions of the Middle East

**Religion**
152B. Islamic Mysticism: Perso-Indian (Eastern) Traditions
161F. The Turks: From Ottoman Empire to European Union
161O. Introduction to Islamic Communities in North Carolina
283. Islam and Modernism
284. The Religion and History of Islam

**Russian**
118FCS. Islam and Orthodoxy
118S. Islam and Orthodoxy

**Slavic and Eurasian Studies**
145. Orhan Pamuk and World Literature
179FCS. Turkey: Muslim and Modern

**Theater Studies**
129B. Performance Traditions of the Middle East

**Turkish**
10. Accelerated Turkish Language and Culture I
11. Accelerated Turkish Language and Culture II
105S. The Middle East through Historical Literature
106FCS. Cultures of Conflict: From Bosnia to Afghanistan in Film and Fiction
106S. Tracing Muslim Identities in Eurasia
120S. The City of Two Continents: Istanbul in Literature and Film
132. Representing the Middle East
135. The Turks: From Ottoman Empire to European Union
145. Orhan Pamuk and World Literature
179FCS. Turkey: Muslim and Modern
235. The Turks: From Ottoman Empire to European Union

**Visual Studies**
110H. Representing the Middle East

**SPECIAL TOPICS COURSES, OFFERED PERIODICALLY**

**Literature**
49S. Film and Visual Culture
97FCS. Islam and Comparative World Cinema (Focus Seminar)
97FCS. Love and Sexuality: Coming of Age Films from the Muslim World (Focus Seminar)
125. Gender and Representation—The Middle East
292. Film and the Foreign: Contemporary Iranian Cinema in Focus

**Political Science**
117.02 Introduction to Middle East Politics
299. Religion, Politics, and Violence

**Religion**
89FCS. Allah, Sex, and Money (Focus Seminar)
89FCS. Fundamental Challenges: Islam, Human Rights, Terrorism (Focus Seminar)
89FCS. The Qur’an Over Time (Focus Seminar)
185. Islam in the West
196S. Islamic Law and Ethics
196S. Good Muslim, Bad Muslim: Debates in Muslim Law and Ethics
245S. Madrasas, Maps, and Money: The Geopolitics of Islamic Knowledge

**Sociology**
195S. Gender, Labor, and Globalization
195S. Sociology of the Middle East
Italian

For courses in Italian, see “Romance Studies (ROMST)” on page 582.

Japanese

For courses in Japanese, see “Asian and Middle Eastern Studies (AMES)” on page 171.

Jewish Studies (JEWISHST)

Professor E. Meyers (religion), Director; Professor Bland (religion), Director of Undergraduate Studies; Professors Golding (philosophy), Koonz (history), C. Meyers (religion), Peters (religion), and Shatzmiller (history); Associate Professors Donahue (German) and Hacohen (history); Assistant Professors Ginsberg (Asian and Middle Eastern studies) Lieber (religion), and Stein (cultural anthropology); 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, comparative area studies, cultural anthropology, English, Germanic languages, history, medieval and renaissance studies, political science, religion, 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 nearby UNC-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 Religion 40 (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 100 level. Not more than three courses in Religion may count for the certificate. One (semester) Hebrew language course may count toward the certificate.

1. Elementary Modern Hebrew. FL One course. C-L: see Hebrew 1
1A. Biblical Hebrew I. FL One course. C-L: see Religion 1; also C-L: Hebrew 5
2. Elementary Modern Hebrew. FL One course. C-L: see Hebrew 2
2A. Biblical Hebrew II. FL One course. C-L: see Religion 2; also C-L: Hebrew 6
40. Judaism. CCI, CZ One course. C-L: see Religion 40; also C-L: Women's Studies
63. Intermediate Modern Hebrew. ALP, FL One course. C-L: see Hebrew 63
64. Intermediate Modern Hebrew. ALP, CZ, FL One course. C-L: see Hebrew 64
100. The Old Testament/Hebrew Bible. CCI, CZ, EI One course. C-L: see Religion 100; also C-L: Ethics
103. Women in the Biblical Tradition: Image and Role. CCI, CZ, EI One course. C-L: see Religion 109; also C-L: Women's Studies
105. Classical Judaism, Sectarianism, and Early Christianity. CCI, CZ One course. C-L: see Religion 133
106. Jewish Mysticism. CZ, EI One course. C-L: see Religion 134; also C-L: Medieval and Renaissance Studies 134C, International Comparative Studies 141C, Ethics
107. Contemporary Jewish Thought. CCI, CZ, EI One course. C-L: see Religion 136
111. Archaeology and Art of the Biblical World. ALP, CCI, CZ, EI One course. C-L: see Religion 175

118. Jewish Ethics. CCI, CZ, EI One course. C-L: see Religion 118; also C-L: Ethics

119S. Women in Judaism. CCI, CZ, EI, W One course. C-L: see Religion 132S

125S. Advanced Modern Hebrew. ALP, CCI, FL One course. C-L: see Hebrew 125S; also C-L: International Comparative Studies

126S. Advanced Modern Hebrew. ALP, CCI, FL One course. C-L: see Hebrew 126S; also C-L: International Comparative Studies 141AS

130. Representing the Holocaust. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 156; also C-L: Literature 161K

131S. Topics in Modern Hebrew. ALP, CCI, FL One course. C-L: see Hebrew 183S

132. The Palestinian-Israeli Conflict in Literature and Film. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 183; also C-L: Literature 163Q, International Comparative Studies

132FCS. The Palestinian-Israeli Conflict in Literature and Film. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 183FCS; also C-L: Literature 163QFCS

133. Jerusalem: Past and Present. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 174; also C-L: Religion 161Y

139. Introduction to Israeli Culture. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 155; also C-L: Religion 161P, Literature 163L

140. Contemporary Israeli Cinema. ALP, CCI, EI One course. C-L: see Asian & Middle Eastern Studies 161; also C-L: Arts of the Moving Image 111H, Literature 112M, Cultural Anthropology 161, Women's Studies 151

143. Screening the Holocaust: Jews, WWII and World Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 143; also C-L: Arts of the Moving Image 111M

146. History of Jews in the Late Middle Ages. CCI, CZ, R One course. C-L: see History 134B; also C-L: Medieval and Renaissance Studies 134B

147. Jewish History, 1492 to the Present. CCI, CZ, EI, SS One course. C-L: see History 134C; also C-L: Ethics

148. The Crusades to the Holy Land. CCI, CZ, R One course. C-L: see History 144A; also C-L: Medieval and Renaissance Studies 144C

149. The Modern Middle East. CCI, CZ One course. C-L: see History 152; also C-L: Asian & Middle Eastern Studies 140, International Comparative Studies

151S. Capstone Seminar: History of Zionism and the State of Israel. CCI, CZ, EI, R, SS One course. C-L: see History 195ES

155. Palestine, Israel, Arab-Israeli Conflict. CCI, EI, SS One course. C-L: see Cultural Anthropology 155; also C-L: Asian & Middle Eastern Studies 159, Islamic Studies

162. German Jewish Culture from the Enlightenment to the Present. ALP, CCI, CZ One course. C-L: see German 187; also C-L: Literature 163J

163. Jewish Berlin. ALP, CCI, CZ, EI One course. C-L: see German 196C; also C-L: Literature 163K, International Comparative Studies

185S. Fragmented Memories: Polish and Polish Jewish Culture Through Film. ALP, CCI, CZ, EI One course. C-L: see Polish 185S; also C-L: Religion 150CS


195A. Internship: Hospital-Jewish Approaches to Visiting the Sick. EI Internship: Hospital-Jewish Approaches to Visiting the Sick. The Jewish practice of bikkur holim (visiting the sick) examined in readings and hospital visits with clinical and pastoral supervision.
Readings and discussions focusing on: historical, ritual and ethical aspects of comforting the ill. Research paper required. Required participation in service-learning. Instructor: Tulsky. One course.


197. Special Topics in Jewish Studies. Topics vary from semester to semester. Instructor: Staff. One course.

198S. Special Topics in Jewish Studies. Seminar version of Jewish Studies 197. Instructor: Staff. One course.

201. Hebrew Prose Narrative. FL One course. C-L: see Religion 207
203. Rabbinic Hebrew. FL One course. C-L: see Religion 220
204. Readings in Hebrew Biblical Commentaries. One course. C-L: see Religion 221
206. Archaeology of Palestine in Hellenistic-Roman Times. CCI, CZ, STS One course. C-L: see Religion 244
230. Representing the Holocaust. ALP, CCI, CZ One course. C-L: Asian & Middle Eastern Studies 256

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 (AMES)” on page 171.

Latin

For courses in Latin, see “Classical Studies (CLST)” on page 216.

Latin American Studies (LATAMER)

Dr. Clements, 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, provides students with the opportunity for interdisciplinary, in-depth study of the realities of Latin American societies and cultures. In addition to offering courses and a certificate on completion of the requirements, the Center for Latin American and Caribbean Studies 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 UNC-Chapel Hill sponsor the Consortium in Latin American Studies at the University of North Carolina at Chapel Hill and Duke University, which provides opportunities for collaboration with faculty and students from the University of North Carolina who are interested in Latin America. 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. Duke in the Andes in Quito, Ecuador is a new program as of spring 2007. Opportunities for study abroad in other countries are also available.

For further information consult the academic coordinator of the Center for Latin American and Caribbean Studies, the John Hope Franklin Center, 2204 Erwin Rd.

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 "Introduction to Contemporary Latin America" (Latin American Studies 136), the interdisciplinary capstone seminar (Latin American Studies 198), fulfill the indicated language requirement, and take three additional area courses, two of which must be at or above the 100 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 100 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 100 level or above; or 3) by taking two courses in any one of the less commonly taught Latin American languages (such as Aymara, Quechua, Yucatec Maya). A Summer Intensive Yucatec Maya Language Program is also offered through the Consortium in Latin American Studies.

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 academic coordinator. 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.

50. Duke-Administered Study Abroad: Special Topics in Latin American Studies. CCI
Topics differ by section. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Latin American Studies. CCI
Topics differ by section. Instructor: Staff. One course.

121S. Geographies of the Erotic: Brazilian Literature in Translation. ALP, CCI, CZ, EI
One course. C-L: see Portuguese 121S; also C-L: International Comparative Studies 131FS, Cultural Anthropology 140BS, Literature 162FS

136. Introduction to Contemporary Latin America. CCI, CZ
One course. C-L: see History 136A; also C-L: International Comparative Studies 132A

151E. Elections and Social Protest in Latin America. CCI, CZ, SS
One course. C-L: see Political Science 151E; also C-L: International Comparative Studies 131E

190. Haitian Creole for the Recovery in Haiti. CZ
One course. C-L: see French 199; also C-L: African and African American Studies 187, Cultural Anthropology 156E, Linguistics 198

198S. Capstone Seminar in Latin American Studies. CCI, CZ
Required for students seeking the certificate in Latin American Studies. Synthesis, interpretation, and application of the knowledge gained in previous courses and experiences abroad (DukeEngage, study abroad, etc.) Students will create curriculum units focused on major issues in Latin America and Caribbean studies to present in local high schools. This project will require visits to local high schools and will meet requirements of service-learning designation for the course.
Open to juniors and seniors. Instructor: Staff. One course. C-L: International Comparative Studies 130ES, Education 185

**199. 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.

**199S. 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.

**200S. 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.**

**299S. 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**
70. Topics on the Third World and the West
71. Topics on the Third World and the West
127A. The Caribbean, 1492-1700
127B. The Caribbean in the Eighteenth Century
129. Culture and Politics in the Caribbean
138S. Francophone Literature
168S. The Atlantic Slave Trade
170. Afro-Brazilian Culture and History

**Art History**
177S. 20th Century Latin American Photography

**Arts of the Moving Image**
113. States of Exile and Accented Cinemas

**Asian & Middle Eastern Studies**
168S. Francophone Literature

**Biology**
134L. Fundamentals of Tropical Biology
135L. Research Methods in Tropical Biology
215. Tropical Ecology

**Cultural Anthropology**
128A. The Idea of Latin America
191J. Gender and Sexuality in Latin America

**Environment**
217. Tropical Ecology

**French**
161S. Francophone Literature

**History**
75. Topics on the Third World and the West
76. Topics on the Third World and the West
127A. The Caribbean, 1492-1700
127B. The Caribbean in the Eighteenth Century
155. Mexico Since Before Cortes
162S. Francophone Literature
168A. The Emergence of the Atlantic Basin to 1713
168BS. The Atlantic Slave Trade
170C. Afro-Brazilian Culture and History
174A. Latin America: Colonialism and Its Consequences

412 Courses and Academic Programs
174B. Modern Latin America
103FS. The Atlantic Slave Trade
110CS. Francophone Literature
130AS. Research Seminar in Citizenship and Culture
130B. Gender and Sexuality in Latin America
130G. Introduction to Brazilian Literature
130H. Introduction to Spanish-American Literature
131C. Latin-American Literature in Translation
132BS. 20th Century Latin American Photography
151B. The Caribbean in the Eighteenth Century

**Latin/o/a Studies in the Global South**
181S. United States Latina/o Literatures and Cultural Studies

**Literature**
113AS. States of Exile and Accented Cinemas
141. International Popular Culture
162B. The Idea of Latin America
163D. Latin-American Literature in Translation

**Political Science**
151A. Dictators and Democrats in Modern Latin America

**Portuguese**
111S. Research Seminar in Citizenship and Culture
113S. Introduction to Brazilian Literature
170C. Afro-Brazilian Culture and History

**Sociology**
126. The Challenges of Development

**Spanish**
115. Introduction to Spanish-American Literature
116. Introduction to Spanish-American Literature
117S. Spanish-American Short Fiction
121D. Latin-American Literature in Translation
127. The Idea of Latin America
144S. Duke in Andes: Special Topics
148A. Dictators and Democrats in Modern Latin America
175S. Hispanic Literature and Popular Culture
177S. 20th Century Latin American Photography
181S. United States Latina/o Literatures and Cultural Studies

**Visual Studies**
121F. International Popular Culture
126KS. 20th Century Latin American Photography
225S. Latin American Modernism and Visual Culture

**Women's Studies**
189. Gender and Sexuality in Latin America

**Latin/o/a Studies in the Global South (LSGS)**

Professor Antonio Viego, 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 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 and complementary courses offered at UNC-Chapel Hill, which offers an interdisciplinary minor in Latina/o 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,
students, writers, musicians, and performers; summer research awards; 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) 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 abroad programs in Latin America and Spain and to apply to DukeEngage programs that focus on Latino/a populations in the United States and along the border, and/or that take place in various countries within Latin America. For further information, consult the associate director of Latino/a Studies at 223 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 Registrar (juniors and seniors) and should also meet in person with the associate 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%) 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 100.** 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 100-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 b) 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 100-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% 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 program coordinator. Up to two of the elective courses may be taken at UNC-Chapel Hill, in consultation with the program coordinator. Students are strongly encouraged to take part in study abroad programs in Latin America or Spain. 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 200.** Capstone in Latino/a Studies in the Global South, preferably in the senior year.

**100S. Introduction to Latino/a Studies in the Global South.** ALP, CCI, SS Intro to the interdisciplinary field of Latino/a Studies, and how it reconfigures the study of the United
States and the Americas. Considers literature, history, sociology, economics, politics, culture and language in examining terms such as: Latino, latinidad, Global South, transnational, globalization, and multiculturalism. Exploration of alignments and divergences of Latino/a Studies with African and African American Studies, Latin American and Caribbean Studies, and Critical US Studies. Classroom learning will connect with the community outside of Duke. Required intro course for students in the Latino/a Studies in the Global South certificate program. Instructor: Viego. One course. C-L: Literature 162ES, Spanish 120S

**150S. 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.

**155S. Mayas, Aztecs and Incas: The World According to the Indigenous People of Latin America.** CZ, EI, FL, R One course. C-L: see Spanish 155S; also C-L: Cultural Anthropology 157S, International Comparative Studies 131BS

**181S. United States Latina/o Literatures and Cultural Studies.** ALP, CCI One course. C-L: see Spanish 181S; also C-L: Latin American Studies

**ELECTIVES**

**African and African American Studies**
116. Comparative Race and Ethnic Studies
129. Culture and Politics in the Caribbean

**Cultural Anthropology**
162S. Farmworkers in North Carolina: Roots of Poverty, Roots of Change

**Documentary Studies**
162S. Farmworkers in North Carolina: Roots of Poverty, Roots of Change

**History**
170B. Exploring Latino Identity in the Twentieth Century

**Sociology**
116. Comparative Race and Ethnic Studies

**Spanish**
105. Spanish for Oral Communication
106A. Health, Culture, and the Latino Community
106ES. Latino/a Voices in Duke, Durham and Beyond

**SPECIAL TOPICS COURSES OFFERED PERIODICALLY**

**African and African American Studies**
104S. Masks, Masquerades, and Popular Cultures in the Americas
199S. America in Black and Brown
299. Pigging Out: The Cultural Politics of Food

**Art History**
288S. Escultura Social: A New Generation of Art from Mexico City

**English**
169CS. Cultures of Imperialism: War of 1898
169CS. Issues of Identity
173S. Latino/a History through Literature
173S. Miami

**History**
49S. First-Year Seminar: Latino Identity and Activism
195S. U.S. West and South 1890-1945
195S. Junior/Senior Seminar: Imagining the Aztec Transnational

**Literature**
143S. Migration and Exile
162ZS. The Idea of Latin America

**Political Science**
199C. Immigration: Ethics and Politics

**Romance Studies**
200S. Visual Studies: Latin America

**Sociology**
224FS. Migration

**Spanish**
122S. Literary Translation: Identity in the Contemporary Latino Young Adult Novel
Linguistics (LINGUIST)
Associate Professor Andresen (English), Chair; Professor Andrews (Slavic and Eurasian studies), Director of Undergraduate Studies; Professors O'Barr (cultural anthropology), Rosenberg (philosophy), Rubin (psychology), and Thomas (romance studies); Associate Professor Baran; Associate Professor of the Practice Walther (German); Assistant Professor of the Practice Fellin; Adjunct Assistant Professor Keul (German). Affiliated faculty: Professors Brandon (philosophy), Cooke (Asian and Middle Eastern Studies), García-Gómez (romance studies), and Rubin (psychology); Associate Professor Güzeldere (philosophy); Assistant Professor Sterrett (philosophy); Professor of the Practice Tufts (romance studies); Associate Professor of the Practice Kim (Asian and Middle Eastern Studies); Assistant Professor of the Practice 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 last 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 data base; 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.

48S. Focus Program Seminar on Linguistics. SS Focus Program on Linguistics. Topics vary each semester offered. Instructor: Staff. One course.

50. Duke-Administered Study Abroad: Special Topics in Linguistics. CCI The study of linguistics and languages on Duke-approved programs at foreign institutions of higher learning. Topics differ by section. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Linguistics. CCI Advanced study of linguistics and languages on Duke-Approved programs at foreign institutions of higher learning. Topics differ by section. Instructor: Staff. One course.
101. Introduction to Linguistics (DS4). 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 107, International Comparative Studies

102. Languages of the World. CCI, SS
The major languages of the world viewed in the context of the communicative and significate 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 114, Russian 117, International Comparative Studies 102E

103. Symbolic Logic. CZ
One course. C-L: see Philosophy 103; also C-L: Information Science and Information Studies

104S. Introduction to Theoretical Linguistics. R, SS
One course. C-L: see English 113S; also C-L: Cultural Anthropology 102S

105S. Italian Sociolinguistics. CCI, CZ, FL, SS
One course. C-L: see Italian 108S

107. Language Technologies and Culture Acquisition. R, SS, STS
One course. C-L: see Russian 109; also C-L: Information Science and Information Studies

108. Philosophy of Mind. CZ, R
One course. C-L: see Philosophy 112; also C-L: Visual Studies 122B, Information Science and Information Studies

109. Philosophy of Language. CZ
One course. C-L: see Philosophy 109

110. Psychology of Language. R, SS
One course. C-L: see Psychology 134

111FCS. The Mind and Language. SS
One course. C-L: see English 118FCS

111SFCS. 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 118FCS

112. English Historical Linguistics. SS
One course. C-L: see English 112

113. 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 107A, English 113B

113FCS. Language and the Law. CZ, EI, SS
One course. C-L: see Slavic and Eurasian Studies 181FCS

120. Advertising and Society: Global Perspective (DS4). CCI, SS
One course. C-L: see Cultural Anthropology 110; also C-L: Sociology 160, Visual Studies 110E, Canadian Studies, Policy Journalism and Media Studies, Women's Studies

120D. Advertising and Society: Global Perspective (DS4). CCI, SS
One course. C-L: see Cultural Anthropology 110D; also C-L: Sociology 160D, Visual Studies 110DE

121. French Composition and Translation. CCI, FL
One course. C-L: see French 108

122. Fundamentals of Spanish Linguistics. FL, SS
One course. C-L: see Spanish 109

123S. Topics in Spanish Linguistics. CCI, FL
One course. C-L: see Spanish 109S

124S. French Phonetics. FL
One course. C-L: see French 107S

125S. Bilingualism. CCI, SS
One course. C-L: see Asian & Middle Eastern Studies 125S

126S. Korean Sociolinguistics. CCI, CZ, SS
One course. C-L: see Asian & Middle Eastern Studies 126S
133FCS. Neuroscience and Human Language. NS, SS Same as Linguist 133S; open only to students in the Focus Program. Prerequisite: Advanced placement credit in Biology. Instructor: Andrews. One course. C-L: Russian 133FCS

133S. 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 133S, Neuroscience 176S

140FCS. Focus Program Seminar on Linguistics. SS One course. C-L: see English 119FCS

152S. Cognitive Psychology of Oral Traditions. CCI, SS One course. C-L: see Psychology 152S

153S. Issues in Language Development (C, D). CCI, SS, W One course. C-L: see Psychology 153S; also C-L: Children in Contemporary Society, Early Childhood Education


180FCS. The Politics of Language. SS One course. C-L: see Slavic and Eurasian Studies 180FCS; also C-L: Political Science 178FCS


190A. 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.

190B. Research Independent Study. R See Linguistics 190A. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

198. Haitian Creole for the Recovery in Haiti. CZ One course. C-L: see French 199; also C-L: Latin American Studies 190, African and African American Studies 187, Cultural Anthropology 156E

199. 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.

199S. Special Topics in Linguistics. CCI, R, SS Same as Linguistics 199 except instruction is provided in a seminar format. Instructor: Staff. One course.

201. Cognitive and Nerolinguistics. NS, R, SS The interrelationship between language and brain as described and analyzed in cognitive and neolinguistics. 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, neolinguistics, neuobiology, 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 216, Neuroscience 231S

202S. 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 267S, English 204S

203S. 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: Cultural Anthropology 208S, English 203S

204. Semiotics of Culture (DS4). ALP, CCI, CZ, R One course. C-L: see Russian 202; also C-L: Cultural Anthropology 202


212S. Topics in Spanish Linguistics. FL, R, SS One course. C-L: see Spanish 212S

213S. 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: Butters. One course. C-L: Cultural Anthropology 213S, English 215S


221. Structure of French. FL One course. C-L: see French 212

228S. Recent and Contemporary Philosophy. CZ One course. C-L: see Philosophy 228S

260. History of the German Language. One course. C-L: see German 260; also C-L: Medieval and Renaissance Studies 260B

261S. Second Language Acquisition and Applied Linguistics. SS One course. C-L: see German 261S

268. 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 268, Neuroscience 268

299. Special Topics in Linguistics. CCI, R, SS Advanced study of linguistic theory. Topics to be announced. Instructor: Staff. One course.

299S. Special Topics in Linguistics. CCI, R, SS Same as Linguistics 299 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 100 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 101 and 102, 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 215S, 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

I. Introductory Linguistics Courses (2):
   101. Introduction to Linguistics
   102. Languages of the World

II. Theory: Three (3) courses in the study of theoretical linguistics. Courses to be chosen from the following list:
   Regularly Scheduled Linguistics Courses:
   103. Symbolic Logic
   104S. Introduction to Theoretical Linguistics
   109. Philosophy of Language
   110. Psychology of Language (cross-listed)
   112. English Historical Linguistics
   119. Language, Culture, and Society
   125S. Bilingualism
   133S. Neuroscience and Human Language
   151. Culture and Thought
   174. Gender and Language
   187. Variety in Language
   190A. Independent Study
   190B. Independent Study
   200. Issues in Second Language Acquisitions
   201. Cognitive and Neurolinguistics
   202. Language, Brain, and Human Behavior
   205. Semiotics and Linguistics
   207S. Semantics
   213. Linguistics and Law
   220S. Psycholinguistics
   250S. The Cultural Analysis of Discourse
   261S. Second Language Theory and Practice
   268. Brain and Language
   Special Topics Courses, offered periodically:
   Cultural Anthropology
   112. Current Topics in Linguistics
   English
   119. Current Topics in Linguistics
   Linguistics
   199. Special Topics
   199S. Special Topics Seminar
   299. Special Topics in Linguistics (Advanced)
   299S. Special Topics in Linguistics Seminar (Advanced)

III. Disciplinary Areas. Two (2) 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
   Philosophy
   Psychology
   Romance Studies
   Slavic and Eurasian Studies
   Spanish
IV. **Junior/Senior Seminar in Linguistics.** (Linguistics 215S). The capstone course for the major, usually taken in the junior or senior year.

V. **Language Requirement.** Two (2) 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 tri-lingual 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 190, 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 199S, if it is titled "Honors Thesis.") 2) The second course is Linguistics 215S, 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 100 level or above. Usually, two of these courses are Linguistics 101 and Linguistics 102.

**Literature Program (LIT)**

Professor Hardt, Chair; Professor Hansen, Director of Undergraduate Studies; Professors Aravamudan, Chow, Hansen, Hardt, Hayles, Jameson, R. Khanna, Lenoir, Lentricchia, Mignolo, Moi, Mudimbe, B. H. Smith, Surin, and Wiegman; Associate Professors Dainotto, Donahue, Lubiano, Mottahedeh, Vieggo, and Willis; Research Professors Dorfman and Garreta. *Affiliated faculty:* Professors Burian (classical studies and theater studies), Cooke (Asian and Middle Eastern Studies), Davis (classical studies), Powell (art history), Stiles (art history), Torgovnick (English), and Wharton (art history); Associate Professors Gheith (Slavic and Eurasian studies) and Moses (English); Associate Professor of the Practice S. Khanna (Asian and Middle Eastern Studies); Visiting Professor Harootunian
A major or a minor is available in this program.

INTRODUCTORY

20S. 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.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

60S. 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.

97FCS. Special Topics in the Focus Program. ALP Topics vary. Open only to students in the Focus Program. Instructor: Staff. One course.


165C. Introduction to Asian and African Literature. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 121; also C-L: International Comparative Studies

FUNDAMENTALS

101S. Theory Today: Introduction to the Study of Literature. ALP Introduction to major areas of research in Literature with focus on specific theoretical issues of contemporary concern in various subfields of literary study. Led by a primary Literature faculty member, and featuring lectures by seven Literature faculty on their areas of expertise, including film; media; science and technology; cultural studies; literary studies and aesthetics; feminism and gender studies; marxism and transcultural studies; philosophy and theory. Required for all Literature majors and minors; to be taken as early as possible in major/minor sequence. Instructor: Staff. One course.

ARTS OF THE MOVING IMAGE*

110. Introduction to Film (DS4). 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. Economics and aesthetics. Not open to students who have taken Theater Studies 132 or who have taken this course as FVD 130. Instructor: Gaines or Paletz. One course. C-L: Theater Studies 171, English 101A, Arts of the Moving Image 101, Visual Studies 121A, Policy Journalism and Media Studies

110BS. Capstone Course: Program in Film/Video/Digital. ALP, STS One course. C-L: Arts of the Moving Image 170S


112D. Colonial Cinema and Postcolonial Reflections. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 177; also C-L: International Comparative Studies 122F, Arts of the Moving Image 111J

112E. Indian Cinema. ALP, CCI, CZ, R One course. C-L: see Asian & Middle Eastern Studies 170; also C-L: Arts of the Moving Image 111D, Visual Studies 105B


* See separate listing for the “Arts of the Moving Image (AMI)” on page 163 for production course offerings.
112G. World of Korean Cinema. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 175; also C-L: Arts of the Moving Image 111G, Visual Studies 105F, Cultural Anthropology 161A

112H. Japanese Cinema. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 171; also C-L: Arts of the Moving Image 111F, Visual Studies 105C

112J. Modern Chinese Cinema. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 188; also C-L: Arts of the Moving Image 111A, Visual Studies 105G

112K. Italian Cinema. ALP, CCI One course. C-L: see Italian 132; also C-L: Arts of the Moving Image 111E, Visual Studies 126A, Theater Studies 172A

112L. Terror and German Cinema. ALP, CCI, CZ One course. C-L: see German 189; also C-L: Visual Studies 118C

112M. Contemporary Israeli Cinema. ALP, CCI, EI One course. C-L: see Asian & Middle Eastern Studies 161; also C-L: Arts of the Moving Image 111H, Jewish Studies 140, Cultural Anthropology 161, Women's Studies 151


113. Movies of the World/The World of Movies. ALP, CCI, STS History and theory of film and video technology across nations; postcolonial patterns and their electronic and mechanical transmission; economics of distribution, reception, exhibition, and their relation to aesthetics. The first world defined against the second and third by means of cultural product. Instructor: Mottahedeh. One course. C-L: German 156, Russian 113, Arts of the Moving Image 112


115S. 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, Metzger, or Gaines. One course. C-L: Arts of the Moving Image 115S, Visual Studies 121CS, Study of Sexualities

116. Studies in Film History (DS4). ALP One course. C-L: see English 185; also C-L: Theater Studies 172, Visual Studies 115A


120AS. **Special Topics in Television Genres. ALP** Close study of one or more mainstream television genres, such as the sit com, soap opera serial, cop show, game show, network news show, or the "made for TV" movie. Instructor: Staff. One course. C-L: Arts of the Moving Image

120BS. **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

120C. **Conflict, Conflict Resolution, and Film. ALP, CCI, SS** One course. C-L: Arts of the Moving Image 108, Political Science 156, Public Policy Studies 172, Visual Studies 117H

120E. **Introduction to Documentary Film. ALP, CCI** One course. C-L: Arts of the Moving Image 102, Art History 122, Documentary Studies 107, Visual Studies 117C

120F. **Film Genres. ALP** One course. C-L: Arts of the Moving Image 106, Art History 136, Visual Studies 117F

120G. **American Film Comedy. ALP** One course. C-L: Arts of the Moving Image 107, English 186C, Visual Studies 117G


**GENDER STUDIES**

123. **Special Topics in 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

124. **Selected Topics in Feminist Studies.** Topics vary each semester. Instructor: Staff. One course.

124S. **Selected Topics in Feminist Studies.** Seminar version of LIT 124. Instructor: Staff. One course.

125. **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

125AS. **Masculine Anxiety and Male-Male Desire in Drama and Film Since 1950. ALP, CCI** One course. C-L: see Theater Studies 179S; also C-L: Visual Studies 128GS

125S. **Special Topics in Gender and Sexuality. ALP** Seminar version of Literature 125. Instructor: Staff. One course.

184S. **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: Study of Sexualities

**STUDIES IN CULTURE**

100. **Introduction to Cultural Studies (DS4). 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 101B, Visual Studies 121E, Arts of the Moving Image

112N. Existentialist Cinema. ALP, CCI, CZ, EI, STS One course. C-L: see German 184; also C-L: Theater Studies 172B, International Comparative Studies 183C, Visual Studies 118H, Arts of the Moving Image

114AS. Media Theory. STS Introduction to the material and technical infrastructure that informs and constrains the production and dissemination of knowledge. Exploration of cultural impact of technical media from writing to the internet. Combines historical and theoretical discussion with hands-on experimentation with various media, including the codex book, phonography and sound registration technology, photography, cinematography, video, virtual reality, digital computation, and the internet. Instructor: Hansen. One course. C-L: Arts of the Moving Image 118S, Information Science and Information Studies 114S, Visual Studies 121HS

131S. 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.

132. Special Topics in the Study of Literature in Relation to Other Disciplines. ALP Lecture version of Literature 132S. Instructor: Staff. One course.

132AS. Radio: The Theater of the Mind. ALP, CZ One course. C-L: see Theater Studies 107S; also C-L: Music 122S

132BS. Travel, Gender, and Power. CCI, SS One course. C-L: see Cultural Anthropology 191QS; also C-L: Asian & Middle Eastern Studies 157S, Women's Studies 181S

132C. History of the Museum. ALP, CCI, CZ, R One course. C-L: see Visual Studies 172; also C-L: International Comparative Studies

132S. 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.

133B. Experimental Art and Its Ethics since 1945. ALP, CCI, CZ, EI One course. C-L: see Art History 168; also C-L: Women's Studies 177, International Comparative Studies 101A, Ethics

133C. Global Performance Art: History/Theory from 1950's to Present. ALP, CCI, CZ, EI One course. C-L: see Visual Studies 181; also C-L: Information Science and Information Studies 175, Theater Studies 175A, Women's Studies 176


143. 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

143BS. Anthropology of Space. CCI, SS One course. C-L: see Cultural Anthropology 191BS; also C-L: Women's Studies 182S
143S. Problems in Global Culture. ALP, CCI, EI Seminar version of Literature 143. Instructor: Staff. One course. C-L: Arts of the Moving Image

144. Special Topics in North American Literature and Culture. ALP, CCI Topics in North American (United States, Canada, Mexico) culture, examined through literary texts, film, and other media. Organized according to trends, topics, and genres. One course.

144S. Special Topics in North American Literature and Culture. ALP, CCI Seminar version of LIT 144. Instructor: Staff. One course.

145S. Special Topics in Science and Culture. ALP Approaches to the question of science and technology in a cultural context. Readings by scientists and scholars of science and society. Instructor: Staff. One course. C-L: Information Science and Information Studies

146S. Topics in Modern Literature and Culture. ALP, CCI One course. C-L: see Italian 155S

147. 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.

147S. Special Topics in International Literature and Culture. ALP, CCI Seminar version of Lit 147. One course.

151G. The Melancholy of Art: Passages of Time in European Literature and Cinema, 1819-2000 (DS3). ALP, CCI One course. C-L: see English 134; also C-L: German 174

151K. The French Love Story. ALP, CCI One course. C-L: see French 192; also C-L: Women's Studies 187

151M. Vampire Chronicles: Fantasies of Vampirism in a Cross-cultural Perspective. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 141S; also C-L: Cultural Anthropology 142, International Comparative Studies 122E, Women's Studies 131S, Study of Sexualities 131S

153. Trauma and Space in Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 153; also C-L: Cultural Anthropology 142B

154CD. Major Authors in French and Francophone Modernity. ALP, CCI One course. C-L: see French 171D

161AD. 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 131CD, Spanish 121AD

162CS. Spanish Avant-Gardes/Kino-Texts. ALP, CCI, EI, FL One course. C-L: see Spanish 147S

162FS. Geographies of the Erotic: Brazilian Literature in Translation. ALP, CCI, CZ, EI One course. C-L: see Portuguese 121S; also C-L: International Comparative Studies 131FS, Latin American Studies 121S, Cultural Anthropology 140BS

162G. Traffic in Women: Cultural Perspectives on Prostitution in Modern China. ALP, CCI, SS One course. C-L: see Asian & Middle Eastern Studies 138; also C-L: International Comparative Studies 122C, Cultural Anthropology 142A, Women's Studies 138, Study of Sexualities 138

163D. Latin-American Literature in Translation. ALP, CCI One course. C-L: see Spanish 121D; also C-L: International Comparative Studies 131C, Latin American Studies

163J. German Jewish Culture from the Enlightenment to the Present. ALP, CCI, CZ One course. C-L: see German 187; also C-L: Jewish Studies 162
163Q. The Palestinian-Israeli Conflict in Literature and Film. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 183; also C-L: Jewish Studies 132, International Comparative Studies

163QFCS. The Palestinian-Israeli Conflict in Literature and Film. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 183FCS; also C-L: Jewish Studies 132FCS

165F. Trauma and Passion in Korean Culture. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 183; also C-L: Jewish Studies 132, International Comparative Studies 120C

165L. Global Chinese Cities through Literature and Film. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 133; also C-L: Visual Studies 105J, Cultural Anthropology 101A, International Comparative Studies 121H

165MS. Discourse of Disease and Infection. ALP, CCI, CZ, STS One course. C-L: see Asian & Middle Eastern Studies 134S; also C-L: Cultural Anthropology 101BS, International Comparative Studies 104CS, Visual Studies 105KS

165NS. Critical Inter-Asia: Rethinking Local and Global Connections. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 148; also C-L: International Comparative Studies 122A

165P. Korea in the World: Global Perspectives. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 144; also C-L: International Comparative Studies 122B

186A. Marx, Nietzsche, Freud. CCI, CZ, SS One course. C-L: see German 186; also C-L: Philosophy 186, Political Science 195

186AD. Marx, Nietzsche, Freud. CCI, CZ, EI, SS One course. C-L: see German 186D; also C-L: Philosophy 186D, Political Science 195D


LITERARY STUDIES

101. Introduction to the Art of Reading. ALP An introduction to the reading and interpretation of literary texts, along with an introduction to the major approaches in literary theory. Instructor: Lentricchia or Moi. One course.

121. 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.

131C. Criminality of Art. ALP One course. C-L: see Theater Studies 176; also C-L: Visual Studies 128F

132A. The Existentialist Imagination. ALP, CZ, EI One course. C-L: see German 183D; also C-L: Philosophy 183

150S. Special Topics in Literary Movements. ALP Historical, theoretical, and/or formal approaches to literary movements in different periods and cultures. Instructor: Staff. One course.

151BS. Popular Fictions (DS4). 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 171BS, Women's Studies 172S

151C. Contemporary Novel. ALP, W One course. C-L: see English 171A
151E. Romantic Fairy Tales: Literary and Folk Fairy Tales from Grimms to Disney (DS3) (DS4). ALP, CCI, CZ One course. C-L: see German 173; also C-L: International Comparative Studies 183A
151FS. 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.
151HD. 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 163CD
151J. Melodrama East and West. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 179; also C-L: Women's Studies 179, International Comparative Studies 170A, Visual Studies 105E
151LS. The Russian Fairy Tale and Its Cultural Legacy. ALP, CCI, CZ One course. C-L: see Russian 134; also C-L: International Comparative Studies 160B
151N. Poetics of Murder: Detective Fiction. ALP, CCI One course. C-L: see German 180
151S. 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.
154S. 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.
163G. The Devil's Pact: Faust and the Faust Tradition. ALP, CCI, EI One course. C-L: see German 170; also C-L: Ethics
165B. Mystical Literature. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 187; also C-L: Religion 165B
185S. 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 172ES

AREA STUDIES
161. 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
161S. Special Topics in Third World or Postcolonial Literature and Cultures. Seminar version of Literature 161. Instructor: Ferraro, Moses, or Willis. One course. C-L: International Comparative Studies
162AS. 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 162AS

162B. The Idea of Latin America. CCI, CZ One course. C-L: see Spanish 127; also C-L: Cultural Anthropology 128A, Latin American Studies

162ES. Introduction to Latino/a Studies in the Global South. ALP, CCI, SS One course. C-L: see Latino/a Studies in the Global South 100S; also C-L: Spanish 120S

162Z. 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

162ZS. Special Topics in Literature and National Cultures, Ethnicity, Race. ALP, CCI Seminar Version of Literature 162Z. Instructor: Staff. One course. C-L: International Comparative Studies

163B. Classics of Western Civilization: The German Tradition, 1750-1930 (DS3). ALP, CCI, CZ One course. C-L: see German 182; also C-L: History 179A, Political Science 134

163HS. The Middle East through Historical Literature. ALP, CCI, CZ One course. C-L: see Turkish 105S; also C-L: Islamic Studies

163K. Jewish Berlin. ALP, CCI, CZ, EI One course. C-L: see German 196C; also C-L: Jewish Studies 163, International Comparative Studies

163MS. The Middle East in Popular Culture. CCI, CZ, SS One course. C-L: see Cultural Anthropology 191AS; also C-L: Asian & Middle Eastern Studies 158S

164CS. Borderland and Battleground: A Journey Through Twentieth-Century Eastern Europe. ALP, CCI, CZ One course. C-L: see Slavic and Eurasian Studies 186

165A. Chinese Literature and Culture in Translation. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 172S

165B. Representing the Holocaust. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 156; also C-L: Religion 161K, Jewish Studies 130

165E. Korean Literature in Translation. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 163

ADVANCED UNDERGRADUATE STUDIES

181A. Marxism and Society. SS A critical appraisal of Marxism as a scholarly methodology for understanding human societies. The basic concepts of historical materialism, as they have evolved and developed in historical contexts. Topics include sexual and social inequality, alienation, class formation, imperialism, and revolution. Core course for the program in Marxism and Society. Instructor: Staff. One course. C-L: Cultural Anthropology 139, Education 139, History 186, Sociology 139, International Comparative Studies

181B. Marxism and Culture. ALP Capstone seminar for Marxism and Society certificate students. A reconsideration of Marxist theories of culture and ideology in the light of contemporary developments in politics and ethics and in contemporary art. Various national contexts compared in this respect; problems of high literature and mass culture. Enrollment limited to students completing the certificate. Prerequisite: Literature 181A (Marxism and Society core course). Instructor: Staff. One course.

182. 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.

Literature Program (LIT) 429
182AS. 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, de Beauvoir, Camus, D. Lessing, Murdoch, Osborne, A. S. Byatt. Instructor: Moi. One course. C-L: English 171GS

191. 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 191 without completion of Literature 192. Does not count towards the ten Literature courses required for the major. Instructor: Staff. One course.

192. Honors Thesis II. ALP, R, W Continuation of Literature 191 in which Literature majors finish the year-long honors program. Does not count towards the ten Literature courses required for the major. Prerequisite: Literature 191. Instructor: Staff. One course.

STUDY AWAY FROM DUKE

195. Special Topics in World Media. ALP, CCI Studies in the media and society in a national or international setting; offered only in a Duke study abroad program. Instructor: Staff. One course.

196. Special Topics in World Literature and Culture. ALP, CCI Studies in literature and culture in a national or comparatist mode; offered only in a Duke study abroad program. Instructor: Staff. One course.

197S. Special Topics in the United States Culture Industries. ALP, R, W One course. C-L: Arts of the Moving Image 121S

INDEPENDENT STUDY AND SENIOR/GRADUATE COURSES

199. 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.

199A. 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.

200S. Seminar in Asian and Middle Eastern Cultural Studies. CZ One course. C-L: see Asian & Middle Eastern Studies 200S; also C-L: African and African American Studies 200S, Cultural Anthropology 288S

210S. 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

211S. 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. Instructor: Burian. One course. C-L: German 211S, Islamic Studies

212S. 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 212S, Arts of the Moving Image

225S. Teaching Race, Teaching Gender. CCI, SS One course. C-L: see African and African American Studies 297S; also C-L: Women's Studies 297S, History 297S

233S. Performance Studies. ALP One course. C-L: see Theater Studies 233S

251S. Methods and Theories of Romance Studies. ALP, CCI, R One course. C-L: see Romance Studies 201S

255. Special Topics in Literature. ALP Topics vary by semester. Instructor: Staff. One course.

255S. Special Topics in Literature. ALP Topics vary each semester. Instructor: Staff. One course.

260. Twentieth-Century Reconceptions of Knowledge and Science (DS4). 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 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. Instructor: Herrnstein Smith. One course. C-L: English 280, Information Science and Information Studies


262. 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 270; also C-L: Philosophy 270, Genome Sciences and Policy

263S. 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, Eiseman, Koolhaas, Lynn, Diller + Scofidio. Explores programs for post-digital architecture that integrate nano & biomimetic technologies, smart materials & protocells 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 263S

270. Consciousness and Modern Society. CCI, CZ, EI One course. C-L: see German 270; also C-L: International Comparative Studies

272S. 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 body, the other, difference and identity, the politics of theory. New perspectives on canonical texts on these subjects. Instructor: Moi. One course. C-L: English 272S

279. 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.

280S. Literary Guide to Italy. ALP, CCI, CZ One course. C-L: see Italian 221S; also C-L: German 221S

281. 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.

281S. 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 LIT 281. Instructor: Jameson or staff. One course.

284. 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.

284S. Antonio Gramsci and the Marxist Legacy. CCI, CZ, SS One course. C-L: see Italian 230S

286. Topics 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.

287BS. Ethnohistory of Latin America. CCI, CZ, R, SS One course. C-L: see Cultural Anthropology 287S; also C-L: History 287BS

293. 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.

294S. Special Topics: 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: Gaines, Jameson, or Mottahedeh. One course.

295. Special Topics in 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.

297. Topics in Cultural Studies. ALP Instructors: Gaines, Radway, Surin, and staff. One course.

298. Special Topics. Subjects, areas, or themes that cut across historical eras, several national literatures, or genres. Instructor: Staff. One course.

THE MAJOR

The literature major is a challenging and provocative course of study for undergraduates interested in thinking critically about the world. The program’s core courses in literary studies and critical theory, film history and visual theory, cultural studies, globalization, and new media form the foundation for students to design programs of investigation based on their unique interests. While the areas of study explored by literature majors range widely across time periods and forms/media of cultural production, the key concept that informs what majors in literature do – and that differentiates the literature major from other majors in the humanities – is “theoretical interrogation.” Theoretical interrogation means the exploration of diverse cultural phenomena according to the underlying assumptions –
philosophical, historical, economic, technical, and social – that shape their production. Such interrogation may perhaps best be understood as centering on various forms of language: the languages of literature; the languages of film, television and video; the languages of popular culture; the languages of new media; the languages of sexuality; the languages of nation and empire; the languages of cultural production. The program in literature is committed to the idea that close exploration of such languages and their philosophical, historical, economic, technical, and social underpinnings leads to a superior understanding of how we have come to be who we are, which is also to say, of where we’ve come from and where we might want to go from here. Majors are encouraged to acquire advanced competency in one or more foreign languages as well as in the newer technical languages of visual and computational media.

Requirements for the Major: The major is comprised of ten courses. All students must take Literature 101S (“Theory Today”) a team-taught, comparatist introduction to the various areas and crucial problems driving faculty research in the broad field of literature.

The remaining nine courses may be chosen to develop a focus on one or two of the core areas of study (Cultural Studies; Literary Studies and Aesthetics; Media, Science and Technology Studies; Film Studies; Feminism; Marxism and Transnational Studies; Philosophy and Critical Theory) or to develop a comparatist sampling that draws on several or all of these areas. At least six of these nine courses must be “core literature courses” (core literature courses are taught by primary or secondary literature faculty; students should consult the department Web site and/or their advisor for a list of core courses). One of these six “core literature courses” must be a senior culminating experience, defined as any one of the following: an honors thesis, a senior seminar, an independent study, or a graduate-level course, taken during the senior year. The remaining balance of courses (three or fewer) may be selected from courses cross-listed with the literature program.

THE MINOR

The Minor in Literature aims to be a humanities-centered interdisciplinary meeting place for Duke undergraduates. It offers students in other disciplines a systematic exposure to the Literature Program’s unique approach to the study of print, image, and media culture. The minor is particularly suitable for majors in the social and natural sciences who wish to become conversant with contemporary cultural and intellectual debates that bear on their work in their major field. It also enables majors in other languages and literatures to explore theoretical and interdisciplinary issues of broad relevance to the humanities. Students taking the Literature Minor can choose a broad based exploration of the languages of culture; or they may choose to focus on a particular area such as film, popular culture, or new media. Minors are encouraged to acquire advanced competency in one or more foreign languages.

Requirements for the Minor: The minor is comprised of five courses. All students must take Literature 101S (“Theory Today”). At least three of the remaining four courses must be “core literature courses” (core literature courses are taught by primary or secondary literature faculty; students should consult the department Web site and/or their advisor for a list of core courses); the remaining course may be selected from courses cross-listed with the literature program. Courses may be chosen to sample widely from the areas of study or to concentrate on one or two of those areas.

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 GPA of 3.2 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 191 and 192). 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. They 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 towards the ten Literature courses required for the major.

Marine Biology

For courses in marine biology, see “Biology (BIOLOGY)” on page 188, “Environmental Sciences and Policy Program (ENVIRON)” on page 312, and the “University Program in Marine Sciences” on page 437.

Marine Science and Conservation Leadership

Professor Van Dover, 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, NC, 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 25 or Environment 101 with permission, for students who place out of Environment 25), 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 Web site: [http://nicholas.duke.edu/marinelab/programs/certificate.html](http://nicholas.duke.edu/marinelab/programs/certificate.html).

**PROGRAM COURSES**

**Introductory Course**

*Environmental Sciences and Policy*
- 25. Introduction to Environmental Sciences and Policy
- or
- 101. Integrating Environmental Sciences and Policy

**Leadership/Ethics/Management/Communication Courses**

**Biology**
- 174. Philosophy of Biology

**Documentary Studies**

**Engineering**
- 108S. Ethics in Professions: Scientific, Personal and Organizational Frameworks

**Environment**
- 105S. Ethical Challenges in Environmental Conservation
- 152S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding
- 249. Green Futures: Exploring Environmental, Economic, and Social Sustainability

**Markets and Management Studies**
- 120. Managerial Effectiveness

**Philosophy**
- 114. Philosophy of Biology
- 115. Applied and Environmental Ethics

**Political Science**
- 147D. Environmental Politics and Policies in the Developing World
- 152S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding

**Public Policy Studies**
- 116D. Policy Choice as Value Conflict
- 140S. Women as Leaders
- 144S. Social Enterprise Development
- 146. Leadership, Development, and Organizations
- 147D. Environmental Politics and Policies in the Developing World
- 167S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding

**Religion**
- 115BS. Buddhist Ethics
- 129. Religion and Science: Biology, Minds, and Souls

**Study of Ethics**
- 115. Applied and Environmental Ethics

**Theater Studies**
- 100S. Communication, Improvisation, and Business

**Marine Science: Natural Science Courses**

**Biology**
- 10L. Marine Biology
- 53. The Dynamic Oceans
- 114L. Biological Oceanography
- 123. Analysis of Ocean Ecosystems
- 129L. Marine Ecology
- 150L. Physiology of Marine Animals
- 155L. Biochemistry of Marine Animals
- 156L. Sensory Physiology and Behavior of Marine Animals
- 176L. Marine Invertebrate Zoology
- 178L. Marine Ichthyology
- 188L. Research Methods in Marine Science
190. Research Independent Study
191. Research Independent Study
254. Vertebrate and Invertebrate Endocrinology
297. Research Independent Study

**Cell Biology**
243. Respiratory Proteins and the Environment

**Earth and Ocean Sciences**
12. The Dynamic Oceans
102. Ocean and Atmosphere Dynamics
114L. Biological Oceanography
115. Waves, Beaches, and Coastline Dynamics
122. Analysis of Ocean Ecosystems
123. Hydrogeology
129L. Marine Ecology
170. Introduction to Physical Oceanography
176L. Marine Invertebrate Zoology
187S. Marine Geology of South Florida
215. Introduction to Physical Coastal Processes

**Environment**
114L. Biological Oceanography
123. Analysis of Ocean Ecosystems
124L. Sound in the Sea: Introduction to Marine Bioacoustics
139L. Marine Ecology
150L. Physiology of Marine Animals
155L. Biochemistry of Marine Animals
170. Introduction to Physical Oceanography
176L. Marine Invertebrate Zoology
178L. Marine Ichthyology
188L. Research Methods in Marine Science
225. Coastal Ecotoxicology & Pollution
243. Respiratory Proteins and the Environment
273. Marine Fisheries Policy

**Marine Science: Social Science Courses**

**Biology**

**Documentary Studies**
172S. Environmental Conservation and Documentary Photography

**Economics**
163. Economics of the Environment
270. Resource and Environmental Economics
270L. Resource and Environmental Economics (Lecture)

**Environment**
163. Economics of the Environment
172S. Environmental Conservation and Documentary Photography
175. Marine Policy
251D. International Conservation and Development
252. Sustainability and Renewable Resource Economics
270. Resource and Environmental Economics

**Genome Sciences and Policy**

**Public Policy Studies**
272. Resource and Environmental Economics

**Marine Conservation Courses**

**Biology**
109. Conservation Biology and Policy
125. Biology and Conservation of Sea Turtles
125L. Biology and Conservation of Sea Turtles
126. Marine Mammals
126L. Marine Mammals
127. Marine Megafauna
Sojourn in Singapore: Urban Tropical Ecology

109. Conservation Biology and Policy
125. Marine Mammals
125L. Marine Mammals
127. Marine Megafauna
135. Biology and Conservation of Sea Turtles
135L. Biology and Conservation of Sea Turtles
177. Conservation of Mammals: Challenges and Opportunities on Land and at Sea

Senior Capstone Course
Environmental Sciences and Policy
186S. Marine Science and Conservation Leadership Capstone: From Water to Washington and Back

Public Policy Studies
187S. Marine Science and Conservation Leadership Capstone: From Water to Washington and Back

SPECIAL TOPICS COURSES OFFERED PERIODICALLY

Leadership/Ethics/Management/Communication
English
173. Science and Nature Writing

Environmental Sciences and Policy
181. Science and Nature Writing

Public Policy Studies
196. Border Crossing: Leadership, Value Conflicts, and Public Life

Marine Science: Social Science
Environmental Sciences and Policy
298. Ocean and Coastal Law and Policy

Marine Science: Natural Science
Environmental Sciences and Policy
298. Fisheries Ecology

Marine Conservation Courses
256S. From Molecules to Management: Application of Molecular Tools to Marine Conservation

University Program in Marine Sciences

Professor Van Dover (environment), Director and Chair; Professor Rittschof (environment and biology), Director of Undergraduate Studies; Professors C. Bonaventura (environmental science and cell biology), Crowder (environmental science and biology), and Forward (environmental science and biology); Associate Professors Campbell (environmental science), Nowacek (environmental science and engineering), and Read (environmental science); Assistant Professors Basurto (environmental science), Hench (environmental science), and Johnson (environmental science); Professor Emeritus Barber (environmental science and biology); Professor of the Practice Orbach (environmental science); Associate Professor of the Practice Halpin (environmental science); Associate Professor of the Practice Emeritus Kirby-Smith (environmental science); Research Professors J. Bonaventura (environmental science and cell biology) and Ramus (environmental science and biology); Research Scientists Johnston (environmental science) and Schultz (environmental science); Assistant Research Scientist Friedlaender (environmental science)

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 modern scientific equipment, including a shared-use molecular laboratory, a specialized library, and the surrounding marine environment.

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, Summer Terms 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 Panama, Singapore, and Trinidad. Small class size and an island setting facilitate rewarding student-faculty interactions. For
additional information contact the Academic Services Office, Duke University Marine Lab, 135 Duke Marine Lab Rd., Beaufort, North Carolina 28516, 252-504-7502, ml_admissions@nicholas.duke.edu; or visit the Web site at http://www.nicholas.duke.edu/marinelab. Duke students in good standing and with adequate preparation are automatically accepted, but must notify the Admissions Office (ml_admissions@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 Web site 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 *Duke University Official Schedule of Courses* or the Duke Marine Lab Web site (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, environmental sciences and policy), minors (including biology, chemistry, environmental sciences and policy), and programs (including pre-health and the Marine Science and Conservation Leadership certificate) see the Marine Lab Web site’s Academic Programs section (http://www.nicholas.duke.edu/marinelab/programs) or consult the Director of Undergraduate Studies for the department.

**Biology**
- 10L. Marine Biology
- 109. Conservation Biology and Policy
- 114L. Biological Oceanography
- 123. Analysis of Ocean Ecosystems
- 125. Biology and Conservation of Sea Turtles
- 125L. Biology and Conservation of Sea Turtles
- 126. Marine Mammals
- 126L. Marine Mammals
- 127. Marine Megafauna
- 129L. Marine Ecology
- 150L. Physiology of Marine Animals
- 155L. Biochemistry of Marine Animals
- 156L. Sensory Physiology and Behavior of Marine Animals
- 176L. Marine Invertebrate Zoology
- 178L. Marine Ichthyology
- 188L. Research Methods in Marine Science
- 190. Research Independent Study
- 191. Research Independent Study
- 193T. Tutorial
- 197T. Tutorial
- 207AL. Experimental Tropical Marine Ecology
- 207BL. Marine Ecology of the Pacific Coast of California
- 207EL. Harmony in Brittany: French Use of Marine Environments
- 254. Vertebrate and Invertebrate Endocrinology
- 297. Research Independent Study

**Cell Biology**
- 210. Research Independent Study
- 243. Respiratory Proteins and the Environment

**Documentary Studies**

**Earth and Ocean Sciences**
- 114L. Biological Oceanography
- 116. Beach and Island Geological Processes
- 122. Analysis of Ocean Ecosystems
- 129L. Marine Ecology
- 170. Introduction to Physical Oceanography
- 176L. Marine Invertebrate Zoology
- 191. Research Independent Study

438 Courses and Academic Programs
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
non-profit 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.

In addition to offering courses and a certificate after completion of the requirements, the Markets and Management Studies Program makes a concerted effort to bring Duke undergraduates closer to the business world in a variety of ways. The program sponsors lecturers and career events. Professors of the Practice teach the entrepreneurship, finance, and leadership courses. Additional information can be obtained from the director or the program coordinator in the Markets and Management Studies Program office.

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 190, 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 Web page: http://www.markets.duke.edu.

Core Courses

190. 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, Spennier, or Veraldi. One course.


Electives

106S. 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.

108FCS. 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.

120. 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

140. 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.

140S. Ethics in Management. EI, SS Seminar version of Markets and Management Studies. Instructor: Hull. One course.

147. 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.

161. 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.

170. 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.

172. 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.

175. Business of Sport. SS Basic principles of the sports marketing and television industry. Topics include: history of sports marketing and television; influence of consumer demographics and behavior; economics of sports on television including production, distribution, advertising and rights fees; role of corporate sponsorships and sports advertising; economics of new leagues, new sports channels. Why corporate sponsors invest in sports marketing; how different leagues and sports properties are structured and the subsequent impact on their respective economic models. Instructor: Stevenson. One course.

180. 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 & Management Studies 85 and Sociology 159 or consent of the instructor. Instructor: Jones and Nordgren. One course.

182. 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 151 or Economics 181 or consent of instructor. Instructor: Veraldi. One course.

185. 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.

Special Topics


100. Duke-Administered Study Abroad: Advanced Special Topics in Markets and Management Studies. CCI Topics differ by section. Instructor: Staff. One course.

195. Special Topics in Markets and Management Studies. Topics vary each semester. Instructor: Staff. One course.

195S. Special Topics Seminar in Markets and Management Studies. Topics vary each semester. Instructor: Staff. One course.

PROGRAM COURSES

Core Courses

Political Science
153. International Business Government Relations

Public Policy Studies
146. Leadership, Development, and Organizations

Sociology
140D. Organizations and Global Competitiveness
144. Technology and Organizational Environments
145. Nations, Regions, and the Global Economy
155. Organizations and Management
158. Markets and Marketing
159. The Sociology of Entrepreneurship
Elective Courses

Computer Science
181S. Computer Science Seminar

Cultural Anthropology
110. Advertising and Society: Global Perspective
110D. Advertising and Society: Global Perspective
116S. Advertising and Masculinity

Economics
122D. American Business History
151. Basic Finance and Investments
165. American International Economic Policy
181. Corporate Finance
183. Advanced Financial and Managerial Accounting
188. Competitive Strategy and Industrial Organization
189. Business and Government

Engineering
108S. Ethics in Professions: Scientific, Personal and Organizational Frameworks

English
120. Advertising and Society: Global Perspective
120D. Advertising and Society: Global Perspective

History
158AD. American Business History

Philosophy
170. Business Ethics: The Debate Over Corporate Social Responsibility

Political Science
113. Issues of International Political Economy
158. Non-State Actors in World Politics
158D. Non-State Actors in World Politics
161. Business, Politics, and Economic Growth
167. International Law and International Institutions

Psychology
115. The Psychology of Consumers
138. Social Psychology of Business

Public Policy Studies
144S. Social Enterprise Development
165. American International Economic Policy
189. Business and Government

Sociology
110. A-E. Comparative Sociology: Selected Areas
114. Cybernetworks and the Global Village
126. The Challenges of Development
129. Gender, Work, and Organizations
141. Consuming Passions
155B. Organizations & Management in Global Capital Markets: an Ethical Perspective
156. Global Contexts of Science and Technology
160. Advertising and Society: Global Perspective
160D. Advertising and Society: Global Perspective
168. Business and Politics in American Society

Study of Ethics
170. Business Ethics: The Debate Over Corporate Social Responsibility

Theater Studies
168S. Entrepreneurship and International Arts Management

Visual Studies
110E. Advertising and Society: Global Perspective

Women's Studies
141. Gender, Work, and Organizations

Mathematics (MATH)

Professor H. Layton, Chair; Professor Aspinwall, Associate Chair; Professor Schoen, Director of Undergraduate Studies; Assistant Professor of the Practice C. Bray, Associate Director of Undergraduate Studies, Associate Professor of the Practice Blake, Supervisor
of First-year Instruction; Professors Allard, Aspinwall, Beale, H. Bray, Bryant, Durrett, Hain, Harer, H. Layton, Liu, Miller, Pardon, Petters, Reed, Rose, Saper, Schaeffer, Schoen, Stern, Trangenstein, Venakides, and Zhou; Associate Professors Kraines, Mattingly, Plesser, and Witelski; Assistant Professors A. Layton, Maggioni, Nolen, and Ng; Professors Emeriti Hodel, Kitchen, Moore, Smith, Warner, and Weisfeld; Associate Professor of the Practice Bookman; Assistant Research Professors Bouzarth, Joshi, Mapes, Matic, Rutherford; Adjunct Professors Bertozzi, Dong, Howard, Shearer, and Wahl; Lecturer Tomberg; Instructor Bar-On

A major or a minor is available in this department.

25L. 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 Mathematics 19 or 31 or 31L. Instructor: Staff. One course.

26L. Laboratory Calculus and Functions II. QS A continuation of Mathematics 25L. 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 32L. Not open to students who have credit for Mathematics 31 or 31L. Prerequisite: Mathematics 25L. Instructor: Staff. One course.

31. 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 31L as a prerequisite. Instructor: Staff. One course.

31L. 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 25L or 26L. Instructor: Staff. One course.

32. 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 32L or 41. Prerequisite: Mathematics 31. Instructor: Staff. One course.

32L. 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 32 or 41. Prerequisite: Mathematics 26L or 31L or consent of instructor. Instructor: Staff. One course.

32X. Introductory Honors Calculus II. QS Similar to Mathematics 32, but faster paced and more challenging. Open to students who score at least 750 on the SAT Mathematics Aptitude Test. Instructor: Staff. One course.

41L. 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. The weekly labs will involve explorations of applications, techniques, and Theory. Prerequisite: Advanced placement credit for Mathematics 31. Not
open to students who have taken Mathematics 26L, 31L, 32L, or 32 or who have taken this course as Mathematics 41. Instructor: Staff. One course.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.


61. Perspectives on Science I. STS Weekly seminars showcasing research directions that use quantitative methods. Interviews and library research leading to a web-based report and oral presentation. Projects include a focused quantitative example and an analysis of the broader impact or development of the field including historical developments and impact on society. Emphasis on biological and medical sciences. Open only to students in the ADVANCE Program. Prerequisite: Mathematics 31 and 31L or consent of instructor. Instructor: Staff. Half course.

62. Perspectives on Science II. STS Similar to Mathematics 61, but with emphasis on engineering, physical, and social sciences. Open only to students in the ADVANCE Program. Prerequisite: Mathematics 32 or 32L, or consent of instructor. Instructor: Staff. Half course.

65S. 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.

100. Duke-Administered Study Abroad: Advanced Special Topics in Mathematics. Topics differ by section. Instructor: Staff. One course.

102. Multivariable Calculus. 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 32, 32L or 41. Not open to students who have taken Mathematics 103. Instructor: Staff. One course.

103. Intermediate 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 102. Prerequisite: Mathematics 32, 32L, or 41. Instructor: Staff. One course.

103X. Honors Intermediate Calculus and Linear Algebra. QS Similar to Mathematics 103, but more theoretical. Students who have taken 32X are encouraged to enroll. Instructor: Staff. One course.

104. 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 107. Prerequisite: Mathematics 32, 32L, or 41. Instructor: Staff. One course. C-L: Modeling Biological Systems

104X. Honors Intermediate Calculus and Linear Algebra. QS Similar to Mathematics 104, but more theoretical. Instructor: Staff. One course.

105. Vector 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 102 or 103. Prerequisite: Mathematics 104. Instructor: Staff. One course.
107. 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 102, 103 or 105. Not open to students who have had Mathematics 104. Instructor: Staff. One course.


121. Introduction to Abstract Algebra. QS Groups, rings, and fields. Students intending to take a year of abstract algebra should take Mathematics 200 and 201. Not open to students who have had Mathematics 200. Prerequisite: Mathematics 104. Instructor: Staff. One course.

123S. Geometry. QS, 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 32, 32L, 41, or consent of instructor. Instructor: Staff. One course.

124. 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 32, 32L, 41 or consent of instructor. Instructor: Staff. One course. C-L: Modeling Biological Systems

126. 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 104 or equivalence. Instructor: Staff. One course.

128S. 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 32, 32L, 41, or consent of instructor. Individual research paper required. Instructor: Staff. One course. C-L: Information Science and Information Studies

131. 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 107 or Mathematics 108. Prerequisite: Mathematics 102, 103 or 105; corequisite: Mathematics 104. Instructor: Staff. One course. C-L: Modeling Biological Systems

132S. Nonlinear Ordinary Differential Equations. QS, R Theory and applications of systems of nonlinear ordinary differential equations. Topics may include qualitative behavior, numerical experiments, oscillations, bifurcations, 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 107 or 131 or consent of instructor. Instructor: Staff. One course.

133. 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 108 or 131 or consent of instructor. Instructor: Staff. One course. C-L: Modeling Biological Systems


136. Statistics. QS One course. C-L: see Statistical Science 114; also C-L: Information Science and Information Studies

139. 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 203. Prerequisite: Mathematics 102, 103 or 105. Instructor: Staff. One course.

149S. 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.

150. Topics in Mathematics from a Historical Perspective. QS Content of course determined by instructor. Prerequisite: Mathematics 139 or 203 or consent of instructor. Instructor: Staff. One course.


160S. 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 150 or 250. Prerequisites: Mathematics 103 and 104 and basic knowledge of a programming language (at the level of Computer Science 6), or consent of instructor. Instructor: Staff. One course. C-L: Modeling Biological Systems

181. Complex Analysis. QS Complex numbers, analytic functions, complex integration, Taylor and Laurent series, theory of residues, argument and maximum principles, conformal mapping. Prerequisite: Mathematics 103 and 104 or consent of instructor. Instructor: Staff. One course.

187. Introduction to Mathematical Logic. QS 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 103 and 104 or Philosophy 103. Instructor: Staff. One course.

188. Logic and Its Applications. QS 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 148, Philosophy 150

191. 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.
192. **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.

193. **Independent Study.** Same as Mathematics 191, but for seniors. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

194. **Research Independent Study. R** Same as Mathematics 192, but for seniors. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

196S. **Seminar in Mathematical Modeling. 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. Students must write at least one substantial paper on their project. Prerequisite: Mathematics 108 or 131 or consent of instructor. Instructor: Staff. One course. C-L: Modeling Biological Systems

197S. **Seminar in Mathematics. QS, R** Intended primarily for juniors and seniors majoring in mathematics. Required research project culminating in written report. Prerequisite: Mathematics 103 and 104. Instructor: Staff. One course.

199S. **Honors Seminar. QS, R** Topics vary. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

**For Seniors and Graduate Students**

200. **Introduction to Algebraic Structures I. QS** 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 121. Prerequisite: Mathematics 104 or equivalent. Instructor: Staff. One course.

201. **Introduction to Algebraic Structures II. QS** Fields and field extensions, modules over rings, further topics in groups, rings, fields, and their applications. Prerequisite: Mathematics 200, or 121 and consent of instructor. Instructor: Staff. One course.

203. **Basic Analysis I. QS, W** Topology of \( \mathbb{R}^n \), continuous functions, uniform convergence, compactness, infinite series, theory of differentiation, and integration. Not open to students who have had Mathematics 139. Prerequisite: Mathematics 104. Instructor: Staff. One course.

204. **Basic Analysis II. QS** Differential and integral calculus in \( \mathbb{R}^n \). Inverse and implicit function theorems. Further topics in multivariable analysis. Prerequisite: Mathematics 203, or 139 and consent of instructor. Instructor: Staff. One course.

205. **Topology. QS** Elementary topology, surfaces, covering spaces, Euler characteristic, fundamental group, homology theory, exact sequences. Prerequisite: Mathematics 104. Instructor: Staff. One course.

206. **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 104. Instructor: Staff. One course.


214S. **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 MBS 200S. Prerequisites: Mathematics 107 or 131 or consent of instructor. One course. C-L: Modeling Biological Systems 214S, Computational Biology and Bioinformatics 230S

215. 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 103, 104, 135 or equivalent, or consent of instructor. Instructor: Staff. One course. C-L: Economics 225


217. Linear Models. QS One course. C-L: see Statistical Science 244

219. 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 139) and probability (Mathematics 135). Instructor: Staff. One course. 221. Numerical Analysis. QS, R One course. C-L: see Computer Science 250; also C-L: Statistical Science 250, Modeling Biological Systems


228. 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 133 or 211 or an equivalent course. Instructor: Staff. One course. C-L: Modeling Biological Systems

229. Mathematical Modeling. QS Formulation and analysis of mathematical models in science and engineering. Emphasis on case studies; may include individual or team research projects. Instructor: Staff. One course. C-L: Modeling Biological Systems

231. 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 104, 107 or 131, and 203 or 139. Instructor: Staff. One course.

232. Introduction to Partial Differential Equations. QS Fundamental solutions of linear partial differential equations, hyperbolic equations, characteristics, Cauchy-Kowalevski theorem, propagation of singularities. Not open to students who have taken the former Mathematics 297. Prerequisite: Mathematics 204 or equivalent. Instructor: Staff. One course.


236. General Relativity. NS One course. C-L: see Physics 292

241. Real Analysis. QS Measures; Lebesgue integral; \( L^k \) spaces; Daniell integral, differentiation theory, product measures. Prerequisite: Mathematics 204 or equivalent. Instructor: Staff. One course.

242. Functional Analysis. QS Metric spaces, fixed point theorems, Baire category theorem, Banach spaces, fundamental theorems of functional analysis, Fourier transform. Prerequisite: Mathematics 241 or equivalent. Instructor: Staff. One course.

245. Complex Analysis. QS Complex calculus, conformal mapping, Riemann mapping theorem, Riemann surfaces. Prerequisite: Mathematics 204 or equivalent. Instructor: Staff. One course.

250. 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 251 or consent of instructor. Instructor: Staff. One course. C-L: Modeling Biological Systems

251. Groups, Rings, and Fields. QS 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 201 or equivalent. Instructor: Staff. One course.

252. An Introduction to Commutative Algebra and Algebraic Geometry. QS Affine algebraic varieties, Groebner bases, localization, chain conditions, dimension theory,
253. **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 200 or equivalent. Instructor: Staff. One course.

261. **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 200 and 205 or consent of instructor. Instructor: Staff. One course.

262. **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 261 or consent of instructor. Instructor: Staff. One course.

263. **Topics in Topology.** QS Algebraic, geometric, or differential topology. Consent of instructor required. Instructor: Staff. One course.

264. **Computational Topology.** QS One course. C-L: see Computer Science 236

267. **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 204 or equivalent. Instructor: Staff. One course.

268. **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 267 or consent of instructor. Instructor: Staff. One course.

272. **Riemann Surfaces.** QS 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, Čech cohomology. Prerequisite: Mathematics 245 and Mathematics 261 or consent of instructor. Instructor: Staff. One course.

273. **Algebraic Geometry.** QS Projective varieties, morphisms, rational maps, sheaves, divisors, sheaf cohomology, resolution of singularities. Prerequisite: Mathematics 252 and 272; or consent of instructor advised. Instructor: Staff. One course.

277. **Topics in Algebraic Geometry.** QS Schemes, intersection theory, deformation theory, moduli, classification of varieties, variation of Hodge structure, Calabi-Yau manifolds, or arithmetic algebraic geometry. Prerequisite: Mathematics 273 or consent of instructor. Instructor: Staff. One course.

278. **Topics in Complex Analysis.** QS Geometric function theory, function algebras, several complex variables, uniformization, or analytic number theory. Prerequisite: Mathematics 245 or equivalent. Instructor: Staff. One course.

281. **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 232 or equivalent. Instructor: Staff. One course.

282. **Elliptic Partial Differential Equations.** QS Fourier transforms, distributions, elliptic equations, singular integrals, layer potentials, Sobolev spaces, regularity of elliptic
boundary value problems. Prerequisite: Mathematics 232 and 241 or equivalent. Instructor: Staff. One course.


287. 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 241 or Statistics 205 or equivalent. Instructor: Staff. One course. C-L: Statistical Science 207

288. 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 135 or equivalent, and consent of instructor. Instructor: Staff. One course. C-L: Statistical Science 297

295. Special Topics. QS Instructor: Staff. One course.

298. Special Readings. QS Instructor: Staff. One course.

THE MAJOR

The Department of Mathematics offers both the A.B. degree and the B.S. degree. Students who plan to attend graduate school in mathematics or the sciences should consider working toward the B.S. degree, which requires at least eight courses in mathematics numbered above Mathematics 107. The A.B. degree requires at least seven courses in mathematics numbered above Mathematics 107. At least half of the major/minor courses numbered above 103 should be taken at Duke. In particular, Mathematics 121 (or 200) and 139 (or 203) 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 A.B. Degree

Prerequisites. Mathematics 31 or 31L or an equivalent course (Advanced Placement allowed); Mathematics 32 or 32L or 41 or an equivalent course (Advanced Placement allowed); Mathematics 103 and Mathematics 104 or equivalent courses. (Many upper-level mathematics courses assume programming experience at the level of Computer Science 4. Students without computer experience are encouraged to take Computer Science 6.)

Major Requirements. Seven courses in mathematics numbered above 107 including Mathematics 121 or 200 and Mathematics 139 or 203.

For the B.S. Degree

Prerequisites. Mathematics 31 or 31L or an equivalent course (Advanced Placement allowed); Mathematics 32 or 32L or 41 or an equivalent course (Advanced Placement allowed); Mathematics 103 and Mathematics 104 or equivalent courses. (Many upper-level mathematics courses assume programming experience at the level of Computer Science 4. Students without computer experience are encouraged to take Computer Science 6.)

Major Requirements. Eight courses in mathematics numbered above 107 including: Mathematics 121 or 200; Mathematics 139 or 203; and one of Mathematics 136, 181, 201, 204, 205, 206, 215, 216. There is also a Physics requirement. It may be met by receiving Advanced Placement credit for Physics 61 and 62; or by completing Physics 41L and 42L,
Physics 53L and 54L, or Physics 61L and 62L; 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 103 or 105 or the equivalent.
Requirements. Five courses in mathematics numbered above 103, other than 105, to include at least one course (or its equivalent) from the following: Mathematics 121, 132S, 135, 139, 160S, 181, 187, or any 200-level course.

Mechanical Engineering and Materials Science
For courses in mechanical engineering and materials science, see “Pratt School of Engineering” on page 667.

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 Professors Spicer (biochemistry), Endow (cell biology), Marchuk (University Program In Genetics), Dawson (immunology), Wharton (microbiology), Beese (structural biology and biophysics), W. C. Hall (neurobiology), Abraham (pathology), and Schwartz-Bloom (pharmacology and cancer biology).

BIOCHEMISTRY (BIOCHEM)
210. 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.
222. 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 222, Computational Biology and Bioinformatics 252
258. 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 258, Cell Biology 258, University Program in Genetics 258, Immunology 258, Structural Biology and Biophysics 258, Computational Biology and Bioinformatics 258

259. Structural Biochemistry II. Continuation of Biochemistry 258. Structure/function analysis of proteins as enzymes, multiple ligand binding, protein folding and stability, allostery, protein-protein interactions. Prerequisites: Biochemistry 258, organic chemistry, physical chemistry, and introductory biochemistry. Instructors: Hellinga and staff. Half course. C-L: Cell Biology 259, Immunology 259, Computational Biology and Bioinformatics 259, Structural Biology and Biophysics 259, University Program in Genetics 259

265S. Seminar. Topics and instructors announced each semester. 2 units or variable. Instructor: Staff. Variable credit.


291. Physical Biochemistry. Basic principles of physical chemistry as applied to biological systems. Topics include thermodynamics, kinetics, statistical mechanics, spectroscopy, and diffraction theory. Concepts discussed in the context of the biochemistry and behavior of biological macromolecules. Emphasis on quantitative understanding of biochemical phenomena, with extensive problem solving as an instructive tool. Prerequisite: undergraduate physical chemistry and one year of calculus. Instructor: Oas and staff. One course. C-L: Structural Biology and Biophysics 291

CELL BIOLOGY (CELLBIO)

All courses require the consent of the instructor and/or the director of undergraduate studies.

203. 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: Jakoi and Vigna. One course.

206. Physiology and Medicine of Extreme Environments. Advanced topics in physiology and medicine of ambient pressure, immersion, gravity, temperature and gas composition. Environments considered include: diving, hyperbaric medicine; hot/cold terrestrial, water operations; microgravity, high-g acceleration; high altitude, space. Basic mechanisms and medical management of: decompression sickness; altitude sickness; hypothermia and hyperthermia; hypoxia; carbon monoxide poisoning; oxygen toxicity. Practical applications: pressure vessel design, operation; life support equipment; cardiorespiratory physiology measurements at low and high pressure; simulated dive and flight (optional). Prerequisites: consent of the course instructor. Instructor: Vann. One course.

210. 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. Variable credit. C-L: Marine Sciences
243. Respiratory Proteins and the Environment. NS Structure, function and evolution of copper and iron based respiratory proteins in response to environmental oxygen levels and physiological needs. Lectures and readings on the balance between pathways for metabolic oxygen utilization and alternative disease-causing pathways involving oxidative and nitrosative reactions. Interactive molecular graphics and student presentations supplement text and lectures. Covers molecular adaptations, circulation, allostery, reaction kinetics and thermodynamics, reactive oxygen and nitrogen species, gene expression, blood pathogens, malaria, sickle cell anemia. (Given at Beaufort.) Prerequisites: organic chemistry or consent of instructor. Instructor: C. Bonaventura. One course. C-L: Environment 243, Marine Sciences, Marine Science and Conservation

258. Structural Biochemistry I. Half course. C-L: see Biochemistry 258; also C-L: Cell and Molecular Biology 258, University Program in Genetics 258, Immunology 258, Structural Biology and Biophysics 258, Computational Biology and Bioinformatics 258

259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Immunology 259, Computational Biology and Bioinformatics 259, Structural Biology and Biophysics 259, University Program in Genetics 259

268. Biochemical Genetics II: From RNA to Protein. Half course. C-L: see Biochemistry 268; also C-L: Immunology 268, University Program in Genetics 268

CELL AND MOLECULAR BIOLOGY (CMB)

258. Structural Biochemistry I. Half course. C-L: see Biochemistry 258; also C-L: Cell Biology 258, University Program in Genetics 258, Immunology 258, Structural Biology and Biophysics 258, Computational Biology and Bioinformatics 258

259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Cell Biology 259, Immunology 259, Computational Biology and Bioinformatics 259, Structural Biology and Biophysics 259

333. Statistics for Basic Biomedical Scientists. Half course. C-L: see Pharmacology and Cancer Biology 333; also C-L: Neurobiology 333

UNIVERSITY PROGRAM IN GENETICS AND GENOMICS (UPGEN)

191. 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 the instructor required. Instructor: Staff (Genetics Program). One course.

192. 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 the instructor required. Instructor: Staff (Genetics Program). One course.

233. Genetic Epidemiology. This course will cover traditional genetic epidemiologic methods such as study design, linkage analysis and genetic association. Instructor: Ashley-Koch. One course.

258. Structural Biochemistry I. Half course. C-L: see Biochemistry 258; also C-L: Cell and Molecular Biology 258, Cell Biology 258, Immunology 258, Structural Biology and Biophysics 258, Computational Biology and Bioinformatics 258

259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Cell Biology 259, Immunology 259, Computational Biology and Bioinformatics 259, Structural Biology and Biophysics 259

268. Biochemical Genetics II: From RNA to Protein. Half course. C-L: see Biochemistry 268; also C-L: Cell Biology 268, Immunology 268

IMMUNOLOGY (IMMUNOL)

84FCS. Evolution, Immunity, Microbes and Medicine: A systems-level perspective on human disease. NS Role of the immune system and human microbial symbionts in human disease, both infectious and non-infectious, from an evolutionary and ecological perspective. Introductions to molecular biology, evolution, microbiology and immunology; specific diseases and processes. Open only to students in the Focus Program. Instructors: Chan and Kepler. One course.

191. 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.

192. 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 the instructor required. Instructor: Staff. One course.

193. 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 the instructor required. Instructor: Staff. One course.

213S. Computational Immunology. One course. C-L: see Computational Biology and Bioinformatics 223

244. 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 119 and Chemistry 151L or equivalents. Instructors: He and Zhang. One course. C-L: Biology 244

258. Structural Biochemistry I. Half course. C-L: see Biochemistry 258; also C-L: Cell and Molecular Biology 258, Cell Biology 258, University Program in Genetics 258, Structural Biology and Biophysics 258, Computational Biology and Bioinformatics 258

259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Cell Biology 259, Computational Biology and Bioinformatics 259, Structural Biology and Biophysics 259, University Program in Genetics 259

268. Biochemical Genetics II: From RNA to Protein. Half course. C-L: see Biochemistry 268; also C-L: Cell Biology 268, University Program in Genetics 268

MOLECULAR GENETICS AND MICROBIOLOGY (MGM)

203. Research Independent Study. R Independent research in Molecular Genetics and Microbiology. Instructor: Staff. One course.

221. Computational Gene Expression Analysis. QS C-L: see Computational Biology and Bioinformatics 221; also C-L: Statistical Science 278

222. Critical Readings in Genetics and Genomics. One course. C-L: University Program in Genetics 222

252. 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.

282. 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: McCusker, Abraham, and staff. One course.

**NEUROBIOLOGY (NEUROBIO)**

**93FCS. 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 95FCS, Neuroscience 93FCS, Neurosciences

**95FCS. Neuroeconomics: The Neurobiology of Decision Making.** NS, SS Emerging ideas in neuroeconomics research. Topics include basic structural and functional organization of the brain, strengths and limitations of techniques in neuroscience, introduction of concepts from economics into neuroscience, and impact of neuroscience on economics models. Open only to students in the Focus Program. Instructor: Huettel. One course. C-L: Neuroscience 95FCS


**212. 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.


**257. Vision.** Understanding the machinery of vision and its perceptual consequences. How we see brightness, color, form, motion, depth; the integration of visual and auditory information to generate unified multimodal representations; using vision to probe cognitive aspects of brain function; exploring visual aesthetics. The course is designed for advanced undergraduates and beginning graduate students. Instructor: Fitzpatrick and Purves. One course.

**259. The Biological Basis of Music.** Examine how and why we hear what we do, from intraspecies 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 259, Psychology 265, Music 259

**PATHOLOGY (PATHOL)**

**191. Tutorial in Sports and Medicine.** Reading course focusing on a series of books highlighting the relationship between sports and medicine. Substantial analytical paper required to be submitted at the end of the semester. Consent of instructor required. Instructor: Friedman. One course.

**192. 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.
209. **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.

275. **Fundamentals of Electron Microscopy and Biological Microanalysis.** Emphasis will be placed on preparative procedures including freezing techniques and on the application of electron microscopy to ultrastructural pathology. Scanning electron microscopy, X-ray microanalysis, and scanning ion microscopy will be discussed in addition to conventional transmission electron microscopy. Limited laboratory experience included. Consent of instructor required. Instructors: Ingram, Lefurgey, Roggli, and Shelburne. One course.

**PHARMACOLOGY AND CANCER BIOLOGY (PHARM)**

90FCS. **Chemistry of the Brain: Sex, Eating, and Addiction. NS, R** The neurochemistry of the brain. The basic mechanisms, focus on how the brain causes three kinds of behavior: sex, eating, and addiction. Topics such as, how drugs affect the brain, why people get fat, and why anorectic drugs not work over the long run. The neurobiological basis of sexual behavior and sexual differentiation of the brain. Different models of addiction: i.e. a neurochemical adaptation in the brain, a disease, or a moral weakness. Open only to students in the Focus Program. Instructor: Kuhn. One course.

149S. **Reward and Addiction. NS** One course. C-L: see Psychology 149S; also C-L: Neuroscience 164S

150. **Pharmacology: Drug Actions and Reactions.** 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 non-science 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 133

160. **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 non-science 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 127, Neuroscience 135

170S. **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 101L. Instructor: Staff. One course.

191. **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.

192. **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.
197. 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.

198. Research Independent Study in Science Education. R Continuation of Pharmacology 197. Open to juniors and seniors with consent of supervising instructor. Prerequisites: Biology 25L; Chemistry 21L or 23L; Pharmacology 197. Consent of instructor required. Instructor: Schwartz-Bloom. One course.

200. 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.

233. 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 151L; Mathematics 31 and 32. Instructor: Slotkin and staff. One course. C-L: Neuroscience 233

235. Interdisciplinary Approaches to Pharmacology Part II. NS Several model systems (CNS, cardiovascular, and infectious diseases) will be used to explore the molecular biochemical, and physiological basis of drug action. Consent of instructor required. Instructor: Whorton. One course.

254. Mammalian Toxicology. Principles of toxicology 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 151L, or consent of instructor. Instructor: Abou-Donia and staff. One course.

297. 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.

298. 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.

299. 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 297 and 298, with consent of supervising instructor. Instructor: Staff. One course.
STRUCTURAL BIOLOGY AND BIOPHYSICS (SBB)

222. Structure of Biological Macromolecules. R One course. C-L: see Biochemistry 222; also C-L: Computational Biology and Bioinformatics 252

259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Cell Biology 259, Immunology 259, Computational Biology and Bioinformatics 259, University Program in Genetics 259

263. Algorithms in Structural Biology and Biophysics. NS, QS, R One course. C-L: see Computer Science 263; also C-L: Computational Biology and Bioinformatics 263

Medieval and Renaissance Studies (MEDREN)

Professor Greer, Director; Professor Rasmussen, Director of Undergraduate Studies; Professors Aers, Beckwith, Bland, Brothers, Bruzelius, Clark, Finucci, Gaspar, Grant, Greer, Hillerbrand, Longino, Martin, Mauskopf, Mignolo, Porter, Price, Quilligan, Rasmussen, Robisheaux, Schmaltz, Shatzmiller, Silverblatt, Solterer, Tennenhouse, Wharton, and Van Miegroet; Associate Professors Janiak, Keefe, Neuschel, Sigal, Somerset, and Woods; Assistant Professors Eisner, Galletti, Hassan, Malegam, McCarthy, Pak, and Stern; Professors Emeriti Clay, DeNeef, Garcia-Gomez, Newton, Randall, Rigsby, Silbiger, Steinmetz, Williams, and Witt; Visiting Assistant Professor Dubois; Adjunct Assistant 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.

CORE COURSES

21S. First-Year Seminar: Topics in Medieval Studies. Topics vary according to instructor: perspectives from history, literature, religion, philosophy, and the arts. Instructor: Staff. One course.

22S. First-Year Seminar: Topics in Renaissance Studies. Topics vary according to instructor: perspectives from history, literature, religion, philosophy, and the arts. Instructor: Staff. One course.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

114. The Living Middle Ages. 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 139, Classical Studies 139, History 116


195. 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.

196. 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.

228. The Legacy of Greece and Rome. ALP, CCI, CZ One course. C-L: see Classical Studies 228
OTHER COURSES

For full descriptions of most of these courses, consult the cross-listings under the specified department in this bulletin.


100. 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.

100S. Seminar in Medieval and Renaissance Studies. Seminar version of Medieval and Renaissance Studies 100. Instructor: Staff. One course.

104S. Latin Epistle. ALP, FL One course. C-L: see Latin 104S

105. Ancient and Medieval Epic. ALP, CCI One course. C-L: see Classical Studies 105

106A. Introduction to Old English. CCI, CZ, R One course. C-L: see English 110A

107A. Tudor/Stuart Britain. CZ, R, W One course. C-L: see History 107A; also C-L: International Comparative Studies 180E


111A. Introduction to Italian Literature I. ALP, CCI, FL One course. C-L: see Italian 111

111B. Introduction to Spanish Literature I. ALP, CCI, FL One course. C-L: see Spanish 111

111ES. Introduction to German Literature I. ALP, CCI, FL One course. C-L: see German 121S

112A. Gothic Cathedrals. ALP, CCI, CZ, R One course. C-L: see Art History 110

112B. Medieval Architecture. ALP, CCI, CZ, R One course. C-L: see Art History 111

113. The Art of Medieval Southern Italy. ALP, CCI, CZ, R One course. C-L: see Visual Studies 154

116S. The Pagan World of the Divine Comedy. ALP, CCI One course. C-L: see Classical Studies 116S

119. Medieval Philosophy. CCI, CZ, EI One course. C-L: see Philosophy 119

120. Late Medieval and Renaissance Philosophy. CCI, CZ One course. C-L: see Philosophy 120

121A. Medieval English Literature to 1500. ALP, CCI, R One course. C-L: see English 121A

121B. Sixteenth-Century English Literature. ALP One course. C-L: see English 121B

121C. Middle English 1100-1500. ALP, CCI, R One course. C-L: see English 121C

123A. Seventeenth-Century English Literature. ALP One course. C-L: see English 123A

129A. Introduction to Shakespeare. ALP, W One course. C-L: see English 129G

129C. Shakespeare: Comedies and Romances. ALP One course. C-L: see English 129C; also C-L: Theater Studies 108

131C. Topics in Medieval Art and Architecture. ALP, CCI, CZ One course. C-L: see Art History 134

132. Ancient Myth. ALP, CCI, CZ One course. C-L: see Classical Studies 132

132AS. Topics in Renaissance British Literature. ALP Two courses. C-L: see English 132CS

133B. British Isles in the Middle Ages. CCI, CZ, EI One course. C-L: see History 133C

134B. History of Jews in the Late Middle Ages. CCI, CZ, R One course. C-L: see History 134B; also C-L: Jewish Studies 146
134C. Jewish Mysticism. CZ, EI One course. C-L: see Religion 134; also C-L: Jewish Studies 106, International Comparative Studies 141C, Ethics

137. Art in Renaissance Italy. ALP, CCI, CZ One course. C-L: see Art History 144B

138. Reformation Europe. CCI, CZ One course. C-L: see History 138; also C-L: International Comparative Studies

139AS. Special Topics in Medieval English Literature to 1500. ALP One course. C-L: see English 139AS

139BS. Special Topics in Seventeenth-Century English Literature. ALP One course. C-L: see English 139BS

140A. France in the Making: Language, Nation, and Literary Culture in Premodern Europe. CCI, CZ, FL One course. C-L: see French 142; also C-L: International Comparative Studies

140BS. Chaucer I. ALP, CCI, R One course. C-L: see English 140S

140C. Topics in Renaissance Art. ALP, CCI, CZ One course. C-L: see Art History 140

141B. Chaucer II. ALP, CCI, R One course. C-L: see English 141

144A. Courtly Love and Hate. ALP, CCI, FL One course. C-L: see French 162S

144B. Renaissance and Baroque Art History. ALP, CCI, CZ One course. C-L: see Art History 144A

144C. The Crusades to the Holy Land. CCI, CZ, R One course. C-L: see History 144A; also C-L: Jewish Studies 148

145A. Milton. ALP, R One course. C-L: see English 145

146A. Introduction to Islamic Civilization. CCI, CZ, EI One course. C-L: see Religion 146; also C-L: Cultural Anthropology 147, History 101G, International Comparative Studies 141A, Ethics, Information Science and Information Studies

147A. Introduction to Islamic Civilization. CCI, CZ, EI One course. C-L: see Religion 147; also C-L: Cultural Anthropology 148, History 102G, International Comparative Studies, Ethics

147B. Magic, Religion, and Science since 1400. CCI, CZ, EI, STS One course. C-L: see History 147

148B. History of Medieval and Renaissance Italy. ALP, CZ One course. C-L: see History 148B

148S. Italians Abroad, Foreigners in Italy: Seeing and Being Seen (DS2). ALP, CCI, CZ One course. C-L: see Italian 148S; also C-L: International Comparative Studies

149. Sex, Death, and a Little Love: Boccaccio's Decameron. ALP, CCI, CZ, R One course. C-L: see Italian 144; also C-L: International Comparative Studies 182H

150. Renaissance Architecture in Italy: Brunelleschi to Michelangelo. ALP, CZ One course. C-L: see Art History 152; also C-L: Italian 152

151A. The History of the Renaissance in Europe 1250-1550. CZ, W One course. C-L: see History 151A; also C-L: International Comparative Studies

151B. Spanish Literature of the Renaissance and the Baroque. ALP, CCI, FL One course. C-L: see Spanish 151; also C-L: Information Science and Information Studies 151

151S. Eros in the Renaissance. ALP, CZ, R, W One course. C-L: see Romance Studies 151S

152A. Michelangelo in Context. ALP, CCI, CZ One course. C-L: see Art History 155; also C-L: Italian 153

152D. Women Writers of the Renaissance: Spain and England. ALP, CCI, CZ One course. C-L: see Spanish 152D; also C-L: English 123FD

153B. Golden Age Literature: Cervantes. ALP, CCI, FL One course. C-L: see Spanish 153
154B. Netherlandish Art and Visual Culture in the Seventeenth and Eighteenth Centuries. ALP, CCI, CZ, R One course. C-L: see Art History 153; also C-L: International Comparative Studies
155S. Music History I: To 1650. ALP, CCI, CZ One course. C-L: see Music 155S
156A. The Reformation of the Sixteenth Century. CCI, CZ, EI One course. C-L: see Religion 158; also C-L: History 156A, International Comparative Studies 181H, Ethics
156C. Medieval Christendom, Conflict. CCI, CZ, EI One course. C-L: see History 156C; also C-L: Religion 161Z
157. French Art and Visual Culture in the Early Modern Period. ALP, CCI, CZ, R One course. C-L: see Visual Studies 101C; also C-L: International Comparative Studies 180A
157A. Rise of Modern Science: Early Science through Newton. CZ, STS, W One course. C-L: see History 157A
158. History of Netherlandish Art in a European Context. ALP, CCI, CZ One course. C-L: see Visual Studies 158; also C-L: International Comparative Studies
159. History of Netherlandish Art in a European Context. ALP, CCI, CZ One course. C-L: see Visual Studies 159; also C-L: International Comparative Studies
160S. Topics in Renaissance Literature and Culture. ALP, CCI, FL One course. C-L: see French 143S; also C-L: International Comparative Studies
161S. Topics in Medieval and/or Early Modern Literature and Culture. ALP, CCI One course. C-L: see Italian 145S
164D. Love in the Western World. CCI, CZ One course. C-L: see History 164AD
165S. The Vikings and Their Literature. ALP, CCI, EI One course. C-L: see German 165S
166. Dante's Divine Comedy: Hell, Purgatory and Paradise. ALP, CCI, CZ, EI One course. C-L: see Italian 143; also C-L: Religion 161G, History 142, Literature 154B, International Comparative Studies
172S. The Romance of King Arthur. ALP, CZ One course. C-L: see German 172S
182. Shakespeare Before 1600. ALP, EI, R One course. C-L: see English 143; also C-L: Theater Studies 109
183. Shakespeare after 1600. ALP, EI, R One course. C-L: see English 144; also C-L: Theater Studies 110
195KS. Capstone Seminar: Sex, Celibacy & Purity in the Middle Ages. CCI, CZ, EI, R One course. C-L: see History 195KS; also C-L: Religion 195KS
195LS. Capstone Seminar: The Black Death & Medieval Society. CCI, CZ, EI, R One course. C-L: see History 195LS
195MS. Capstone Seminar: Medieval Communities. CCI, CZ, EI, R One course. C-L: see History 195MS
200. 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.
200S. 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.
201S. Introduction to Medieval German: The Language of the German Middle Ages and Its Literature. ALP, FL, R One course. C-L: see German 209S
202A. 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: Steinmetz. One course.
202B. 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.

202C. 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.

203S. Sex, Gender, and Love in Medieval German Literature. ALP, CCI, FL One course. C-L: see German 210S

204. Origen. CZ, EI One course. C-L: see Religion 204

205. 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: Steinmetz. One course.

205S. Dante Studies. ALP, CCI, CZ One course. C-L: see Italian 205S

206. 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 206. Open to juniors and seniors only. Instructor: Keefe. One course.

207. Readings in Historical Theology. CZ Also offered as a Divinity School course. Open to juniors and seniors only. Prerequisites: Medieval and Renaissance Studies 202B and 202C. Instructor: Staff. One course.

207A. Introduction to Old English. ALP One course. C-L: see English 207A

209S. Special Topics is Middle English Literature: 1100 to 1500. ALP, CCI, R One course. C-L: see English 212S

210S. Renaissance Studies. ALP, CCI, CZ One course. C-L: see Italian 210S; also C-L: Art History 210S

213S. Chaucer and His Contexts. ALP, CCI, R One course. C-L: see English 213S

216. Augustine. CZ, EI One course. C-L: see Religion 219

218S. Medieval Philosophy. CCI, CZ, R One course. C-L: see Philosophy 218S

220AS. The Society and Economy of Europe, 1400 - 1700. CCI, CZ, R One course. C-L: see History 221AS; also C-L: Economics 221S

220BS. Religion and Society in the Age of the Reformation. CZ, R One course. C-L: see History 221BS

220S. Shakespeare: Special Topics. ALP, R One course. C-L: see English 220S

221BS. Special Topics in Renaissance Prose and Poetry: 1500 to 1660. ALP, R One course. C-L: see English 221S

223A. Music in the Middle Ages. ALP, R One course. C-L: see Music 222

223B. Music in the Renaissance. ALP, R One course. C-L: see Music 223

224. Music in the Baroque Era. ALP, R One course. C-L: see Music 224


234A. Early Christian Asceticism. CZ, EI One course. C-L: see Religion 234; also C-L: Study of Sexualities, Women's Studies
236A. 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: Steinmetz. One course.

237S. Topics in Romanesque and Gothic Art and Architecture. ALP, CCI, CZ, R One course. C-L: see Art History 236S

239S. Special Topics in Latin Literature of the Middle Ages and Renaissance. One course. C-L: see Latin 240S

240. Premodern Times. ALP, CCI, FL One course. C-L: see French 240

241. History of Netherlandish Art and Visual Culture in a European Context. ALP, CCI, CZ, R One course. C-L: see Visual Studies 210; also C-L: International Comparative Studies

242. History of Netherlandish Art and Visual Culture in a European Context. ALP, CCI, CZ, R One course. C-L: see Visual Studies 211; also C-L: International Comparative Studies

245. Problems in Reformation Theology. CZ Consent of instructor required. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Steinmetz. One course.

245S. Art and Markets. ALP, CCI, R, SS One course. C-L: see Visual Studies 252AS; also C-L: Economics 244S

246. 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.

247. 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: Keefe. One course.

248S. Topics in Italian Renaissance Art. ALP, CCI, CZ, R One course. C-L: see Art History 247S

249. Early Modern Studies. ALP, FL, R One course. C-L: see French 247


260B. History of the German Language. One course. C-L: see German 260; also C-L: Linguistics 260

272. The Early Medieval Church. CZ Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Keefe. One course.

273. 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 development of the church in the West. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Keefe. One course.

276. 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: Keefe. One course.

284S. Latin Palaeography. ALP, CZ, FL One course. C-L: see Latin 284S

THE MAJOR

The major requires ten courses, at least eight of which must be at the 100 level or above 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 114 and 115. In addition to these two courses, students must take the remaining eight 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.

Two courses may be at the introductory level approved by the director of undergraduate studies. Students presenting two courses in the Medieval and Renaissance Focus program do not need approval.

Each program is tailored to the needs and interests of the student under the supervision of a committee consisting of faculty members from appropriate departments. After discussion with the director of undergraduate studies for Medieval and Renaissance Studies, the student submits a provisional program of study outlining special interdisciplinary interests. Normally the program is planned well 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 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 195, 196) 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 195, 196) 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, at least three of which must be at the 100 level or above. Two of these must be Focus or Medieval and Renaissance Studies 114 and 115. The three remaining courses may be taken in any distribution suiting the student's interests in consultation with the director of undergraduate studies.

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 114 and 115 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 Religion

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 to determine how any one of these courses may be distributed: 21S, 22S, 49S, 50, 100, 100S, 110, 114, 114S, 115, 195, 196, 200, 200S.

Military Science—Army ROTC (MILITSCI)
Visiting Professor Koloski, Lieutenant Colonel, U.S. Army, Chair and Supervisor of Junior and Senior Instruction; Visiting Assistant Professor Mangan, Major, U.S. Army Reserve, Supervisor of Freshman and Sophomore Instruction

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. Freshman 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 non-program students enrolled in the freshman courses. It is mandatory each semester for contracted cadets (both scholarship and non-scholarship) 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 (freshman 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 U. S. 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 (telephone 1-919-660-3090 collect, or 1-800-222-9184, toll free) for more detailed information. Also see the Army Reserve Officers’ Training Corps section under Special Programs in this bulletin.

11L. Leadership Laboratory. (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.

2L. Leadership Laboratory. (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.

11S. Fundamentals of 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.

12S. Applied Leadership Theory and Principles. 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 MILITSCI 11S. 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.

26. Army Physical Fitness. Fitness program based on the US Army Physical Fitness Academy model to improve ability in cardiorespiratory endurance, muscular strength and endurance, and overall physical condition. Group stretching techniques, exercise regimens, and running programs; individual workout programs. Emphasis on ability group running. Counts as a physical education activity course; i.e., counts toward the limit of two .5 credit physical activity courses that may be applied toward graduation. Satisfactory/Unsatisfactory grading only. Staff: Instructor. Half course. C-L: Physical Education 26

28. Advanced Army Physical Fitness. Establish a personal exercise program to meet Army Physical Fitness Test (APFT) requirements and to demonstrate physical fitness leadership. Satisfactory/Unsatisfactory grading only. Staff: Instructor. Half course. C-L: Physical Education 28

51. Innovative Team Leadership. 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 11S and 12S. Laboratory required for ROTC cadets. Prerequisites: completion of Military Science 12S or consent of instructor. Instructor: Staff. Half course.

52. 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 51. Instructor: Staff. Half course.

113. Small Unit Military Leadership. 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.

114. 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 113. Instructor: Staff. One course.

151S. 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 113 and 114. Instructor: Staff. One course.

152S. 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 151S. Instructor: Staff. One course.

191. 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.

Modeling Biological Systems (MBS)
Professor Harer, Director; Associate Professor Kraines, Interim Director 2007–2008

A certificate, but not a major, is available in this program.

The Interdisciplinary Undergraduate Certificate in Modeling Biological Systems is sponsored by the Institute for Genome Sciences and Policy. Participating departments and programs include Biology, Computer Science, Mathematics, and the Institute for Statistics and Decision Sciences. This program aims to provide rigorous biological, mathematical, and computational training and an intensive independent research experience.

Seven courses (and additional components described below) are required for completion of the certificate. The seven courses are Introduction to Modeling Biological Systems, the Capstone course, Biology 118 (Genetics and Molecular Biology), Mathematics 104 (Linear Algebra), a semester-long independent study, and two electives from the approved list available from the program. Students are strongly encouraged to take the introductory course before the end of their sophomore year. The required capstone course is typically taken during the senior year. Elective courses are to be chosen based on the student’s major. Course choices should be made in consultation with the certificate program director. Biological science majors should take two elective courses in quantitative methods. Mathematics, statistics, and computer science majors should take as their two electives two biological science courses with a lab/experimental component, at least one of which should be at the 200 level. Students with other majors or with double majors will make their elective choices in consultation with the program director with an eye toward their background and research interests.

This certificate has two additional required components, besides the regular courses. First, students must complete a summer research experience. Summer funding and
assistance with finding appropriate research projects are available. Also, students must take a one-semester independent study course that expands their research experience. Typically, both of these components must involve a faculty member from outside the student’s major department.

Further information is available from the director, Box 90320, Durham, NC 27708-0320.

100. Introduction to Modeling Biological Systems. QS, R Introduction to techniques used in the construction, analysis, and evaluation of mathematical models for biological systems. Includes lectures on genetic, biochemical, physiological, and/or ecological systems. Building on these concepts, students will select a topic to research and present both orally and in a substantive paper demonstrating application of mathematical and computational approaches to biological/biomedical questions. Required course for Modeling Biological Systems certificate. Prerequisite: Mathematics 108 or 131 or consent of instructor required. Instructor: Staff. One course.

100A. Introduction to Mathematical Modeling in Biology. NS, QS, R A first course applying mathematics to biological problems. Topics drawn from cell and molecular biology, molecular evolution, enzyme catalysis, biochemical pathways, ecology, systems biology, and developmental biology. Students in the Modeling Biological Systems Certificate Program may use this course as a substitute for Modeling Biological Systems 100S. Prerequisite: Mathematics 103 or equivalent. Instructor: Mercer. One course. C-L: Biology 105

100S. Introduction to Modeling Biological Systems. NS, QS, R, W Introduction to techniques used in construction, analysis, and evaluation of mathematical models for biological systems. Includes lectures on genetic, biochemical, physiological, and/or ecological systems. Building on these concepts, students will select a topic to research and present both orally and in a substantive paper demonstrating application of mathematical and computational approaches to biological/biomedical questions. Required course for Modeling Biological Systems certificate. Biology 105/Modeling Biological Systems 100A may substitute for this course. Prerequisite: Mathematics 103 or equivalent. Not open to students who have taken Biology 105/Modeling Biological Systems 100A. Instructor: Staff. One course.

200S. Modeling Biological Systems Capstone. R Capstone course for the Modeling Biological Systems Certificate. Exact course content based on research interests of the students. Student presentations of research projects. Discussion of future research and educational opportunities in computational biology. Completion of all other requirements of the MBS certificate required, or permission of instructor. Not open to students who have had Math 214S/MBS 214S/CBB 230S.

214S. Modeling of Biological Systems. QS, R One course. C-L: see Mathematics 214S; also C-L: Computational Biology and Bioinformatics 230S

ELECTIVES

Biology
118. Genetics and Molecular Biology
122. Population Genetics
160. Population Ecology
187. Evolutionary Genetics and Genomics
214. Biophysics in Cellular and Developmental Biology
268L. Models for Environmental Data
281S. Systems Biology Colloquium

Biomedical Engineering
207. Transport Phenomena in Biological Systems (AC or GE, BB)
233. Modern Diagnostic Imaging Systems (AC or GE)
246. Computational Methods in Biomedical Engineering (GE)

Civil Engineering
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Music (MUSIC)

Professor of the Practice Hawkins, Chair; Professor of the Practice Dunn, Director of Undergraduate Studies; Associate Professor of the Practice Love, Director of Performance; Professors Berliner, Brothers, Gilliam, Jaffe, Lindroth, Todd; Associate Professors Meintjes, Rupprecht, Waebber; Assistant Professors McCarthy and Supko; Professors Emeriti Bryan, Douglass, Silbiger, Ward, and Williams; Associate Professor Emeritus Saville; Assistant Professor Emeritus Henry; Professors of the Practice Emeritus Jeffrey; Professors of the Practice Bagg, Davidson, Dunn, Hawkins, Ku, Parksins, Raimi, and Wynkoop; Associate Professors of the Practice Kelley, Pritchard, and Troxler; Assistant Professor of the Practice Brown; Adjunct Assistant Professors Neece and Roberts; Adjunct Associate Professor of the Practice Jensen; Lecturers Bonner, Byrne, Cotton, Eagle, Fancher, Finucane, Gilmore, Greenberg, Hanks, Heid, Kris, Lail, Lile, Link, Linnartz, Liu, Newsome, Niketopoulos, Paolantionio, Pederson, Reed, Simmons, Warburg; Visiting Professor Kramer; Visiting Assistant Professor Mosenbichler-Bryant; Visiting Instructor Zimmerman

A major, a major 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.

THEORY AND COMPOSITION


55A. 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 55B. (Students without playing or singing experience, see Music 55B.) Instructor: Troxler or Staff. One course.
55B. 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 MUS 55A.) Students who have previously taken Music 55A may not register for 55B. Instructor: Troxler or Staff. One course.

56. 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.

65. 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 55. Instructor: Kelley, Lindroth, Parkins, Rupprecht, or staff. One course.

75. 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.

76. Jazz Improvisation II. ALP See Jazz Improvisation I. Prerequisite: Music 75 or consent of instructor. Instructor: Staff. Half course.

114. Theory and Practice of Tonal Music II. ALP Chromaticism, modulation, musical forms, and counterpoint. Writing of short pieces (minuets, variations, songs). Laboratory. Prerequisite: Music 65. Instructor: Kelley, Lindroth, Rupprecht, or staff. One course.


116S. 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 115 or consent of instructor. Instructor: Jaffe. One course.

117S. 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 115 or consent of instructor. Instructor: Jaffe. One course.

118S. Special Topics in Music Theory. ALP Topics vary. Prerequisite: Music 114 or consent of instructor. Instructor: Brown, Jaffe, Lindroth, or staff. One course.

151S. Composition I. ALP, R Composing original music in smaller forms for voice, piano, and other instruments. Studies in compositional techniques. Prerequisites: Music 65 and 114 or consent of instructor. Instructor: Jaffe, Kelley, Lindroth, or staff. One course.

151T. Composition I. ALP, R Same as Music 151S, in tutorial format. Composing original music in smaller forms for voice, piano, and other instruments. Studies in compositional techniques. Prerequisites: Music 65 and 114 or consent of instructor. Not open to students who have taken Music 151S. Instructor: Jaffe, Kelley, or Lindroth. One course.

152T. Composition II. ALP, R Same as Music 152S, in tutorial format. Individual lessons in compositional techniques. See Music 151 or 151A. Prerequisites: Music 65, 114, and 151S or 151T OR consent of instructor. Not open to students who have taken Music 152S. Instructor: Jaffe, Kelley, or Lindroth. One course.


153S. Electronic Music: Introduction to Digital Synthesis. ALP, STS Composing electronic music with frequency modulation synthesis, MIDI sequencing, and digital recording and
editing. History of electronic music. Instructor: Lindroth, Supko, or staff. One course. C-L: Information Science and Information Studies

154S. 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 153 or 153S. Consent of instructor required. Instructor: Lindroth or staff. One course. C-L: Information Science and Information Studies

161S. Composition II. ALP, R Same as Music 161T except seminar format. Instructor: Jaffe, Kelley, Lindroth, or Supko. One course.

161T. Advanced Composition. ALP, R Individual weekly sessions for advanced students. May be repeated for credit. Prerequisites: Music 151S and 152S or consent of instructor. Instructor: Jaffe, Kelley, Lindroth, or Supko. One course.

188A. Musical Theater Workshop: Performance. ALP One course. C-L: see Theater Studies 183A

188S. The Diaghilev Ballet: 1909-1929. ALP, CCI, CZ, R, W One course. C-L: see Dance 188S

HISTORY, LITERATURE, AND ETHNOMUSICOLOGY

20S. Special Topics in Music. ALP Opportunities to engage with a specific issue in music. Instructor: Staff. One course.

48FCS. Focus Seminar. ALP Topics vary each semester. Open only to students in the Focus Program. Instructor: Brothers, Jaffe, or McCarthy. One course.

49S. First-Year Seminar. ALP Topics vary each semester offered. Instructor: Davidson, Todd, Waeber, or staff. One course.

60. Duke-Administered Study Abroad: Special Topics in Music. Topics differ by section. Instructor: Staff. One course.

70. 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.


74D. 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 74D

119S. 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 111K, International Comparative Studies

120. Advanced Special Topics in Music. ALP Opportunities to engage with a specific issue in music. Instructor: Staff. One course.

121S. 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.
122S. Radio: The Theater of the Mind. ALP, CZ One course. C-L: see Theater Studies 107S; also C-L: Literature 132AS
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, or staff. One course.
126S. 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: Staff. One course.
131. THE ARTS AND HUMAN RIGHTS. ALP, EI, SS One course. C-L: see Cultural Anthropology 161C; also C-L: Study of Ethics 161, Political Science 162D, Public Policy Studies 196E
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 131S, Cultural Anthropology 133S
134. Music in East Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 184; also C-L: Religion 161E
135. Music in South Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 185; also C-L: Religion 161I
136. 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 145A, International Comparative Studies, Documentary Studies
138S. 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.
139. 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.
141S. Special Topics in Jazz. ALP Topics vary. Also taught as African and African American Studies 141S. Prerequisite: Music 74 or consent of instructor. Instructor: Brothers or staff. One course.
143. Beethoven and His Time. ALP, CCI The music of Beethoven and its relation to contemporary political and cultural developments. Instructor: Gilliam or Todd. One course. C-L: International Comparative Studies
144. 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

145. 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. C-L: International Comparative Studies 180H

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: Neece. One course.

155S. Music History I: To 1650. ALP, CCI, CZ The history of music in medieval and early modern Europe in its cultural and social context. Prerequisite: Music 65 or consent of instructor. Instructor: Brothers or McCarthy. One course. C-L: Medieval and Renaissance Studies 155S

156S. Music History II: From 1650 to 1850. ALP, CCI, CZ, R The history of music in Europe in its cultural and social context. Prerequisite: Music 65 or consent of instructor. Instructor: Staff. One course. C-L: International Comparative Studies

157. Music History III: After 1850. ALP, CCI, CZ, R The history of music in Europe and the United States in its cultural and social context. Prerequisite: Music 65 or consent of instructor. Instructor: Gilliam or Todd. One course. C-L: International Comparative Studies


163. Opera at the Metropolitan. ALP Introduction to the operas in current repertory at the Metropolitan; discussions with singers, directors, and others involved in their production. Attendance at opera performances required. Offered as part of the Leadership in the Arts Program in New York City. Instructor: Bucker. One course.

164. American Musical Theater from Showboat to Sondheim. ALP One course. C-L: see Theater Studies 104

166S. 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: Waebjer. One course. C-L: Italian 166S

168. 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.

169. 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. Prerequisite: Music 55 or consent of instructor. Instructor: Gilliam. One course. C-L: Arts of the Moving Image

170S. Special Topics in Music History. ALP Topics vary. Instructor: Staff. One course.

190S. Seminar in Music. ALP, R Primarily for junior and senior music majors. Topics to be announced. Prerequisites: Music 115, 155S, 156S, and 157. Instructor: Staff. One course.

For Advanced Undergraduates and Graduate Students

201. 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.
213. 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, or Kelley. One course.

214S. Introduction To 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 and McCarthy. One course.


217. 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 215 or consent of instructor. Instructor: Staff. One course.

222. Music in the Middle Ages. ALP, R Selected topics. Instructor: Brothers. One course. C-L: Medieval and Renaissance Studies 223A

223. Music in the Renaissance. ALP, R Selected topics. Instructor: Brothers or McCarthy. One course. C-L: Medieval and Renaissance Studies 223B


259. The Biological Basis of Music. One course. C-L: see Neurobiology 259; also C-L: Philosophy 259, Psychology 265

295S. Composition Seminar. ALP, R Selected topics in composition. Instructor: Jaffe, Lindroth, or Kelley. One course.

297. 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, Kelley, or Lindroth. One course.

298. Composition. Continuation of Music 297. 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, Kelley, or Lindroth. One course.

299. Composition. ALP Continuation of Music 298. 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, Kelley, or Lindroth. 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.

191. 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 100 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 and minors. There is a fee for additional instruction for music majors and minors and all instruction for 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.

57S. 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.

58S. Vocal Diction. Continuation of Music 57S. German/French. Instructor consent required. Instructor: Cotton or Linnartz. Half course.

Instruction: half hour

79A. Class Piano. Instructor consent required. Instructor: Greenberg. Quarter course.
79B. Class Voice. Instructor: Cotton or Linnartz. Quarter course.
79C. Class Guitar. Instructor: Reed. Quarter course.
79D. Djembe Class. Instructor: Simmons. Quarter course.
79E. Mbira Class. Instructor consent required. Instructor: Staff. Quarter course.
80B. Jazz Piano. Instructor: Paolantonio or staff. Quarter course.
81A. Violin. Instructor: Bonner, Ku, Pritchard, or Warburg. Quarter course.
81B. Viola. Instructor: Bagg. Quarter course.
81C. Cello. Instructor: Raimi. Quarter course.
81D. Double Bass. Instructor: Link. Quarter course.
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82A. Flute. Instructor: Troxler. Quarter course.
82B. Oboe. Instructor: Newsome or Robinson. Quarter course.
82C. Clarinet. Instructor: Gilmore. Quarter course.
82D. Bassoon. Instructor: Pederson. Quarter course.
82E. Saxophone. Instructor: Fancher or Finucane. Quarter course.
82F. Jazz Saxophone. ALP Applied lessons in jazz saxophone. Instructor consent required. Instructor: Finucane. Quarter course.
83A. Trumpet. Instructor: Eagle. Quarter course.
83B. French Horn. Instructor: Niketopoulos. Quarter course.
83C. Trombone. Instructor: Kris. Quarter course.
83D. Tuba. Instructor: Kris. Quarter course.
84A. Percussion. Instructor: Hanks. Quarter course.
84B. Djembe. Instructor: Simmons. Quarter course.
84C. Mbira. Instructor consent required. Instructor: Staff. Quarter course.
88A. Classical Guitar. Instructor: Reed. Quarter course.
88B. Jazz Guitar. Instructor: Lile. Quarter course.
89. Harp. Instructor: Byrne. Quarter course.

Instruction: 1 hour

90B. Jazz Piano. Instructor: Paolantonio or staff. Half course.
92E. Saxophone. Instructor: Fancher or Finucane. Half course.
98B. **Jazz Guitar.** Instructor: Lile. Half course.

**Ensemble Classes: pass/fail**

100. **Symphony Orchestra.** Instructor: Davidson. Half course.
101. **Wind Symphony.** Instructor: Staff. Half course.
102. **Marching Band.** Instructor: Au. Half course.
104. **Small Jazz Ensemble.** Instructor: Finucane. Quarter course.
105. **Collegium Musicum.** Instructor: Staff. Half course.
106. **Chamber Music.** Instructor: Bagg or staff. Half course.
107B. **Djembe Ensemble.** Instructor: Simmons. Half course.
108. **Afro-Cuban Percussion.** Instructor: Simmons. Quarter course.
111. **Opera Workshop.** Instructor: Dunn. Half course.
112. **Chapel Choir.** Instructor: Wynkoop. Half course.
113. **Chorale.** Instructor: Wynkoop. Half course.

**Other Applied Music Courses**

128. **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 114 and consent of instructor. Instructor: Davidson or staff. One course.
129. **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 114 or consent of instructor. Instructor: Wynkoop. One course.

179. **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: Wynkoop. One course.

187. **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.

**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 musicianship 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 100 level or above, and study in applied music (see below).

The major offers two tracks.

1. **Major in Music**

*Prerequisite.* Music 65

*Requirements.* Music 114, 115, 155S, 156S, 157, 190S or a 200-level course approved by the director of undergraduate studies. One course each from two of the following three groups:

- **Group A:** Music 117S, 139
- **Group B:** Music 134, 135, 136, 137, 138S, 141S, 142
- **Group C:** Music 161, 177, 179.

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 102). Faculty advisory panel consultation during sophomore year. Those who plan graduate study in music are strongly advised to prepare themselves in two foreign languages.

2. **Major in Music with Concentration in Performance**

*Prerequisite.* Music 65.

*Requirements.* Music 114, 115, 155, 156, 157, 190S or a 200-level course approved by the director of undergraduate studies.

Two full credits of Music 179, culminating in a recital. One additional music elective approved by the director of undergraduate studies.

At least five semesters of applied music (Music 80-99, 179) earning a minimum of four full credits; two semesters of participation in a departmental ensemble (not 102). 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 113.

*Requirements.*

1. Music 65
2. One course in music history from among: Music 155S, 156S, 157
3. One full course credit from among: Music 74, 75, 76, 114, 134, 135, 136, 137, 138S, 141S, 142, 155S, 156S, 157
4. Two semester courses in performance from among: Music 79-113 (excluding 102), 128, 129, 177, 179
5. Two additional full course credits in music, one of which must be above 113.
Naval Science—Naval ROTC (NAVALSCI)

Professor Mats, Captain, U.S. Navy, Chair; Visiting Assistant Professor VanHo, Lieutenant, U.S. Navy, Director of Undergraduate Studies; Visiting Associate Professor Spano, Lieutenant Colonel, U.S. Marine Corps; Visiting Assistant Professors Pintauro, Lieutenant, U.S. Navy; Rauen, Major, U.S. Marine Corps; and White, Lieutenant, U.S. 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.

11. 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.

11L. Naval Orientation Laboratory. Practical application of the elements and material presented in Naval Science 11. Instructor: Staff.


12L. Naval Ships Systems Laboratory. Practical application of the theories and principles of naval ships systems. Instructor: Staff.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

52. Seapower and Maritime Affairs. CZ, STS This course is a conceptual study of the history and strategy of sea faring 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.


101L. First Year Naval Leadership Laboratory. Practical application of military discipline, leadership and management. Also provides general military training. Instructor: Staff.

102L. Second Year Leadership Laboratory. Practical application of military discipline, leadership and management. Also provides general military training. Instructor: Staff.

103L. Third Year Naval Leadership Laboratory. Practical application of military discipline, leadership and management. Also provides general military training. Instructor: Staff.

104L. Fourth Year Naval Leadership Laboratory. Advanced practical application of military discipline, leadership and management. Also provides general military training. Instructor: Staff.
126. **Concepts and Analyses of Naval Tactical Systems.** The study of weapons systems used aboard naval vessels and aircraft. Detection systems; systems integration into current naval platforms and their offensive and defensive capabilities. Instructor: Staff. One course.

126L. **Naval Tactical Systems Laboratory.** Practical application of the theories and principles of naval tactical systems. Instructor: Staff.

131. **Navigation.** STS Theory, principles, and procedures of ship navigation, movements, and employment. Dead reckoning, piloting, celestial and electronic principles of navigation. Naval Science 131L should be taken concurrently. Instructor: Staff. One course.

131L. **Navigation Laboratory.** Practical application of the theories and principles of navigation as presented in the lecture series. Instructor: Staff.

132. **Naval Operations.** Components of general naval operations, including concepts and application of tactical formations and dispositions, relative motion, maneuvering board and tactical plots, rules of the road, and naval communications. Prerequisite: NAVALSCI 131 or consent of instructor. Staff. One course.

132L. **Naval Operations Laboratory.** Practical application of the theories of naval operations as presented in the lecture series. Instructor: Staff.

141S. **Evolution of Warfare.** STS Continuity and change in the history of warfare, with attention to the interrelationship of social, political, technological, and military factors. Instructor: Staff. One course.

145. **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.

145L. **Naval Leadership and Management I Laboratory.** Practical application of the theories discussed in Naval Science 145. Instructor: Staff.

146. **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. Conducted in seminar format. Prerequisites: Naval Science 11 or Naval Science 145. Instructor: Staff. One course.

146L. **Naval Leadership and Management II Laboratory.** The practical application of theories discussed in Naval Science 146. Instructor: Staff.

147L. **Marine Leadership Laboratory.** Marine Corps career management, naval correspondence, force structure, leadership techniques, and training. Instructor: Staff.

148L. **Marine Leadership Laboratory.** Continuation of Naval Science 147L. Instructor: Staff.

151S. **Amphibious Warfare.** Development of amphibious doctrine, with attention to its current applications. Instructor: Staff. One course.

191. **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.

192. **Independent Study, no credit.** Individual non-research directed study in a field of special interest related to non-credit naval science courses, under the supervision of a faculty member, resulting in an academic product. Instructor: Staff.
Neurobiology

For courses in neurobiology, see Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates on page 453

Neuroscience (NEUROSCI)

Professor Williams, Director of Undergraduate Studies in Neuroscience; Associate Professor White, Associate Director of Undergraduate Studies in Neuroscience

A major or a minor is available in this program. A certificate is available through 2013.

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 integration 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 and Neuroscience and the Department of Biology, both of which are in Trinity College of Arts and Sciences. There are also important contributions from the Department of Neurobiology in the Duke University School of Medicine and the Biomedical Engineering Department in the Pratt School of Engineering at Duke University. Furthermore, the broad impact of discovery in neuroscience now extends beyond these academic disciplines as neuroscientists collaborate 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.

GATEWAY COURSES

93FCS. Neurobiology of Mind. NS One course. C-L: see Neurobiology 93FCS; also C-L: Psychology 95FCS

95FCS. Neuroeconomics: The Neurobiology of Decision Making. NS, SS One course. C-L: see Neurobiology 95FCS


CORE COURSES

112. Introduction to Cognitive Neuroscience (B, C). NS One course. C-L: see Psychology 112; also C-L: Philosophy 149

114. Fundamentals of Neuroscience. NS, STS One course. C-L: see Psychology 135; also C-L: Biology 154

115. Cellular and Molecular Neurobiology. NS One course. C-L: see Biology 115

116. Brain and Behavior. NS One course. C-L: see Psychology 136

ELECTIVES—RESEARCH

50. 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 Independent Study and the greater

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level of commitment required; does not obligate student or faculty to subsequent Independent Study. Instructor consent required. Satisfactory/unsatisfactory grading only. Instructor: Staff. Half course.

191. Research Independent Study 1. 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. Meets general requirement of a curriculum Research (R) course. Open to all qualifying students with consent of supervising instructor and director of undergraduate studies. May be repeated. Continued in Neuroscience 192. Instructor: Staff. One course.


ELECTIVES—REGULAR

119S. Special Topics in Neuroscience. Topics vary by semester. Instructor: Staff. One course.

126. Behavior and Neurochemistry (B, P). NS One course. C-L: see Psychology 126

132. Decision Neuroscience (B,C). NS, SS, STS One course. C-L: see Psychology 132

133. Pharmacology: Drug Actions and Reactions. One course. C-L: see Pharmacology and Cancer Biology 150

135. Drugs, Brain, and Behavior. NS One course. C-L: see Pharmacology and Cancer Biology 160; also C-L: Psychology 127

158L. Electrobiology. One course. C-L: see Biomedical Engineering 101L

161S. Neurobiology of Learning and Memory (B, C). NS One course. C-L: see Psychology 165S

162S. Emotions and the Brain (B, C). NS One course. C-L: see Psychology 141S


164S. Reward and Addiction. NS One course. C-L: see Psychology 149S; also C-L: Pharmacology and Cancer Biology 149S

166. Behavioral Neuroimmunology: Brain and Behavior in Health and Disease. One course. C-L: see Psychology 156

167S. Social Neuroscience (B, C, P). NS, R One course. C-L: see Psychology 167S

169S. The Neurobiology of the Pain System: Its Function and Dysfunctions. NS, R, W One course. C-L: see Psychology 169S


176S. Neuroscience and Human Language. NS, SS One course. C-L: see Linguistics 133S; also C-L: Russian 133S

180. Brain Waves and Cognition (B, C). NS, R One course. C-L: see Psychology 181C

181. Functional Neuroimaging (B,C). NS, R One course. C-L: see Psychology 181F

182. Perception and the Brain. NS, R One course. C-L: see Psychology 182B

195S. Current Research in Neuroscience (B). EI, NS, R, W A formal research and training component of the Trinity College Forum in Neuroscience 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: Meck. One course. C-L: Psychology 195S

**201L. Electrophysiology (AC or GE).** One course. C-L: see Biomedical Engineering 201L

**204S. Exploring the Prefrontal Cortex. NS, R, W** One course. C-L: see Psychology 204S

**211S. Affective Neuroscience (B, C).** NS One course. C-L: see Psychology 241S

**216S. Cognitive Neuroscience of Memory. NS** One course. C-L: see Psychology 226S

**231S. Cognitive and Neurolinguistics. NS, R, SS** One course. C-L: see Linguistics 201; also C-L: Russian 216

**233. Essentials of Pharmacology and Toxicology.** One course. C-L: see Pharmacology and Cancer Biology 233

**240. Molecular Basis of Membrane Transport (GE, MC, EL).** One course. C-L: see Biomedical Engineering 210

**241. Theoretical Electrophysiology (GE, EL).** One course. C-L: see Biomedical Engineering 211

**242S. Biology of Nervous System Diseases. NS** One course. C-L: see Biology 241S; also C-L: Psychology 211S

**245. Development of Neural Circuits. NS** One course. C-L: see Biology 240

**250S. Hormones, Brain, and Cognition (B, C). NS, R** One course. C-L: Psychology 250S

**252. Neural Signal Acquisition (GE, IM, EL).** One course. C-L: see Biomedical Engineering 252

**253. Computational Neuroengineering (GE, EL).** One course. C-L: see Biomedical Engineering 253

**268. Brain and Language (B, C). NS** One course. C-L: see Linguistics 268; also C-L: Psychology 268

**295S. Special Topics in Neuroscience.** Topics vary by semester. Undergraduate as well as Graduate/ Professional students. Instructor: Staff. One course.

**Elective Courses Offered through other Departments**

**Biology**

156L. Sensory Physiology and Behavior of Marine Animals

171. Primate Sexuality

184L. Experimental Cell and Molecular Biology

**Evolutionary Anthropology**

171. Primate Sexuality

**THE MAJOR**

**For the A.B. Degree**

**Requirements:** 6 pre-/co-requisites and 10 courses in major (9 at the 100-level or higher)

**Pre-/co-requisites** (6 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 A.B. degree. In Biology, one of the two ‘gateway’ courses, Biology 101—Gateway to Biology: Molecular Biology, or Biology 102L—Gateway to Biology: Evolution and Genetics, will satisfy the pre-/co-requisite for the Neuroscience major. Please note that AP credit will not be granted for the Biology pre-/co-requisite. In Chemistry, students are required to complete one term of general chemistry (Chemistry 31L—Core Concepts in Chemistry or Chemistry 43L—Honors Chemistry: Core Concepts in Context), without the added requirement of organic chemistry; however, students must also complete one term of computer programming (Engineering 53L—Computational Methods in Engineering or Computer Science 6—Program Design and Analysis I). In Mathematics, one term of calculus is required (Math
31L—Laboratory Calculus I). In Physics, two terms of calculus-based physics are required, which may be satisfied by one of the following two sequences or their equivalent: Physics 41L—Fundamentals of Physics followed by Physics 42L—Fundamentals of Physics, or Physics 53L—General Physics I followed by Physics 54L—General Physics II. **Gateway courses** (1 course required). One of three ‘gateway’ courses should be the first of the 10 courses that a student would complete in fulfillment of the Major in Neuroscience. For students admitted into the “Exploring the Mind” Focus Program, Neuroscience 093FCS—Neurobiology of Mind or Neuroscience 095FCS—Neuroeconomics: the Neurobiology of Decision Making, will satisfy this gateway requirement. For all other students, Neuroscience101—Biological Basis of Behavior: Introduction and Survey is the gateway to the Major. **Core courses** (3 courses required). There are three core courses in the Major in Neuroscience that reflect the three levels of inquiry described above: Neuroscience 115—Cellular and Molecular Neurobiology; Neuroscience 114—Fundamentals of Neuroscience, which addresses neural circuits and systems, and either Neuroscience 112—Introduction to Cognitive Neuroscience, which focuses on human cognition, or Neuroscience 116—Brain and Behavior, which focuses on animal models that are used to study behavioral systems. **Statistics** (1 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: Statistical Science 101—Data Analysis and Statistical Inference, Statistical Science 102—Introductory Biostatistics, Statistical Science 103—Probability and Statistical Inference, Statistical Science 113—Probability and Statistics in Engineering, or Psychology and Neuroscience 117—Applications of Statistical Methods in Psychology. **Electives** (4 courses required). Neuroscience Majors are required to explore the breadth and depth of the field by fulfilling four course requirements in Neuroscience, with at least one elective being a seminar course or a term of independent study. Furthermore, for the A.B. degree, students must explore the broader impact of Neuroscience on society. To do so, candidates for the A.B. degree must complete a course on Ethics and Applications in Neuroscience (planned for spring 2011), the History of Neuroscience (planned for fall 2011), or one of the following two courses in Philosophy: Philosophy 112—Philosophy of Mind or Philosophy 255S—Topics in Philosophy of Mind. To complete the elective requirements for the A.B. degree, students may choose from a variety of seminar, small-lecture, and laboratory offerings that are drawn from a dynamic list of approximately 50 courses offered by five Departments in Trinity College, as well as Departments in the School of Medicine and the Pratt School of Engineering. **Capstone** (1 experience required). Neuroscience majors are required to complete a capstone experience that facilitates integration of knowledge and understanding across level of analysis. There are three means by which this capstone requirement may be satisfied. A student may complete two terms of Independent Study (Neuroscience 191/192) working under the mentorship of a faculty-investigator on a single project that would carry-over across these two terms. The second means is completion of one of the laboratory (carrying the L designation) or methods courses in Neuroscience. The third means for fulfilling the capstone requirement is completing Neuroscience 195S—Current Research in Neuroscience. This seminar course is also a requirement for Graduation with Distinction in Neuroscience (see below).

No more than two of the ten courses required for the major may be used to satisfy the requirements of another major or minor. No more than one “allied elective” (see Web site for current list) may count among the ten courses for the major, except under exceptional consideration by the Director of Undergraduate Studies in Neuroscience. **For the B.S. Degree**

**Requirements**: 7 pre-/co-requisites and 10 courses in major (9 at the 100-level or higher)
Pre-/co-requisites (7 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 101L—Gateway to Biology: Molecular Biology or Biology 102L—Gateway to Biology: Evolution and Genetics, will satisfy the pre-/co-requisite for the Neuroscience major. Please note that AP credit will not be granted for the Biology pre-/co-requisite. 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 31L—Core Concepts in Chemistry or Chemistry 43L—Honors Chemistry: Core Concepts in Context) to then complete one term of organic chemistry (Chemistry 151L—Organic Chemistry). The second option is completion of one term of general chemistry (Chemistry 31L—Core Concepts in Chemistry or Chemistry 43L—Honors Chemistry: Core Concepts in Context), without the added requirement of organic chemistry; however, students must also complete one term of computer programming (Engineering 53L—Computational Methods in Engineering or Computer Science 6—Program Design and Analysis 1). 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. In Mathematics, two terms of calculus are required (Math 31L—Laboratory Calculus I and Math 32—Introductory Calculus II or Math 32L—Laboratory Calculus II or their equivalent). If a student has AP credit for Math 31, then Math 41L—One Variable Calculus, may be taken to satisfy the Mathematics pre-/co-requisite. In Physics, two terms of calculus-based physics are required, which may be satisfied by one of the following two sequences or their equivalent: Physics 41L—Fundamentals of Physics followed by Physics 42L—Fundamentals of Physics, or Physics 53L—General Physics I followed by Physics 54L—General Physics II.

Gateway courses (1 course required). One of three ‘gateway’ courses should be the first of the ten courses that a student would complete in fulfillment of the Major in Neuroscience. For students admitted into the “Exploring the Mind” Focus Program, Neuroscience 093FCS—Neurobiology of Mind or Neuroscience 095FCS—Neuroeconomics: the Neurobiology of Decision Making will satisfy this gateway requirement. For all other students, Neuroscience 101—Biological Basis of Behavior: Introduction and Survey, is the gateway to the Major.

Core courses (3 courses required). There are three core courses in the Major in Neuroscience that reflect the three levels of inquiry described above: Neuroscience 115—Cellular and Molecular Neurobiology; Neuroscience 114—Fundamentals of Neuroscience, which addresses neural circuits and systems, and either Neuroscience 112—Introduction to Cognitive Neuroscience, which focuses on human cognition, or Neuroscience 116—Brain and Behavior, which focuses on animal models that are used to study behavioral systems.

Statistics (1 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: Statistical Science 101—Data Analysis and Statistical Inference, Statistical Science 102—Introductory Biostatistics, Statistical Science 103—Probability and Statistical Inference, Statistical Science 113—Probability and Statistics in Engineering, or Psychology 117—Applications of Statistical Methods in Psychology.

Electives (4 courses required). Neuroscience Majors are required to explore the breadth and depth of the field by fulfilling four course requirements in Neuroscience, with at least one elective being a seminar course or a term of independent study. Seminar, small-lecture, and laboratory elective offerings are drawn from a dynamic list of approximately 50 courses that are offered by five Departments in Trinity College, as well as Departments in the School of Medicine and the Pratt School of Engineering.
Neuroscience majors are required to complete a capstone experience that facilitates integration of knowledge and understanding across level of analysis. There are three means by which this capstone requirement may be satisfied. A student may complete two terms of Independent Study (Neuroscience 191/192) working under the mentorship of a faculty-investigator on a single project that would carry-over across these two terms. The second means is completion of one of the laboratory (carrying the L designation) or methods courses in Neuroscience. The third means for fulfilling the capstone requirement is completing Neuroscience 195S—Current Research in Neuroscience. This seminar course is also a requirement for Graduation with Distinction in Neuroscience (see below).

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 or minor. No more than one “allied elective” (see Web site for current list) may count among the ten courses for the major, except under exceptional consideration by the Director of Undergraduate Studies in Neuroscience.

Graduation with Distinction in Neuroscience

Neuroscience majors with a GPA of 3.5 or above in Neuroscience courses, not including independent study, 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 Independent Study in Neuroscience (Neuroscience 191/192). 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 faculty members. On some committees, a doctorally prepared non-faculty member who is familiar with the student’s work may serve in place of one faculty member.

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 will take Neuroscience 195S—Current Research in Neuroscience. This spring-term seminar 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

Minor Requirements for students in Trinity College of Arts and Sciences: 5 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 at the 100-level or higher and at least two courses must be from the core or gateway offerings (with no more than one gateway course counting). 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. Lastly, “allied electives” (see Web site for current list) are not
counted among the five courses for the Minor in Neuroscience, except under exceptional consideration by the Director of Undergraduate Studies in Neuroscience.

**Minor Requirements for Biomedical Engineering Majors in the Pratt School: 5 Neuroscience courses**

Biomedical Engineering majors in the Pratt School wishing to Minor (or second-Major) in Neuroscience should consult the Web site for Undergraduate Neuroscience (http://dibs.duke.edu/education/undergraduate-neuroscience) and the Director of Undergraduate Studies in Biomedical Engineering for the latest academic information.

The minor in Neuroscience for Biomedical Engineering majors requires a minimum of five Neuroscience courses from gateway, core, and elective course offerings. For Biomedical Engineering majors who were admitted into the “Exploring the Mind” Focus Program, Neuroscience 093FCS—Neurobiology of Mind or Neuroscience 095FCS—Neuroeconomics: the Neurobiology of Decision Making, 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 114—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 112, 115 or 116). The Biomedical Engineering major is also required to complete Biomedical Engineering 101/Neuroscience 158—Electrobiology 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 (NCS)**

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 201, 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.

**201. Survey of Nonlinear and Complex Systems. NS, QS** Half course. C-L: see aphysics 201

**Pathology**

For courses in pathology, see Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates on page 453.

**Pharmacology**

For courses in pharmacology, see Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates on page 453.

**Persian**

For courses in Persian, see Slavic and Eurasian Studies on page 614.

**Philosophy (PHIL)**

Professor Schmaltz, Chair; Professor Rosenberg, Director of Undergraduate Studies; Professors Brandon, Buchanan, Flanagan, Gillespie (political science), Grant (political science), Golding, Hoover, McShea (biology), Neander, Norman, Purves (neurobiology), Sanford, Sreenivasan, and Wong; Associate Professors Ferejohn, Güzeldere, and Janiak; Assistant Professors Einheuser and Sterrett; Professors Emeriti Mahoney and Peach; Adjunct Associate Professor Ward; Associate Research Professor Hawkins; Senior Research Scholar Dretske
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 41, 42, 43S, and 44S may be taken for credit. These courses are not open to juniors and seniors.

41. Introduction to Philosophy. CZ, W Examination of problems in philosophy; emphasis on metaphysics and theory of knowledge. Instructor: Staff. One course.

42. Introduction to Philosophy. CZ, EI, W Examination of problems in philosophy; emphasis on ethics and value theory. Instructor: Staff. One course.

43S. Introduction to Philosophy. CZ, W Philosophy 41 conducted as a seminar. Instructor: Staff. One course.

44S. Introduction to Philosophy. CZ, EI, W Philosophy 42 conducted as a seminar. Instructor: Staff. One course.

48. Logic. CZ The conditions of effective thinking and clear communication. Examination of the basic principles of deductive reasoning. Instructor: Brandon, Einheuser, Güzeldere, Sanford, or staff. One course.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Golding or Staff. One course.

50. Duke-Administered Study Abroad: Special Topics in Philosophy. CCI Topics differ by section. Instructor: Staff. One course.

85FCS. Freedom and Responsibility: The Ethical Dimensions of Liberty. CZ, EI, SS, W One course. C-L: see Political Science 85EFCS

86FCS. 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.

95FCS. 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
97FCS. 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.

98FCS. Puzzles of the Mind: Humans, Animals, & 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.

99FCS. 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.

100. 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 100


102. Aesthetics: The Philosophy of Art. ALP, CZ The concept of beauty, the work of art, the function of art, art and society, the analysis of a work of art, criticism in the arts. Instructor: Ward. One course. C-L: Visual Studies 122A

103. Symbolic Logic. CZ Detailed analysis of deduction and of deductive systems. Open to sophomores by consent of instructor. Instructor: Brandon, Einheuser, Güzeldere, or Rosenberg. One course. C-L: Linguistics 103, Information Science and Information Studies


106. Philosophy of Law. CZ, EI Natural law theory, legal positivism, legal realism, the relation of law and morality. Instructor: Golding. One course. C-L: Ethics

107. 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: Ethics

108. Introduction to the Evolution of Human Culture, Behavior and Institutions. CCI, CZ, 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 108

109. 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: Einheuser or Sterrett. One course. C-L: Linguistics 109

110. 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: Einheuser, Ferejohn or Sanford. One course. C-L: Information Science and Information Studies


112. 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: Einheuser, Flanagan, or Guzeldere. One course. C-L: Linguistics 108, Visual Studies 122B, Information Science and Information Studies

113S. 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: Einheuser or Sterrett. One course.

114. 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 174, Genome Sciences and Policy, Marine Science and Conservation

115. 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 115, Marine Sciences, Marine Science and Conservation


117. 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, Golding, or Wong. One course. C-L: Ethics

118. 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: Ethics, Genome Sciences and Policy, Health Policy


120. Late Medieval and Renaissance Philosophy. CCI, CZ Study of conceptual shifts from the Middle Ages to the Renaissance and Early Modern period stressing impact of Muslim philosophy on the Christian west. Revival of ancient thought, scientific developments,
European discovery of New World and impact on political philosophy. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 120


122. 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

122S. Philosophical Issues in Feminism. Seminar version of Philosophy 122. Instructor: Wong or staff. One course.

123. Aristotle. CZ, EI Survey of principal topics in Aristotelian philosophy. Areas of study include metaphysics, epistemology, philosophy of science, philosophy of language, ethics, and political philosophy. Instructor: Ferejohn. One course. C-L: Classical Studies 113

123FCS. Introduction to Political Philosophy. EI, SS One course. C-L: see Political Science 123FCS; also C-L: Ethics


126. 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.


129. Topics 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: Flanagan, Ferejohn, Janiak, Rosenberg, or Sterrett. One course.

129FCS. Acting Globally, Thinking Normatively. EI, SS Examines how normative ethical & political theories might help us think more clearly about rights, obligations, and justice in a global context. Also looks into the limitations of some of these theories (originally developed for more local contexts). Particular focus on ethical challenges raised by international commerce. Do multinational corporations have obligations to maintain standards over and above those required by local regulations? How do we determine what these obligations and standards are? What duties do citizens and consumers in a corporation's home country have to compel more responsible corporate behavior abroad? Instructor: Norman. One course. C-L: Study of Ethics 129FCS
130. 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: Schmaltz. One course.


135. Thinking About God: The Nature of Religious Belief at the Crossroads of Judaism, Christianity, & Islam. CCI, CZ, EI Analytical examination of bases for belief in God and possibility of afterlife, relation between faith and reason, and interrelated issues concerning justification for/content of religious belief. Considers similarities and differences on these issues among Judaism, Christianity, and Islam. Open only to students in the Duke in Turkey summer program. Instructor: Guzeldere. One course. C-L: Cultural Anthropology 120B, Religion 161V, International Comparative Studies 102F, Turkish 136

136. 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.

137. 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 100C, Public Policy Studies 138

138. 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: Einheuser, Sanford or Sterrett. One course.


145. The Philosophy and Methodology of Economics. EI, SS Economics as target discipline for philosophy of science. How economists investigate the economy; how economics produces knowledge/explanation/prediction/understanding. Classic contributions to economic methodology (John Stuart Mill, John Neville Keynes, Milton Friedman) & to Philosophy of Science (Carl Hempel, Karl Popper, Thomas Kuhn, Imre Lakatos) with case studies of applications to economic problems. Also recent topics at intersection of
Philosophy & Economics (models, causality, reductionism, realism). Prerequisites: either one course in philosophy and one course in economics; or Economics 105D, 110D, or 139D; or consent of instructor. Instructors: Hoover. One course. C-L: Economics 137, Study of Ethics 115

146. Prisoner's Dilemma and Distributive Justice (A, C-N). EI, SS One course. C-L: see Political Science 103; also C-L: Economics 103, Ethics, Information Science and Information Studies

149. Introduction to Cognitive Neuroscience (B, C). NS One course. C-L: see Psychology 112; also C-L: Neuroscience 112

150. Logic and Its Applications. QS One course. C-L: see Mathematics 188; also C-L: Computer Science 148

152. 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, Guzeldere, and Neander. One course. C-L: Neuroscience 152

162. Human Rights in Theory and Practice. CCI, CZ, EI, SS One course. C-L: see Political Science 162; also C-L: Public Policy Studies 162, Documentary Studies, Ethics, Global Health

163. 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: Ethics

165. Politics, Philosophy, and Economics Capstone (A, C-N). R, SS One course. C-L: see Political Science 165; also C-L: Economics 104


183. The Existentialist Imagination. ALP, CZ, EI One course. C-L: see German 183D; also C-L: Literature 132A

184S. 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 107, Political Science 123, or Political Science 126. If you take this course you cannot get credit for Philosophy 107, Political Science 123, or Political Science 126. Open only to students in the Duke in Oxford program. Consent of instructor required. Instructor: Stears. Two courses. C-L: Political Science 185S

185S. Science, Ethics, & 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 161WS, Public Policy Studies 138S

186. Marx, Nietzsche, Freud. CCI, CZ, SS One course. C-L: see German 186; also C-L: Literature 186A, Political Science 195

186D. Marx, Nietzsche, Freud. CCI, CZ, EI, SS One course. C-L: see German 186D; also C-L: Literature 186AD, Political Science 195D

191. 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.

192. 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.

195. Special Topics in Philosophy. Instructor: Staff. One course.

196S. Seminars in Philosophy. CZ Instructor: Staff. One course.

197S. Seminars in Philosophy. CZ Instructor: Staff. One course.

For Seniors and Graduates

203S. 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, Golding, or Wong. One course. C-L: Political Science 289S, Women's Studies

206S. 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: Golding. One course.

208S. Political Values. CZ, EI Analysis of the systematic justification of political principles and the political values in the administration of law. Instructor: Golding. One course.

211S. Plato. CZ Selected dialogues. Instructor: Ferejohn. One course. C-L: Classical Studies 211S


218S. 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 218S

225S. 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: Schmaltz. One course.

227S. 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: Schmaltz. One course.

228S. Recent and Contemporary Philosophy. CZ A critical study of some contemporary movements, with special emphasis on analytic philosophers. Instructor: Sterrett. One course. C-L: Linguistics 228S

229S. 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, Rosenberg, Schmaltz, or Sterrett. One course.

231S. Kant's Critique of Pure Reason. CZ Instructor: Janiak. One course.

233S. 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.

234S. 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 organicism, the units of selection, and sociobiology. Consent of instructor required. Instructor: Brandon, Neander, or Rosenberg. One course. C-L: Biology 234S

236S. Hegel's Political Philosophy. EI, R, SS One course. C-L: see Political Science 236S; also C-L: German 275S

237S. Nietzsche's Political Philosophy. CZ, EI, SS One course. C-L: see Political Science 226S; also C-L: German 276S

238S. 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

240S. 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, Guzeldere, or Neander. One course.


250S. Topics in Formal Philosophy. Topics selected from formal logic, philosophy of mathematics, philosophy of logic, or philosophy of language. Instructor: Einheuser. One course.

251S. 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, Einheuser, or Sanford. One course.

252S. Metaphysics. CZ, R Selected topics: substance, qualities and universals, identity, space, time, causation, and determinism. Instructor: Einheuser or Sanford. One course.

255S. 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, Guzeldere, or Neander. One course. C-L: Neuroscience 255S

259. The Biological Basis of Music. One course. C-L: see Neurobiology 259; also C-L: Psychology 265, Music 259

266S. Topics in Early Modern Political Thought from Machiavelli to Mills. CCI, SS One course. C-L: see Political Science 266S

270. 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 270; also C-L: Literature 262, Genome Sciences and Policy
273S. Heidegger. CZ, EI, SS One course. C-L: see Political Science 273S
291S. Special Fields of Philosophy. CZ Instructor: Staff. One course.
292. Special Topics in Philosophy. CZ Topics vary each semester. Instructor: Staff. One course.
292S. 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, Gopal Sreenivasan, and other faculty from the Trent Center for Bioethics, Humanities, and the History of Medicine. One course.
293S. Causation. A study of the philosophical foundations of causation. Involves close reading and discussion of classic modern philosophical analyses of causation, with special reference to applications in the philosophy of science including the social sciences. Instructor: Hoover. One course.

THE MAJOR
Requirements. Ten courses in philosophy, eight of which must be at the 100-level or above. The courses must include Philosophy 100 and 101; a course at the 100 level or above in value theory (for example, ethics, political philosophy); a course at the 100 level or above in metaphysics, epistemology, philosophy of mind, or philosophy of science, a course in logic (Philosophy 48, 103, or 150), and at least one seminar at the 200 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 100 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.

Physics (PHYSICS)
Professor Gauthier, Chair; Associate Professor Teitsworth, Associate Chair for Teaching; Professor Greenside, Director of Undergraduate Studies; Professors Aspinwell, Baranger, Behringer, Beratan, Curtarolo, Chang, Edwards, Gao, Goshaw, Greenside, Han, Howell, Johnson, Mueller, Oh, Palmer, Petters, Smith, Thomas, and Tornow; Associate Professors Bass, Chandrasekharan, Finkelstein, Kotwal, Kruse, Mehen, Plesser, Samei, Scholberg, Smith, Socolar, Springer, Teitsworth, Wu; Assistant Professors Arce, Buchler, Charbonneau, C. Walter; Professors Emeriti Bilpuch, Evans, Fairbank, Meyer, Roberson, Robinson, Walker, R. Walter, and Weller; Associate Research Professor Phillips; Assistant Research Professors Ahmed and Tonchev; Adjunct Professors Ciftan, Everitt, Guenther, Lawson, Skatrud, and West; Adjunct Assistant Professors Daniels, Dutta, and Vylet; Lecturer Brown

A major or a minor is available in this department.

Through the study of physics, students undertake a systematic examination of the objects that make up the natural universe and their interactions with each other. The knowledge and analytical skills thus obtained are basic to the study of the sciences and engineering. The department offers a number of courses for nonspecialists who wish to learn about the physicist's description of nature for its intrinsic intellectual value.

35. 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.

38S. 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.

41L. Fundamentals of Physics. NS, QS First semester of a two-semester course series. For students interested in majoring in physics; taken in the freshman year. Basic principles of classical physics. Emphasis on laying a foundation for further study of physics. Topics include: vector algebra tools, the description of motion, Newton's Laws, work and energy, systems of particles, conservation laws, rotation, gravity, elastic properties of solids, mechanics of fluids, properties of gases, Laws of Thermodynamics, oscillations, mechanical waves, and sound. Closed to students having credit for Physics 53L, 61L. Prerequisites: Mathematics 31 and 32 or equivalent; Mathematics 32 may be taken concurrently. Instructor: Chandrasekharan or Brown. One course.

42L. Fundamentals of Physics. NS, QS Second semester of a two-semester course series. For students interested in majoring in physics; taken in the freshman year. Basic principles of electromagnetism. Emphasis on laying the foundation for further study in a physics program. Topics include: electric fields, Gauss's Law, potential, capacitance, current, DC circuits, magnetic fields, Ampere's Law, electric and magnetic forces, magnetic induction, Faraday's Law, AC circuits, Maxwell's field, equations, electromagnetic waves and special relativity. Closed to students having credit for Physics 54L or 62L. Prerequisites: Mathematics 31 and 32 or equivalent. Instructor: Brown. One course.

47S. 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: Mueller. One course.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.


53L. 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 53L and a lab/recitation (Physics 53L9,R) section required. Students planning to major in physics should enroll in Physics 41L, 42L in their freshman year. Closed to students having credit for Physics 41L, 61L, or 63L. Prerequisites: one year of college calculus (or equivalent) such as Mathematics 25L, 26L, or 31. Mathematics 32 recommended. Instructor: Brown or Mehen. One course. C-L: Marine Sciences

54L. General Physics II. NS, QS The second part of a two-semester calculus based course providing a survey of the 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 (interference and diffraction), atomic and nuclear physics. Students must enroll in both a lecture (Physics 54L) and a lab/recitation (Physics 54L9,R) section in order to receive credit for the course. Closed to students having credit for Physics 42L, 62L or 63L.
55. Introduction to Astronomy. NS 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: Greenside or Plesser. One course. C-L: Visual Studies

61L. 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 41L, 42L in their freshman year. Closed to students having credit for Physics 41L or 53L. Prerequisites: Mathematics 31, 32, or equivalent; Mathematics 32 may be taken concurrently with Physics 61L. Instructor: Behringer. One course.

62L. 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, and geometrical optics. Not open to students having credit for Physics 42L or 54L. Prerequisites: Physics 61L and Mathematics 32 or the equivalents. Instructor: Baranger or Kruse. One course.

63L. Applications of Physics: A modern perspective. NS, QS Intended principally for students in engineering and the physical sciences as a continuation of Physics 62L. 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 42L or 54L. Prerequisites: Physics 62L and Mathematics 103 or the equivalents. Instructor: Chang. One course.

85S. 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.

100. 20th Century Physics. NS Survey of modern physics including relativity and the quantum physics of atoms, nuclei, particles, quarks, condensed matter, and lasers. Not applicable toward a major in physics. Prerequisite: Physics 42L, 54L, or 62L and Mathematics 103 (may be taken concurrently). Instructor: Han. One course.


105. Introduction to Astrophysics. NS Basic principles of astronomy treated quantitatively. Cosmological models, galaxies, stars, interstellar matter, the solar system, and experimental techniques and results. Prerequisite: Mathematics 32 and Physics 42L, 54L, 62L, or consent of instructor. Instructor: Kruse. One course.
115L. 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: Kotwal. Half course.

143L. Optics and Modern Physics. NS Intended as a continuation of Physics 41L, 42L. Waves and Optics. Introduction to Quantum Mechanics and Special Theory of Relativity. Applications in condensed matter, particle physics, and cosmology. Prerequisite: Physics 42L, 54L, or 62L, and Mathematics 103 (may be taken concurrently). Instructor: Socolar. One course.

171L. Electronics. NS 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 42L, 54L, 62L, or equivalent; Mathematics 103 or equivalent. Instructor: Walter or Finkelstein. One course.

176. Thermal Physics. NS 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 Engineering 176. Prerequisites: Mathematics 103 or equivalent and Physics 41L, 53L, 62L, or equivalent. Instructor: Greenside. One course.

181. Intermediate Mechanics. NS Newtonian mechanics at the intermediate level, Lagrangian mechanics, linear oscillations, chaos, dynamics of continuous media, motion in noninertial reference frames. Prerequisite: Mathematics 107 or equivalent (may be taken concurrently). Instructor: Arce. One course.

182. Electricity and Magnetism. NS Electrostatic fields and potentials, boundary value problems, magnetic induction, energy in electromagnetic fields, Maxwell's equations, introduction to electromagnetic radiation. Prerequisite: Mathematics 107 or equivalent. Instructor: Mehen. One course.

185. Modern Optics I. NS Optical processes including the propagation of light, coherence, interference, and diffraction. Consideration of the optical properties of solids with applications of these concepts to lasers and modern optical devices. Prerequisite: Electrical and Computer Engineering 53L. Instructor: Staff. One course. C-L: Visual Studies 123A, Electrical and Computer Engineering 122

For Seniors and Graduates

201. Survey of Nonlinear and Complex Systems. NS, QS 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 213. Instructor: Behringer. Half course. C-L: Nonlinear and Complex Systems


205. Introduction to Nuclear and Particle Physics. NS 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 211, 212; for graduate student, Physics 315, which may be taken concurrently. Instructor: Walter. One course.

211. Quantum Mechanics I. NS Experimental foundation, wave-particle duality, the Schroedinger equation and the meaning of the wave function, analytical and numerical solution of one-dimensional problems, formulation in terms of states and operators, angular momentum and spin, applications to the harmonic oscillator and hydrogen atom. Prerequisite: Mathematics 104 or 107 and Physics 143L. Instructor: Scholberg or Teitsworth. One course.

212. Quantum Mechanics II. NS Further development of quantum mechanics with applications. Topics include: perturbation methods (time-independent and time-dependent), path integrals, scattering theory, local density theory, elements of relativistic quantum mechanics, and miscellaneous examples drawn from atomic, condensed matter, particle, and nuclear physics. Prerequisite: Physics 211. Instructor: Springer. One course.

213. 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 6, Mathematics 107, and Physics 41L, 42L, or equivalent. Instructor: Behringer or Virgin. One course. C-L: Computer Science 264, Modeling Biological Systems

214. Biophysics in Cellular and Developmental Biology. NS Application of the experimental and theoretical methods of physical sciences to the investigation of cellular and developmental systems. Topics include the physical techniques for investigating biological organization and function as well as examples of key applications. Prerequisites: Calculus-based introductory physics, Biology 119 or equivalent or consent of instructor. Instructor: Buchler. One course. C-L: Biology 214, Modeling Biological Systems

217S. Advanced Physics Laboratory and Seminar. NS, R, W Experiments involving the fields of electricity, magnetism, heat, optics, and modern physics. Written and oral presentations of results. Instructor: Oh. One course.

222. Special and General Relativity. NS 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 black holes. Prerequisite: Physics 181 and Mathematics 107 or equivalents. Instructor: Plesser. One course.

225. Independent Study: Advanced Topic. Reading in a field of special interest under the supervision of a faculty member. Intended for students interested in studying textbook topics not offered in regularly available courses. At least a final examination is required and the format is determined by the supervising faculty member. Consent of instructor required. Instructor: Staff. One course.

226. 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 director of undergraduate studies required. Instructor: Staff. One course.

227. 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 226 or summer research experience with the instructor. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.
230. **Mathematical Methods in Physics. QS** Includes topics in complex analysis, residue calculus, infinite series, integration, special functions, Fourier series and transforms, delta functions, and ordinary differential equations; and use of MATHEMATICA for graphical, symbolic, and numerical computation. Prerequisite: Mathematics 107. Instructor: Staff. One course.

230S. **Selected Topics in Theoretical Physics. NS** Topics vary as indicated on Physics Department Web site. Consent of Instructor required. Instructor: Staff. One course.


265. **Advanced Optics.** 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: ECE 122 or equivalent. Instructor: Gauthier. One course. C-L: Electrical and Computer Engineering 221, Biomedical Engineering 238

271. **Quantum Optics. NS** 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 212 and 230. Instructor: Gauthier. One course.

272. **Quantum Information Science.** One course. C-L: see Electrical and Computer Engineering 227

281. **Classical Mechanics. NS** Newtonian, Lagrangian, and Hamiltonian methods for classical systems; symmetry and conservation laws; rigid body motion; normal modes and forced oscillations; small nonlinear oscillations; canonical transformations; Hamiltonian chaos. Instructor: Staff. One course.

292. **General Relativity. NS** 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: Plesser or Aspinwall. One course. C-L: Mathematics 236

293. **Representation Theory. QS** One course. C-L: see Mathematics 253

THE MAJOR

Students majoring in physics are prepared for work in a wide variety of commercial and industrial organizations as well as governmental laboratories. They are also prepared for graduate work in physics, engineering and other science disciplines, or for the study of medicine. Students planning to major in physics should enroll in Physics 41L, 42L in their freshman year. They should also arrange to complete the necessary mathematics as soon as possible.

For the A.B. Degree

Prerequisites. Physics 41L and 42L or 53L and 54L, or equivalents; Mathematics 31, 32, 103, and one additional course at or above the 100 level.

Major Requirements. Physics 143L, 176, 181, 211, one among the laboratory courses 171L, 217S, and 226 (involving experimental research), and one other course in physics
above 100 except for Physics 115 and Physics 230. (For the major, Physics 230 is considered to be a mathematics course.)

For the B.S. Degree

Prerequisites. Physics 41L and 42L or 53L and 54L, or equivalents; Mathematics 31, 32, 103, 107, or equivalents, and 108 or equivalents.

Major Requirements. Physics 143L, 176, 181, 182, 211, 212, 217S, one among the laboratory courses 171L, and 226 (involving experimental research), plus one other course in physics above 100 except for Physics 115 and Physics 230. (For the major, Physics 230 is considered to be a mathematics course.) Students planning graduate study in physics are urged to take additional electives in physics and in mathematics.

Departmental Graduation With Distinction

The department offers upperclassmen the possibility of being associated with research conducted in the department. This work 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 41L and 42L or 53L and 54L, or equivalents; Physics 143L; plus two additional physics courses numbered above 100, except for Physics 115 and Physics 230.

Policy Journalism and Media Studies

Professor Hamilton, Co-Director; Lecturer Rogerson, Co-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 non-governmental organizations (NGOs), and academics specializing in media studies. Students will research contemporary media policy-making 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 100 level or above. The six courses must include: three core courses, two of which must be the capstone course, Public Policy Studies 202 (Policy Journalism and Media Studies), and Public Policy Studies 125S (News As Moral Battleground), and a third core course, either Public Policy Studies 118S, 119S, or 120S, (Television Journalism, Magazine Journalism, or News Writing and Reporting); as well as three elective courses from the list below. 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 Registrar’s Office (or, if they are declaring a major for the first time, through the Pre-Major Advising Center) and also see Program Co-Director Ken Rogerson in the DeWitt Wallace Center for Media and Democracy, room 148, Sanford School of Public Policy.

**Core Course**
Public Policy Studies 125. News as Moral Battleground

**Capstone Course**
Public Policy Studies 202. Policy Journalism and Media Studies Capstone Course

**Journalism Practical Core Course Cluster**
**Public Policy Studies**
118S. Television Journalism
119S. Magazine Journalism
120S. News Writing and Reporting
125. News as Moral Battleground
202. Policy Journalism and Media Studies Capstone Course

**Visual Studies**
125BS. Television Journalism
125CS. Magazine Journalism
125ES. News Writing and Reporting

**Elective Courses**
**African and African American Studies**
126S. The Press and the Public Interest
177S. Race and Equity
179. Separation and Inclusion

**Arts of the Moving Image**
101. Introduction to Film

**Cultural Anthropology**
108. Fantasy, Mass Media, and Popular Culture
110. Advertising and Society: Global Perspective
116S. Advertising and Masculinity

**Documentary Studies**
176S. American Communities: A Photographic Approach
177S. Advanced Documentary Photography

**English**
101A. Introduction to Film
117CS. Creative Non-Fiction: Writing for Publication

**History**
188A. Genocide in the Twentieth Century

**International Comparative Studies**
103E. Fantasy, Mass Media, and Popular Culture
161B. Eastern Europe in Transition: Markets, Media, and the Mafia

**Linguistics**
120. Advertising and Society: Global Perspective

**Literature**
110. Introduction to Film

**Political Science**
100ES. Duke Summer Program: London
114. Public Opinion
203S. Politics and Media in the United States
276. Media in Post-Communist Societies

**Public Policy Studies**
117. Media and National Security
123S. Watchdogs and Muckrakers: Investigative Journalism and Public Policy
126. Information, Policy, and Ethics
127S. The Press and the Public Interest
163S. Telecommunications Policy and Regulation
173S. Race and Equity
174. Separation and Inclusion
176S. American Communities: A Photographic Approach
177S. Advanced Documentary Photography
221. Media and Democracy
243. Media in Post-Communist Societies
264S. Advanced Topics in Public Policy
268. Media Policy and Economics

**Russian**

125. Eastern Europe in Transition: Markets, Media, and the Mafia
246. Media in Post-Communist Societies

**Sociology**

121. Eastern Europe in Transition: Markets, Media, and the Mafia
160. Advertising and Society: Global Perspective

**Theater Studies**

171. Introduction to Film

**Visual Arts**

118S. American Communities: A Photographic Approach
119S. Advanced Documentary Photography

**Visual Studies**

103XS. American Communities: A Photographic Approach
103YS. Advanced Documentary Photography
110B. Fantasy, Mass Media, and Popular Culture
110E. Advertising and Society: Global Perspective
121A. Introduction to Film
125A. Media and National Security
127B. Eastern Europe in Transition: Markets, Media, and the Mafia
251A. Media and Democracy

**Polish**

For courses in Polish, see Slavic and Eurasian studies on page 614.

**Political Science (POLSCI)**

Professor Remmer, Chair; Associate Professor Wibbels, Associate Department Chair; Associate Professor de Marchi, Director of Undergraduate Studies; Professors Aldrich, Feaver, Fish, Gelpi, Gillespie, Grant, Grieco, Hamilton (public policy), Horowitz (law), Hough, Jentleson (public policy), Kitschelt, Knight, Kuran (economics), Lange, McClain, Michiewicz (public policy), Munger, Niov, Paletz, Price, Remmer, Rohde, Rosenberg (philosophy), and Spragens; Associate Professors de Marchi, Hacohen (history), Hillygus, Mayer (public policy), McKean, Shi, and Wibbels; Assistant Professors Beramendi, Büthe, Charney (public policy), Downes, Goss (public policy), Krishna (public policy), Leventoglu, Siegel (law), and Trejo; Professors Emeriti Eldridge, Hall, Holsti, and Johns; Research Professors Brennan, Euben, and Soskice; Adjunct Professors Engstrom, MacKuen, Rabinowitz, Stinson, and Vanberg; Adjunct Associate Professor Kessler; Associate Professor of the Practice Maghraoui

A major or a minor is available in this department.

Courses in political science for undergraduates are offered in four fields: (A) American government and politics; (B) comparative government and politics; (C-N) normative political theory/(C-E) empirical political theory and methodology; and (D) international relations, law, and politics. In the course descriptions below the field within which the course falls is indicated by the appropriate letter symbol (A, B, C-N/C-E, D) after the course title. The area of knowledge designation is followed by the relevant curriculum codes. Courses numbered from 91 through 93 serve as an introduction both to the study of political science and to the subject matter and approaches of the relevant field. Middle and upper-level courses and seminars (numbered at the 100 and 200 levels respectively) consider in depth particular issues and topics within the field. Topical introductory seminars are offered to
INTRODUCTORY COURSES

The following courses introduce the study of political science. Courses numbered 49S, and 91 through 93 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.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

75. 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 48, Politics, Philosophy, and Economics

85AFCS. Issues in Twentieth-Century American Politics. EI, SS Changing focus on topics such as federal-state relations, the inter-relationships of the executive, legislative, and judicial branches of government; judicial review; the role of political parties and the impact of racial, gender, ethnic, and class identities in influencing public opinion and voting; the formulation and execution of various domestic and foreign policies. Examines the ethical, cultural, and political issues and controversies associated with maintaining civil liberties in the twentieth century. Open only to students in the Focus Program. Instructor: Staff. One course.

85CFCS. Issues in Twentieth-Century American Political Theory (C-N). EI, SS Contemporary issues of American political thought. Analysis of attempts to refurbish or develop alternatives to the dominant liberal tradition. How the liberal tradition and its alternatives influence various ethical and political issues and controversies within the twentieth century. Open only to students in the Focus Program. Instructor: Staff. One course.

85EFCS. Freedom and Responsibility: The Ethical Dimensions of Liberty (C-N). CZ, EI, SS, W The conflicting visions of freedom and responsibility that characterize the modern world; the possibility of leading ethical lives in the face of the conflicting demands that a complex vision of the good engenders. Readings include Luther, Hobbes, Locke, Mill, Rousseau, Marx, Nietzsche. Open only to students in the Focus Program. Instructor: Gillespie. One course. C-L: Philosophy 85FCS

85FFCS. 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.

85GFCS. Ancient and Modern Liberty (C-N). 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 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 86FCS
85HFCS. Human Rights at Home and Abroad (C-N). CCI, EI, SS The contemporary human rights movement and how it shapes societies at home and abroad. Topics include theoretical debates over the meaning, justification, and extent of human rights, the international law and politics of human rights, and the domestic and grassroots struggles that shape the theory and practice of rights. How the human rights movement is, and how it ought to be evolving. Open only to students in the Focus Program. Instructor: Staff. One course.

85JFCS. Design for a Small Planet (B). EI, SS, STS Causes and remedies for maldistributed over-consumption of environmental resources in the modern world. Avoiding ecocrash and war by designing ecologically sound alternatives, political and economic constraints, political and economic tools available as remedies. Open only to students in the Focus Program. Instructor: Mckean. One course.

85KFCS. Reason, Virtue, and Rights (C). 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.

85LFCS. Images of the Hero: From Achilles to Shane. CCI, EI, SS Considers the terms by which heroes are seen across history. Uses textual and film evidence to distinguish various forms of heroism. Heroism as physical courage is contrasted with moral courage. Considers how normative concepts, and cultural context, influences how heroes are discerned and understood. Traces the changes in heroic qualities across figures such as diverse as Achilles, St. Paul, Shane, and Mother Teresa. Open only to students in the Focus Program. Instructor: Lewis. One course.

90A. American Government and Politics. Credit for Advanced Placement on the basis of the College Board examination in American government and politics. Does not satisfy course requirements of the political science major. One course.

90B. 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.

91. 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.

91D. The American Political System. SS Same as Political Science 91 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course.

92. 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

92D. Democracy, Development, and Violence: Introduction to Comparative Politics. CCI, EI, SS Same as Political Science 92 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course. C-L: International Comparative Studies

93. Elements of International Relations (D). 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.

93D. Elements of International Relations (D). CCI, SS Same as Political Science 93 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Eldridge or Feaver. One course.

96D. Political Freedom (C-N). CCI, EI, SS America as the land of the free and a place of slavery; political freedom in relation to power justice and equality, intelligence, faith and freedom, freedom and gender, class and race. Authors include Marx, Milton Friedman, Plato, Sophocles, Toni Morrison, Dostoevsky, DeTocqueville, Martin Luther King, Jr., Malcolm X, Catherine MacKinnon, and Hannah Arendt. Instructor: Euben. One course.

98. Introduction to Canada (B). SS One course. C-L: see Canadian Studies 98; also C-L: History 98, Sociology 98, International Comparative Studies 98

STUDY ABROAD COURSES


100A. Environmental Policy in Europe (B): Duke in Berlin. CCI, SS Economic concepts and environmental policies with their application to selected environmental issues in Western and Eastern Europe, transboundary pollution problems, and the role of the European Community. Taught by a leading German expert in the Duke-in-Berlin fall semester program. Instructor: Staff. One course. C-L: Public Policy Studies 102, German 103A, International Comparative Studies


100C. Political Philosophy of Globalization. CCI, CZ, EI, SS One course. C-L: see Philosophy 137; also C-L: Public Policy Studies 138

100ES. Duke Summer Program: London. CCI, SS Media and Politics in Britain. Instructor: Staff. Two courses. C-L: International Comparative Studies, Policy Journalism and Media

100F. Duke Semester Program: Florence. CCI, SS Instructor: Staff. One course.

100G. Themes in Chinese Culture and History. CCI, CZ, SS One course. C-L: see Cultural Anthropology 163; also C-L: History 163G, International Comparative Studies


100M. Duke Summer/Semester Program: Madrid. CCI, SS Instructor: Staff. One course.

100N. Duke Semester Program: Ecuador. CCI, SS Instructor: Staff. One course.

100P. Duke Summer/Semester Program: St. Petersburg, Russia. CCI, SS Permission of instructor required. Instructor: Staff. One course.

100T. Duke Summer/Semester Program: France. CCI, FL, SS Instructor: Staff. One course.

100V. Duke Semester Program: Venice. CCI, SS Topics differ by section. One course.

100Z. Duke-Administered Study Abroad: Advanced Special Topics in Political Science. CCI, SS Topics differ by section. Instructor: Staff. One course.

OTHER UNDERGRADUATE COURSES

100GA. 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.

100GS. Environment, Health and Development in China. CCI, EI, SS, STS One course. C-L: see Cultural Anthropology 163BS; also C-L: Global Health Certificate 173S, International Comparative Studies 121JS, Ethics


102. 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.

103. Prisoner's Dilemma and Distributive Justice (A, C-N). EI, SS Economic, political, and philosophical perspectives on distributive justice and the problems in each discipline raised by variations on the prisoner's dilemma. Classic texts include Hobbes and Hume, Smith and Marx, Mill and Rawls. Gateway course to the Politics, Philosophy, and Economics certificate program. Joint course with the University of North Carolina-Chapel Hill so may be offered on both campuses during the semester. Prerequisites: Economics 1D or Economic 51D and Philosophy 107 or Political Science 123. Instructor: Brennan, Munger, or Rosenberg. One course. C-L: Economics 103, Philosophy 146, Ethics, Information Science and Information Studies

104. Politics and Literature (C-N). 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: Ethics

105. Law and Constitutional Reform in Russia and the Former Soviet Union (B). CCI, CZ One course. C-L: see Russian 140; also C-L: International Comparative Studies 161C


106D. International Security (D). EI, SS, STS Same as Political Science 106 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Feaver. One course.

107D. The Challenges of Living an Ethical Life. CZ, EI One course. C-L: see Study of Ethics 100D

108. 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 or Paletz. One course.

109. Left, Right, and Center: Competing Political Ideals (C-N). 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: Ethics

109D. Left, Right, and Center: Competing Political Ideals (C-N). CCI, EI, SS Same as Political Science 109 except instruction provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course. C-L: Ethics

110. 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.


112A. 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.

112CS. Religion and Politics. CCI, EI, SS One course. C-L: see Public Policy Studies 110S; also C-L: Religion 105S

112S. Critiques of the Contemporary American Political System. EI, SS Assessment of prominent arguments regarding alleged institutional weaknesses and ethical and cultural failings of contemporary American democratic society. Analysis and criticism of the conceptions of democratic ideals that inform those critiques. Instructor: Spragens. One course.

113. Issues of International Political Economy. CCI, R, SS A comparative, cross-cultural and cross-national examination of international political economy issues centering on trade, money and finance, and to a lesser degree the multinational enterprise. Examination of international economic issues of concern to developed and developing countries. Prerequisite: Political Science 93. Instructor: Grieco. One course. C-L: Markets and Management Studies

114. Public Opinion. EI, SS Theories of public opinion: childhood socialization, attitude formation, learning, expression, opinion/behavior link. Public attitudes toward central ethical and political issues and controversies at various times in American political history. Democratic norms and values, race and affirmative action, candidate impression formation, and relation of elite and mass opinion. Origins, manifestations, and consequences of public opinion in American politics. Instructor: Staff. One course. C-L: Policy Journalism and Media

114S. Public Opinion. EI, SS Examine the link between racial identity and public opinion, specifically the concept of whiteness as a racial, social, and political identity. Explore the normative quality of white racial identity and its consequences for the American political process. Investigate white American public opinion on various political issues, white attitudes about people of color, as well as what whites think about their own racial group and racial identity. Instructor: Staff. One course.

115. Ethnicity & US 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.

116S. Post-World War II Europe and East Asia: A Comparative Perspective (D). CCI, SS, W The nations of contemporary Western Europe as a 'zone of peace,' a political-geographic space in which cooperation is highly robust and war is virtually unthinkable. The development of that zone in light of the persistence of major war in that area from the late fifteenth to the mid-twentieth centuries. The evolution of Western European politics and institutions since World War II (most importantly, the European Union); comparison with East Asia as another key region of the modern world that has not become a zone of peace but may be increasingly a zone of major conflict and even war. Instructor: Grieco. One course. C-L: International Comparative Studies

117. Comparative Government and Politics: Selected Countries (B). 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.

118. 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

118FCS. Introduction to Middle East Politics (B). 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

119. Islam and the State: Political Economy of Governance in the Middle East. One course. C-L: see Economics 134S

120. International Conflict and Violence (D). 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: Eldridge. One course.

121. 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 129A

122. 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 93 recommended. Instructor: Staff. One course.

123. 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
123D. Introduction to Political Philosophy. EI, SS Same as Political Science 123 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course. C-L: Ethics

123FCS. 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. Open only to students in the Focus Program. Instructor: Gillespie. One course. C-L: Philosophy 123FCS, Ethics

124S. Human Rights Activism. CCI, EI, R, SS One course. C-L: see Cultural Anthropology 161S; also C-L: Public Policy Studies 153S

125. Comparative Approaches to Global Issues. CCI, CZ, SS One course. C-L: see International Comparative Studies 125; also C-L: Cultural Anthropology 125, History 137, Religion 183, Sociology 125

126. 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: Ethics

127. 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.

128. Multiculturalism and Political Theory. CCI, EI, SS Theoretical and normative issues arising in the multicultural context of modern societies: nationalism, ethnic revival, and identity politics, as they contest understandings and practices of democracy, cultural pluralism, the nature of cultural membership, individual and group rights, minority representation, citizenship, and questions concerning justice and the good. Instructor: Staff. One course. C-L: Ethics

129. Economic History and Modernization of the Islamic Middle East. CCI, CZ, SS, W One course. C-L: see Economics 133; also C-L: Islamic Studies

130. Women and the Political Process. R, SS One course. C-L: see Women's Studies 130

131. 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: Ethics

132. Radical Political Economy. CCI, EI, SS Critical approaches to contemporary political economy and alternative political economic practices. Power and inequality, relations between state, economy and grassroots democratic social movements. Focus on contesting principles such as equality, democracy, freedom, justice efficiency in relation to diverse economic practices. A variety of scales examined from municipal to transnational. Historical and contemporary texts. Instructor: Staff. One course.

133. American Power and the Global Economy. R, SS Examination of the character and role of America in helping to shape and manage the global economy, and the effects of both on America's foreign policy and national politics and economy. Issues include America and the 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: Ethics
global trade regime, international money and finance, the multinational enterprise, and the developing countries. Instructor: Grieco. One course.

134. **Classics of Western Civilization: The German Tradition, 1750-1930.** ALP, CCI, CZ
One course. C-L: see German 182; also C-L: History 179A, Literature 163B

135. **Political Development of Western Europe.** 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. C-L: International Comparative Studies

136. **Comparative Government and Politics: Western Europe.** CCI, SS, W
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. C-L: International Comparative Studies

137. **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: Aldrich. One course.

138L. **Quantitative Political Analysis I.** QS, R
Basic applications of statistical methods to the analysis of political phenomena. Emphasis on research design, graphical display, probability, testing of hypotheses, statistical inference, and the use of computers. Instructor: Staff. One course.

139. **Conflict, Collusion, and Cooperation (C-E).** 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 POLSCI 230S. Instructor: Niou. One course.

139FCS. **Conflict, Collusion and Cooperation (C).** 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.

139S. **Conflict, Collusion, and Cooperation (C-E).** SS
Same as Political Science 139 except in seminar format. Instructor: Niou. One course.

140. **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.

141D. 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 149D

142. War and Peace (D). 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: Gelpi. One course.

142S. War and Peace (D). CCI, R, SS Same as Political Science 142 except in seminar format. Instructor: Gelpi. One course.

143. Gender and Political Theory (C-N). CCI, SS One course. C-L: see Women's Studies 165

144. Force and Statecraft (D). 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 93 or equivalent. Instructor: Feaver. One course.


146. Development of Congress as an Institution. CCI, SS Changes in election processes, rules, and membership in six periods: federalist, antebellum, reconstruction, progressive era, civil rights era, post-Watergate. "Representativeness" of the institution, including focus on the history of racial and gender balance, and its meaning for policy and the views of members. Instructor: Staff. One course.

147D. Environmental Politics and Policies in the Developing World (B). CCI, EI, SS, STS Problems of sustainable development and early industrialization in the Third World; special focus on land use, agriculture, deforestation, desertification, wildlife, water, and population growth, Third World cities, early industrialization, and aid for development projects. Instruction is provided in two lectures and one small discussion meeting each week. Instructor: McKean or Miranda. One course. C-L: Public Policy Studies 147D, International Comparative Studies, Ethics, Marine Science and Conservation

149. Globalization and Public Policy (D). R, SS One course. C-L: see Public Policy Studies 185; also C-L: International Comparative Studies

150D. Ancient Political Theory (C). 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 157D. One course. C-L: Classical Studies 157D, Ethics

151. 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


151E. 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: Trejo. One course. C-L: International Comparative Studies 131E, Latin American Studies 151E


154. Politics of East Asia (B). CCI, SS An introduction to the political and economic systems of contemporary East Asia, with emphasis on China, Taiwan, Korea, Japan, Hong Kong, and Singapore. The ideologies and strategies pursued by these countries, contemporary economics, political, and strategic issues in the region. Instructor: Niou. One course. C-L: International Comparative Studies 121G


156B. Film and Politics. ALP, EI, R, SS Selected film genres and films as they illuminate political behavior. Ethical issues and controversies raised by the making and contents of films. Inducts students into the ways research is conducted in the study of films and the generation and presentation of knowledge in the discipline. Instructor: Paletz. One course. C-L: Arts of the Moving Image 110


157. Foreign Policy of the United States (D). 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. Instructor: Eldridge or Feaver. One course.
157D. Foreign Policy of the United States (D), CCI, SS
Same as Political Science 157 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Feaver. One course.

158. Non-State Actors in World Politics (D). R, SS, STS, W
Survey of broad range of non-state actors in world politics, including international organizations, supranational courts, NGOs, multinational corporations, transgovernmental and private transnational networks. Issues include environmental politics, human rights, globalization, and international terrorism. Instructor: Buthe. One course. C-L: Public Policy Studies 181, Markets and Management Studies

158D. Non-State Actors in World Politics (D). R, SS, STS, W
Same as Political Science 158 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Buthe. One course. C-L: Public Policy Studies 181D, Markets and Management Studies

159. Ambition and Politics (C-N), 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: Ethics

160. Political Geography of World Affairs (D). 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.

161. Business, Politics, and Economic Growth (B). 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

162. Human Rights in Theory and Practice (C-N), 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 162, Philosophy 162, Documentary Studies, Ethics, Global Health

162B. 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.

162D. The Arts And Human Rights. ALP, EL, SS
One course. C-L: see Cultural Anthropology 161C; also C-L: Study of Ethics 161, Music 131, Public Policy Studies 196E
163. Institutions and Reforms in Rural China (B). 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 POLSCI 261S. Instructor: Niou. One course.

164. Politics in the Developing World (B). CCI, SS
Prospects, challenges, and problems of developing nations. Democratization and related problems. Focus on Mexico, Chile, Turkey, Iran, South Africa and Nigeria. Instructor: Leventoglu. One course.

165. Politics, Philosophy, and Economics Capstone (A, C-N). 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 104, Philosophy 165

166. 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: Munger. One course.

167. International Law and International Institutions (D). CCI, R, SS
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 93 or equivalent. Instructor: Staff. One course. C-L: Markets and Management Studies

168. Analysis of Political Decision Making (C-E). SS
Surveys of some of the most prominent problems, methods, ideas, and findings that have emerged in recent theoretical studies of politics. Intellectual puzzles, speculative models and normative and explanatory applications, individual decision theory, game theory, and social choice theory. Not open to students who have taken Political Science 139. Instructor: Niou. One course.

169. Chinese Politics (B). 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: Shi. One course. C-L: International Comparative Studies

170S. Domestic Politics and Regional Rivalry in East Asia (B). CCI, R, SS
The complicated regional relationships between Taiwan, China, North and South Korea. Their politics and economic growth; their relationship with Japan and the United States. Instructor: Niou. One course.

171. From Apartheid to Democracy in South Africa (B). CCI, EI, SS
The South African political system in the twentieth century with particular attention to the transition from apartheid and white minority rule to nonracial democracy. Instructor: Johns. One course. C-L: African and African American Studies 171, International Comparative Studies 110B

171B. South African History, 1870 to the Present. CCI, CZ, EI, SS
One course. C-L: see History 115G; also C-L: International Comparative Studies 103H, African and African American Studies 115G
172. Introduction to the Politics of the Communist System (B). CCI, SS
The development of the Communist Movement as a consequence of the Industrial Revolution. Marxist theories and some of the underlying structural and dynamic principles of Marxist-Leninist systems. Social, economic, and political transformations undertaken under the auspices of Stalin and Mao. Issues related to the reform of Marxist-Leninist systems. Instructor: Shi. One course.

173. Ethnic Conflict (B). CCI, R, SS
An examination of ethnic conflict and discrimination in the United States, Africa, Europe, and Asia. Theories of ethnic identity formation, ethnic conflict, the role of ethnicity in politics, and the economics of discrimination. How ethnic conflict is likely to change in the next few decades. The impact of a freer trade environment and the increasing integration of the world economy on ethnic conflict. The effectiveness of international institutions like the United Nations and NATO in preventing the reoccurrence of tragedies like Rwanda. Instructor: Staff. One course. C-L: International Comparative Studies 103A

174. Introduction to African Studies (B) (DS3 or DS4). ALP, CCI, CZ
One course. C-L: see African and African American Studies 107; also C-L: Cultural Anthropology 136, History 115C

175BS. Distributive Justice (C-N). 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 175, Ethics

176. Chinese Politics and Film (B). CCI, SS
The use of films produced in different periods of Chinese history over the past fifty years that demonstrate changes and continuity of culture and politics in the People's Republic of China. Instructor: Shi. One course.

177A. American Constitutional Development I. SS
Development of the United States Constitution through Supreme Court decisions: the foundations of national power, including the separation of powers, the nature of the federal union and the relationship of the Constitution to political and economic life since 1790. Instructor: Fish. One course. C-L: History 177A

177B. 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: Fish. One course. C-L: History 177B

178FCS. The Politics of Language. SS
One course. C-L: see Slavic and Eurasian Studies 180FCS; also C-L: Linguistics 180FCS

179. 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. Instructor: Haynie. One course.

180. Putin’s Russia: The History of Economic and Political Consolidation. CCI, CZ, EI, SS
One course. C-L: see History 182; also C-L: Slavic and Eurasian Studies 182

181. Comparative Democratic Development (B). CCI, SS
Comparative study of democratic political institutions with emphasis on selected Asian, African, and Latin American nations. Instructor: Remmer. One course.

182. China and the World (B, D). 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: Shi. One course. C-L: International Comparative Studies
183. Ecological Crisis and Political Theory (C-N). CCI, EI, SS Ethical, political, economic, aesthetic, social, and technological approaches to contemporary ecological crisis. Focus on western modernity; attention to historical roots. Instructor: Staff. One course. C-L: Ethics

184. Conflict, Cooperation, and Globalization in the Ancient World (D). CCI, CZ, EI, SS Building cities, making war, and creating a world order in the ancient world and relevance of these developments today. Considers how Greeks understood their political communities and worked out various forms of governance and civic life; breakdown of order in an interstate context; conduct of war, diplomacy, and creation of a stable order between cities; the idea of the city--the cosmopolis--developed in the post-classical period, and its fullest expression in the administration, diplomacy, warfare and law of Rome. Readings include classical texts, epigraphic evidence, and interpretive studies. Instructor: Lewis. One course.

185S. Classical and Contemporary Political Theory. EI, SS Two courses. C-L: see Philosophy 184S

186. Civilians in Path of War (D). 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: Downes. One course. C-L: Ethics

187S. 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: Study of Sexualities, Women's Studies

188. Comparative Health Care Systems (B). CCI, EI, SS One course. C-L: see Public Policy Studies 178; also C-L: Sociology 171, Ethics, Global Health, Health Policy

189. Internship. Open to students engaging in practical or governmental work experience during the summer or a regular semester. Instructor: Staff. One course. Consent of director of undergraduate studies required. Instructor: Staff. One course.

190. Internship. See Political Science 189. Consent of director of undergraduate studies required. Instructor: Staff. One course.

191A. Sophomore/Junior Independent Study. SS 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 an American politics course requirement. Instructor: Staff. One course.

191B. Sophomore/Junior Independant Study. SS Same as Political Science 191 except fulfills a comparative politics course requirement. Instructor: Staff. One course.

191C. Sophomore/ Junior Independant Study. SS Same as Political Science 191 except fulfills a political theory course requirement. Instructor: Staff. One course.

191D. Sophomore/ Junior Independent Study. SS Same as Political Science 191 except fulfills an international relations course requirement. Instructor: Staff. One course.

192A. Sophomore/Junior Research Independant Study. R, SS 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 an American politics course requirement. Instructor: Staff. One course.

192B. Sophomore/Junior Research Independent Study. R, SS Same as Political Science 192A except fulfills a comparative course requirement. Instructor: Staff. One course.

192C. Sophomore/Junior Research Independent Study. SS Same as Political Science 192A except fulfills a political theory course requirement. Instructor: Staff. One course.

192D. Sophomore/Junior Research Independent Study. R, SS Same as Political Science 192A except fulfills an international relations course requirement. Instructor: Staff. One course.

193A. Senior Independent Study. SS 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 an American politics course requirement. Instructor: Staff. One course.

193B. Senior Independent Study. SS Same as Political Science 193A except fulfills a comparative politics course requirement. Instructor: Staff. One course.

193C. Senior Independent Study. SS Same as Political Science 193A except fulfills a political theory course requirement. Instructor: Staff. One course.

193D. Senior Independent Study. SS Same as Political Science 193A except fulfills an international relations course requirement. Instructor: Staff. One course.

194A. Senior Research Independent Study. R, SS 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 an American politics course requirement. Instructor: Staff. One course.

194B. Senior Research Independent Study. R, SS Same as Political Science 194A except fulfills a comparative politics course requirement. Instructor: Staff. One course.

194C. Senior Research Independent Study. R, SS Same as Political Science 194A except fulfills a political theory course requirement. Instructor: Staff. One course.

194D. Senior Research Independent Study. R, SS Same as Political Science 194A except fulfills an international relations course requirement. Instructor: Staff. One course.

195. Marx, Nietzsche, Freud (C-N). CCI, CZ, SS One course. C-L: see German 186; also C-L: Philosophy 186, Literature 186A

195D. Marx, Nietzsche, Freud. CCI, CZ, EI, SS One course. C-L: see German 186D; also C-L: Philosophy 186D, Literature 186AD

196. Taiwan: Domestic Politics and External Threats (B). CCI, SS The causes of and possible solution to the contest between Taiwan and China. Topics include: evolving public opinion on independence versus unification, United States security commitments to Taiwan, China's growing military threats, and trade relations between Taiwan and mainland China. Instructor: Niu. One course.

197. Advanced Research Independent Study (A,B,C,D). R Discovery, critical evaluation and/or application of knowledge and understanding within political science resulting in a
substantial research paper containing advanced analysis and interpretation. Offered only in areas of study not otherwise provided in department course offerings, and with the direct 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. Open to juniors and seniors. Instructor: Staff. One course.  
198S. Capstone Seminar: Geopolitics of War and Empire, 1850-1950. CZ, R, SS, STS One course. C-L: see History 195OS  
199. Special Topics in Government and Politics. SS Topics vary from semester to semester. A. American Government and Politics; B. Comparative Government and Politics; C. Political Theory; D. International Relations. Instructor: Staff. One course.  
199A. Amer Gov/ Politics (Top). SS One course.  
199B. Comp Gov/ Politics (Top). SS One course.  
199BS. Special Topics in Government and Politics (Comparative Politics). Special Topics in Government and Politics (Comparative Politics). Same as Political Science 199B except in seminar format. Instructor: Staff. One course.  
199C. Political Theory (Top). SS One course.  
199CS. Special Topics in Government and Politics (Political Theory). SS Special Topics in Government and Politics (Political Theory). Same as Political Science 199C except in seminar format. Instructor: Staff. One course.  
199D. Internat Relations (Top). SS One course.  
199DS. Special Topics in Government and Politics (International Relations). SS Special Topics in Government and Politics (International Relations). Same as Political Science 199D except in seminar format. Instructor: Staff. One course.  
199S. Special Topics in Government and Politics. SS Same as in Political Science 199 except in seminar format. Instructor: Staff. One course.  
FOR SENIORS ONLY  
200S. Senior Seminars. SS Special topics courses; open also, if places are available, to qualified juniors who have earned a 3.0 average and obtain the consent of the instructor. A. American Government and Politics; B. Comparative Government and Politics; C. Political Theory; D. International Relations. Instructor: Staff. One course.  
201S. Problems in International Security (D). 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.  
202S. 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.  
203S. Politics and Media in the United States. R, SS, STS 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: Paletz. One course. C-L: Canadian Studies, Arts of the Moving Image, Policy Journalism and Media

204. Interfield Capstone Course for Majors. EI, R, SS Senior capstone considering major issue(s) in political science from multiple points of view, using quantitative/qualitative evidence. Areas including normative and deductive theory, empirical evidence, knowledge of real world comparative institutions, and relations among nations to illuminate and explain phenomenon. Focus on ethical concerns of design and performance of political institutions: What makes systems better than others and how would we know? Students will synthesize knowledge and produce research paper that demonstrates active and deep engagement with multiple perspectives. Instructor: Munger. One course.


206S. Political Participation: Comparative Perspectives (B). CCI, SS The study of political participation through development of an understanding of relevant research methods. The effects of political culture on political participation. Popular participation and mobilization systems in liberal democracies and developing countries. Instructor: Shi. One course. C-L: International Comparative Studies 201AS

207S. Religion and Comparative Politics (B). 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 socioeconomic 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: Trejo. One course.

208S. Theories of International Conflict (D). 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: Gelpi. One course.


210S. 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: Trejo. One course.

211S. Thucydides and the Realist Tradition (D). 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: Lewis. One course. C-L: Politics, Philosophy, and Economics

212S. Politics and Markets (A, C-E, D). R, SS Seminar on classics of political economy, exploring the relationship between economic markets and politics as treated in the works of Adam Smith, Marx, Polanyi, Schumpeter, Lindblom, and Hirsch, as well as contemporary works on globalization and its effects on domestic politics. Open only to seniors and graduate students. Instructor: Staff. One course.

213S. Theories of International Political Economy (D). SS Issues include politics of trade, finance, economic development, conflict and cooperation in the world economy, and causes and consequences of economic globalization. Both advanced industrialized and developing countries. Open to qualified seniors with consent of instructor. Instructor: Buthe. One course.

214S. Economy, Society, and Morality in Eighteenth-Century Thought (C-N). 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 146. Pre-requisites: Economics 105D; and Economics 110D. Instructors: De Marchi and Grant. One course. C-L: Economics 214S

215S. Democratic Institutions (B). CCI, 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.

216. Predicting Politics. R, SS Focus on recent scholarship concerning prediction of occurrence and outcomes of political processes, e.g. elections, civil wars and international disputes, in the national, cross-national, and international realm. Instructor: Ward. One course.

216S. Gender, Identity, and Public Policy. R, SS One course. C-L: see Public Policy Studies 211S; also C-L: Women's Studies 211S

217. Minorities and Election Law. EI, SS The course will cover issues of minority disfranchisement and minority vote dilution through administration of elections and the manner in which electoral competition is structured. Examines alternative ways to conduct elections and determine winners. Emphasis on ways in which courts respond to these issues and remedial alternatives. Instructor: Engstrom. One course.

218S. Political Thought in the United States (A, C-N), 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: Ethics

219S. American Grand Strategy. CZ, SS 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 strategy. Consent of instructor required. Instructor: Feaver. One course. C-L: History 220S, Public Policy Studies 219S
220S. Problems in International Politics (D). 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.

221S. Theories of International Relations (D). R, SS Systematic evaluation of major theories of international relations, including realism, liberalism, and constructivism. Identification of key criteria for assessment of theories, and discussion of new research frontiers in the field, including analysis of domestic politics and foreign policy. Instructor: Downes and Grieco. One course.

222. Introduction to Statistical Analysis (C-E). QS Basic applications of statistical theory to political questions: research design, hypothesis tests, computer data analysis. Consent of instructor required for undergraduates. Instructor: De Marchi. One course.


224S. Modern Political Theory (C-N). 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: Ethics

225S. Understanding Ethical Crisis in Organizations. EI, R, SS One course. C-L: see Study of Ethics 202S; also C-L: Sociology 202S, Public Policy Studies 203S

226S. Nietzsche's Political Philosophy (C-N). 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 276S, Philosophy 237S

227S. Assisting Development. R, SS, W One course. C-L: see Public Policy Studies 206S

228S. International Democratization. EI, R, SS One course. C-L: see Public Policy Studies 228S

229S. 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: Ethics

230S. Introduction to Positive Political Theory (C-E). 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 POLSCI 139. Instructor: Aldrich or Niou. One course.

231S. Crisis, Choice, and Change in Advanced Democratic States (B). 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
232S. 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.


234. 9/11: Causes, Response & Strategy. EI, SS, W One course. C-L: see Public Policy Studies 233

236S. Hegel's Political Philosophy (C-N). 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 236S, German 275S

238S. 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 255AS

239S. American Mass Political Behavior. 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. One course.

240S. The Politics of European Integration (D). 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 distributorial 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. Consent of instructor required. Instructor: Buthe. One course.

243S. Introduction to Deductive & Analytical Approaches to Political Phenomena. 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: Staff. One course.

244S. Formal Modeling In Political Science (C-E). QS Emphasis on use of formal analysis in various subfields in political science. Students expected to (i) derive/prove the results from the readings, (ii) analyze the contribution of readings and (iii) find ways to improve the
line of research. Students expected to have taken a course in game theory, Political Science 243S or equivalent. Instructor: Leventoglu. One course.

245. Counterterrorism Law and Policy. EI, R, SS One course. C-L: see Public Policy Studies 245

246S. Political Economy of Growth, Inflation, and Distribution (A,B). R, SS Study of three kinds of economic performance: growth, inflation and distribution. Consider alternative policies, such as import substitution industrialization and neoliberalism, inflation targeting and exchange rates; alternative institutions, such as authoritarianism, competitive elections, limitation on government, central bank independence; and alternative histories, such as independence or colonial heritage. Instructor: Keech. One course. C-L: Economics 247S

247. Politics and Philosophy of Self and Other (C-N). EI, SS Epistemological, ontological, ethical, and political dimensions of relations between self and other. Thinkers may include Husserl, Merleau-Ponty, Levinas, Derrida, Adorno, Gadamer, Sartre, Foucault, and Bahktin. Instructor: Staff. One course.

248S. Contemporary Continental Political Thought (C). 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.

249. The Politics of Health Care. EI, SS One course. C-L: see Public Policy Studies 253; also C-L: Health Policy

250. The Nation-State and the International System (D). CCI, R, SS 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 93. Instructor: Grieco. One course.

255S. State and Society in China (B). CCI, SS An examination of selected aspects of Chinese politics. Prerequisite: Political Science 117 or equivalent. Instructor: Shi. One course.

256S. Theory and Practice of National Security (D). 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.

257S. Politics, Society and Development in China (B). CCI, SS Issues affecting development in China including financial markets, labor, capital, democracy, and cultural patterns. Instructor: Shi. One course.

259S. American Civil-Military Relations (A, D). 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.

260S. Social Theory and Social Practice (C-N). 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.

264. Marine Policy. SS, STS One course. C-L: see Environment 276; also C-L: Public Policy Studies 297
266S. Topics in Early Modern Political Thought from Machiavelli to Mills (C-N). CCI, SS Topics vary from semester to semester. Instructor: Staff. One course. C-L: Philosophy 266S

267S. Persistence and Change in Political Institutions (B, D). CCI, R, SS Persistence and Change in Political Institutions (B,D). 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.


271S. International Environmental Regimes (B, D). 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: McKean. One course. C-L: Public Policy Studies 258S, International Comparative Studies 201CS

272S. International Relations Theory and Chinese Foreign Policy (B,D). 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: Shi. One course. C-L: International Comparative Studies

273S. Heidegger (C-N). 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 273S

275. 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.


277. Comparative Party Politics (B). 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: Lange. One course. C-L: International Comparative Studies 201E, Canadian Studies


279S. Contemporary United States Foreign Policy. EI, R, SS One course. C-L: see Public Policy Studies 279S


281S. Collective Action and Social Movements (B). 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: Trejo. One course.

283S. Congressional Policy-Making, SS Lawmaking and oversight of the executive branch by the U.S. Congress. Committee, party, executive, and interest group roles. Instructor: Munger. One course.

286S. Theory and Practice of International Security (D). 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 93 recommended. Instructor: Staff. One course.

289S. Contemporary Ethical Theories (C-N). CZ, EI, SS One course. C-L: see Philosophy 203S; also C-L: Women's Studies


299. Advanced Topics in Government and Politics. SS Topics vary from semester to semester. A. American Government and Politics B. Comparative Government and Politics C. Political Theory D. International Relations Instructor: Staff. One course.

299A. Amer Gov/ Politics (Top). SS One course.


299B. Comp Gov/ Politics (Top). SS One course.

299BS. Advanced Topics in Government and Politics (Comparative Studies). SS Advanced Topics in Government and Politics (Comparative Politics). Same as Political Science 299B except in seminar format. Instructor: Staff. One course.

299C. Political Theory (Top). SS One course.

299CS. Advanced Topics in Government and Politics (Political Theory). SS Advanced Topics in Government and Politics (Political Theory). Same as Political Science 299C except in seminar format. Instructor: Staff. One course.

299D. Internat Relations (Top). SS One course.

299DS. Advanced Topics in Government and Politics (International Relations). SS Advanced Topics in Government and Politics (International Relations). Same as Political Science 299D except in seminar format. Instructor: Staff. One course.

299S. Advanced Topics in Government and Politics. Same as Political Science 299 except in seminar format. Instructor: Staff. One course.

POLITICAL INTERNSHIPS

The department administers an internship program, primarily in Washington, D.C., 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 189 or 190 and writing a substantive paper containing significant analysis and interpreta-
tion on a politics-related topic. Potential applicants should contact the internship director at any time, but preferably in the fall semester.

POLITICAL SCIENCE COURSES BY FIELDS

Political science courses for undergraduates are offered in four fields. The courses in each of the four fields are listed below; in the course descriptions above, the field in which each course falls is indicated by the appropriate symbol (A, B, C-N/E, or D).


**THE MAJOR**

*Major Requirements.* Ten (10) courses in political science, at least eight of which must be at or above the 100 level. Among the ten courses taken two (2) must be foundation courses; three (3) must be subfield distribution courses; three (3) must be concentration courses (including a 200-level course); and two (2) may be electives.

The two (2) required foundation courses are satisfied by:

- Political Science 102 Introduction to Political Inquiry

AND

any one (1) of the following introduction to political thought courses:

- Political Science 85EFCS Freedom and Responsibility: The Ethical Dimensions of Liberty
- Political Science 96 Political Freedom
- Political Science 109 Left, Right and Center: Competing Political Ideals
- Political Science 123 Introduction to Political Philosophy

The three (3) required subfield courses are satisfied by one (1) course in each of three (3) sub-fields of political science (other than that in normative theory (C-N) satisfied by one of the introduction to political thought courses): American government and politics (A), comparative government and politics (B), international relations, law and politics (D).

An election must be made respecting courses bearing more than one field designation. The

* If subject matter is appropriate to the field
courses that satisfy the sub-fields are found in the section above, “Political Science Courses by Field”. This list does not include courses which may be 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. The following types of courses are not included in these lists:

- Political Science 49S First-year seminars
- Political Science 189 –190 Internship credit
- Political Science 191 –194 Independent Study
- Political Science 200S Senior Seminars

Majors taking such a course without a field designation should consult with the undergraduate program coordinator to determine in which field it will be assigned.

The concentration requirement is satisfied by three (3) courses in one (1) of the four subfields denoted by A, B, C-N, D.

A thematic or inter-field depth-concentration may be created with the approval of a faculty supervisor and the director of undergraduate studies.

The 200-level course requirement is satisfied by: one (1) senior seminar (Political Science 200S) or one (1) course at the Political Science 201-299 level in the depth-concentration subfield, or by the two-course Senior Honors Program (Political Science 200H.02, 200H.03) or by (Political Science 204, Interfield Capstone course).

Two (2) elective political science courses complete the ten (10) course major. Students admitted to the Senior Honors Program will only have one (1) elective due to the prerequisite Political Science 138 Quantitative Political Analysis for students undertaking a non-political theory honors project.

New majors who wish to create an inter-field concentration made up of courses listed under different areas of concentration/fields 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-CH courses offered at a level below the 200 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 and enable students to enroll in any 90-level introductory course(s) and permit them to enroll in advanced American and/or Comparative Government course(s). Advanced placement course credits (90A, 90B) 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 the chapter "Degree Programs" in this bulletin.

**Departmental Graduation with Distinction**

The department offers students majoring in political science a senior honors program, by successful completion of which a participant achieves Graduation with Distinction in political science. The central requirement of the program is an honors thesis which the student prepares under faculty supervision. The honors program consists of two courses.
Seniors entering their seventh semester who have attained at least a 3.3 grade point average overall and a 3.5 average in political science courses are eligible for admission to Political Science 200H.02, provided they have completed or will complete by the end of that semester Political Science 138 Quantitative Political Analysis I or an equivalent course including Statistics 101 or above if they intend to select a research subject in the American (A), comparative (B), or international relations (D) subfields. Admission to the program will be determined by the satisfaction of GPA requirements, course prerequisite (Political Science 138) and by faculty approval of the thesis proposal. Upon request, the honors program coordinator may recommend admission to the honors seminar of a student who lacks one or both requisite grade point averages. The honors program coordinator must approve any recommended student’s admission.

Political Science 200H.02, a seminar taken in the fall of the senior year, is devoted to developing an honors thesis. The work of the seminar includes close supervision of the proposal, research and writing stages of the project by a primary and secondary advisor selected by the student. The primary advisor must be selected from among the faculty of the Department of Political Science. The secondary advisor may be selected from among the same faculty or from among faculty of a related department or, in exceptional circumstances with the explicit approval of the coordinator of the program and with the consent of the director of graduate studies, from among advanced graduate students in the Department of Political Science.

Continued close faculty supervision is provided through Political Science 194, Senior Research Independent Study. Completion of the thesis, its evaluation, and its defense before a three-member committee composed of the coordinator of the program together with the primary and secondary advisors warrants Graduation with Distinction in political science if a grade of A- or better is assigned to the student’s thesis. The intradepartmental concentration option is partially satisfied by successful completion of the two-course senior honors thesis seminar. Further information may be obtained from the honors program coordinator or from the director of undergraduate studies.

THE MINOR

Requirements. A minimum of five courses in political science, no more than two of which may be numbered less than 100. 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-CH. Courses taken Pass/Fair and Advanced Placement courses DO NOT satisfy course requirements for the minor.

Politics, Philosophy, and Economics

Professor Brennan, 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 eight courses, including: two cross-listed courses, one that functions as a gateway to the certificate
program, a second that figures as its capstone, and six 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 1D, Introductory Macroeconomics, or Economics 51D, Economic Principles, and b) Philosophy 107, Political and Social Philosophy, or Political Science 123, Introduction to Political Philosophy. However, students without this previous preparation may enroll in the gateway course with the permission of the instructor.

**PROGRAM REQUIREMENTS**

Eight 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 103. Prisoner’s Dilemma and Distributive Justice (C-L: Economics 103, Philosophy 146)

**Capstone Course**

In the spring semester of their senior year, students must take the Politics, Philosophy, and Economics capstone course:

Political Science 165 (C-L: Economics 104, Philosophy 165)

**Core Courses**

Beyond the gateway course, and prior to or concurrent with the capstone course, students must take a common core of microeconomics, rational choice, ethical theory/political philosophy, and the history of economic thought. The six courses will be chosen from three groups:

- Two economics courses: 55D. Intermediate Microeconomics; 146. Adam Smith and the System of Natural Liberty, or 148. History of Economic Thought, or 190S. The Development of Modern Economic Thought
- Two political science courses: 139. Conflict, Collusion, and Cooperation, or 168. Analysis of Political Decision Making, or 230S. Introduction to Positive Political Theory
- Two philosophy courses: 116. Problems in Ethical Theory and 117. Ancient and Modern Ethical Theory

**Economics**

48. Introduction to Political Economy

**Political Science**

75. Introduction to Political Economy

211S. Thucydides and the Realist Tradition

**Portuguese**

For courses in Portuguese, see Romance Studies on page 582.

**Psychology and Neuroscience (PSY)**

Professor Cooper, Chair; Research Professor Rabiner, Director of Undergraduate Studies; Senior Lecturing Fellow Murphy, Associate Director of Undergraduate Studies; Professors Angold, Asher, Bettman, Blumenthal, Cabeza, Caspi, Chartrand, Cooper, Costanzo, Costello, Curry, Dodge, Fitzsimons, Flanagan, George, W. C. Hall, Hariri, Hoyle, F. Keefe, R. Keefe, Leary, Levin, J. Lynch, Madden, March, Meck, Moffitt, Nicolelis, Nowicki, Palmer, Payne, Platt, Purves, Putallaz, Robins, Roth, Rubin, Schmajuk, Sheppard, Sherwood, Siegler, Sikkema, Smith-Lovin, Spener, Strauman, Surwit, Swartzwelder, Thompson, Vidmar, Whitfield, C. Williams, R. Williams, Woldorff, and Wood; Associate
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 Web site.

11. Introductory Psychology. NS, SS, STS Broad survey of the field of modern psychology. Focus on the natural science study of behavior, emphasizing biological, evolutionary, cognitive, and developmental perspectives while placing this work in historical, social and philosophical context. Conceptual issues unifying the subfields of psychology highlighted along with consideration of techniques and methods by which knowledge about brain, mind, thought and behavior is acquired and refined. The implications for life and society of contemporary scientific approaches and technologies. Students required to participate in psychological research. Instructor: Whitfield or Staff. One course.


49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

50RE. 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.

93FCS. 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.

94FCS. Psychosocial Development of the Mind Through the Life Course. CCI, SS The mind as it changes across the life span. The impact of environmental, cultural, interpersonal input during adolescence and early adulthood. Psychosocial and physiological influences on the mind and cultural differences in mind development. Role of mind in identity formation. Special attention to developmental changes and challenges in adulthood and late life. Compare and contrast age differences and age changes in psychosocial development of mind. Open only to students in the Focus Program. Instructor: Gold. One course. C-L: Sociology 99FFCS

95FCS. Neurobiology of Mind. NS One course. C-L: see Neurobiology 93FCS; also C-L: Neuroscience 93FCS, Neurosciences
100RE. Abnormal Psychology (A, P). CCI, EI, SS Disordered behavior and constructive personality change viewed in interpersonal and social context for purposes of understanding normal and abnormal personality development and functioning. Research designs, methods and reasoning by which psychologists assess behavioral disorders and personality variants. Variance of disorders across cultures and ethical issues associated with treatment. Students required to participate in psychological research. Formerly: Psychology 119A. Prerequisite: Psychology 11 strongly recommended. Instructor: Rabiner, Robins, Veith, Rosenthal. One course.

101RE. 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. Formerly: Psychology 91. Recommended background: Strong Biology background, AP course, Biology 19, 25L or equivalent; Biology 19 or 25L may be taken concurrently. Psychology 11 strongly recommended for Psychology majors. Instructor: Williams or staff. One course. C-L: Neuroscience 101, Neurosciences

102RE. Cognitive Psychology: Introduction and Survey (C). SS 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 required to participate in psychological research. Formerly: Psychology 92. Prerequisite: Psychology 11 strongly recommended. Instructor: Cabeza, Day, Mitroff, or Rubin. One course.

103RE. 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. Formerly: Psychology 97. Prerequisite: Psychology 11 strongly recommended. Instructor: Bonner, Brannon, Feng or Joh. One course. C-L: Early Childhood Education

104RE. Social Psychology (P). 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. Formerly Psychology 116. Prerequisite: Psychology 11 strongly recommended. Instructor: George and Leary. One course. C-L: Sociology 106

105. 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 exams, remembering names, early childhood memories, amnesia, photographic memory, eyewitness testimony, and pharmacological effects. Instructor: Marsh. One course.

106. The Psychology of Gender (P). 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

107. Biopsychology of Affective and Mood Disorders. NS, STS An exploration of the biological underpinnings of anxiety and affective disorders, including depression, bipolar
disorder, and others. Current and historical treatments also discussed in terms of biological mechanisms and cultural influences driving treatment approaches. Prerequisite: Psychology 101RE (formerly PSY 91) or Psychology 135. Instructor: Murphy. One course.

108A. Educational Psychology (C, D). CCI, EI, SS One course. C-L: see Education 118; also C-L: Children in Contemporary Society, Early Childhood Education, Ethics

109A. Health Psychology (P). SS The role of behavior in the etiology, pathophysiology, and treatment of cardiovascular disease and endocrine disorders; psychoneuroimmunology; chronic pain; and life style behaviors with health consequences such as smoking and eating disorders. Emphasis on the research designs, methods and reasoning by which one infers the relationship between behavior and various health changes. Not open to students who have taken Psychology 98. Instructor: Keefe. One course. C-L: Health Policy

109B. Stress and Coping (P). 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. Prerequisite: Psychology 99. Instructor: Keefe. One course.

109C. Behavioral Medicine (P). SS, STS Overview of the interdisciplinary field of behavioral medicine, emphasizing the integration of the 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. Psychology 109A encouraged as a prerequisite, but not required. Instructor: R. B. Williams. One course.


110RE. Alcohol: Brain, Individual, and Society (B, P). NS, SS, STS Multidisciplinary course exploring the impact of alcohol use on individuals and society. Integrated segments focus on: biomedical effects; addiction and treatment; historical context of drinking; and college drinking issues. Not open to first-year students. Formerly Psychology 102. Instructors: Rezvani, Roberts, Swartzwelder. One course.

111. 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. C-L: Biology 167

112. 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 the human brain, and the current theories and controversies in this rapidly growing field. Comparisons of human brain function with machine intelligence and the higher brain functions of non-human animals. Prerequisites: One of the following: PSY 101RE formerly 91, PSY 102RE formerly 92, PSY 135, NEUROBIO 95FCS or PSY 95FCS or permission of instructor. Instructor: Egner, LaBar, Purves. One course. C-L: Philosophy 149, Neuroscience 112

113A. Self and Society (P). CCI, SS One course. C-L: see Cultural Anthropology 141; also C-L: Women's Studies

113B. Psychological Anthropology (C, D, P). CCI, SS One course. C-L: see Cultural Anthropology 165

114. Personality (P). 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.

115. The Psychology of Consumers (C,P). 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: Chartrand. One course. C-L: Markets and Management Studies

117. Introduction to Statistical Methods in Psychology (G). QS Introduction to statistical methods commonly used in psychological research. Topics in applied statistical methods including: measures of central tendency and variability; probability and distributions; confidence intervals and hypothesis testing; t-test and analysis of variance; correlation and regression; and chi-square tests. Calculate and interpret statistics with reference to data and research questions typical in psychological research. Includes a lab section with instruction in the management and analysis of psychological data using statistical software designed for use in social science research. Required for the major. Instructor: Hoyle. One course.

117B. Statistical Methods for Data Analysis in Psychology. QS, R Second course in applied statistical methods for psychology majors. Introduction to psychometric methods and graphical methods of data analysis. In-depth coverage of analysis of variance, correlation, and multiple regression. Overview of multivariate statistical methods used in psychological research. Students analyze data of their choosing and report results in manuscript form in preparation for, or concurrent with, independent research in psychology. Includes a lab section with instruction in use of statistical software for data management, analysis, and presentation. Instructor: Hoyle. One course.

118. Special Topics in Social Psychology (P). SS Study of one broad area in social psychology; exact content area varies by semester. Possible areas include social cognition, social influence, and applied social psychology. Prerequisite: Psychology 99 or 104(RE), formerly 116. Instructor: Staff. One course.

119B. Child Clinical Psychology (D, P). SS The etiology and developmental course of major childhood psychological disorders. Practices of assessment, diagnosis, and treatment of childhood psychological disorders and the research that supports these practices. Emphasis on understanding interactions among individual child, family, and social factors in the etiology, diagnosis, and treatment of childhood psychological disorders. Prerequisite: Psychology 99 or 103(RE), formerly 97. Instructor: Hardy. One course. C-L: Children in Contemporary Society, Early Childhood Education

119C. Experimental Psychopathology (A,P). NS, 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 primary journal articles. Topics also include the logic of diagnostic nomenclature, methodological and ethical issues in psychopathology research, integration across levels of analysis, and translating research findings into effective interventions. Prerequisite: Psychology 100RE formerly 119A. Instructor: Strauman. One course.

121. Early Cognitive Development (C, D). SS Conceptual development in humans from birth through early childhood. Topics include infants' and young children's perception of the world, their acquisition of knowledge about the world, and the way they remember and use this knowledge over time. Particular consideration given to the question of whether children's thinking about objects, living kinds, and persons involves general-purpose vs. specialized cognitive processes. Prerequisite: Psychology 102(RE)(formerly 92) or 103(RE) (formerly 97). Instructor: Staff. One course.
122. 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: Marsh or Serra. One course.

123. Human Memory (C). SS A review of the theoretical and empirical study of human memory. Emphasis on research designs, methods, and reasoning by which understanding is gained of memory across the life span. Topics include transient and short-term memories, models of memory, unconscious memories, and memory processes and tasks. Covers both data and theory, historical and contemporary research, behavioral and brain research. Prerequisite: Either Psychology 102(RE) formerly 92 or 105. Instructors: Marsh, Rubin, or Serra. One course.

124. Human Development (D). CCI, EI, R, SS One course. C-L: see Human Development 124; also C-L: Sociology 124, Early Childhood Education

125. Memory and the Brain (B). NS Brain function in relation to the phenomenon of memory. Historical and current perspectives. Instructor: Swartzwelder or staff. One course.

126. Behavior and Neurochemistry (B, P). 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 101(RE), formerly 91. Instructor: Meck or staff. One course. C-L: Neuroscience 126

127. Drugs, Brain, and Behavior (B). NS One course. C-L: see Pharmacology and Cancer Biology 160; also C-L: Neuroscience 135

128. 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

129. Human Cognitive Evolution. NS, SS One course. C-L: see Evolutionary Anthropology 122

129A. Political Psychology. CCI, SS One course. C-L: see Political Science 121

130. Psychosocial Aspects of Human Development (D). CCI, EI, SS One course. C-L: see Human Development 180; also C-L: Sociology 169, Early Childhood Education, Ethics

131. Social Development (D). CCI, SS Overview of the social development of children from birth to age twelve. Focus on aspects within the family, including parent-child and sibling relationships; family socialization strategies, including gender socialization and parenting; and demographic characteristics such as family constellation and socioeconomic status. Socialization agents such as school, peers, media and community context explored as they relate to social development. Readings focusing on children and families from diverse backgrounds. Prerequisite: Psychology 99 or 103(RE), formerly 97. Instructor: Asher or Hill. One course. C-L: Children in Contemporary Society, Early Childhood Education

132. 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 132
132B. 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 166, International Comparative Studies 101G

133. Psychology of Ethnicity and Context (D). 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(RE), formerly Psychology 97, recommended. Instructor: Hill or staff. One course. C-L: African and African American Studies 134, Children in Contemporary Society, Global Health

134. 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 110

135. Fundamentals of Neuroscience (B). NS, STS Introduction to neuroscience, including: basic physiology; microstructure and anatomy of neural tissues; mechanisms of neuronal development and integration; sensory-motor control; auditory, visual, and olfactory systems; the neural foundations of animal behavior; and the evolution of nervous systems. Emphasis on the development and critical evaluation of neuronal theories of brain function using biochemical, mathematical, and/or deductive/inductive models of reasoning and experimentation. Prerequisites: Biology 25L, and Chemistry 12L or 22L or equivalent. Instructor: Bilbo, LaBar or Meck. One course. C-L: Biology 154, Neuroscience 114

136. 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: Psychology 101(RE) formerly Psychology 91. Instructor: Yin. One course. C-L: Neuroscience 116

137. 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: Stocking. One course. C-L: Children in Contemporary Society

138. Social Psychology of Business (P). 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(RE) formerly 116/Sociology 106 or a Markets and Management course. Instructor: Gerend and Bleak. One course. C-L: Markets and Management Studies

139. Motivation and Cognitive Influences in Social Psychology (P). SS Course details the important intersection of cognitive and motivational approaches within social psychology with emphasis on basic social psychological principles and theories that have emerged from this synergy. Explores how a "motivated cognition" approach to social psychology has influenced research on self-concept, self-regulation, achievement behavior, group and
interpersonal processes, stereotyping and prejudice, among other fundamental topics and issues in the field. In addition to required midterm and final, students will be expected to actively participate in discussions and to present a more in depth analysis of weekly readings to class at least once during semester. Instructor: Shah. One course.


141S. Emotions and the Brain (B, C). NS A broad perspective of the expanding field of affective neuroscience. How emotions are mediated in the brain. Overview of neural theories of emotion along with the relevant neuroanatomy and psychopharmacology, animal models of emotion, insights from human cognitive and clinical neuroscience. Emphasis on understanding the mechanisms by which emotion influences cognitive processes, including perception, attention, learning, and memory. Prerequisites: Psychology 101(RE), formerly Psychology 91, or Psychology 102(RE), formerly Psychology 92, required and Psychology 126 or 135 preferred. Instructor: LaBar. One course. C-L: Neuroscience 162S

142S. Thought Without Language (B, C, D). NS The nature of thought without language and the representational strategies employed by infants and animals when thinking about number and other seemingly complex subjects. Comparison of how infants and non-human animals solve similar problems in an effort to understand more broadly the type of cognition that is possible without language. Topics include infantile amnesia, serial memory, symbolic models, object permanence, imitation, theory of mind, causality, and tool-use. Methods, models and reasoning whereby inferences are made about thought processes in animals and children. Prerequisite: Psychology 101(RE), formerly 91 or 103(RE), formerly 97. Instructor: Brannon. One course.

143S. Clinical Issues for the LGBTQ Community. CCI, SS One course. C-L: see Study of Sexualities 135S; also C-L: Women's Studies 135S

144S. Thought in Action: The Origins of Human Tool Use (B, C). NS, R, SS, STS Current theory and empirical research on the cognitive bases of tool use in humans, non-human primates, and other animals. Animal cognition and behavior, evolutionary psychology, cognitive development, cognitive neuroscience, object-user interfaces from engineering, and impact on society from the early industrial age to the present. Prerequisites: Psychology 101(RE), formerly 91, 102(RE), formerly 92, 103(RE), formerly 97 or equivalent. Instructor: Greif. One course. C-L: Evolutionary Anthropology 182S

145S. Learning to Read (C, D). R, SS Development of reading skills, psychology of reading, reading education. Topics include developmental theories of reading, learning to read in other languages, Whole language and Phonics teaching methods, cognitive processes in skilled reading, reading difficulties and dyslexia, home environment and cultural effects, teaching methods, reading tests, policy implications. Instructor: Feng. One course. C-L: Education 148S, Children in Contemporary Society

148S. Neuroscience and Cognitive Aging (B, C). NS, R, W Theories of cognitive aging (emphasis on the psychobiological/neurobiological perspectives) focusing on processes of perception, attention, decision making, memory and movement through both text and journal readings. Neurological diseases of aging (i.e., Parkinson's disease, Alzheimer's disease). Focus on developing skills for scientific grant writing. Instructor: Jurkowski. One course. C-L: Neuroscience 163S

149S. Reward and Addiction (B). NS 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 101(RE), formerly 91 or Psychology 135/Biology 154/Neurobiology 154. Instructor: Schramm-Sapyta. One course. C-L: Pharmacology and Cancer Biology 149S, Neuroscience 164S
150RE. Research Methods in Psychological Science (G). NS, 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. Formerly Psychology 101. Instructor: Cooper, Schwartz, or Staff. One course.

151. Clinical Interventions with Children and Families (D, P). 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. Enrollment limited to juniors and seniors. Prerequisites: Psychology 119B or 100(RE), formerly 119A, and a research methods course or statistics course. Instructor: Hardy. One course.

152S. Cognitive Psychology of Oral Traditions (C). CCI, SS Oral traditions and collective memory studied in social contact. Impact of writing on oral literature and culture, on society and cognitive activities. Basic knowledge of cognitive mechanisms; examples of various oral traditions. Instructor: Rubin. One course. C-L: Linguistics 152S

153S. 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 153S, Children in Contemporary Society, Early Childhood Education

154S. Achievement Motivation (P,D). R, SS Psychological perspective on development of achievement motivation in educational settings (primarily elementary through college). 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. Prerequisites: junior or senior status and completion of Psychology 99, 103(RE)-formerly 97, or 104(RE)-formerly 116. Instructor: Linnenbrink-Garcia. One course. C-L: Children in Contemporary Society


156. Behavioral Neuroimmunology: Brain and Behavior in Health and Disease (B). 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 101RE formerly 91, Psychology 135, Biology 25L, or equivalent. Instructor: Bilbo. One course. C-L: Neuroscience 166
157S. Life Span Analysis of Social Relationships (D, P). CCI, R, SS, W The developmental changes that occur in social relationships (for example, parent, sibling, peer) across the life span; the differing roles these relationships play in the development of the individual. Particular attention given to understanding gender and ethnicity differences in the forms and functions of relationships. Prerequisite: Psychology 99 or 103(RE)-formerly 97. Instructor: Costanzo or Putallaz. One course.


159S. Biological Psychology of Human Development (B, D, P). 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: Early Childhood Education, Human Development


161A.S. 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: 11, 102(RE)-formerly 92, 109 (A, B, or C), or 112, or consent of instructor. Instructor: Weinfurt. One course. C-L: Public Policy Studies 196DS

161S. Emotion and Cognition (C, P). SS How emotion, whether generated from everyday experiences or clinical disorders (such as depression, posttraumatic stress disorder, schizophrenia) impact critical memory and cognitive processes; emphasis on both psychological and physiological models. Instructor: Staff. One course.

162S. Personality and Individual Differences. 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: Capsi. One course.

163S. Coping with Catastrophic Events (P). R, SS, W Impact, recovery process, and treatment techniques including psychological interventions focused on individuals, groups, and community. Instructor: Keefe. One course.


165S. Neurobiology of Learning and Memory (B, C). NS The literature on neurobiological mechanisms of learning and memory. Readings on important historical discoveries; studies on the processes whereby the brain encodes and stores information. Readings selected to integrate information from neuroanatomical, behavioral, neurochemical, and neurophysio-
logical experiments related to memory. Prerequisite: Psychology 112, 135, 136 or Biology 115/Neuroscience 115 or permission of instructor. Instructor: Staff. One course. C-L: Neuroscience 161S

167S. Social Neuroscience (B, C, P). NS, R Neural mechanisms underlying social phenomena. Topics include: social perception and cognition, person perception, attitudes, and interpersonal processes. Reciprocal interaction between brain function and social behaviors. Recommended prerequisites: At least one class in neuroscience or biological basis of behavior and some knowledge of social psychology. Instructor: Morris. One course. C-L: Neuroscience 167S

168S. Cognition in the Classroom: Applying the Science of Learning to Education. 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.

169S. The Neurobiology of the Pain System: Its Function and Dysfunctions. 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 101RE (previously PSY 91) or Psychology 135. Instructor: Murphy. One course. C-L: Neuroscience 169S

170. 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.

170S. 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.

171S. The Psychology of Trauma and Memory (C,A,P). 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.

172S. Psychology of Obesity and Eating Disorders (B, P). CCI, NS, R, SS Review of current perspectives on psychology, physiology, and treatment of obesity and eating disorders. Topics will include: epidemiology, physiology of energy balance, genetics, race and gender as they relate to these disorders, medical and psychological comorbidities, behavioral and medical treatments, and review of the safety and efficacy of fad diets. Visit to the Duke Diet and Fitness Center to meet with patients and staff. Some background in biology and psychology and consent of instructor are required. Instructor: Surwit. One course.

173S. Theoretical Issues in General Psychology (C, D, P). SS Examination of basic issues that cut across different areas of psychology, with emphasis on the nature of science and knowledge, the kinds of knowledge psychology may provide, and different conceptions of mind. Instructor: L. Wallach. One course.

174S. Infancy (C, D, P). 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 103RE, formerly 97, and one other psychology course. Instructor: Grimes or staff. One course. C-L: Children in Contemporary Society

175AS. Motivational Approaches in Social Psychology (P). R, SS Social psychology on motivation and its role in determining nature and consequences of self and social-regulation. Focus on research and theorizing on differing motivations underlying social behavior (such as the motivations characterizing stereotyping and prejudice as well as achievement behavior and interpersonal relationships). Prerequisite: Psychology 99 and either statistics or a psychological research/methods course. Instructor: Shah. One course.

175BS. Psychology of Positive Emotion and Experience (P). CCI, R, SS Critical examination of the positive psychology movement, including prior contributions to the field. Measures and quality of data; issues related to gender, ethnicity, and culture. Focus on applications to health. Prerequisite: One prior psychology class. Instructor: Staff. One course.

176S. 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.

177S. 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 101(RE)-formerly 91 or background in biology. Instructor: Sloan. One course. C-L: Study of Sexualities

178S. Functional Anatomy of the Human Brain. NS, STS One course. C-L: see Neuroscience 173S

179S. Neuroscience of Illusions: Sensation, Perception and the Misinterpretation of Reality (B, C). NS Human sensory systems and their limitations. Sensorineural mechanisms, the brain's reconstructions and representation of the physical world, cortical processing of space and time, conscious and unconscious mental operations. Prerequisites: Psychology 101(RE)-formerly 91 or Psychology 135/Biology 154/Neurobiology 154. Instructor: Tucker. One course. C-L: Neuroscience 168S

181C. Brain Waves and Cognition (B, C). NS, R 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 noninvasive-ly 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: (Psy 101(RE):former 91, 102(RE):former 92, 112 or 135). Prior course in statistics and proficiency with computers strongly recommended. Instructor: Woldorff. One course. C-L: Neuroscience 180

181F. 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 neuroimaging experiment. Prior course in statistics and proficiency with computers strongly recommended. Consent of instructor required. Instructor: Huettel, Diaz. One course. C-L: Neuroscience 181

182B. Perception and the Brain. NS, R 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

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sensory modalities. Prerequisites: Psychology 101(RE)-formerly 91 or 102(RE)-formerly 92. Prior course in statistics is strongly recommended. Instructor: Groh. One course. C-L: Neuroscience 182

183B. 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 Statistics is strongly recommended. Junior and Senior only and consent of instructor required. Instructor: Grimes. One course. C-L: Children in Contemporary Society, Early Childhood Education


185D. Research Methods in Psychopathology and Psychotherapy (P). 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 100(RE)-formerly 119A and prior course in statistics are strongly recommended. Instructor: Strauman. One course. C-L: Global Health

190S. History of Modern Psychology (B, C, D, P). SS, STS Major developments in psychology from the late nineteenth century to the present, with emphasis on the history of ideas. The experimental beginnings of psychology as a science, psychoanalysis, evolutionary thinking, behaviorism, cognitive psychology, and the psychology of social issues. Instructor: L. Wallach. One course.

191. 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. C-L: Neurosciences


194. Research Independent Study. R See Psychology 191. Senior year spring. Prerequisite: Two psychology courses. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course. C-L: Neurosciences

195S. Current Research in Neuroscience (B). EI, NS, R, W One course. C-L: see Neuroscience 195S
196T. Junior Tutorial. An in-depth historical or theoretical analysis in a field of special interest under the supervision of a faculty member, who is responsible for planning and directing the course of study. The final product for the course is a substantive paper containing significant analysis and interpretation of a previously approved topic. Does not meet major requirements for seminar or a research methods course. Two prior psychology classes and consent of faculty instructor and DUS required. Meets as a regularly scheduled class. Open only to juniors. Instructor: Staff. One course.

197T. Senior Tutorial. An in-depth historical or theoretical analysis in a field of special interest under the supervision of a faculty member, who is responsible for planning and directing the course of study. The final product for the course is a substantive paper containing significant analysis and interpretation of a previously approved topic. Does not meet major requirements for seminar or a research methods course. Two prior psychology classes and consent of faculty instructor and DUS required. Meets as a regularly scheduled class. Open only to seniors. Instructor: Staff. One course.

For Advanced Undergraduates and Graduates

200A. 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.

200B. Graduation with Distinction Thesis Preparation Workshop II. Continuation of Psychology 200A. 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.

201S. The Psychology of Mindfulness Meditation: Theory, Research, and Practice. CCI, NS, SS Mindfulness meditation in relation to psychological and phycial 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: PSY 100R, 101RE, or 102RE desirable. Open to graduate and advanced undergraduate students. Instructor: Robins. One course.

202S. Exploring the Prefrontal Cortex (B). 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 204S

205S. 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: Children in Contemporary Society, Early Childhood Education

206S. Pediatric Psychology (D, P). SS The conceptual and methodological bases for the field. Emphasis on the reasoning, research designs, and methods implemented at the interface of behavioral and biomedical issues concerning health care for children. Case material illustrating how developmental, biological, and psychosocial processes act together in child health and illness. Focus on adjustment and coping with illness and treatments related to cystic fibrosis, sickle cell disease, cancer, diabetes, and seizure disorders. Consent of instructor required. Instructor: Bonner. One course. C-L: Children in Contemporary Society, Early Childhood Education

208S. Seminar in Emotion (D, P). 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 99 or 108 and consent of instructor. Instructor: Staff. One course. C-L: Women's Studies

209S. Disturbances in Eating and Body Experience Across the Lifespan. 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.

210AS. Multidisciplinary Approaches to Contemporary Children's Issues. R, SS, W Half course. C-L: see Children in Contemporary Society 210SA; also C-L: Public Policy Studies 210S

211S. Biology of Nervous System Diseases. NS One course. C-L: see Biology 241S; also C-L: Neuroscience 242S

214S. Motivational Approaches to Social Psychology (P). SS Advanced topics in the reemerging focus in social psychology on motivation and its role in determining the nature and consequences of self and social-regulation. Focus on research and theorizing on differing motivations underlying social behavior (e.g., the motivations characterizing stereotyping and prejudice as well as achievement behavior and interpersonal relationships). Students expected to read research articles and chapters from the leading social psychology outlets and to actively discuss the merits and limitations of this theory and research. Consent of instructor required. Instructor: Shah. One course.

216S. Gender, Pain, and Coping (P). 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.

218S. Personality, Stress, and Disease (P). SS, STS The interaction between person and social environment as a contributor to development of physical disease. Both epidemiological and laboratory-based research considered. Prerequisite: Psychology 109A for undergraduates and consent of instructor. Instructor: R. B. Williams. One course.


226S. Cognitive Neuroscience of Memory (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 101(RE), formerly 91, or Psychology 102(RE), formerly 92, and consent of instructor. Instructor: Cabeza. One course. C-L: Neuroscience 216S

227S. Behavioral Physiology: Basic Systems (P). SS Organ systems review of physiology, emphasizing the role of the central nervous system and behavior in physiological function. Emphasis on the research designs, methods, and reasoning by which the physiology of behavior is understood. Prerequisite: Psychology 101(RE)-formerly 91 or 159S for undergraduates and consent of instructor. Instructor: Surwit. One course.

229S. Psychosocial Determinants of Health. 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 99 or 116, Research Methods. Open to Juniors, Seniors and Graduate students. Instructor: Richman. One course.

230S. Stereotypes and Stigma (P). 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 99 and 104(RE)-formerly 116. Instructor: Richman. One course.

238S. 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.,

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240S. Biological Pathways to Psychopathology (A(P),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. Prior coursework in biological psychology, i.e., PSY 101RE (formerly PSY 91) or its equivalent is recommended. Instructor consent required. Instructor: Hariri. One course.

241S. 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 135 or Psychology 112. Instructor: LaBar. One course. C-L: Neuroscience 211S

242S. Nonverbal Cognition. 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. Consent of instructor required. Brannon. One course.

249S. Anthropology and Psychology (C, P). CCI, SS One course. C-L: see Cultural Anthropology 249S


258S. Social Behavior and Personality (P). R, SS Broad examination of current theory and research on the interpersonal, personological, and social cognitive influences on social interaction/behavior. Emphasis on: nature of social influence, function/construction of the self, relationship formation/maintenance, aggression, altruism, personality-based mediators and moderators of social behavior, and application of social psychological theory/research to real-world issues. Methodologies discussed = experimental, quasi-experimental, narrative, observational, and correlational models. Prerequisite: Psychology 99 or 104(RE)-formerly 116 and 185B and Statistics 101, Psychology 117 or equivalent and consent of instructor for undergraduates. Instructor: Costanzo or Hoyle. One course.

262S. Minority Mental Health: Issues in Theory, Treatment, and Research (P). CCI, SS Survey and discussion of theoretical, research, and clinical issues in minority mental health with special emphasis on African-Americans. Prerequisite: Psychology 100(RE)-formerly 119A for undergraduates and consent of instructor. Instructor: Staff. One course. C-L: African and African American Studies 262S

265. The Biological Basis of Music. One course. C-L: see Neurobiology 259; also C-L: Philosophy 259, Music 259

267S. Language, Brain, and Human Behavior. R, SS, STS One course. C-L: see Linguistics 202S; also C-L: English 204S

268. Brain and Language (B, C). NS One course. C-L: see Linguistics 268; also C-L: Neuroscience 268

270PS. Selected Problems: Self and Social Behavior. R, SS Overview of psychological theory and research involving the role of self-attention in human thought, emotion,
motivation, and behavior; open only to seniors and graduate students. Instructor: Leary. One course.

270S. 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.

272S. Obesity and Eating Disorders (B, P). 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.

290. 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.

THE MAJOR
For the A.B. 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 11 (an AP score of 5 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 11 will need to complete a total of eleven courses in the major beyond Psychology 11. Thus, AP credit allows you to place out of Psychology 11, but does not reduce the total number of courses you must take.

For breadth the student is required to take Introductory Psychology (11) and at least two survey courses that cover major areas of the field. One of these survey courses must be Biological Bases of Behavior (101RE) or Cognitive Psychology (102RE), and one must be Abnormal Psychology (100RE), Developmental Psychology (103RE), or Social Psychology (104RE). Students seeking additional breadth may count up to four of these survey courses towards the major. Introductory Psychology 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 3 courses in 2 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 (101RE) and developmental (103RE) areas, at least 3 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 (number 141S and above including 200-level seminars. It is recommended that the seminar be taken in an area where a survey course was completed.

For quantitative techniques, the required course is Introduction to Statistical Methods in Psychology (117). 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 136, Statistical Science 101, 102, 103, 110, 112, 114, 200, 210, or 213. 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 Statistics/Decision Sciences should consult with the director of undergraduate studies in Psychology & Neuroscience prior to enrolling in their initial statistics class.

For an introduction to research methods in psychology, each student will take Research Methods in Psychological Science (150RE), or one of the specialized research methods in
the 181-185 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 34 credits needed for graduation. Information is also available at http://psychandneuro.duke.edu/undergraduate.

For the B.S. Degree

As for the A.B. degree, with the following additions: (1) Mathematics 32 or equivalent; (2) six natural science courses in at least two of the following mathematics/natural science departments: mathematics (100 level or above, in addition to the Statistics requirement, above), computer science (100 level or above), chemistry, physics, evolutionary anthropology, and biology; Natural science classes in the Department of Psychology and Neuroscience that are being used to satisfy other major requirements listed above do not count towards these six. (3) at least three of the six mathematics/natural science courses must be numbered 100 or higher; (4) at least one course that involves extensive laboratory or fieldwork (for example, experimental methods or independent research).

THE MINOR

Requirements. Five courses in psychology including Introductory Psychology (11) and at least two survey courses that cover major areas of the field. One of these survey courses must be Biological Bases of Behavior (PSY 101RE) or Cognitive Psychology (PSY 102RE) and one must either be Abnormal Psychology (PSY 100RE), Developmental Psychology (PSY 103RE), or Social Psychology (PSY 104RE). At least one of the remaining courses must be beyond the survey level (i.e., above 104).

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 191-194. Psychology 50RE (practicum) 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 should have an overall GPA of a 3.3 and a GPA in Psychology of 3.5 at the time they apply to the program and must meet these GPA requirements by enrollment in their final semester and they must maintain this level of performance through graduation. Psychology minors and Program II students must have 3.5 GPA in the major program of study.

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. 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 should register for two of the courses listed 191 to 194 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, 200A and 200B, 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 mentor 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 (PUBPOL)
Professor Kuniholm, Dean; Lecturer Rogerson, Director of Undergraduate Studies; Professors Agre (chemistry), Cliffeleter, P. Cook, Darby, Dodge, Feaver (political science), Fleishman, Hamilton, Healy (environment), James, Jentleson, Korstad, Ladd, McClain (political science), Munger (political science), Nechyba (economics), Mickiewicz, Price (political science), Schroeder (law), Sloan (economics), J. Vigdor, and Weiner (law); Associate Professors Conrad, Frankenberg, Mayer, Pfaff, Peck, and Whetten; Assistant Professors Ananat, Bellemare, Charney, Gassman-Pines, Gibson-Davis, Goss, Jeuland, Kelley, Krishna, and D. Taylor; Professors of the Practice Brown, Glenday, Harris, Joseph, Kelly, Lethem, Shukla, Spengler, Stangl (statistics), and T. Taylor; Associate Professor of the Practice F. Fernholz; Research Professors Cook-Deegan and Vaupel; Adjunct Professor Yaggy; Adjunct Associate Professor Pickus; Visiting Professors Gilles and Oberschall; Visiting Associate Professors Krupp and Schanzer; Visiting Assistant Professors Sasser, Schewel, and Tham; Visiting Professors of the Practice Busek, Johnson, and Pomerantz; Lecturer Blount; Visiting Lecturers Bliwise, T. Cook, Dancy, Elson, Emmett, R. Fernholz, Hahn, Healey, Kaufman, Martin-Staple, Moriarty-Lempke, Moses, Prak, Saponara, Slawson-Kuniholm, So, Sud, and VanSant; Senior Research Scientists Vaupel, Rabiner, and Rosch; Research Scientists Berlin, Glennie, and Lansford; Research Scholar E. Vigdor

A major is available in this department.

Courses in public policy are open to all students providing that any prerequisites are met.

49S. First-Year Seminar. Topics may vary each semester offered. Instructor: Staff. One course.


55D. 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: Kelley, Mayer, Taylor, or Vigdor. One course. C-L: Global Health, Health Policy

81FCS. 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.
82. **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: Frey. One course.

100S. **Children and the Experience of Illness. **SS One course. C-L: see Documentary Studies 100S; also C-L: Visual Studies 1031S


102. **Environmental Policy in Europe (B): Duke in Berlin. **CCI, SS One course. C-L: see Political Science 100A; also C-L: German 103A, International Comparative Studies

103. **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 55, Public Policy 55D, 114, 116, 128/equivalent, Statistics 101, and approval from Internship Coordinator. Instructor consent required. Instructor: Staff.

103S. **Cidanania, Cultura e Participacao/Citizenship, Culture and Participation. **ALP, CCI, CZ, EI, R One course. C-L: see Portuguese 141S; also C-L: Cultural Anthropology 140AS, African and African American Studies 140S, International Comparative Studies 130HS

104S. **Medicine and the Vision of Documentary Photography. **ALP One course. C-L: see Documentary Studies 104S; also C-L: Visual Studies 103BS


106. **Animals and Ethics: Welfare, Rights, Utilitarianism, and Beyond. **CCI, EI, SS One course. C-L: see Women's Studies 101

106S. **Animals and Ethics: Welfare, Rights, Utilitarianism, and Beyond. **CCI, EI, SS One course. C-L: see Women's Studies 101S

107. **Science and Policy of Natural Catastrophes. **NS, SS, STS One course. C-L: see Engineering 60; also C-L: Environment 161


109. **Natural Catastrophes: Rebuilding from Ruins. **NS, SS, STS One course. C-L: see Engineering 61; also C-L: Environment 162

109S. **Children, Schools and Society. **CCI, EI, SS, W One course. C-L: see Education 112S; also C-L: Children in Contemporary Society, Early Childhood Education, Ethics

110S. **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: Charney. One course. C-L: Political Science 112CS, Religion 105S

111. **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. C-L: Health Policy 111

112. Politics of Food: Land, Labor, Health, and Economics. ALP, CCI, EI, R One course. C-L: see Documentary Studies 167S; also C-L: Cultural Anthropology 168AS

113. The 1960s: History and Public Policy. CZ, R, SS One course. C-L: see History 113A


115D. 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 140

116. 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 55D. Instructor: Buchanan, Charney, Korstad, Peck, or Pickus. One course. C-L: Ethics

116D. Policy Choice as Value Conflict. EI, SS Same as Public Policy Studies 116 except instruction is provided in two lectures and one small discussion meeting each week. Prerequisite: Public Policy Studies 55D. Instructor: Charney, Korstad, Peck, or Pickus. One course. C-L: Marine Science and Conservation

117. Media and National Security. SS, STS The influence of political leadership, organizational factors in media structures, and the roles and norms of journalists. Change in the definition of security and rationales for military intervention, especially since the end of the Cold War. Parallel changes in media technology introducing the capacity for unmediated, live diffusion of images and tension, conflict, and emergencies. The increasingly important relationship between information and security as seen in controversies surrounding the coverage of terrorism. Instructor: Mickiewicz. One course. C-L: Visual Studies 125A, Policy Journalism and Media

118S. Television Journalism. SS Theories and concepts of television broadcasting; writing and editing for electronic media; issues of production. Consent of instructor required. Instructor: Staff. One course. C-L: Visual Studies 125BS, Information Science and Information Studies, Policy Journalism and Media Studies

119S. Magazine Journalism. SS, W Storytelling techniques of magazine journalism; historical and contemporary writing for magazines; and visual impact in print. Students develop experience in different kinds of magazine writing, collaborate on a magazine produced by the class, contribute to campus publications. Consent of instructor required. Instructor: Bliwise. One course. C-L: Visual Studies 125CS, Documentary Studies 119S, Policy Journalism and Media Studies

120S. 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: Visual Studies 125ES, Arts of the Moving Image, Policy Journalism and Media Studies

**123S. Watchdogs and Muckrakers: Investigative Journalism and Public Policy. SS, W** Historical as well as current examples of how the media have exposed and explained issues vital to the public; journalistic tools and hurdles such as anonymous sourcing, hidden cameras, disinformation, the Freedom of Information Act, and computer-assisted reporting. Instructor: Staff. One course. C-L: Documentary Studies, Policy Journalism and Media

**124. Children in Contemporary Society. R, SS** One course. C-L: see Children in Contemporary Society 150

**125. News as Moral Battleground. EI, 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: Cohen. One course. C-L: Documentary Studies, Policy Journalism and Media Studies

**126. 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: Ethics, Information Science and Information Studies, Policy Journalism and Media

**127S. The Press and the Public Interest. SS** The press as it serves (or fails to serve) the interests of the people, the policymakers and opinion leaders and the various levels of government. The history of journalistic practice and expectation; the media's role in a series of more recent public controversies. Instructor: Staff. One course. C-L: African and African American Studies 126S, Policy Journalism and Media

**128D. 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, Bellemare, Conrad, Hamond, or Ladd. One course.

**129. 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 130

**131. Law, Culture, and the Russian Legal Tradition. CCI, CZ, EI, SS** One course. C-L: see Russian 157; also C-L: International Comparative Studies

**134D. 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.

135. 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.

135FCS. Law and Globalization in Emerging Markets. CCI, SS One course. C-L: see Russian 139FCS; also C-L: International Comparative Studies 161FCS

135S. Law and Globalization in Emerging Markets. CCI, SS One course. C-L: see Russian 139S; also C-L: International Comparative Studies 161E

136. 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: Ethics


137S. 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.

138. Political Philosophy of Globalization. CCI, CZ, EI, SS One course. C-L: see Philosophy 137; also C-L: Political Science 100C

138S. Science, Ethics, & Society. CZ, EI Two courses. C-L: see Philosophy 185S; also C-L: Religion 161WS


140S. Women as Leaders. SS Intellectual and experiential exploration of the theory and practice of leadership, with an emphasis on the special role gender plays. Topics include: authority, conflict, power, and an assessment of each student's potential for leadership. Small group work required. Instructor: Seidman. One course. C-L: Marine Science and Conservation, Women's Studies
141S. Science and The Media. SS, STS  
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: Environment 140S

142S. Intellectual Property: Law, Policy, and Practice. EI, SS, STS  
Survey and analysis of American intellectual property law and policy. Examines the impact of intangible assets—copyrights, trademarks, patents, and related rights and interests—on artistic expression, communication, and innovation. Emphasis on media-oriented issues including film, television, music, computer programs, and digital content, with special focus on the tension between the impulse to protect property interests and the need for an expansive public domain. Extensive readings in both case law and policy commentary. Instructor: Frey. One course.

143S. 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.

144. Social Enterprise Development. EI, SS  
Lecture version for Public Policy 144S. Instructor consent required. Instructor: Gergen. One course.

144S. Social Enterprise Development. EI, SS  
How leaders and their associates become social innovators in a variety of situations. Focus on enterprises that have strong social and commercial values. Social innovation theories and models, evaluation of social innovation situations, social innovator competencies, and personal values and traits. Ethics, character, and citizenship as important themes. Includes a personal social innovator plan, campus and community leadership projects, case discussions, and a ropes course experience. Not open to seniors. Consent of instructor required. Instructor: Gergen. One course. C-L: Ethics, Markets and Management Studies, Marine Science and Conservation

145. 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: Ethics

146. Leadership, Development, and Organizations. EI, SS  
Effective leadership processes in different types of organizations and situations. Focus on ethical leadership behavior. Topics range from ethics, citizenship, and the meaning of a great society to "defining moments" of individual ethical behavior in leadership situations. Course includes an important service learning project in Durham, along with reflection on the ethical leadership experience. Consent of Instructor required. Instructor: Helms. One course. C-L: Markets and Management Studies, Marine Science and Conservation

147D. Environmental Politics and Policies in the Developing World (B). CCI, EI, SS, STS  
One course. C-L: see Political Science 147D; also C-L: International Comparative Studies, Ethics, Marine Science and Conservation

148S. Islam and the Media. CCI, SS  
How the news media portray Muslims in the United States, and how Muslim communities see themselves in the context of media coverage. Roles of religion, culture, language and other experience in journalists' approach to stories about Muslims in America. American Muslims identification with these stories. News
media's portrayals of individuals and communities resemblance to Muslims' self-portraits. One assignment: develop a project involving Muslim communities, guided by Wendy Ewald of the Center for Documentary Studies. Field trips to area Islamic centers. Instructor: Bennett. One course. C-L: Documentary Studies 173S

149. United States Environmental Policy. EI, SS, STS, W One course. C-L: see Environment 149; also C-L: Health Policy, Energy and the Environment

150S. Inside Polling and the Democratic Process. SS, STS Course analyzes pitfalls, errors, strengths, results of polls. Essential to responsible and accurate reporting. Necessary information for public not only during elections. Assignments are reading and taking apart real polls. Students not required to do polling, but will do focus group simulations. Instructor: Mickiewicz. One course.

152. 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 154, Economics 154

153S. Human Rights Activism. CCI, EI, R, SS One course. C-L: see Cultural Anthropology 161S; also C-L: Political Science 124S


155. Global Health Ethics: Interdisciplinary Perspectives. EI, SS One course. C-L: see Global Health Certificate 151; also C-L: Global Health

156. Health Economics. SS One course. C-L: see Economics 156; also C-L: Health Policy


158S. Small Town USA: Local Collaborations. ALP, CCI, R One course. C-L: see Documentary Studies 158S; also C-L: Visual Arts 158S, Visual Studies 103WS

159S. State and Local Public Policy. SS How state and local governments pay for public services. Financing education and transportation programs, the use of municipal bonds for capital projects, the design of intergovernmental aid programs, and state and local tax policy. Consent of instructor required. Instructor: Clotfelter or Ladd. One course.

160S. Long Term Care Policy. SS The aging of the United States population, escalating expenditures, uneven managed care penetration in the Medicare and Medicaid markets, and unresolved public/private relationships; federal policy debates on social security and Medicare, state and local service strategies, and reform agenda for the future. Instructor: Taylor. One course.

162. Human Rights in Theory and Practice. CCI, CZ, EI, SS One course. C-L: see Political Science 162; also C-L: Philosophy 162, Documentary Studies, Ethics, Global Health
163S. Telecommunications Policy and Regulation. SS, STS Broadcast policies, the rise of cable television, spectrum allocation and authorization, and developments in common carrier telecommunications. Instructor: Prak. One course. C-L: Arts of the Moving Image, Information Science and Information Studies, Policy Journalism and Media

164S. Science and Technology Policy. SS, STS One course. C-L: see Environment 146S

165. American International Economic Policy. CCI, SS, STS, W One course. C-L: see Economics 165; also C-L: Markets and Management Studies

166. The Insurgent South: Movements for Social Change Since the Civil War. CZ, SS Social movements in the South from Reconstruction to the present. Includes Populism, Women's Suffrage, the Interracial Movement, labor, civil rights, and post-1960s conservatism. Attention to public policy positions espoused by social movement organizations and activists. Lecture/discussion. Weekly writing assignments. Instructor: Korstad. One course. C-L: History 166A

167S. Environment and Conflict: The Role of the Environment in Conflict and Peacebuilding. CCI, EI, SS, W One course. C-L: see Environment 152S; also C-L: Political Science 152S, Marine Science and Conservation

169A. United States Foreign Policy I: From World War II to Vietnam War. CCI, CZ, EI, SS Basic assumptions about international interests and purposes of United States foreign policy and the means by which they have been pursued from the origins of the Cold War to the war in Vietnam. Focus on crucial operational premises in the 'defining moments' of United States diplomatic history. Policy-making models, politics of foreign policy, global environment within which United States policy is made, and uses of history. Special attention to the origins of the Cold War and the Vietnam War. Instructor: Kuniholm. One course. C-L: History 167A

169B. United States Foreign Policy II: From Vietnam War to the Present. CCI, CZ, SS Examination of basic assumptions about international interests and purposes of United States foreign policy and the means by which they have been pursued from the end of the Vietnam War to the Clinton administration. Focus on crucial operational premises in the "defining moments" of United States diplomatic history. Various policy-making models, politics of foreign policy, global environment within which United States policy is made, and uses of history. Special attention to the Cold War, the Arab-Israeli wars, and the Gulf War. Continuation of Public Policy Studies 169A (recommended but not required). Instructor: Kuniholm. One course. C-L: History 167B

170S. Higher Education and The News Media. SS Analysis of media coverage of major issues in higher education. Issues (business vs intellectual) regarding colleges and universities covered by the media, and how do they do it? Differences in the media's focus on public and independent institutions. Effect of advances in "new media" on coverage of higher education, if any, and if so, how. Ways colleges and universities try to shape and respond to coverage of higher education. Instructor: Burness. One course.


173S. Race and Equity. SS Major historic efforts of the republic to establish legal equality for former slaves and their descendants—the Emancipation Proclamation, the Thirteenth, Fourteenth, and Fifteenth Amendments to the Constitution. Modern-day controversies over race and equality. Efforts of Lyndon Johnson and Richard Nixon under the rubric of "affirmative action." Fair-employment approaches ranging from "casting a wider net" to "goals and timetables" to overt or tacit quotas as well as voter-equality schemes from at-large elections to racial "gerrymandering" to cumulative voting. Desegregation and integration as
competing ideals; actual and proposed remedies for unfairness. Instructor: Staff. One course.
C-L: African and African American Studies 177S, Policy Journalism and Media

174. Separation and Inclusion. SS The history of the competing theories of separation and inclusion; focus on recent fragmentizing movements, including aspects of multiculturalism, feminism, and gay rights activism. Whether America is becoming disunited and, if so, whether the change is a temporary phase or a permanent transformation. Instructor: Staff. One course. C-L: African and African American Studies 179, Policy Journalism and Media

175. Distributive Justice. EI, SS One course. C-L: see Political Science 175BS; also C-L: Ethics

176S. American Communities: A Photographic Approach. ALP, CCI, SS One course. C-L: see Documentary Studies 176S; also C-L: Visual Arts 118S, Visual Studies 103XS, Arts of the Moving Image, Policy Journalism and Media Studies

177S. Advanced Documentary Photography. ALP, SS One course. C-L: see Documentary Studies 177S; also C-L: Visual Arts 119S, Visual Studies 103YS, Arts of the Moving Image, Policy Journalism and Media Studies

178. Comparative Health Care Systems (B). 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 171, Political Science 188, Canadian Studies, International Comparative Studies, Ethics, Global Health, Health Policy

180. Introduction to Leadership, Ethics, and Public Policy. EI, SS Robertson Scholars Colloquium, exploring facets of development, ethics, and leadership. Introduction to intellectual theories and models of making meaning out of college experiences and the Robertson Scholars Program's values. Focus on ethics, leadership, and one public policy issue. Interactive approach including readings, projects, speakers, and writing. Satisfactory/Unsatisfactory grading. Open only to Robertson Scholars. Instructor consent required. Instructor: Brown. Half course.


183S. Social Science and Policy Research. R, SS Theory and research methods in social science applied to solutions to contemporary social problems. Includes direct mentoring and participation in faculty research on topics such as drug abuse, racial socialization, teenage aggression, school failure, and child abuse. Preparation for independent research. Methods course approved for Children in Contemporary Society certificate program. Consent of instructor required. Instructor: Staff. One course. C-L: Psychology 160S

184S. The Photographic Essay: Narratives Through Pictures. ALP One course. C-L: see Documentary Studies 180S; also C-L: Visual Arts 180S

185. Globalization and Public Policy (D). 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 149, International Comparative Studies

186. Public Economics. QS, SS One course. C-L: see Economics 187

188. Whose Democracy? Participation and Public Policy in the United States. R, SS Overview of patterns in Americans’ engagement and disengagement from civic life. Examination of why people do (and do not) participation. Skews based on gender, race, ideology, and class differences. 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. Classroom discussion; short memos; and team-based “research service learning” component, consisting of research-based policy memo for Durham-area grassroots organization and 10 hours of direct service. Instructor: Goss. One course.

189. Business and Government. QS, SS One course. C-L: see Economics 189; also C-L: Markets and Management Studies

190. 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 55, Public Policy 55D, 114, 116, 128/equivalent, Statistics 101, and approval from Internship Coordinator. Instructor: Staff. One course.

191. 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.

192. 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.

193. Selected Public Policy Topics. Topics Vary. Satisfactory/Unsatisfactory grading only. Instructor: Staff. One course.


194. Entrepreneurial Leadership and Social Innovation. EI, SS Gateway course for the Entrepreneurial Leadership Initiative (ELI). Introduces students to the intellectual underpinnings of entrepreneurial, entrepreneurial leadership, social innovation, and social enterprise development. Examines the dynamic relationship between social entrepreneurship and the public good through case studies, group projects, and experiential learning. Explores the challenges and triumphs of entrepreneurial leadership and social innovation in areas of public concern such as education, community welfare, international development, and healthcare. Students encouraged to pursue a research service-learning project and apply for the summer and capstone components of ELI. Instructor: Gergen. One course.

195. Selected Public Policy Topics. SS Instructor: Staff. One course.

195AS. Selected Public Policy Topics. SS Seminar version of Public Policy Studies 195. Instructor: Staff. Half course.

195C. Gateway Lecture: Modern American Legal History. CCI, CZ, R, SS One course. C-L: see History 105C

195CS. Research on Policy and Practice in Schools. R, SS One course. C-L: see Children in Contemporary Society 155S

195S. Selected Public Policy Topics. SS Seminar version of Public Policy Studies 195. Instructor: Staff. One course.

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195T. Selected Public Policy Topics. SS Tutorial version of Public Policy Studies 195, 196. Offered in the Leadership in the Arts Program in New York City. Topics vary by section. Instructor: Staff. One course.

196. Selected Topics. SS Instructor: Staff. One course.

196CS. Capstone Seminar: Clothing and U.S. History. CZ, R, SS, W One course. C-L: see History 196GS; also C-L: Economics 195GS

196DS. Medical Decision Making. SS, STS One course. C-L: see Psychology 161AS

196E. The Arts And Human Rights. ALP, EI, SS One course. C-L: see Cultural Anthropology 161C; also C-L: Study of Ethics 161, Music 131, Political Science 162D

196FS. 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 196PS

196IS. Civic Engagement: Reflection & Transformation. CCI, CZ, EI, SS One course. C-L: see Religion 163S; also C-L: Study of Ethics 166S

196J. Development and Africa. CCI, CZ, SS One course. C-L: see African and African American Studies 160; also C-L: Cultural Anthropology 122D, International Comparative Studies

196KS. Documenting Black Experiences. ALP, CCI One course. C-L: see Documentary Studies 139S; also C-L: African and African American Studies 133S, Arts of the Moving Image 105AS, Cultural Anthropology 134CS

196LS. Global Russia. CCI, CZ, EI, SS One course. C-L: see Russian 185S; also C-L: Cultural Anthropology 174AS, International Comparative Studies 161JS

196MS. Capstone Seminar: Regulating American Business: Historical Perspectives. CZ, EI, R, SS, W One course. C-L: see History 196MS; also C-L: Economics 195MS

196S. Selected Topics. SS Seminar version of Public Policy Studies 196. Instructor: Staff. One course.

197S. Muckraking to Data Mining: Reporting that made a difference. EI, SS Investigative reporting, like that which prompted a president to resign, new consumer safety laws and the release of wronged prisoners. Traces the evolution of investigative reporting through lens of stories which changed public policy. Fresh reading of original works. Follows changing methods and mores of investigative and watchdog reporting. Instructor: Cohen. One course.

198S. Honors Seminar. R, SS, W Special research topics. Consent of the honors seminar instructor and director of undergraduate studies required. Instructor: Staff. One course.

199S. Honors Seminar. R, SS, W Continuation of Public Policy Studies 198S. Consent of the honors seminar instructor and director of undergraduate studies required. Prerequisite: Public Policy Studies 198S. Instructor: Staff. One course.

For Seniors and Graduates

201S. 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.

202. 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. Course 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: Rogerson or Roselle. C-L: Policy Journalism and Media Studies

**203S. Understanding Ethical Crisis in Organizations.** EI, R, SS  
C-L: see Study of Ethics 202S; also C-L: Political Science 225S, Sociology 202S

**204. 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.) Instructor: Krupp. C-L: Economics 253

**206S. 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 227S

**207S. 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. One course.

**208S. Philanthropy: the Theory of Practice and the Practice of Theory.** R, SS  
Role of grantmaking foundations as engines of social, economic, and political change. Normative implications for democracy of elites using wealth to influence society. Theories of strategic vs. expressive philanthropy. Debate over time-limited vs. perpetual foundations. Cases of philanthropy's impact in realms such as education, public television, and AIDS research. New philanthropic ventures that hybridize for-profit and non-profit approaches. Consulting project to guide newly wealthy individuals in philanthropic stategy. Instructor: Goss. One course.

**210S. Multidisciplinary Approaches to Contemporary Children's Issues.** R, SS, W  
C-L: see Children in Contemporary Society 210SA; also C-L: Psychology 210AS

**211S. 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. One course. C-L: Political Science 216S, Women's Studies 211S

**212S. 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.

213S. Designing Innovation for Global Health: From Philanthropy to People. EI, SS, STS
The policy and philanthropic landscape behind appropriate technologies for global health. Focus is on developing countries and problems specific to those settings. Topics examined include: policies to minimize inequity, appropriate level of intervention for an innovation (individual, group, community), intellectual and financial capital, end-user input, systems for sharing and owning knowledge, philanthropy, ethical issues, and policy ramifications. Several weeks devoted to examination of specific technologies and problems, including access to medicines, malnutrition, clean water, and information technology. Instructor: So.

C-L: Health Policy

216S. Race, Ethnicity and Social Policy. 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: Public Policy Studies 216S

217S. 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 217S, Education 217S

218. 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 218

219S. American Grand Strategy. CZ, SS
C-L: see Political Science 219S; also C-L: History 220S

220. 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 Statistics 101 or Public Policy 312 required; further coursework in multiple regression preferred. Consent of instructor required. Instructor: Vigdor.

221. 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: Mickiewicz. C-L: Visual Studies 251A, Information Science and Information Studies, Policy Journalism and Media

222S. Advanced Magazine Journalism. R, SS, W
Advanced version of PPS 119S. 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.

223S. Collective Action, Environment & 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 244S

224. 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 234

225S. Monuments and Memory: Public Policy and Remembrance of Racial Histories. ALP, CCI, EI, SS Processes of memorialization of various dimensions of racial pasts, via statuaries, 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 225S

226S. 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: Vigdor. One course.

227. 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 245

228S. 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 228S

229S. 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: James. C-L: African and African American Studies 229S

231S. 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. PPS128 prerequisite or instructor approval. Instructor: Bellemare. C-L: Economics 231S
232S. 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. PPS 128 prerequisite or instructor approval. Instructor: Bellemare. C-L: Economics 232S

233. 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 234

237. Global Environmental Health: Economics and Policy. SS, STS C-L: see Environment 238; also C-L: Global Health Certificate 238

240. Responsible 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: 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: Cook-Deegan. C-L: Genome Sciences and Policy


245. 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 245

251S. 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. C-L: Economics 251S, Health Policy


257S. 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. One course. C-L: History 296S, International Comparative Studies
258S. International Environmental Regimes (B, D). EI, SS, STS C-L: see Political Science 271S; also C-L: International Comparative Studies 201CS

261. 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 261, Environment 272, Health Policy

262S. 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 261. Instructor: Conrad. C-L: Economics 262S

263S. 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, Health Policy

264. Advanced Topics in Public Policy. SS Selected topics. Instructor: Staff.

264S. Advanced Topics in Public Policy. SS Selected topics. Seminar version of Public Policy Studies 264. Instructor: Staff. C-L: Policy Journalism and Media

266S. Introductory Demographic Measures and Concepts. SS C-L: see Global Health Certificate 250S

268. Media Policy and Economics. R, SS, STS Use of economics to examine the production and consumption of information in communications markets and impact of media on society. Topics include regulation of television/radio/newspapers, intellectual property and Internet, content diversity, and news markets. Instructor: Hamilton. C-L: Economics 235, Policy Journalism and Media

269S. 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: Hamilton. C-L: Political Science 268S

270S. History of Poverty in the United States. CCI, CZ, SS C-L: see Study of Ethics 211S; also C-L: History 211S

271S. 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: Children in Contemporary Society

272. Resource and Environmental Economics. SS C-L: see Environment 270; also C-L: Economics 270, Health Policy, Marine Science and Conservation

274. Environmental Politics. SS C-L: see Environment 274; also C-L: Health Policy

278S. Race and American Politics. CCI, SS C-L: see Political Science 278S; also C-L: African and African American Studies 278S

568 Courses and Academic Programs
279S. 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 279S

280S. 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.


285. Land Use Principles and Policy. SS C-L: see Environment 285

286. Economic Growth and Development Policy. SS, STS, W Basic principles and policy issues in the study of economic growth and development. The roles of physical, natural and human capital, technological innovation, productivity improvements and institutions in explaining patterns and causes of variations in growth and development performance of countries. Effects on growth and development of many current policy issues including HIV-AIDs, financial crises, foreign aid and investment, debt burdens and forgiveness, corruption and governance. Prerequisites: Public Policy 110 or Economics 149. Instructor: Fernholz, Glenday, or Shukla. C-L: Economics 286, International Comparative Studies

290S. 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 55D, two of the core courses (Public Policy Studies 114, 116, 128 or equivalent, or Statistics 101), and consent of director Instructor: Staff.

297. Marine Policy. SS, STS C-L: see Environment 276; also C-L: Political Science 264

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 55D, 114, 116; Public Policy Studies 128 or Economics 55; one course about the Economics of the Public Sector (with Public Policy Studies 128 or Economics 55 as a prerequisite) from a list of courses that will be provided each semester; one history course; Statistics 101; plus four Public Policy Studies 100/200-level elective courses, one of which must be a 200-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 290S 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 103, a non-credit, pass/fail 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: Economics 51 or 55, Public Policy Studies 55D, 114, 116, 128/equivalent, and Statistics 101. All of these courses are listed as prerequisites for Public Policy Studies 103. 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 course work 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 55D, 114, 116, 128 or substitute. 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 Studies Majors*, available from the office of the Director of Undergraduate Studies.

**Religion (RELIGION)**

Associate Professor Jaffe, *Chair*; Professor C. Meyers, *Director of Undergraduate Studies*; Professors Bland, Chaves, Clark, Hillerbrand, Kort, Lawrence, E. Meyers, Morgan, Peters, and Van Rompay; Associate Professors Goodacre, Moosa, Nickerson and Prasad; Assistant Professors Hassan, Kim, and Lieber; Instructor Need; *Affiliated faculty*: Professors Aers (English), Beckwith (English), Ehrman (University of North Carolina at Chapel Hill), Ewing (cultural anthropology), and Surin (literature); Associate Professor Hacohen (history); Adjunct Assistant Professor Thompson (documentary studies); Visiting Assistant Professors Freeman (history) and Dubios; Visiting Research Professor Kadivar

A major or minor is available in this department.

Study in the Department of Religion arises from the recognition that religion, although it takes many forms, is a constitutive element of human existence individually and collectively. The curriculum is organized so that courses at the 40 level provide an
introduction to the major religious traditions, those with significant representation and influence throughout the world. Courses at the 100 level include those which focus on specific traditions, texts, and contexts and those which deal with religious data from a theoretical perspective.

All introductory courses and courses at the 100 level, with the exception of those courses specially designated, are open to all undergraduates. Courses at the 200 level are open to upperclass students with the consent of the instructor.

1. Biblical Hebrew I. FL Elements of phonology, morphology, and syntax. Exercises in reading and writing Hebrew. Course credit contingent upon the successful completion of Religion 2. Instructor: Leiber or staff. One course. C-L: Jewish Studies 1A, Hebrew 5

40. Judaism. CCI, CZ Introduction to Judaic civilization from its origins to modern times. Instructor: Bland, Lieber, E. Meyers, or staff. One course. C-L: Jewish Studies 40, Women's Studies

40S. Judaism. CCI, CZ Seminar version of Religion 40. One course. C-L: Jewish Studies 40S, Women's Studies

41. Christianity. CCI, CZ, EI Introduction to Christian doctrine, ritual, social organization and ethics in the past and present. Instructor: Hillerbrand, Moosa, Van Rompuy, or staff. One course.

42. Islam. CCI, CZ, EI Introduction to Islamic theology, practice, social institutions, and ethics in the past and present. Instructor: Lawrence, Moosa, or staff. One course.

43. 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.

44. Buddhism. CCI, CZ, EI Introduction to Buddhist texts, beliefs, rituals, and ethics in the past and present. Instructor: Jaffe or staff. One course.

45. 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: Nickerson or staff. One course. C-L: International Comparative Studies 90A

48. Japanese Religions: Buddhas, Kanmi, 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.

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.


72S. Seminar for First- and Second-Year Students. CZ Topics and instructors to be announced. Instructor: Staff. One course.

80. Approaches to Religion. CCI, CZ Introduction to influential methods and approaches in the academic study of religion, seeking to understand, examine, and evaluate influential conceptions of religion advanced by representatives of these methods. Instructor: Staff. One course.

85. 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.
99D. 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: Moosa, Morgan, or Staff. One course.

99FCS. 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.

100. The Old Testament/Hebrew Bible. CCI, CZ, EI Historical, literary, ethical, and theological investigations of the ancient Near Eastern context of Israelite religion and culture. Instructor: C. Meyers, E. Meyers, or Peters. One course. C-L: Jewish Studies 100, Ethics

102. The New Testament. CCI, CZ, EI Examination of the major books of the New Testament, covering their contents, ethical implications, historical and social setting, authorship, date, and theology. Instructor: Goodacre or staff. One course.

105S. Religion and Politics. CCI, EI, SS One course. C-L: see Public Policy Studies 110S; also C-L: Political Science 112CS

107A. 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: Nickerson. One course. C-L: International Comparative Studies 120A, Ethics

108. 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: Ethics

109. 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: C. Meyers or staff. One course. C-L: Jewish Studies 103, Women's Studies

110. 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: Nickerson. One course. C-L: History 110A

111. 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: Ethics

112. Greek and Roman Religion. CCI, CZ One course. C-L: see Classical Studies 112

114. 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: Nickerson. One course. C-L: Dance 114

115AS. 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.

115BS. 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: Ethics, Marine Science and Conservation

116A. 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 112, Ethics

117. 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: Staff. One course. C-L: International Comparative Studies 120B, Asian & Middle Eastern Studies 119

118. Jewish Ethics. CCI, CZ, EI 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 118, Ethics

119. Muslim World: Transformations and Continuities. CCI, SS One course. C-L: see Cultural Anthropology 126; also C-L: International Comparative Studies 101F, Women's Studies

120. 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: Hillerbrand. One course. C-L: History 156B, Ethics

121. 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 132

124. 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: Morgan or staff. One course. C-L: Visual Studies 130A, Ethics


127. Protestant Traditions. CZ, EI The committee did not see a strong enough investigation of cultural differences as socially constructed to warrant CCI. Instructor: Hillerbrand. One course. C-L: History 122

129. 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 seventeenth-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: Bland. One course. C-L: Marine Science and Conservation

131. 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.

132S. 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 119S

133. 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: E. Meyers. One course. C-L: Jewish Studies 105


136. Contemporary Jewish Thought. 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: Bland or E. Meyers. One course. C-L: Jewish Studies 107

138. 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

140. Religions of India. CCI, CZ Major religious traditions of the subcontinent: Hinduism, Buddhism, Jainism, and Islam. Instructor: Lawrence, Prasad, or staff. One course. C-L: International Comparative Studies 170G

144. Introduction to the Civilizations of Southern Asia. CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 160; also C-L: Cultural Anthropology 101, History 193, International Comparative Studies

146. Introduction to Islamic Civilization. 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: Lawrence, Moosa or staff. One course. C-L: Cultural Anthropology 147, History 101G, Medieval and Renaissance
Religion (RELIGION) 575

Studies 146A, International Comparative Studies 141A, Ethics, Information Science and Information Studies

147. Introduction to Islamic Civilization. CCI, CZ, EI Continuation of Religion 146. Instructor: Lawrence, or staff. One course. C-L: Cultural Anthropology 148, History 102G, Medieval and Renaissance Studies 147A, International Comparative Studies, Ethics

150CS. Fragmented Memories: Polish and Polish Jewish Culture Through Film. ALP, CCI, CZ, EI One course. C-L: see Polish 185S; also C-L: Jewish Studies 185S

152B. 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: Comparative Area Studies. Instructor: Lawrence. One course. C-L: International Comparative Studies 141E, Ethics, Islamic Studies


153C. 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 155

154FCS. Qu'ran over Time. CCI, CZ, EI Same as Religion 154S but open to students only in the Focus Program. Instructor: Lawrence. One course.

154S. Qu'ran Over Time. CCI, CZ, EI Qu'ran 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: Lawrence. One course.

156S. Islam in the Americas. CCI, CZ, SS, W Explores how Muslim communities live and practice Islam in the American context. Examines diverse Muslim communities emerging from transatlantic exploration, trade in slaves, and migration as well as indigenous conversion. Discussion of religious and cultural identities of American Muslim peoples and consideration of questions of communal organization, religious authority, gender dynamics, youth culture, political and civic engagement, as well as American Muslim comedy and entertainment. Examination of impact of 9/11 upon American Muslims, their responses to the tragedy, and Americans' shifting perceptions of Islam and Muslims Instructor: Hassan. One course. C-L: History 156S, African and African American Studies 161S


159. 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: Clark. One course.

160. Religions of the African Diaspora. CCI, CZ, SS One course. C-L: see African and
American Studies 150; also C-L: Cultural Anthropology 150, International
Comparative Studies

161A. West African Rootholds in Dance. ALP, CCI, CZ One course. C-L: see Dance 110L;
also C-L: African and American Studies 110A, Asian & Middle Eastern Studies
110A, Cultural Anthropology 129A

161C. Dance and Dance Theater of Asia. ALP, CCI, CZ One course. C-L: see Dance 149;
also C-L: Cultural Anthropology 149, Theater Studies 133, Asian & Middle Eastern Studies
149, International Comparative Studies 170C

161E. Music in East Asia. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern
Studies 184; also C-L: Music 134

161F. The Turks: From Ottoman Empire to European Union. ALP, CCI, CZ, EI, R One
course. C-L: see Turkish 135; also C-L: Cultural Anthropology 152, History 141A,
International Comparative Studies 162A, Islamic Studies

161G. Dante's Divine Comedy: Hell, Purgatory and Paradise. ALP, CCI, CZ, EI One
course. C-L: see Italian 143; also C-L: Medieval and Renaissance Studies 166, History 142,
Literature 154B, International Comparative Studies

161H. Kundalini Yoga and Sikh Dharma. ALP, CCI, CZ One course. C-L: see Dance 155;
also C-L: Asian & Middle Eastern Studies 135, International Comparative Studies 170H

161J. History and Practice of the Dance and Dance-theatre of India. ALP, CCI, CZ One
course. C-L: see Dance 147; also C-L: Cultural Anthropology 149B, Theater Studies 134,
Asian & Middle Eastern Studies 154

161K. Representing the Holocaust. ALP, CCI, CZ One course. C-L: see Asian & Middle
Eastern Studies 156; also C-L: Literature 165B, Jewish Studies 130

161N. Dance and Religion in Asia and Africa. ALP, CCI, CZ One course. C-L: see Dance
158; also C-L: Asian & Middle Eastern Studies 136, Cultural Anthropology 149C, African
and African American Studies 158, International Comparative Studies 102A

161O. Introduction to Islamic Communities in North Carolina. CCI, CZ, SS One course.
C-L: see Asian & Middle Eastern Studies 178; also C-L: Islamic Studies

161QS. Documenting Religion. CCI, CZ One course. C-L: see Documentary Studies 168S;
also C-L: Cultural Anthropology 162AS, Visual Studies 103GS

161T. Muslims in the West. CCI, CZ, SS One course. C-L: see Cultural Anthropology 135

Philosophy 132; also C-L: International Comparative Studies 102G, Cultural Anthropology
120A, Turkish 133

161V. Thinking About God: The Nature of Religious Belief at the Crossrds of Judaism,
Christianity, & Islam. CCI, CZ, EI One course. C-L: see Philosophy 135; also C-L: Cultural
Anthropology 120B, International Comparative Studies 102F, Turkish 136

161WS. Science, Ethics, & Society. CZ, EI Two courses. C-L: see Philosophy 185S; also C-
L: Public Policy Studies 138S

161X. Pilgrimage and Tourism. ALP, CCI, CZ, EI, W One course. C-L: see Visual Studies
156

161Y. Jerusalem : Past and Present. ALP, CCI, CZ, EI One course. C-L: see Asian &
Middle Eastern Studies 174; also C-L: Jewish Studies 133
161YS. Religion and Culture in Korea. CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 118S
161Z. Medieval Christendom, Conflict. CCI, CZ, EI One course. C-L: see History 156C; also C-L: Medieval and Renaissance Studies 156C
162S. 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. Instructor: Jaffe. One course.
163S. Civic Engagement: Reflection & 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: Presad. One course. C-L: Public Policy Studies 196IS, Study of Ethics 166S
164A. 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.
165. Islam in Central Eurasia. CCI, CZ One course. C-L: see Russian 190; also C-L: History 185, International Comparative Studies
165B. Mystical Literature. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 187; also C-L: Literature 165B
166. 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: Ethics
168S. 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: Moosa. One course. C-L: Ethics

172A. Islamic Awakening: Revival and Reform. CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 151

172AFCS. Islamic Awakening: Revival and Reform. CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 151FCS

173. Religious Movements. CCI, CZ, SS One course. C-L: see Cultural Anthropology 138

174. 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: Peter. One course.


175. 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: Meyers. One course. C-L: Jewish Studies 111

182. 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. C-L: Health Policy

183. Comparative Approaches to Global Issues (B, D). CCI, CZ, SS One course. C-L: see International Comparative Studies 125; also C-L: Cultural Anthropology 125, History 137, Political Science 125, Sociology 125

184. 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: Hillerbrand. One course. C-L: Documentary Studies, Ethics, Arts of the Moving Image

186. 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: Kort. One course. C-L: Ethics


195KS. Capstone Seminar: Sex, Celibacy & Purity in the Middle Ages. CCI, CZ, EI, R One course. C-L: see History 195KS; also C-L: Medieval and Renaissance Studies 195KS

199. 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. Instructor: Subramanian. One course. C-L: Cultural Anthropology 193A
SPECIAL TOPICS, INDEPENDENT STUDIES, AND SMALL GROUP LEARNING EXPERIENCES

20S. Special Topics in Writing. Various topics with diverse readings and intensive writing. Instructor: Staff. One course.

89FCS. Focus Seminars. CZ Topics vary from semester to semester. Open only to students in the Focus Program. Instructor: Staff. One course.

161R. Sociology of Religion. CCI, R, SS One course. C-L: see Sociology 151

165AS. Topics in Korean Religions: Modern Korean Buddhism in the Global Context. ALP, CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 164S

185. Special Topics in Religion. Topics vary from semester to semester. Instructor: Staff. One course.

185S. Special Topics in Religion. Seminar version of Religion 185. Instructor: Staff. One course.


191A. 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.

191B. 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.

192A. Independent Study. See Religion 191A. For freshmen and sophomores with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

192B. Research Independent Study. R See Religion 191B. For freshmen and sophomores with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

193A. Independent Study. See Religion 191A. For juniors and seniors with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

193B. Research Independent Study. R See Religion 191B. For juniors and seniors with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

194A. Independent Study. See Religion 191A. For juniors and seniors with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

194B. Research Independent Study. R See Religion 191B. For juniors and seniors with departmental approval. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

195S. Junior-Senior Seminars. CZ Topics and instructors to be announced. Instructor: Staff. One course.

196S. Junior-Senior Seminars. CZ Topics and instructors to be announced. Instructor: Staff. One course.

198R. Honors Research. R, W Continuation of, and required for credit for, Religion 197. Prerequisite: Religion 197. Consent of the director of undergraduate studies required. Instructor: Staff. One course.

For Seniors and Graduates


204. Origen. CZ, EI The systematic and apologetic writings of an important Alexandrian thinker and exegete of the third century. Instructor: Clark. One course. C-L: Medieval and Renaissance Studies 204

207. 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 207. Instructor: Chapman, Davis, Peters, or Portier-Young. One course. C-L: Jewish Studies 201

208. 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 208. Prerequisites: OLDTEST 115, 116. Instructor: Chapman, Davis, Peters, or Portier-Young. One course. C-L: Jewish Studies 202

212S. Theorizing Religion. CCI, CZ, EI Late nineteenth- and twentieth-century theories, interpretations, and approaches to the study of religion. Instructor: Staff. One course.

215. 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: Clark. One course.


220. Rabbinic Hebrew. FL Interpretive study of late Hebrew, with readings from the Mishnah and Jewish liturgy. Consent of instructor required for undergraduates. Instructor: E. Meyers or staff. One course. C-L: Jewish Studies 203


235. Consenting to Consent of instructor required. Instructor: Staff. One course.


244. 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: E. Meyers. One course. C-L: Jewish Studies 206

245S. Special Topics in Religion. CZ Subject varies from semester to semester. Instructor: Staff. One course.

248. Sociology of Religion. CZ, SS One course. C-L: see Sociology 230

254. 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: Moosa. One course. C-L: African and African American Studies 254, Medieval and Renaissance Studies 254, International Comparative Studies


278. Muslim Networks Across Time and Space. CCI, CZ, EI One course. C-L: see Asian & Middle Eastern Studies 254S

283. Islam and Modernism. CCI Cultural, religious, and ideological forces which shape Muslim responses to modernism. Instructor: Lawrence. One course. C-L: International Comparative Studies, Islamic Studies

284. 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: Lawrence. One course. C-L: International Comparative Studies, Islamic Studies

285. 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.

288. 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

294. The Social Organization of American Religion. Addresses religion's formal and informal social organization. Examines how religion is organized, and explores causes and consequences of variation in religious social organization. Considers impact of demographic changes on American religion, and asks how ideas from study of social networks, formal organizations, and professions apply to religion. Instructor: Chaves. One course.

THE MAJOR

Major Requirements. Ten courses, at least eight of which must be at the 100 level or above. One course must be a small group learning experience/seminar taken during the junior or senior year, a 200-level course, Religion Department independent study, or
Religion Department honors project. The student, in consultation with her or his advisor and with the advisor's approval, will select 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 towards the major. Only one Divinity School course can count towards the major, and that course cannot be equivalent to a course offered by the Religion Department. Students interested in taking Divinity School courses should consult the director of undergraduate studies regarding credit towards the religion major.

**Departmental Graduation With Distinction**

The Religion Department has a program for Graduation with Distinction (see the bulletin under that heading). This program is intended for the outstanding religion major whose grade point average is at least 3.5 in religion (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 religion minor offers students specializing in another department or program the opportunity to enrich their studies by engaging in the consideration of religion, which is one of the constitutive elements of human existence.

*Minor Requirements.* A minimum of five religion courses, at least four of which must be at the 100 level or above. Only one approved study abroad course can count towards the minor. Only one Divinity School course can count towards the minor, and that course cannot be equivalent to a course offered by the Religion Department. Students who wish to take Divinity School courses should consult the director of undergraduate studies regarding credit towards the religion 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 foreign language. Master of Arts and Doctor of Philosophy programs often require examination in one or two foreign languages. Students planning to attend a theological seminary should note that knowledge of biblical languages, as well as Latin, frequently is presupposed or required. Those planning to pursue studies of Asian religions should begin appropriate language study as part of their undergraduate preparation.

**Romance Studies (ROMST)**

Professor Dainotto, Chair; Professor Solterer, Director of Undergraduate Studies (French and Italian); Associate Professor Rodriguez-Garcia Associate Director of Undergraduate Studies (Spanish and Portuguese); 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 Bell, Dainotto, Dubois, Finucci, Greer, Jameson, Jenson, Longino, Mignolo, Moi, Solterer; Associate Professors Gabara, Hardt, Rodriguez-Garcia, Rosa, Sieburth, Viego; Assistant Professors Adrian, Eisner, Milian, Saliot; Professors Emeriti Damasceno, Garci-Gómez, Kaplan, Keineg, Orr, Stewart, and Thomas; Research Professors Dorfman, Garréta; Professor of the Practice Tufts; Assistant Professor of the Practice Fellin; Assistant Professor of the Practice Paredes; Adjunct Associate Professor Byrd
A major (in French, Italian, or Spanish studies) or a minor is available in this department.

Prerequisites for all courses numbered 100 or above not taught in English:

Courses: French 15 or Spanish 15
Italian 15 or 22
French, Italian, Spanish 76
Portuguese 63 or 76, or consent of instructor

or SAT II: French: score of 640+
Italian: score of 640+
Spanish: score of 660+

or AP: Spanish literature exam: score of 4 or 5
French or Spanish language exam: score of 5

Students may submit AP scores for credit as well as placement in French or Spanish.

Credit is awarded as follows:
1 credit for Spanish 76 for a score of 4 or 5 on AP literature exam
1 credit for French or Spanish 76 for a score of 5 on AP language exam

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.

ROMANCE STUDIES (ROMST)

50. Duke-Administered Study Abroad: Special Topics in Romance Studies. CCI Topics differ by section. Instructor: Staff. One course.

81FCS. 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.

150. Topics in Romance Studies. A comparative study of languages, literatures, and/or cultures related to Romance Studies. Instructor: Staff. One course.

150S. Topics in Romance Studies. ALP, CZ A comparative study of languages, literatures, and/or cultures related to Romance Studies. Instructor: Staff. One course.

151S. Eros in the Renaissance. ALP, CZ, R, W The theme of eros, desire or love, in Renaissance Italy and France, with attention to questions of sexuality and gender. Prose readings, lyric poetry, as well as Plato's Symposium and Ovid's Metamorphoses. Writing and Research intensive. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 151S

200S. Seminar in Romance Studies. CCI Topics to be announced. Instructor: Staff. One course.

201S. 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 251S


250S. 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.

**FRENCH (FRENCH)**

1. **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.

2. **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. Four class meetings a week. Instructor: Tufts and staff. One course.

14. **Intensive Elementary French. FL** Covers the basic elementary French language curriculum (French 1-2) in one semester. Not open to students who have studied French for more than two years pre-college. 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. Instructors: Tufts and staff. Two courses.

15. **Intensive Intermediate French Language and Culture. FL** Covers the intermediate French language curriculum (French 63, 76) 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 1-2 or 14 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.

63. **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 2 or 14 at Duke, or SAT II score of 490-580, or AP Language Test score of 3 in French. Instructors: Tufts and staff. One course.

76. **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 63 at Duke, or SAT II score of 590-630, or an AP Language Test score of 4. Instructors: Tufts and staff. One course.


100S. **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 76, SAT French score of 640 or above, AP French Language 5, or equivalent. Instructor: Tufts and staff. One course.

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101. 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 76, or AP Language Test score of 5, or equivalent. Instructors: Tufts and staff. One course.

104S. 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. C-L: International Comparative Studies 182FS

107S. 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 124S

108. 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 101 or equivalent or consent of instructor. Instructor: Staff. One course. C-L: Linguistics 121

109S. 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 76, SAT French score of 640 or above, AP French Language 5, or equivalent. Instructor: Reisinger. One course. C-L: International Comparative Studies 182AS

110S. 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

111S. French Topics 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.

113. France, the "Universal" Nation. CCI, CZ, FL The concept of "nationhood" and French national identity, with its "universal" sense of reason and justice, and its specific and "exceptional" qualities, including a commitment to a secular state, as compared to the American model. Not open to students who have taken this course as French 139. Instructor: Staff. One course. C-L: International Comparative Studies

114. Les Autres Frances. ALP, CCI, CZ, FL Exploration of linguistic and ethnic minorities within France, with an emphasis on Corsica, Alsace, and Brittany. The future of these minorities in the context of the European Community. Includes novels, films, essays, paintings, audio-archives. Instructor: Staff. One course.

114F. 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.

118. Creative and Practical Writing Workshop. ALP, CCI, FL, W. Workshop developing writing skills in a variety of practical and literary genres. Study of examples of each genre. Recommended for majors and students returning from study abroad in French speaking countries. Native speakers need consent of instructor. Not open to students who have taken course as French 160. Prerequisite: At least two French courses at the 100-level, or equivalent. Instructor: Staff. One course.

119. 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 76 or equivalent. Instructor: Tufts or staff. One course.

120. French Comedy. ALP, CCI, FL. The theatrical tradition of comedy and its evolution, with emphasis on Molière, Marivaux, and Beaumarchais, and other readings from Pathelin to Ionesco. Introduction to theory of comedy from Moliere to Freud. Instructor: Staff. One course.

121. 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.

124S. Poetry. ALP, CCI, FL, W. Exploration of the rich and varied corpus of French and Francophone poetry from the medieval epic to surrealism and beyond. Instructor: Staff. One course.


128. 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.


132. French in the New World. ALP, CCI, CZ, FL. Francophone languages and cultures in Canada, New England, Louisiana and the Caribbean. Origins, history, and linguistic characteristics as well as current political, linguistic, and cultural issues studied from fictional texts, documents, or audio-visual productions. Instructor: Staff. One course. C-L: International Comparative Studies 183E
133. Childhood in French Culture. ALP, CCI, FL Childhood in French culture since the nineteenth century, beginning with Rousseau's Emile. Novels, poetry, essays, films. Instructor: Staff. One course.

135. France's Cultural Legacy in the New World: Quebec. ALP, CCI, CZ, FL Culture and literature of Quebec and French Canada; best of poetry, novels, drama, essays, and films. Instructor: Staff. One course. C-L: Canadian Studies

140S. 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.

141S. French Literature. ALP, CCI, FL Topics to be announced. Open to juniors and seniors. May be repeated. Instructor: Staff. One course.

142. France in the Making: Language, Nation, and Literary Culture in Premodern Europe. CCI, CZ, FL Origins and transformations of French imaginaries. Inquiry into earliest myths/images, including crusade and holy war, which pitted France and Europe against Arab and Muslim world. Fictional, historical chronicle, autobiography, and film exploring how first ideas of France in the West were forged through conflict—war, foreign occupation, American "new France" settlement. Instructor: Solterer. One course. C-L: Medieval and Renaissance Studies 140A, International Comparative Studies

143S. Topics in Renaissance Literature and Culture. ALP, CCI, FL Topics may include: women writers, love and death, the Wars of Religion, identity and alterity, travel literature, the new world. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 160S, International Comparative Studies

145. Topics in Seventeenth-Century French Literature. ALP, CCI, FL Readings from playwrights, philosophers, poets, moralists, historians, travelers, novelists, and letter writers. Topics include taste, science, religion, love, death, autobiography, and myth-making. Instructor: Longino. One course.


148. Turmoil in Nineteenth-century French Society. ALP, CCI, FL Fiction, film, history, essays on political turmoil that shaped the modern French state: Revolutions, empires, colonization, immigration. Instructor: Staff. One course.

149S. 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 100-level. Topics vary each semester offered. For students thinking about majoring or minoring in the language, counts towards both. 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 after consulting with instructor. Instructor: Staff. One course.

151S. 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.

154. Twentieth Century French Theater. ALP, CCI, FL Topics may include: Alfred Jarry (1896) and "Theater of the Absurd" of 1950's, French stage and WW II, post-May 1968 political theater; regional theater; francophone theater; women writers; directors and actors. Instructor: Tufts or staff. One course. C-L: Theater Studies 120

155. French Cinema. ALP, CCI, FL Historical overview of French cinema from the beginning of the sound period (1930). Films by directors such as Clair, Renoir, Carné, Godard, Truffaut, and Varda. Readings in the theory of cinema by French theorists. Analysis of the position of French cinema within European and American cinema traditions.
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156. 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 117, History 153C, Visual Studies 126F

157. 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 Studies 126G


159. 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 Studies 126I

160. 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


164D. 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 100-level French course to enroll in French section. Instructor: DuBois. One course. C-L: History 165D, Cultural Anthropology 156D

168. 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.


170. French Science Fiction. ALP, CCI, CZ, FL The science fiction and utopia genres in French and Francophone literature and culture from the late XIXth-Century to the extreme present. Instructor: Staff. One course.

171D. Major Authors in French and Francophone Modernity. ALP, CCI Introduction to the work of a major author from the nineteenth and/or twentieth century in the French-language tradition. Topics include: literary movements and their relationship to political, economic, or other social contexts; authorial personae and roles; print culture and its relation to nations, diasporas, and other social collectivities; narratology; and gender and literature. Taught in English, with discussion groups in English and also French, for students seeking credit for the major or minor. Instructor: Staff. One course. C-L: Literature 154CD

180S. 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.

181. 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.

182. Research Independent Study. R See French 181. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

183. Research Independent Study. R See French 181. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

184. Research Independent Study. R See French 181. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

185. Topics in French Literature and Culture. ALP, CCI, FL Topics to be announced. (Offered only in the Duke-in-France Program.) Instructor: Staff. One course.

186. Advanced Topics in French and/or Francophone Literature/Culture Abroad. ALP, CCI, FL Topics may vary. Instructor: Staff. One course.

188. 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.


191S. Topics in French Literature and/or Culture. ALP, CCI, CZ Topics to be announced. Taught in English. Instructor: Staff. One course.


194. **Advanced Expression. CCI, FL** Intensive practice in speaking and writing. Offered only in the Duke in France Program. Instructor: Staff. One course.

195. **Topics in French and/or Francophone Culture Abroad. CCI, CZ, FL** Topics may vary. Instructor: Staff. One course.

196. **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

197S. **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.

198. **Topics in French Literature and/or Culture Abroad. ALP, CCI, CZ** Topics to be announced. Taught in English. Instructor: Staff. One course.

199. **Haitian Creole for the Recovery in Haiti. CZ** Introductory course in Haitian Creole targeted toward future participants in Haitian Recovery from earthquake of Jan 2010. Preparation for verbal interactions in a health care environment; engineering, architecture/urban planning, religion, and law also represented; students' immediate needs will be integrated into the class structure. Textbook, Haitian Creole for Health Care, helps students to acquire basic communicative competence in Kreyòl with emphasis on oral expression, listening comprehension, proficiency in reading and basic written interactions. Provides cultural context and insight for all linguistic material, and pragmatic orientation for experience on the ground in Haiti. Instructor: Jenson or staff. One course. C-L: Latin American Studies 190, African and African American Studies 187, Cultural Anthropology 156E, Linguistics 198

200S. **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.

206. **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, Bergougnioux, Houellebecq), and the minimalist school (Chevillard, Echenoz, Deville, Lenoir). Instructor: Staff. One course.

212. **Structure of French. FL** Modern French phonology, morphology and syntax. Pragmatic interpretation of the current modes of use, including language levels, situationism, and interrelations. Readings in current linguistic theory. Instructor: Staff. One course. C-L: Linguistics 221

240. **Premodern Times. 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, Provençal 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 240

247. 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 249

251. 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.

252. 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.

252S. 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.

256. 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 256, International Comparative Studies 280B

261. 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.

281. 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.

ITALIAN (ITALIAN)

1. 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.

2. Elementary Italian 2. FL Italian 2 develops and expands elements acquired in Italian 1: aural comprehension, speaking, reading, and writing. Conducted in Italian. Four class meetings a week. Prerequisite: Italian 1 or placement through the Director of the Italian Language Program. Instructor: Fellin or staff. One course.

11. 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.

14. Intensive Elementary Italian. FL Covers the basic elementary curriculum (Italian 1 and 2) 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.

15. Intensive Intermediate Italian. CZ, FL Covers the basic intermediate curriculum (Italian 63 and 76) in one semester. Listening, speaking, and cultural exploration activities with emphasis on the development of reading and writing abilities. Meets five times a week, eight contact hours. Prerequisite: successful completion of college-level elementary course or consent of the Italian language director. Instructor: Fellin or staff. Two courses.
21. **Accelerated Elementary Italian. FL** Covers the elementary Italian Language curriculum (Italian 1-2) 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.

22. **Accelerated Intermediate Italian. FL** Covers the intermediate Italian Language curriculum (Italian 63-76) 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 100 level. Four class meetings a week. Prerequisite: Italian 21 or consent of the Italian Language Director. Instructor: Fellin and staff. One course.

63. **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.

64T. **Intermediate Italian Tutorial. CZ, FL** Further study of Italian language and aspects of Italian culture and contemporary society; offered only in the Duke-in-Venice program. Instructor: Staff. One course.

76. **Advanced Intermediate Italian. CZ, FL** Further development of the elements practiced in Italian 1-63. Increased attention to grammatical accuracy and vocabulary development; guided writing practice and development of second language reading skills with emphasis on analysis of cultural and literary texts. Prepares students for 100 level Italian courses. Instructors: Fellin and staff. One course.

101. **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 15, 22, or 76, or consent of the Italian Language Program Director. Instructor: Fellin and staff. One course.

103. **Topics in Italian Culture. ALP, CCI, FL** Practice in understanding, speaking, reading, and writing Italian with special attention to cultural topics and issues. Instructor: Staff. One course.

108S. **Italian Sociolinguistics. CCI, CZ, FL, SS** Linguistic diversity in modern Italy. Social and geographic language variation, multilingualism, and the relationship between language and dialect. Special codes, including youth slang, language and politics, language and bureaucracy. Discussion of language and gender, language and racism, linguistic etiquette within Italian society. Instructor: Fellin. One course. C-L: Linguistics 105S

110S. **Introduction to Italian Civilization. CCI, CZ, FL** The institutions and culture of Italy throughout the centuries. Instructor: Dainotto, Fellin, Finucci, or Hardt. One course.

111. **Introduction to Italian Literature I. ALP, CCI, FL** Major writers of the Italian premodern literary tradition of the thirteenth, fourteenth, and fifteenth centuries. Poetry, fiction, theater, and essay. Instructor: Eisner. One course. C-L: Medieval and Renaissance Studies 111A


113. **Introduction to Italian Literature III. ALP, CCI, FL** Major writers of the Italian modern literary tradition (nineteenth, twentieth, and twenty-first centuries). Poetry, fiction, theater, and essay. Instructor: Dainotto or Hardt. One course.

114. **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.

115. Topics in Italian Literature and/or Culture. ALP, CCI, CZ, FL Topics to be announced. Survey course on Italian literature and culture required for Italian major or minor. Instructor: Finucci. One course.

116. 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.

118S. 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. C-L: International Comparative Studies 181CS

120. 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.

121S. 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.

123. 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

127. 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.

130. Topics in Italian Literature and Culture. ALP, CCI, CZ Topics on single authors, genres, movements, or themes across centuries. Taught in English. Instructor: Dainotto, Eisner, Finucci, Hardt. One course.

130FCS. 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.


131. Topics of 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

131P. Topics in Italian Civilization: Preceptorial. Preceptorial attached to Italian 131. Please see instructor for more information. Instructor: Staff.

132. 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 112K, Arts of the Moving Image 111E, Visual Studies 126A, Theater Studies 172A

134. Aspects of Renaissance Culture (DS2). ALP, CCI, CZ One course. C-L: see Medieval and Renaissance Studies 115; also C-L: Art History 149, History 148A


135. Italian Women Writers. ALP, EI Ethical and political issues raised in representative works by women. Topics include: marginalization of women writers in the literary canon, critical perception and self-perception of women authors, and beliefs about women in both the social and the cultural space. Taught in English. Not open to students who have taken this course as Italian 115 or ICS 181C. Instructor: Dainotto, Finucci, or Hardt. One course. C-L: International Comparative Studies 182B, Women's Studies

135P. Italian Women Writers -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 135. Further information available from instructor. Instructor: Dainotto, Finucci, or Hardt.

136. 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 175B, International Comparative Studies 128, Cultural Anthropology 137

136P. City and City Life in Italy--Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 136. Further information available from instructor. Instructor: Finucci.

137. Modernism, Avant-gardism, and Visual Art, 1900-1945. ALP, CCI, CZ One course. C-L: see Art History 167; also C-L: International Comparative Studies, Women's Studies

142S. Italian Literature. ALP Topics to be announced. Taught in English. Open to juniors and seniors. Instructor: Staff. One course.

142SP. Italian Literature--Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 142S. Further information available from instructor. Instructor: Staff.


144P. Sex, Death, and a Little Love: Boccaccio's Decameron -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 144. Further information available from instructor. Instructor: Eisner.

145S. Topics in Medieval and/or Early Modern Literature and Culture. ALP, CCI Topics may include: the Italian Middle Ages, the Renaissance, the baroque, humanism. Taught in English. Instructor: Finucci and Eisner. One course. C-L: Medieval and Renaissance Studies 161S
145SP. Topics in Medieval and/or Early Modern Literature and Culture -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 145S. Further information available from instructor. Instructor: Eisner, Finucci.


148SP. Italians Abroad, Foreigners in Italy: Seeing and Being Seen -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 148S. Further information available from instructor. Instructor: Finucci.

151S. 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 120S

151SP. The Italian Theatre -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 151S. Further information available from instructor. Instructor: Dainotto, Finucci.

152. Renaissance Architecture in Italy: Brunelleschi to Michelangelo. ALP, CZ One course. C-L: see Art History 152; also C-L: Medieval and Renaissance Studies 150

153. Michelangelo in Context. ALP, CCI, CZ One course. C-L: see Art History 155; also C-L: Medieval and Renaissance Studies 152A

155S. Topics in Modern 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. C-L: Literature 146S

155SP. Topics in Modern Literature and Culture -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 155S. Further information available from instructor. Instructor: Eisner, Dainotto, Finucci, or Hardt.

160S. Italian Identities Between Europe and the Mediterranean. CCI, CZ The question of Italian identity from the perspective of the cultural divide between north and south. Northern Italy's attraction towards a technologically progressive Europe, and Southern Italy's yearning for the traditionally slower pace of Mediterranean civilization. Study of a nation which does not possess a univocal vision of itself. Taught in English. Instructor: Dainotto. One course. C-L: International Comparative Studies 182CS

160SP. Italian Identities Between Europe and the Mediterranean--Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 160S. Further information available from instructor. Instructor: Dainotto.

166S. Opera. ALP, CCI One course. C-L: see Music 166S

191. 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.

192. Research Independent Study. R See Italian 191. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

193. Research Independent Study. R See Italian 191. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

194. Research Independent Study. R See Italian 191. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.
195. 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.

198. 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.

200. 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.

201S. Italian Linguistics. ALP, CCI, SS An interdisciplinary study of selected topics, such as history of linguistic theories, language and world view, semiotics, ethnolinguistics, language and cinema, language and identity, discourse and conversation analysis. Taught in English. Instructor: Fellin. One course.

201SP. Italian Linguistics -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 201S. Further information available from instructor: Instructor: Fellin.

202S. 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.


205S. 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 205S

205SP. Dante Studies -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 205S. Further information available from instructor. Instructor: Eisner.


210SP. Topics in Renaissance Studies --Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 210S. Further information available from instructor. Instructor: Finucci.

220S. 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 219S

220SP. Topics in Sexuality and Gender Studies -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 220S. Further information available from instructor. Instructor: Finucci and staff.

221S. 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 280S, German 221S

221SP. Literary Guide to Italy -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 221S. Further information available from instructor. Instructor: Dainotto.

225S. 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: International Comparative Studies 281ES, Arts of the Moving Image
225SP. Cinema and Literature in Italy -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 225S. Further information available from instructor. Instructor: Dainotto, Finucci, or Hardt.

230S. 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 284S

230SP. Antonio Gramsci -- Preceptorial. A preceptorial, in Italian, requiring concurrent enrollment in Italian 230S. Further information available from instructor. Instructor: Dainotto.

PORTUGUESE (PORTUGUESE)

1. 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: Damasceno and staff. One course.

2. Elementary Portuguese II. FL Builds on the elements of language acquired in Elementary Portuguese 1; enrollment in Portuguese 2 presupposes acquisition of the contents covered in Portuguese 1. 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 1 or consent of instructor. Instructors: Damasceno and staff. One course.

49S. 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.

53. Portuguese as a Second Romance Language. FL Designed for undergraduate and graduate students who are fluent, or native speakers, in another Romance language. Prepares students to enter intermediate sequence Portuguese courses at Duke. Most grammar and textbook work is done outside of class, freeing class time for more communicative activities. Conversation sessions provide intensive review of grammar focused through discussion on issues raised in film, newspapers, readings, music. Meets five times a week. Instructor: Damasceno or staff. One course.

63. 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 2, 53, or consent of instructor. Instructor: Damasceno or Staff. One course.

76. 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 100-level courses. Prerequisites: Portuguese 63 or consent of instructor. Instructor: Damasceno or Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Portuguese. CCI, FL Topics differ by section. Instructor: Staff. One course.

103. 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 53 or equivalent, or consent of director. Instructor: Damasceno and staff. One course.

108S. 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 sayings, expressions, and proverbs; emphasis on oral communication. Contemporary 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 63 or consent of instructor. Instructor: Damasceno or staff. One course.

111S. Research Seminar in Citizenship and Culture. CZ, FL, R, W Interdisciplinary research seminar that allows students to practice intermediate to advanced language skills and develop individual research projects on contemporary issues in the Portuguese-speaking world as they are perceived and discussed from within these countries. Focus on the changing nature/rights of citizenship in Lusophone world and/or relationship of Portuguese speaking country to global issues of citizenship. Research paper required; research resources concentrate on journalistic and other media sources, including the Internet. Prerequisite: Portuguese 76 or consent of instructor. Instructor: Damasceno. One course. C-L: International Comparative Studies 130AS, Latin American Studies

113S. 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: International Comparative Studies 130G, Latin American Studies

121S. 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: International Comparative Studies 131FS, Latin American Studies

139S. Portugal, Portuguese-Speaking Africa, and Brazil: Old Problems, New Challenges. CCI, CZ Readings from multidisciplinary sources and films emphasizing questions/issues regarding the Portugal-Africa-Brazil triangle. The history and geography of Lusophone cultures from the inception of the Portuguese state to the present. Promotes a critical vision of the Portuguese-speaking nations' relationships as a common language group with other non-Portuguese-speaking nations more closely connected to the individual nations of the Lusophone world. Taught in English. Instructor: Damasceno or staff. One course. C-L: Cultural Anthropology 140CS, International Comparative Studies 131DS

141S. 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: Cultural Anthropology 140AS, African and African American Studies 140S, Public Policy Studies 103S, International Comparative Studies 130HS

143S. Performing Brazil: Issues of Performative Cultures. ALP, CCI Same as 144S, except taught in English, with a preceptorial in Portuguese available for students seeking credit towards the Spanish major. 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. C-L: International Comparative Studies 130J

143S. Performing Brazil: Issues of Performative Cultures. ALP, CCI Seminar version of Portuguese 143. One course. C-L: International Comparative Studies 130J

143SP. Performing Brazil: Issues of Performative Cultures--Preceptorial. A preceptorial requiring concurrent enrollment in Portuguese 143S. Additional information available from instructor. Instructor: Damasceno.

144S. 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.

170C. Afro-Brazilian Culture and History. CCI, CZ, R One course. C-L: see History 170C; also C-L: African and African American Studies 170, Latin American Studies

191. 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.

192. Research Independent Study. R See Portuguese 191. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

193. Research Independent Study. R See Portuguese 191. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

194. Research Independent Study. R See Portuguese 191. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

202S. 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: 100-level Portuguese course or consent of instructor. Instructors: Damasceno and staff. One course.

248S. 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: 100-level Portuguese course or consent of instructor. Instructors: Damasceno and staff. One course.

QUECHUA (QUECHUA)

21. 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.

SPANISH (SPANISH)

1. 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 two years of high school Spanish, or appropriate language placement score. Consent of Director required. Instructor: Paredes and staff. One course.

2. Elementary Spanish 2. FL This course builds on the elements of the language acquired in Elementary Spanish 1; enrollment in Spanish 2 presupposes acquisition of the contents covered in Spanish 1. 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 1 or appropriate placement test score. Instructors: Paredes and staff. One course.

13. Duke in Mexico: Intensive Institute. FL Covers the basic elementary Spanish language curriculum (Spanish 1 and 2) in one summer session in Mexico. Develops aural comprehension, speaking, reading and writing skills; exposure to aspects of Spanish-speaking cultures. Taught in Spanish, using a task-based approach. Six hours per day of classroom instructions (M-F) and required extracurricular activities. Not open to students with more than one year of high school Spanish. Instructor: Staff. Two courses.

14. Intensive Elementary Spanish. FL Covers the basic elementary language curriculum (Spanish 1 and 2) 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. Consent of instructor required. Instructors: Paredes and staff. Two courses.

15. Intensive Intermediate Spanish. CZ, FL Covers the intermediate Spanish language curriculum (Spanish 63 and 76) 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 100-level Spanish courses. Eight class meetings a week. Instructor: Paredes and Staff. Two courses.

16. Duke in Mexico: Intensive Intermediate Institute. CZ, FL Covers the intermediate Spanish language curriculum (Spanish 63 and 76) in one summer session in Mexico. Builds on elements of the language acquired in the elementary sequence in Spanish 1 & 2. 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 100-level Spanish courses. Six hours a day of classroom instruction (M-F); required extracurricular activities. Prerequisite: Spanish 2 or 14. Instructor: Parades and staff. Two courses.

62. 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.

63. 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 1 and 2 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 2 or 14, or appropriate placement test score. Instructors: Paredes and staff. One course.

76. Advanced Intermediate Spanish. CZ, FL This course builds on the elements of the language acquired in Spanish 1 through 63. 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 100-level Spanish courses. Prerequisite: Spanish 63, or appropriate placement test score. Instructors: Paredes and staff. One course.

101. 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 110S and higher courses. Instructors: Paredes and staff. One course.

103A. Advanced Spanish Language Abroad. CCI, FL Topics may vary. Instructor: Staff. One course.

104. 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 101 and 105. Prerequisite: Spanish 76 or appropriate placement test score. Instructors: Paredes and staff. One course.

104S. Discussion of Readings. ALP Instructor: Paredes and Staff. One course.

105. Discourse Strategies Through Politics, Culture, and Society. CCI, FL Development of effective strategies for oral communication. Use of language ranges from informal to formal situations and concrete to abstract topics. Focus on developing structured arguments and increasing linguistic accuracy. Does not count towards the Spanish major or minor; not open to students who have previously taken both Spanish 101 and 104 or Native Speakers of Spanish. Prerequisite: Spanish 76, or appropriate AP, SAT II, or placement test score. Instructors: Paredes and staff. One course. C-L: Latino/a Studies in the Global South

106A. Health, Culture, and the Latino Community. CCI, FL Issues associated with access to the health care industry for growing Latino/a population in the US. Topics: cultural competency issues, medical practices, lexical knowledge related to the field. Develop research proposal informed by required 20 hours of service work with local community partners. Assessment on knowledge of content, oral and written Spanish, and participation in service. Recommended students take 100-level Spanish course prior to enrolling. Prerequisite: Spanish 76 or equivalent. Instructor: Paredes and Staff. One course. C-L: Latino/a Studies in the Global South

106B. Andean Oral Tradition. CCI, CZ, FL Oral narrations of Bolivia, Ecuador, and Peru as a reservoir of indigenous traditional knowledge and wisdom. Taught in Spanish, with exposure to Aymara language. Prerequisite: Spanish 76 or appropriate placement. Instructor: Staff. One course.

106CS. 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 100-level Spanish course prior to enrolling. Pre-requisite: Spanish 76 or equivalent. Instructor: Paredes and Staff. One course. C-L: Education 126S

106ES. Latino/a Voices in Duke, Durham and Beyond. CCI, CZ, FL, W Formation of Latino/a identity(ies) and community voices through the lens of cultural, political, and social issues at local and national level. Topics: Minority voices, power and class, linguistic and artistic expression. Required weekly service work with GANO and the Mariposa Stories Project. Assessment on knowledge of content, oral and written Spanish, service. Recommended students take 100-level Spanish course prior to enrolling. Instructor: Paredes and Staff. One course. C-L: Latino/a Studies in the Global South
106S. The Making of Barcelona: Introduction to Catalan Language and Culture. CCI, CZ, FL The historical making of Barcelona as expressed in its architecture (the Gothic, the Modernista Movement, Gaudi, the new architects), the visual arts (Miro, Picasso), and other cultural forms; an introduction to the culture of Catalonia as well as to the Catalan language. Taught in Spanish, with exposure to Catalan language. Prerequisite: Spanish 76 or equivalent required. Instructor: Staff. One course. C-L: International Comparative Studies 182GS

107. 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.

108S. Advanced Colloquial Spanish. CCI, FL Colloquial Spanish as a catalyst of popular culture; extensive comparisons of English and Spanish popular sayings and proverbs; emphasis on oral communication. Prerequisite: two Spanish courses at the 100 level. Instructor: Staff. One course.

109. 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 101 or 104 or consent of instructor. Instructor: Staff. One course. C-L: Linguistics 122

109S. 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 123S

110S. 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 76, or appropriate AP, SAT II, or placement test score. Strongly recommended students take Spanish 101 before enrolling in this course. Students who have taken more than one course above 110S may not take this course. Instructor: Sieburth and staff. One course.

111. 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 101, 110S, or AP Spanish Literature score of 5. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 111B

112. 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 101, 110S, or AP Spanish Literature score of 5. Instructor: Staff. One course.


114S. Spanish Topics 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 76 or placement/achievement score of 630 or above. Instructor: Staff. One course.

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115. 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 101, 110S, or AP Spanish Literature score of 5. Instructor: Staff. One course. C-L: International Comparative Studies 130H, Latin American Studies

116. Introduction to Spanish-American Literature. ALP, CCI, FL A survey from Independence to the Contemporary period. Prerequisite: Spanish 101, 110S, 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

117S. Spanish-American Short Fiction. ALP, CCI, FL The development of the novella and short story from the nineteenth century to the twentieth century in Spanish America: Marti, Dario, Quiroga, Borges, Cortazar, Garcia Marquez, Allende, Ferre, Carpenter, and others. Not open to students who have taken Spanish 117A,S. Instructor: Staff. One course. C-L: Latin American Studies

120S. Introduction to Latino/a Studies in the Global South. ALP, CCI, SS One course. C-L: see Latino/a Studies in the Global South 100S; also C-L: Literature 162ES

121AD. Latin American Literature in Translation. ALP, CCI One course. C-L: see Literature 161AD; also C-L: International Comparative Studies 131CD

121D. 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 131C, Literature 163D, Latin American Studies

122S. Topics in Spanish and/or Latin-American Literatures and Cultures. ALP, CCI, CZ A cultural critique focusing on specific themes to be announced. Topics may include: cultural differences; relations between languages and literatures; national minorities and multiculturalism; postcolonialism; minor literatures; globalization. Taught in English. Instructor: Staff. One course.

124. 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.


127. The Idea of Latin America. CCI, CZ The idea of Latin America, as invented and created by European imperial powers and maintained by United States emerging imperialism at the turn of the twentieth century, in complicity with local Creole and Mestizo elites. Perspective on the geo- and body- politics of knowledge being enacted by radical intellectuals, indigenous and Afro-social movements, and the Social Forum of the Americas, to open up a new understanding of the global order and global power relations today. Taught in English. Instructor: Mignolo. One course. C-L: Literature 162B, Cultural Anthropology 128A, Latin American Studies

128. The Art and Cultural History of Flamenco. ALP, CCI, CZ One course. C-L: see Dance 128

129S. What's Lost in Translation? Latin American Theater in English. ALP, CCI, CZ Dramatic texts and theatrical traditions of Latin American theatre within their historical context. Role of theater as a critique and force for social transformation, challenges involved in translating highly polemical works from one culture to another. Taught in English. Instructor: Staff. One course. C-L: Theater Studies 127S, International Comparative Studies 132S, Cultural Anthropology 135S
131. Topics of 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

133S. Contemporary European Issues. CCI, CZ, FL An interdisciplinary seminar addressing topics pertaining to European culture, with special emphasis on Spain and its relationship to the rest of Europe. Instructor: Staff. One course. C-L: Cultural Anthropology 182, International Comparative Studies

137. Topics in Contemporary Spanish Culture. CZ, FL (Taught in Spain.) Instructor: Staff. One course. C-L: International Comparative Studies


142S. 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 111, 112, 115, or 116. Instructor: Staff. One course.

143. Spain: Special Topics Abroad. ALP, CCI, CZ, FL 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.

144S. Duke in Andes: Special Topics. CCI, FL Various aspects of literatures and cultures of the Andes. Specific topics to be announced. Instructor: Staff. One course. C-L: International Comparative Studies, Latin American Studies

145S. Mexicana Throught 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 Studies 126MS

146S. Cinemas of the Caribbean. ALP, CCI, EI, FL Visual culture, film criticism, cultural theory, and critical textual analysis. Distinguishes Spanish-speaking Caribbean from other Creole-speaking, Francophone, Anglophone Caribbeans. Focuses on ethical and political questions involving politics, theories of space, historical genealogies, involved in filmic representations of sex and gender, race, and national(ist) Caribbeanness. Instructor: Adrian. One course.

147S. 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 162CS

148A. Dictators and Democrats in Modern Latin America. CCI, FL, R, SS One course. C-L: see Political Science 151A; also C-L: International Comparative Studies, Latin American Studies

149A. Spanish and/or Latin American Literature Abroad. ALP, FL Transfer credit for literature courses taught in non-Duke programs abroad. Special topics course. Instructor: Staff. One course.
149S. 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 100-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.

151. 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 111, 112, 115 or 116. Instructor: Greer or staff. One course. C-L: Medieval and Renaissance Studies 151B, Information Science and Information Studies 151

152D. 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 123FD, Medieval and Renaissance Studies 152D

153. Golden Age Literature: Cervantes. ALP, CCI, 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 111, 112, 115 or 116. Instructor: Greer. One course. C-L: Medieval and Renaissance Studies 153B

155D. Mayas, Aztecs and Incas: The World According to the Indigenous People of Latin America. CZ, EI, FL, 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 131B, Cultural Anthropology 157


162S. 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.


169S. 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 111, 112, 115, or 116. Instructor: Sieburth. One course.
171. 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 111, 112, 115, or 116. Instructor: Staff. One course. C-L: International Comparative Studies

173S. 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. Not open to students who have previously taken this course as Spanish 138S. Instructor: Sieburth. One course. C-L: History 171S

175S. 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, Galdos, Borges, Marsi, and Puig. Taught in Spanish. Prerequisite: Spanish 111, 112, 115, or 116. Instructor: Sieburth. One course. C-L: International Comparative Studies, Latin American Studies


181S. United States 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 181S, Latin American Studies

191. 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.

192. Research Independent Study. R. See Spanish 191. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

193. Research Independent Study. R. See Spanish 191. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

194. Research Independent Study. R. See Spanish 191. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

195S. 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 100-level Spanish courses. Instructor: Student. One course.

198. 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.
200S. Seminar in Spanish Literature. ALP, FL Topics to be announced. Instructor: Staff. One course.
212S. 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 212S
280. 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

THE MAJOR

Prerequisite. French 15 or 76, Italian 15 or 76, Spanish 15 or 76, or equivalents.

Majors are offered in French Studies, Italian Studies, and Spanish, and several different tracks are offered, as described below. The range of courses offered in Romance Studies may be taken toward fulfillment of the following general education curriculum requirements: CCI, EI, FL, QID, 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. Courses designated as ROMST may be counted as related courses.

French Studies Major Requirements

The French Studies major offers two tracks: (1) French Studies and (2) French and European Studies.

Prerequisites: French 76 or equivalent (Advanced Placement language score of 5, SAT II score of 640 or above, or comparable linguistic experience).

1) French Studies: A total of ten courses at the 100 level and above, eight of which must be from departmental offerings taught in French. These eight core courses must include five from the categories Historical Itineraries (120-139*) and Cultural Literary Itineraries (140-180*), of which at least two must be from Historical Itineraries. The two remaining courses must be on French-related topics and may be taken either in the department or in other departments (consult the undergraduate major advisor concerning approved related courses).

2) French and European Studies: An interdisciplinary track requiring a total of ten courses at the 100 level or above, seven of which must be from departmental offerings taught in French. These seven core courses must include four from the categories Historical Itineraries (120-139*) and Cultural and Literary Itineraries (140-180*), at least one of which must be from Historical Itineraries. Three related courses on any French/European topic may be taken outside the department and not in the language of the major (consult the undergraduate major advisor concerning approved related courses).

* All courses from 113 to 179 should be considered to be of approximately equivalent difficulty.
related courses). Proficiency in another European language is highly desirable.

**Italian Studies Major Requirements**

The Italian Studies major offers two tracks: 1) Italian Studies and 2) Italian and European Studies.

*Prerequisite:* Italian 76 or equivalent

1. **Italian Studies:** A total of ten courses at the 100 level and above with an Italian designation. The Italian designation marks courses originating in the Italian program or crosslisted courses with Italian content offered by other departments or programs such as Art History, Cultural Anthropology, English, Film/Video/Digital Studies, History, International Comparative Area Studies, Literature, Medieval and Renaissance Studies, Music, Philosophy, Political Science, Religion, and Theater Studies. Romance Studies courses with Italian content can also be counted towards the major. Five of the ten courses must be taught in Italian, or have an Italian preceptorial (P) component (taught in Italian for students wishing to pursue Italian credit for the major) and must include three of the five core courses: Italian 108, 111, 112, 113, 114.

2. **Italian and European Studies:** An interdisciplinary track requiring a total of ten courses at the 100 level or above. Five courses taught in Italian must be taken, three of which must be core courses (Italian 108, 111, 112, 113, 114), and the others must have an FL designation or include courses with an Italian preceptorial component (P). Five related courses on any Italian and/or European topic may be taken outside the department and not in the language of the major (consult the undergraduate major advisor for approval of related courses).

**Spanish Major Requirements**

The Spanish major offers four tracks: (1) Spanish Studies, (2) Spanish and Latin American Studies, (3) Spanish and European Studies, and (4) Spanish Latin American and Brazilian Studies.

1. **Spanish Studies:** A total of ten courses at the 100 level and above, seven of which must be from departmental offerings taught in Spanish, except Spanish 105, which does not count toward the major. Spanish majors may count Spanish 104 or 107 toward the major, but not both. These seven core courses must include any two survey courses (111, 112, 115, 116) and at least three courses at the 140 level or above. The three remaining courses must be on Peninsular or Latin American topics and may be taken either in the department or in other departments (consult the undergraduate major advisor concerning approved related courses). A Brazilian or Lusophone literature or culture course taught in Portuguese at or above the 100 level offered by the department may be substituted for one of these three courses.

2. **Spanish and Latin American Studies:** An interdisciplinary track requiring a
total of ten courses at the 100 level and above, seven of which must be from departmental offerings taught in Spanish, except Spanish 105, which does not count toward the major. Spanish majors may count Spanish 104 or 107 toward the major, but not both. These seven core courses must include one survey course on Latin American literature (115 or 116), and at least three courses at the 140 level or above, two of which must be on Latin American topics. Three related courses on Latin American topics at or above the 100 level may be taken outside the department, and not in the language of the major. A Brazilian or Lusophone literature or culture course taught in Portuguese at or above the 100 level offered by the department may be substituted for one of these three courses. Proficiency in Portuguese is highly desirable (consult the undergraduate major advisor concerning approved related courses).

(3) Spanish and European Studies: An interdisciplinary track requiring a total of ten courses at the 100 level and above, seven of which must be from departmental offerings taught in Spanish, except Spanish 105, which does not count toward the major. Spanish majors may count Spanish 104 or 107 toward the major, but not both. These seven core courses must include one survey course on Peninsular topics (111 or 112) and at least three courses at the 140 level or above, two of which must be on Peninsular topics. Three related courses on a Spanish/European-related topic may be taken outside the department and not in the language of the major. Proficiency in another European language is highly desirable (consult the undergraduate major advisor concerning approved related courses). A Brazilian or Lusophone literature or culture course taught in Portuguese at or above the 100 level offered by the department may be substituted for one of these three courses.

(4) Spanish Latin American and Brazilian Studies: An interdisciplinary track requiring a total of ten courses at the 100 level or above, nine of which must be from departmental offerings taught in Spanish or Portuguese. Of these nine courses, three must be in Portuguese, and six in Spanish, excluding Spanish 104 and 105, which do not count towards the major. These nine core courses must include one survey course on Latin American literature (115 or 116) and one survey/period course on Brazilian literature (Portuguese 113 or a 200 level course). At least four courses must be at the 140 level or above, two in Spanish and two in Portuguese. The remaining course may be a related course on Latin American or Brazilian topic at or above the 100 level taught outside the department, and not in the languages of the major. (Consult the undergraduate major advisor concerning approved related courses.)
Combined Major in French and Italian Requirements
A combined major in French and Italian requires at least 14 courses at the 100 level or above, which must be from departmental offerings on campus or abroad.

French: The seven courses in French must include four from the categories Historical Itineraries (120-139) and Cultural and Literary Itineraries (140-180), at least one of which must be from Historical Itineraries. All courses must be taught in French.

Italian: The seven courses in Italian must be at the 100 level or above. Five of these courses must be taught in Italian.

Combined Major in French and Spanish Requirements
A combined major in French and Spanish requires at least 14 courses at the 100 level or above, which must be from departmental offerings taught in French or Spanish on campus or abroad. One course taught in Portuguese can be substituted for a Spanish course.

French: The seven courses in French must include four from the categories Historical Itineraries (120-139) and Cultural and Literary Itineraries (140-180), at least one of which must be from Historical Itineraries.

Spanish: The seven courses in Spanish must include any two survey courses (111, 112, 115, 116) and at least three courses at the 140 level or above. All courses must be taught in Spanish.

Combined Major in Italian and Spanish Requirements
A combined major in Italian and Spanish requires at least 14 courses at the 100 level or above, which must be from departmental offerings on campus or abroad. One course taught in Portuguese can be substituted for a Spanish course.

Italian: The seven courses in Italian must be at or above the 100 level. Five of these courses must be taught in Italian.

Spanish: The seven courses must include any two survey courses (111, 112, 115, 116) and at least three courses at the 140 level and above. All courses must be taught in Spanish.

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. Further information may be obtained from the director of undergraduate studies or the assistant to the director.

THE MINOR
Minors are offered in French, Italian, and Spanish Studies.

French Studies
Requirements: A total of five courses from departmental French offerings numbered 100 or above and taught in French. These must include three courses from the categories Historical Itineraries (120-139) and Cultural and Literary Itineraries (140-180), of which at least one must be from Historical Itineraries. (N.B.: all courses from 113 to 179 should be considered to be of approximately equivalent difficulty.)

Italian Studies
Requirements. A total of five courses from departmental Italian offerings numbered 100 or above. These must include at least one of the five core courses (Italian 108, 111, 112, 113, 114). Three of the courses must have an FL designation or include courses with an Italian preceptorial component (P).

Courses 100-129 are taught in Italian and have an FL designation. Courses 130 and above are taught in English and are open to students without previous study on Italian.

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Students desiring an Italian component can enroll in the P section of those courses and are required to do their coursework in Italian.

Majors and minors are also encouraged to take advantage of 200-level course offerings.

Spanish Studies

Requirements. A total of five courses from departmental Spanish offerings numbered 100 or above, except Spanish 105; Spanish 104 or 107 may be counted, but not both. These must include one survey course (111, 112, 115, or 116) and at least two courses at the 140 level or above. All five courses must be taught in Spanish.

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:

I. Department-Administered Programs
   A. 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.
   B. 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.
   C. 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.

II. 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.

III. 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.

IV. 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.

V. Duke-Administered Summer Programs (Office of Study Abroad)
   A. Duke-Administered Summer Programs in the Language
      1) Duke-in-Barcelona; Duke-in-Spain. Major: Two courses may be counted toward the core-course requirement. Minor: Two courses may be counted.
2) **Duke-in-Paris.** *Major:* Two courses may be counted toward the core-course requirement. *Minor:* Two courses may be counted.

3) **Duke-in-Brazil.** *Spanish Latin American & Brazilian Studies Major:* Two courses may be counted. *Spanish Studies, Spanish & Latin American Studies, or Spanish & European Studies Major:* One course may be counted.

4) **Duke-in-Mexico.** Intensive Elementary & Intermediate Spanish

B. **Duke-Administered Summer Programs in English (Duke-in-Venice).** *Major or Minor:* One course may be counted toward the core-course requirement.

VI. **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 614.

**Study of Sexualities (SXL)**

Associate Professor Wilson (Women's Studies), *Director*

A certificate, but not a major, is available in this program.

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.

Students must take as an introductory course Study of Sexualities 115S, and five additional courses, one of which must be a special senior seminar, Study of Sexualities 195S, designed mainly for program participants. Of the total six courses, no more than three can originate in a single department, and four must be at or above the 100 level. Appropriate courses may come from the list given below and may include other courses (new courses, special topics courses, and independent study) as approved by the director. Regular courses are described under the listings of the various departments. Students may also wish to take advantage of house courses offered on topics in this area although house courses cannot satisfy the requirements of the program.

49S. **First Year Seminar.** New concepts and themes in the Study of Sexualities. Topics vary each semester. Instructor: Staff. One course.

115S. **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 109S

120. **Selected Topics.** Lecture version of Study of Sexualities 120S. Topics vary each semester offered. Instructor: Staff. One course.

120S. **Seminars in Selected Topics.** Topics vary each semester offered. Instructor: Staff. One course.

130. **Gender, Sexuality, and Human Rights.** CCI, EI, SS One course. C-L: see Women's Studies 168A

130S. **Gender, Sexuality, and Human Rights.** CCI, EI, SS One course. C-L: see Women's Studies 168S

131S. **Vampire Chronicles: Fantasies of Vampirism in a Cross-cultural Perspective.** ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 141S; also C-L: Cultural Anthropology 142, Literature 151M, International Comparative Studies 122E, Women's Studies 131S

612 Courses and Academic Programs
135S. Clinical Issues for the LGBTQ Community. 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 135S, Psychology 143S


140S. Queer Theory. One course. C-L: see Women's Studies 170AS

145S. Race, Gender, and Sexuality. CCI, SS One course. C-L: see Women's Studies 164S

190S. Capstone Seminar: Modern Sex: Sexuality and Modernity in the Americas. CCI, CZ, R, SS One course. C-L: see History 196CS

195S. Senior Seminar in Study of Sexualities. CCI, R, SS Advanced research course for students pursuing the certificate in Study of Sexualities. Topics vary by semester. Prerequisite: Study of Sexualities 115. Instructor: Staff. One course. C-L: Women's Studies

PROGRAM COURSES OFFERED THROUGH OTHER DEPARTMENTS

Arts of the Moving Image
115S. Sexualities in Film and Video

Cultural Anthropology
108. Fantasy, Mass Media, and Popular Culture
113. Gender and Culture
191J. Gender and Sexuality in Latin America

Dance
175. Gender in Dance and Theatre

International Comparative Studies
101E. Gender and Culture
103E. Fantasy, Mass Media, and Popular Culture
130B. Gender and Sexuality in Latin America

Literature
115S. Sexualities in Film and Video
184S. Feminist Classics

Medieval and Renaissance Studies
234A. Early Christian Asceticism

Political Science
187S. Politics and the Libido

Psychology
177S. Human Sexuality

Religion
125. Women and Sexuality in the Christian Tradition
234. Early Christian Asceticism

Sociology
118. Sex, Gender, and Society
149. Sexuality and Society

Theater Studies
132. Gender in Dance and Theatre

Visual Studies
110B. Fantasy, Mass Media, and Popular Culture
121CS. Sexualities in Film and Video

Women's Studies
111. Gender in Dance and Theatre
117. Gender and Culture
161S. Money, Sex and Power

Study of Sexualities (SXL)  613
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.

SLAVIC AND EURASIAN STUDIES (SES)

145. 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 145, Asian & Middle Eastern Studies 128, International Comparative Studies, Islamic Studies

154. Imperial Russia 1700-1917. CCI, CZ 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 154, History 154

179FCS. Turkey: Muslim and Modern. CCI, CZ 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 179FCS, Islamic Studies

180FCS. 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 178FCS, Linguistics 180FCS

181FCS. 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 113FCS

182. Putin's Russia: The History of Economic and Political Consolidation. CCI, CZ, EI, SS One course. C-L: see History 182; also C-L: Political Science 180

184S. Journey to Eurasia. ALP, CCI, CZ 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 184S, International Comparative Studies

185. Islam in Central Eurasia. CCI, CZ 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 185, Religion 165, Russian 190, International Comparative Studies

186. 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. C-L: Literature 164CS

190. Special Topics in Slavic and Eurasian Studies. Subject varies from semester to semester. Instructor: Staff. One course.

190S. Special Topics in Slavic and Eurasian Studies. Subject varies every semester. Instructor: Staff. One course.

BALTO-FINITC (BALTFIN)

100. Duke-Administered Study Abroad: Advanced Special Topics in Balto-Finnic. CCI Topics differ by section. Instructor: Staff. One course.
HUNGARIAN (HUNGARN)


63. Intermediate Hungarian Language and Culture. FL Focus on the study of Hungarian phonetics, grammar, discourse, textual analysis, and writing. Prerequisites: Hungarian 1 and 2 or Hungarian 14 or consent of instructor. Instructor: Staff. One course.

70. Intensive Intermediate Hungarian. FL Intensive study of Hungarian at the intermediate level. Equivalent of two semesters. Prerequisites: Hungarian 1 and 2 or equivalent. Instructor: Viktorov. Two courses.

100. Duke-Administered Study Abroad: Advanced Special Topics in Hungarian. CCI Topics differ by section. Instructor: Staff. One course.

PASHTO (PASHTO)

1. Elementary Pashto I. FL Acquisition of the Arabic-based script, the mechanics of right-to-left reading and writing, the sounds of the language, and the basic sentence types. Emphasis on reading comprehension and writing, accurate pronunciation and spoken ability. Simple dialogues and conversations used to lay the foundation for oral proficiency. Includes poems and short videos, online multimedia resources, and interaction with class guests. Instructor: Staff. One course.

2. Elementary Pashto II. FL Continuation of Pashto I. Prerequisite: Pashto I. Instructor: Staff. One course.

63. Intermediate Pashto I. FL Intensive classroom and laboratory practice in spoken and written patterns. Prerequisite: Pashto 1 and 2. Instructor: Staff. One course.

64. Intermediate Pashto II. FL Continuation of Pashto 63. Prerequisite: Pashto 1, 2, 63, or equivalent. Instructor: Staff. One course.

PERSIAN (PERSIAN)


2. Elementary Persian. FL Continuation of Persian 1. Instructor: Staff. One course.


64. Intermediate Persian. FL Continuation of Persian 63. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Persian. CCI Topics differ by section. Instructor: Staff. One course.

POLISH (POLISH)

1. Elementary Polish. FL Introduction to understanding, speaking, reading, and writing Polish. No preliminary knowledge of Polish necessary. Instructor: Staff. One course.

2. Elementary Polish. FL Introduction to understanding, speaking, reading, and writing Polish. No preliminary knowledge of Polish necessary. Second half of Polish 1, 2. Prerequisite: Polish 1. Instructor: Staff. One course.

63. Intermediate Polish. FL Intensive classroom and laboratory practice in spoken and written patterns. Readings in contemporary literature. Prerequisites: Polish 1 and 2, or consent of instructor. Instructor: Staff. One course.

64. Intermediate Polish. FL Continuation of Polish 63. Prerequisite: Polish 63 or consent of instructor. Instructor: Staff. One course.

101S. Contemporary Polish Composition and Readings. CCI, FL. Advanced grammar and syntax with intense composition component. Analytical readings in the original. Prerequisite: Polish 63 and 4, or equivalent. Instructor: Staff. One course.

102S. Contemporary Polish Composition and Readings. CCI, FL. Continuation of Polish 101S. Prerequisite: Polish 101S. Instructor: Staff. One course.

174S. Topics in Polish Literature. ALP, CCI. Selected Polish writers and works in their literary and historical contexts. Taught in English. Instructor: Holmgren. One course. C-L: International Comparative Studies 160S

175. 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.

184S. 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 Wyspianksi; 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 121S, International Comparative Studies 160FS

185S. 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 150CS, Jewish Studies 185S

ROMANIAN (ROMANIAN)


63. Intermediate Romanian Language and Culture. FL. Focus on the study of Romanian phonetics, grammar, discourse, textual analysis, and writing. Prerequisite: Romanian 14 or consent of instructor. Instructor: Staff. One course.

70. Intensive Intermediate Romanian. FL. Intensive study of Romanian at the intermediate level. Equivalent of two semesters. Prerequisite: Romanian 14 Instructor: Staff. Two courses.

RUSSIAN (RUSSIAN)

1. 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.

2. Elementary Russian II. FL. Continuation of Russian 1. Introduction to understanding, speaking, reading, and writing. Study of contemporary Russian language and important elements of Russian culture. Second half of Russian 1, 2. Prerequisite: Russian 1. One course.


10. 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.


49S. 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.

61S. 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 2 or equivalent. Instructor: Staff. One course.

62S. Intermediate Russian Language and Culture. CZ, FL Continuation of Russian 61S. (Taught in St. Petersburg in Russian and English depending on placement.) Prerequisite: Russian 61S or equivalent. Instructor: Staff. One course.

63. Intermediate Russian I. FL Intensive classroom and laboratory practice in spoken and written patterns. Reading in contemporary literature. Prerequisite: Russian 1 and 2, or two years of high school Russian. Instructor: Flath. One course.

64. Intermediate Russian II. FL Intensive classroom and laboratory practice in spoken and written patterns. Reading in contemporary literature. Prerequisite: Russian 1, 2 and 63 or equivalent. Instructor: Flath. One course.

66. Intermediate Russian Conversation. Consolidation of oral skills. Intensive conversation on a broad range of topics. Prerequisite: Russian 1 and 2, or equivalent. Instructor: Staff. Half course.


70. Intensive Intermediate Russian. FL Russian 63 and 64 combined. Two meetings daily, as well as daily computer and language laboratory work. Instructor: Staff. Two courses.


101S. Contemporary Russian Composition and Readings. CCI, FL Advanced grammar and syntax with intense composition component. Analytical readings in the original. Prerequisite: Russian 63 and 64, or equivalent. Instructor: Staff. One course.

102S. Contemporary Russian Composition and Readings. CCI, FL Continuation of Russian 101S. Prerequisite: Russian 101S. Instructor: Staff. One course.

103S. 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 64 or equivalent. Instructor: Staff. One course. C-L: International Comparative Studies

104S. Studies in the Russian Language and Culture. CCI, CZ, FL Continuation of Russian 103S. Prerequisite: Russian 103S or equivalent. Instructor: Staff. One course. C-L: International Comparative Studies

105. Third-Year Russian Conversation. Conversation course for students enrolled in Russian 101S. Not open to students currently taking Russian 63 or Russian 196. Instructor: Staff. Half course.

106. Third-Year Russian Conversation. Continuation of Russian 105. Conversation course for students enrolled in Russian 102S. Not open to students currently taking Russian 64 or Russian 196. Instructor: Staff. Half course.

107S. Russian Phonetics. CCI, FL Analysis of contemporary standard Russian literary pronunciation, phonology, and intonational structures. Prerequisite: Russian 64 or consent of instructor. Instructor: Staff. One course.

109. 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 107, Information Science and Information Studies

111S. 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.

112S. Senior Honors Seminar. R, W Continuation of Russian 111S. Consent of the director of undergraduate studies required. Instructor: Staff. One course.

113. Movies of the World/The World of Movies. ALP, CCI, STS One course. C-L: see Literature 113; also C-L: German 156, Arts of the Moving Image 112

115. 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.

116. 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.

117. Languages of the World. CCI, SS One course. C-L: see Linguistics 102; also C-L: Cultural Anthropology 114, International Comparative Studies 102E

118FCS. Islam and Orthodoxy. CCI, CZ Same as Russian 118S; open only to students in the Focus Program. Instructor: Staff. One course. C-L: Islamic Studies

118S. Islam and Orthodoxy. CCI, CZ The history, doctrines, institutions, controversies, and influences of Russian Orthodox Church and Islam in Eurasian Russia. Relationship between Orthodoxy and conceptions of Russia's identity and place in the world, and the character and socio-political function of Islam in the Turkish regions of Central Asia, the Caucasus, and the Balkans. Historical surveys beginning with Byzantine and Muslim missions to Volga region in ninth century CE and ending with the reemergence of Orthodoxy and Islam in the post-Soviet era. One course. C-L: Islamic Studies
119FCS. The Empire's Western Front: Russian and Polish Cultures. ALP, CCI, CZ
Same as Russian 119S; open only to students in the Focus Program. Instructor: Holmgren. One course.

119S. 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.

123. 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.

124S. Russian Language and Culture through Film. CCI, FL, SS, STS
Study of Russian cultural paradigms and constructs of self and other as demonstrated in Russia 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 101S or equivalent or consent of instructor. Instructor: Maksimova. One course. C-L: Visual Studies 127AS

125. Eastern Europe in Transition: Markets, Media, and the Mafia. CCI, CZ, SS

126S. Russian Language and Culture through Film II. ALP, CCI, FL, SS, STS
Continuation of Russian 124S. 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 101S or equivalent, or consent of instructor. Instructors: Maksimova. One course. C-L: Visual Studies 127CS

127. 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 101S or equivalent or consent of instructor. Instructors: Maksimova, McAuliffe, and Viktorov. One course.

128. 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 Soviet and Russian culture and Russian and European/American culture. Prerequisite: Russian 101S or equivalent or consent of instructor. Instructors: Andrews and Mickiewicz. One course.
131. 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.

132S. 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: International Comparative Studies, Women's Studies

133FCS. Neuroscience and Human Language. NS, SS
One course. C-L: see Linguistics 133FCS

133S. Neuroscience and Human Language. NS, SS
One course. C-L: see Linguistics 133S; also C-L: Neuroscience 176S

134. 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. C-L: Literature 151LS, International Comparative Studies 160B

135A. Contemporary Russian Media. CCI, EI, FL, SS
Same as Russian 135 but taught only in St. Petersburg. Taught in Russian. Prerequisite: Russian 64 or equivalent. Instructor: Staff. One course. C-L: Visual Studies 127E, International Comparative Studies, Arts of the Moving Image

136. The New Russia: Reflections of Post-Soviet Reality in Literature & 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, Petrushevskaya, Sadur, Shishkin, Minaev, Tolstaya, Akunin, Ulitskaya and filmmakers Bodrov, Rogenzhin, Bekmambetov, Khlebnikov/Popogrebsky, Balabanov, and Sokurov. Readings and class discussions in English. Instructor: Apollonio. One course. C-L: International Comparative Studies 160E

139FCS. Law and Globalization in Emerging Markets. CCI, SS
Same as Russian 139S; open only to students in the Focus Program. Instructor: Newcity. One course. C-L: International Comparative Studies 161FCS, Public Policy Studies 135FCS

139S. 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 135S, International Comparative Studies 161E

140. Law and Constitutional Reform in Russia and the Former Soviet Union. CCI, CZ
Russia's efforts to create a constitutional government from a variety of perspectives, with particular emphasis on the political, historical, and legal aspects. Legal and constitutional changes in Russia compare or contrast with reforms in other transitional states. Instructor: Newcity. One course. C-L: International Comparative Studies 161C, Political Science 105
141S. 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.


144. 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 144B

145. 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: Flath. One course.

146S. Tennessee Williams and Anton Chekhov. ALP, CCI One course. C-L: see Theater Studies 177S


149S. 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: History 114BS, International Comparative Studies

150. Russian Revolutionary Cinema. CCI, CZ One course. C-L: see History 150E; also C-L: Arts of the Moving Image 111N

150A. End of Russian Socialism: History of Perestroika. CCI, CZ, EI, SS One course. C-L: see History 114A

154. Imperial Russia 1700-1917. CCI, CZ 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 154, History 154

155. 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

155S. Special Topics in Russian and American Culture. Seminar version of Russian 155. Instructor: Staff. One course.

157. Law, Culture, and the Russian Legal Tradition. CCI, CZ, EI, SS. The development of the Russian legal tradition, with particular emphasis on the historical, ethical and cultural factors that have contributed to its emergence, comparing the Russian tradition with the Western legal tradition. How law, lawyers, and legal institutions have been portrayed and perceived in Russian popular culture, especially Russian literature, including the relationship between secular legal institutions and the Russian Orthodox Church. Taught in English. Instructor: Newcity. One course. C-L: Public Policy Studies 131, International Comparative Studies

158. 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.


162. Masterpieces of Nineteenth-Century Russian Literature II. ALP, CCI, W. Selected authors, works, and genres from the second half of the nineteenth century. Authors include Turgenev, Chernyshevsky, Dostoevsky, Tolstoy, Saltykov-Schedrin, and Chekhov. Comparative analysis of Russian, European and American literature of the period. Taught in English. Instructor: Flath. One course. C-L: International Comparative Studies


166. 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 49S or have taken Russian 175 or 176. Instructor: Staff. One course.

167. 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.
169. 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: International Comparative Studies, Women's Studies


178A. 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

182. 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 185

182FCS. Russian Art and Politics. ALP, CCI, CZ Same as Russian 182, but open only to students in the FOCUS program. Instructor: Kachurin. One course. C-L: Art History 185FCS

183S. 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 183S, Theater Studies 122AS

185S. 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 174AS, International Comparative Studies 161JS, Public Policy Studies 196LS

190. Islam in Central Eurasia. CCI, CZ 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 185, History 185, Religion 165

193. 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.


195. 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 102S or consent of instructor. Instructor: Maksimova. One course. C-L: International Comparative Studies

196. 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 195 or consent of instructor. Instructor: Maksimova. One course. C-L: International Comparative Studies 161A

198. 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 195 and 196, or consent of instructor. Instructor: Maksimova. One course.

199. Russian Stylistics and Conversation. ALP, CCI, FL, W Continuation of Russian 198. Prerequisite: Russian 195 and 196, or consent of instructor. Instructor: Maksimova. One course. C-L: International Comparative Studies 160A

For Seniors and Graduates


206. **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.

208. **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 64 or consent of instructor. Instructor: Maksimova. One course.

211. **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 102S or equivalent. Instructor: Andrews or Maksimova. One course.

215. **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.

216. **Cognitive and Neurolinguistics.** NS, R, SS One course. C-L: see Linguistics 201; also C-L: Neuroscience 231S

224S. **Russian Language and Culture through Film.** ALP, CCI, FL, SS, STS Study of Russian cultural paradigms and constructs of self and other as demonstrated in Russia and Soviet films, primarily from 1960s to the present. Special attention 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. Includes oral and written presentations and analysis which require the usage of additional film text and secondary critical literature. Prerequisite: Russian 101S or equivalent or consent of instructor. Instructor: Maksimova. One course. C-L: Visual Studies 224S

226S. **Russian Language and Culture through Film II.** ALP, CCI, FL, SS, STS Continuation of Russian 224S. Analysis of Russian cultural paradigms and linguistic issues through contemporary Russian & Soviet film, including constructs of self and other, 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. Oral and written presentations and analysis which require the usage of additional film text and secondary critical literature are
central components of the course. Prerequisite: Russian 101S or equivalent or consent of instructor. Instructor: Maksimova. One course. C-L: Visual Studies 226S

242S. 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 244


244. 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 144 but requires additional assignments. Instructor: Gheith. One course.

245. 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: Flath. One course.


258. 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.

262. Masterpieces of Nineteenth-Century Russian Literature II. ALP, CCI Selected authors, works, and genres from the second half of the nineteenth century. Authors include Turgenev, Chernyshevsky, Dostoevsky, Tolstoy, Saltykov-Shchedrin, and Chekhov. Taught in English. Readings in Russian. Instructor: Staff. One course. C-L: International Comparative Studies


269. 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: International Comparative Studies, Women's Studies
271S. Bunin: Mystery of the Russian Soul and Metaphysical Memory. ALP, CCI, FL, R
Same as Russian 171S, but includes additional assignments. Taught in Russian. Readings

275. 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.

276. Dostoevsky. ALP, CCI Introduction to life, works, and criticism. Readings include:
Crime and Punishment, The Idiot, and The Brothers Karamazov. Taught in English.
Readings in Russian. Instructor: Flath or Gheith. One course. C-L: International
Comparative Studies

277S. Chekhov. ALP, CCI Drama and prose works. Readings in Russian. Instructor: Flath.
One course.

286S. 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.

288AS. Apocalyptic Visions and Diabolic Drama: The Works of Mixail Bulgakov. ALP,
CCI, FL Critical analysis of Bulgakov's short stories, novellas, plays and novels. In-depth
exposure to major critical works on Bulgakov and influential figures. Taught in Russian.

288B. Apocalyptic Visions and Diabolic Drama: The Works of Mixail Bulgakov. ALP, CCI,
R Critical analysis of Bulgakov's short stories, novellas, plays and novels. In-depth exposure
to major critical works on Bulgakov and influential figures. Taught in English. Readings in

299S. Special Topics. CCI Seminars in advanced topics, designed for seniors and graduate
students. Instructor: Staff. One course.

SERBIAN AND CROATIAN (SERBCRO)
100. Duke-Administered Study Abroad: Advanced Special Topics in Serbian and Croatian.
CCI Topics differ by section. Instructor: Staff. One course.

TURKISH (TURKISH)
1. Elementary Turkish. FL Introduction to understanding, speaking, reading, and writing
Turkish. Instructor: Staff. One course.

2. Elementary Turkish. FL Introduction to understanding, speaking, reading, and writing
Turkish. Second half of Turkish 1, 2. Prerequisite: Turkish 1. Instructor: Staff. One course.

10. 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

11. Accelerated Turkish Language and Culture II. CZ, FL Continuation of Turkish 10.
Intermediate level of proficiency in five areas, grammar, speaking, listening comprehension,
reading and writing. Language taught embedded in cultural constructs. Prerequisite: Turkish
10 or equivalent. Instructor: Goknar. One course. C-L: Islamic Studies

63. Intermediate Turkish. FL Classroom and laboratory practice in spoken and written
patterns. Readings in contemporary literature. Prerequisites: Turkish 1 and 2, 14, or consent
of instructor. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Turkish. CCI Topics
differ by section. Consent of department required. Instructor: Staff. One course.
101S. 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.

102S. Contemporary Turkish Composition and Readings. CCI, FL Continuation of Turkish 101S. Prerequisite: Turkish 101S. Instructor: Staff. One course.

105S. 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: Literature 163HS, Islamic Studies

106FCS. Cultures of Conflict: From Bosnia to Afghanistan in Film and Fiction. 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. Open only to students in the Focus Program. One course. C-L: Slavic and Eurasian Studies 106FCS, Islamic Studies

106S. 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: Islamic Studies

120S. 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: International Comparative Studies 162AS, Slavic and Eurasian Studies 120S, Islamic Studies

132. Representing the Middle East. CCI, CZ, SS One course. C-L: see Cultural Anthropology 132; also C-L: Asian & Middle Eastern Studies 132, History 131B, International Comparative Studies 141B, Visual Studies 110H, Islamic Studies


135. 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: Cultural Anthropology 152, Religion 161F, History 141A, International Comparative Studies 162A, Islamic Studies

135FCS. 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.

136. Thinking About God: The Nature of Religious Belief at the Crossroads of Judaism, Christianity, & Islam. CCI, CZ, EI One course. C-L: see Philosophy 135; also C-L: Cultural Anthropology 120B, Religion 161V, International Comparative Studies 102F

145. 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 145, Asian & Middle Eastern Studies 128, International Comparative Studies, Islamic Studies

179FCS. Turkey: Muslim and Modern. CCI, CZ 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 179FCS, Islamic Studies

220S. 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.

235. 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

245. 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.

299S. Special Topics. Seminars in advanced topics, designed for seniors and graduate students. Instructor: Staff. One course.

UKRAINIAN (UKRAIN)


100. Duke-Administered Study Abroad: Advanced Special Topics in Ukrainian. CCI Topics differ by section. 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 100-level or above. All majors must take the following courses: Russian 63, 64, 101S, 102S, 195, 196 or equivalent. Each major is additionally required to take four courses, of which at least two have a primary focus on
Russian literature. The department urges students to consider coursework that would include at least one 200-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 their histories and contemporary interactions.

Major Requirements: To earn a major in Slavic and Eurasian Studies, students must complete ten (10) courses, 8 of which must be at the 100-level or above. Required courses are “Mapping Slavic and Eurasian Studies” (Slavic and Eurasian Studies 101); a capstone seminar (Slavic and Eurasian Studies 197S) in their junior or senior year, which includes a significant research component; four (4) language courses above the 002 level of either Russian (e.g., Russian 63, 64, 101S, 102S) or Turkish (Turkish 10, 11, 101S, 102S); and four content (elective) courses on Slavic and Eurasian Studies topic with no more than two of these on an exclusively Slavic topic. The department of Slavic and Eurasian Studies also offers Romanian, Polish, and Persian on a regular basis and Georgian on a semi-regular basis. These languages can be counted as fulfilling the language requirement with prior approval from the Director of Undergraduate Studies.

Appropriate content courses may come from a list of approved courses (to be found on the department Web site at http://www.duke.edu/web/slavic/) or may include other courses (new courses, special topics courses, independent study) with at least 50 percent course content in Slavic and Eurasian studies. To determine if specific courses meet requirements for the major, students should consult 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 the two Focus seminars will count toward the 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, three of which must be at the 100-level or above. At least two courses must be in the Russian language.

Russian Literature in Translation

Requirements: Five courses, three of which must be at the 100-level.

Turkish Language and Culture

Requirements: Five courses, three of which must be at the 100-level or above. Two courses must be in the Turkish language.

Sociology (SOCIOL)

Professor Spenner, Chair; Associate Professor of the Practice Bach, Director of Undergraduate Studies; Professors Bonilla-Silva, Burton, Chaves, George, Gereffi, Gao, Keister, Land, Lin, McPherson, Moody, O’Rand, Smith-Lovin, Spenner; Associate Professors Brady, Healy, Read; Professors Emeriti Maddox, 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); Research Professors Stallard and Yashin; Associate Research Professor Shanahan (ethics); Visiting Professors Jones and Reeves; Visiting Assistant Professor Hovsepian; Visiting Lecturers Grady 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.

10. Sociological Inquiry. SS Structure and dynamics of groups, organizations, and institutions; social behavior over the life cycle; social control and deviance; population and social ecology; formation and change of societies. Instructor: Staff. One course.

11. 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. Includes a Service Learning component. Instructors: Bach and Land. One course. C-L: Children in Contemporary Society

49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.


90S. 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.

98. Introduction to Canada. SS One course. C-L: see Canadian Studies 98; also C-L: History 98, Political Science 98, International Comparative Studies 98

99AFCS. Contemporary American Society. CCI, R, SS Relationships among voluntary association, ideology, and identity. Theoretical focus on ecological models borrowed from biology to increase understanding of how voluntary associations grow, decline, and change their composition (and therefore their ability to integrate society) and how associations lead to personal identity, belief systems and even cultural tastes. Analysis of data from a national survey of voluntary memberships and network ties, from the first representative survey of church congregations, and from a study of identities, actions and emotion. Open only to students in the Focus Program. Instructor: McPherson, Morgan, or Smith-Lovin. One course.

99BFCS. 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.

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99CFCS. A Single Europe? Dreams and Reality. CCI, EI, R, SS The cultural effects of European integration and how European Union policies affect collective identities in Europe. Topics include: emergence of European identity, regionalism, nationalism/post-nationalism, immigration and inter-group violence. Open only to students in the Focus Program. Instructor: Staff. One course.

99DFCS. U. S. Latinos in Sociological Perspective: Immigration and Adaptation. CCI, SS The sociological aspects of Latin American immigration to the United States. The historical origins of the migration flow as well as its current characteristics. Problems that immigrants face as they struggle to incorporate into United States society, the impact that migration has on the native-born population of the United States particularly other minority groups, and the impact on the sending countries and communities. The changes that migration engenders in individuals and families, such as its effect on social mobility and gender relations; the heterogeneity of the Latino population. Open only to students in the Focus Program. Instructor: Staff. One course.

99EFCs. Race Relations in the Modern South. CCI, SS The effects of law on racial dynamics, the changing meaning of race in popular and policy discourse, and the impact of recent immigration, particularly Latino immigration, on historical patterns of Southern race relations. Issues addressed through critical reading of a set of historical monographs and the analysis of primary data on racial inequality, racial segregation and racial collective violence. Open only to students in the Focus Program. Consent of instructor required. Instructor: Staff. One course.

99FFCS. Psychosocial Development of the Mind Through the Life Course. CCI, SS One course. C-L: see Psychology 94FCS

99GFCs. Freedom and American Constitutional Law. CCI, EI, SS Examination of how the idea of freedom is translated into the American legal system. Emphasis on understanding the American legal framework and legal reasoning. Reading will include major Supreme Court opinions. Focus on legal rights in education and race. Opportunities to work with Civil Rights attorneys. Open only to students in the Focus Program. Instructor consent required. Instructor: Tobin. One course.

99HFCs. 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.

99IFCS. 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 Certificate 99IFCS

99JFCs. The Limits of Obligation? World Refugee Policy and International Law. 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 99FCS

100. Duke-Administered Study Abroad: Advanced Special Topics in Sociology. CCI, SS Instructor: Staff. One course.

104FCS. 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.

106. Social Psychology. SS One course. C-L: see Psychology 104RE

110. 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: Gao, Gereffi, Lin, or Parrado. One course. C-L: International Comparative Studies, Markets and Management Studies

111. 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: Early Childhood Education, Women's Studies


114. 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: Lin. One course. C-L: Information Science and Information Studies, Markets and Management Studies

115. 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 115

116. 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: Staff. One course. C-L: African and African American Studies 116, Children in Contemporary Society, Latino/a Studies in the Global South

117. **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: Children in Contemporary Society, Early Childhood Education


119. **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, delinquent 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: Children in Contemporary Society

120. **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.


122. **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.

124. **Human Development. CCI, EI, R, SS** One course. C-L: see Human Development 124; also C-L: Psychology 124, Early Childhood Education
125. **Comparative Approaches to Global Issues (B, D).** CCI, CZ, SS One course. C-L: see International Comparative Studies 125; also C-L: Cultural Anthropology 125, History 137, Political Science 125, Religion 183

126. **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

127. **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. C-L: Children in Contemporary Society

128S. **Visual Research and the American Dream.** ALP, R, SS One course. C-L: see Documentary Studies 122S; also C-L: Visual Studies 103PS

129. **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 141, Markets and Management Studies

130S. **Women and the Professions.** EI, R, SS, W One course. C-L: see Education 149S; also C-L: Ethics

131. **Women at Work: Gendered Experience of Corporate Life.** CCI, SS, STS One course. C-L: see Women's Studies 140

132A. **Methods of Social Research.** R, SS, W Principles of social research, design of sociological studies, sampling, and data collection with special attention to survey techniques. Instructor: Brady, George, Lin, or Morgan. One course.

132B. **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 statistics course. Course restricted to first and second Sociology majors. Instructor: McPherson or Staff. One course.

136. **Urban Education.** CCI, SS One course. C-L: see African and African American Studies 147; also C-L: Education 147, Children in Contemporary Society

138. **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: Moody or Healy. One course.
139. Marxism and Society. SS One course. C-L: see Literature 181A; also C-L: Cultural Anthropology 139, Education 139, History 186, International Comparative Studies

141. Consuming Passions. EI, R, SS How sociological theories and methods of analysis aid understanding of the causes and consequences of consumption in modern life, ranging from ethnographic observations of collecting to social surveys of shopping habits. The ethics of a culture where everything has its price and of a global order where consumerism is threatening local cultures. Research paper required. Instructor: Gao. One course. C-L: Ethics, Markets and Management Studies

142D. 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 social, political, 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

144. 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

145. 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, Markets and Management Studies

149. 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 149, Study of Sexualities, Women's Studies

150. 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 Morgan. One course. C-L: Children in Contemporary Society, Early Childhood Education, Women's Studies

151. 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 161R

152S. Sociology through Photography. ALP, SS One course. C-L: see Documentary Studies 146S; also C-L: Visual Studies 103RS
153. **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.


155. **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: Brady or Keister. One course. C-L: Markets and Management Studies, Women's Studies

155B. **Organizations & 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

156. **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 biotechnology, 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

158. **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

159. **The Sociology of Entrepreneurship.** CCI, SS Analysis of the psychological, religious, cultural, economic, political, and historical roots of entrepreneurship. Supply side and demand side perspectives. How to interpret theories at multiple levels of analysis to understanding entrepreneurship. Examines research on new business formation and the likelihood of success. Instructor: Staff. One course. C-L: Markets and Management Studies


161. 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. One course. C-L: Global Health Certificate 159, Global Health

162. 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.

163. 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. C-L: Health Policy


166. 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.

167. The Social Bases of Politics. SS Political power, state action, political mobilization, and policy formation seen through the lens of sociological theory and research. Instructor: Staff. One course.

168. Business and Politics in American Society. EI, R, SS The impact of business on American politics. Theories of political pluralism, state autonomy, capitalist imperatives, and elite domination; sources of corporate political community including shared interest, social class, and interlocking directives; a venues of influence including campaign contributions, lobbying, think tanks, advisory boards, and social networks. Development of research skill through team-based projects. Discussion and debate of ethical implications for business and policy leaders of the future. Instructor: Staff. One course. C-L: Markets and Management Studies

169. Psychosocial Aspects of Human Development. CCI, EI, SS One course. C-L: see Human Development 180; also C-L: Psychology 130, Early Childhood Education, Ethics

170. Mass Media. CCI, SS, STS The role of radio, the press, magazines, movies, and television. Selective audiences, content characteristics, controlling elements, and organizational structure of the various media. Relation of media technologies and their development to the organization of media consumption, media enterprises and their social
impact. Comparative Canadian materials considered. Students are encouraged to examine
how their own behavior relates to continuing conflict between free speech and demands for
media control. Instructor: Staff. One course. C-L: Canadian Studies, International
Comparative Studies, Arts of the Moving Image, Information Science and Information
Studies

171. Comparative Health Care Systems. CCI, EI, SS One course. C-L: see Public Policy
Studies 178; also C-L: Political Science 188, Canadian Studies, International Comparative
Studies, Ethics, Global Health, Health Policy

172. Food and Energy: Applying research and theory to local dining practice. R, SS One
course. C-L: see Environment 171

173. 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.

179. Pigging Out: The Cultural Politics of Food. CCI, EI, SS One course. C-L: see African
and African American Studies 169; also C-L: International Comparative Studies 111A

180S. 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.

190AS. Sociology Honors Seminar. 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.

190BS. Sociology Honors Seminar. SS, W Continuation of Sociology 190A. Consent of
instructor required. Instructor: Staff. One course.

191AS. Race, Rock, and Religion: Culture Wars in America. CCI, R, SS Research
approaches to contemporary cultural and political polarization in America. (Who likes hip-
hop; who likes operas? Are these different people? Who goes to church? Who believes in
evolution?) Patterns and social forces that unite a people, social forces that divide it; how
social positions determine beliefs and cultural preferences. Instructor: Smith-Lovin. One
course.

191BS. 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.

191CS. Cybernetworks. CCI, R, SS The rapid, global growth of social relations and social
networks on the Internet. Topics include the principles of interpersonal relations and social
networks; the rise and development of the cyber space and of cybernetworks (social
networks in the cyber space); types of cybernetworks (general, specialized); cybernetworks
and other social domains (e.g., economics, politics); cybernetworks and interpersonal
networks; cybernetworks, globalization, and localization; the future of cybernetworks.
Instructor: Lin. One course.

191ES. Poverty Across Space and Race. CCI, R, SS Family dynamics in poor communities
in three rural and three urban regions in the United States. Students required to design a
project, collect and analyze data, and write results resulting in a research paper. Instructor:
Lawson-Clark. One course.
191S. Research Seminar: Topics Vary. 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.

192A. 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.

192B. 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.

193. 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.

194. 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.

195S. Seminar in Special Topics. Instructor: Staff. One course.

196S. Seminar in Special Topics. Instructor: Staff. One course.

197S. Seminar in Special Topics. Instructor: Staff. One course.

198. Special Topics in Sociology. Topics vary each semester. Instructor: Staff. One course.

198S. Special Topics in Sociology. Seminar version of Sociology 198. One course.

199S. Sociology Internship. EI, R Open only to sociology majors and minors. Requires eight to ten hours per week working in a community service agency; specific internship placement arranged with instructor to meet student's interest. Students keep a journal detailing their activities at the agency and verbally reflect on their experiences in seminar meetings. Topics include sociological issues related to organizations, work, diversity and inequality. Research paper required. Instructor: Bach or staff. One course.

202S. Understanding Ethical Crisis in Organizations. EI, R, SS One course. C-L: see Study of Ethics 202S; also C-L: Political Science 225S, Public Policy Studies 203S

206. Sociological Theory. SS Structure, foundations, and historical antecedents of recent formulations of such theoretical approaches as phenomenological sociology, exchange theory, critical theory, structuralism, neo-Marxist sociology, sociobiology, and action theory. Instructor: Bonilla-Silva, Healy, or Moody. One course.

208. Survey Research Methods. SS Theory and application of survey research techniques in the social sciences. Sampling, measurement, questionnaire construction and distribution, pretesting and posttesting, response effects, validity and reliability, scaling of data, data reduction and analysis. Instructor: Brady, Lin, or staff. One course.

210S. Designing Social Research. SS Explores sociological research methods. Focuses on basic elements shared by all sociological research: research questions, research design, measurement, sampling, and data collection. Will sharpen students' research skills, help them distinguish good from poor matches between research questions and research methods,
and equip them to design and execute high quality sociological research. Instructor: Chaves. One course.

211S. Proseminar in Sociological Theory. SS Selected topics in the development of sociological thought; systematic sociological theory; interrelations with other social and behavioral sciences. Background of sociology; formal aspects of theory: sociology of knowledge, evolutionary theory, sociobiology, and sociological theory. Instructor: Bonilla-Silva, Healy, or Moody. One course.


213. Social Statistics II: Discrete Multivariate Models. QS Assumptions, estimation, testing, and parameter interpretation for the log-linear, logit, logistic, and probit models. Model comparisons; applications of statistical computing packages and programs. Prerequisite: Sociology 212 or equivalent. Instructor: Land or McPherson. One course.


216S. Advanced Methods of Demographic Analysis. SS Mathematical methods and computer software for the analysis of population dynamics. Life table and stationary population theory; methods of life table estimation; multiple-decrement and multistate life tables; stationary population theory and its extensions; model life tables and stationary populations; two-sex models and interacting populations; hazard regression models, grade-of-membership analysis, and cohort studies. Instructor: Land or Stallard. One course.

217S. Proseminar in Social Statistics and Research Methods. SS Selected topics in the collection and analysis of social science data. Discrete and continuous models of measurement, hazards models, event history analysis, and panel data, dynamic models and time series analysis, research design, evaluation research methods, and social statistics and research methods. Instructor: Land, Lin, McPherson, or Moody. One course.

222S. Proseminar in Comparative and Historical Sociology. SS Selected topics in the differentiation and transformation of societies: theories of social change; globalizaiton and comparative development; societal transformations and social institutions; culture, values, and ideas; social movements and political sociology; comparative social policies; comparative and historical sociology. Instructor: Bonilla-Silva, Brady, Gao, or Lin. One course.

223S. Proseminar in Crime, Law, and Deviance. SS Selected topics in crime and the institutions of social control: theories of crime causation; human development and criminal careers; social control and the criminal justice system; sociology of law; crime, law, and deviance. Instructor: Land. One course.

225S. Proseminar in Economic Sociology. SS Selected topics: basic concepts, theories, and methods; organizations and institutions; social networks and social capital; globalization and markets; occupations and work. Instructor: Brady, Gao, Gereffi, Lin, Keister, Merkx, or Spanner. One course.
226S. Proseminars in Social Institutions and Processes. SS Selected topics in the sociology of institutions and social and institutional behavior: social networks; political sociology; sociology of religion; sociology of science; sociology of education. Instructor: Healy, Moody, or staff. One course.

227S. Proseminar in Medical Sociology. 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, Lin, or Moody. One course.

228S. Social Stratification. SS Core and special topics in social stratification, including explanations for the existence, amount, and various dimensions of stratification in society; institutions that produce stratification; forces that cause the structure of stratification to vary both over time and across societies; and structures that govern social mobility within and across generations. Intergenerational mobility; social structure and the life course; social inequality and the structure of poverty; careers and labor markets; societal transformation; stratification and mobility research. Instructor: Brady, Keister, Lin, Spenner, or O'Rand. One course.

229S. Proseminar in Social Psychology. SS Selected topics in microsociology and social psychology, including social interaction, decision making, social exchange, group processes, intergroup relations, self and identity, social structure and personality, social networks, and application in organizations and health care. Introduction to social psychology; rational choice and social exchange; sociology of self and identity; group processes and intergroup relations; experimental research; practicum; social psychology. Instructor: Burton, George, Lin, Smith-Lovin, or Spenner. One course.

230. Sociology of Religion. CZ, SS Begins with Durkheim's and Weber's different approaches to the sociology of religion. Considers a range of topics, including ritual, religious commitment, conversion, religion and social movements, secularization, social sources of religious variation, and religious influences on people, organizations, and societies. Explores current empirical and theoretical debates. Identifies significant unanswered questions that future research should address. Instructor: Chaves. One course. C-L: Religion 248


236S. Experimental Communities. ALP, CCI, CZ, EI One course. C-L: see Visual Arts 236S; also C-L: Cultural Anthropology 236S

290S. 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 267S


293S. 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 269S

299, Selected Topics. SS Lecture version of Sociology 299S. One course.

299S. Seminar in Selected Topics. Substantive, theoretical, or methodological topics. Instructor: Staff. One course.
THE MAJOR

Prerequisite. Sociology 10, 11, or an equivalent course with the consent of the director of undergraduate studies.

Major Requirements. Nine courses at the 100-level or above, including Sociology 132A, Sociology 132B, Sociology 138, and a course involving a major research project (i.e., Sociology 190A/B, Sociology 191S, Sociology 193, or Sociology 199S). Students may substitute any 100-level statistics course for Sociology 132B 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 100 level. Only one transfer credit and no Advanced Placement credits may count toward the minor.

Spanish

For courses in Spanish, see “Romance Studies (ROMST)” on page 582.

Department of Statistical Science (STA)

Professor Gelfand, Chair; Professor of the Practice Stangl, Associate Chair and Director of Undergraduate Studies; Professor West, Director of Graduate Studies; Professors Berger, Clark, Dunson, Gelfand, West, Winkler, and Wolpert; Associate Professors Clyde, Hauser, Mattingly, and Reiter; Assistant Professors Li, Mukherjee, Schmidler, and Tokdar; Professors Emeriti Burdick and Sacks; Professor of the Practice Banks; Associate Research Professor Iversen; Assistant Research Professor Lucas; Adjunct Professor Bayarri; Visiting Assistant Professor Page

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.

10. 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 10. Not open to students who have had 100-level statistics course, Political Science 138, Psychology 117, or Sociology 133. Instructor: Staff. One course.


49S. First-Year Seminar. QS Topics vary each semester offered. Instructor: Staff. One course.


80FCS. Focus Program - Introductory Special Topics in Statistics. QS This is a seminar course for focus students. Topics vary every semester. MATH 31 is a prerequisite. Instructor: Banks. One course.

101. Data Analysis and Statistical Inference. QS First principles of quantitative arguments in the social and behavioral sciences and public policy. Topics include descriptive statistics,
graphical methods, elementary probability, point and interval estimation, frequentist and Bayesian statistical inference and historical and philosophical developments of statistics. Applications in education, sports, law, environment, government, discrimination, psychology, sociology, and public policy. Prerequisite: STA 10, STA 19, placed in STA 101 by the statistics placement test. Not open to students who have credit for another 100-level statistics course. Instructor: Staff. One course. C-L: Information Science and Information Studies

102. Introductory Biostatistics. QS Reading and interpretation of statistical analyses from life science and medical literature. Topics include: basic concepts and tools of probability and conditional probability, independence, two-by-two tables, Simpson's paradox, medical diagnosis, ROC curves, study designs from medical problems, inference and hypothesis testing from RCT's, decision analysis, and survival analysis. Emphasizes role of biostatistics, drug treating, and clinical trials in modern society. Prerequisites: Statistical Science 10, Statistical Science 19, or placement test into Statistical Science 102. Not open to students who have credit for another 100-level statistical science course. Instructor: Stangl. One course. C-L: Information Science and Information Studies

102B. Statistics in the Courtroom. QS Reading and interpretation of statistical analyses from court cases. Conceptual bases for using data and understanding uncertainty when making legal decisions. Includes reading and discussion of articles about legal cases. Topics include: basic concepts and tools of probability and conditional probability, and of statistical analysis including estimation, inference, prediction, and decision analysis. Prerequisites: Must have taken Statistical Science 10, Statistical Science 19 or taken statistics placement test and placed in Statistical Science 102B. Instructor: Stangl. One course.

103. 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 31 or equivalent. Not open to students who have credit for another 100-level statistics course. Instructor: Staff. One course. C-L: Information Science and Information Studies

104. Probability. QS One course. C-L: see Mathematics 135; also C-L: Information Science and Information Studies, Modeling Biological Systems

113. 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 Statistics 114 or 213. Prerequisite: Mathematics 103 or equivalent. Instructor: Mukherjee. One course. C-L: Information Science and Information Studies, Modeling Biological Systems


a variety of fields. Prerequisite: 100-level statistics course. Permission of Director of Undergraduate Studies required for courses outside Statistical Science. Instructor: Reiter, Stangl, Clyde. One course.


130. Design and Analysis of Causal Studies. QS Design of randomized experiments and observational studies. Role of randomization, block designs, factorial designs, fractional factorial designs, matching. Analysis of variance, contrasts, propensity score matching, instrumental variables. Prerequisites: Statistical Science 121 or Economics 139D. Instructor: Banks. One course.

135. Design and Analysis of Surveys. QS Design and analysis of surveys, including random sampling, stratification, clustering, and multi-stage sampling. Design-based and model-based inference. Methods for handling missing data. Prerequisites: Statistical Science 121 or Economics 139D. Instructor: Reiter. One course.


175S. 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 122, some computer programming expertise. Instructor: Dunson. One course. C-L: Modeling Biological Systems


190AS. 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, an DSS faculty mentor. Offered only in fall semesters. Permission of department required. Instructor: Stangl or West. One course.

190BS. Research Seminar in Statistical Science II. QS, R, W Continuation of Statistics 190AS. 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: Stangl or West. One course.

191. 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.

193S. Special Topics in Statistics. QS, R Special topics not covered in core courses and more advanced topics related to current research directions in statistics. Consent of instructor required. Instructor: Staff. One course.

205. Probability and Measure Theory. QS Introduction to probability spaces, the theory of measure and integration, random variables, and limit theorems. Distribution functions, densities, and characteristic functions; convergence of random variables and of their distributions; uniform integrability and the Lebesgue convergence theorems. Weak and strong laws of large numbers, central limit theorem. Prerequisite: elementary real analysis and elementary probability theory. Instructor: Mukherjee, Wolpert. One course.

207. Probability. QS One course. C-L: see Mathematics 287

213. Introduction to Statistical Methods. QS Emphasis on classical techniques of hypothesis testing and point and interval estimation, using the binomial, normal, t, F, and chi square distributions. Not open to students who have had Statistical Science 114 or Mathematics 136. Prerequisite: Mathematics 103 (may be taken concurrently) or equivalent, or consent of instructor. Instructor: Li. One course.

214. Probability and Statistical Models. QS Theory, modeling, and computational topics in probability and statistics: distribution theory and modeling, simulation and applied probability models in statistics, generation of random variables, Monte Carlo method and integration; Markov Chain Monte Carlo methods; applied stochastic processes including Markov process theory, linear systems theory, and AR models. Latent variable probability models, i.e., mixture models, hidden Markov models, and missing data problems. Discrete and continuous multivariate distributions; linear, multinormal, and graphical models; tools of linear algebra and probability calculus. Statistical computing using Matlab/R. Prerequisite: Statistics 215, 244, and 290. Instructor: Schmidler or West. One course.

215. Statistical Inference. QS Classical, likelihood, and Bayesian approaches to statistical inference. Foundations of point and interval estimation, and properties of estimators (bias, consistency, efficiency, sufficiency, robustness). Testing: Type I and II errors, power, likelihood ratios; Bayes factors, posterior probabilities of hypotheses. The predictivist perspective. Applications include estimation and testing in normal models; model choice and criticism. Prerequisite: Statistics 213 and 244 or consent of instructor. Instructor: Li, Wolpert. One course.

216. Generalized Linear Models. QS Likelihood-based and Bayesian inference of binomial, ordinal, and Poisson regression models, and the relation of these models to item response theory and other psychometric models. Focus on latent variable interpretations of categorical variables, computational techniques of estimating posterior distributions on model parameters, and Bayesian and likelihood approaches to case analyses and goodness-of-fit criterion. Theory and practice of modern regression modeling within the unifying context of generalized linear models. A brief review of hierarchical linear models. Students expected to use several software packages and to customize functions in these packages to perform applied analyses. Prerequisite: Statistics 213 and 244 or consent of instructor. Instructor: Dunson. One course.

217. Ordinal Data Modeling. QS Bayesian and likelihood-based of ordered categorical data and rank data using latent variable constructs. Binary and ordinal regression models, multi-rater ordinal data models, multi-rater rank data models, item-response models, and graded-response models. MCMC estimation. Prerequisites: Statistics 213 or equivalent; working
knowledge of a low-level computing language like C, C++, or Fortran. Instructor: Staff. One course.

218. 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: Statistics 114. Instructor: Banks. One course. C-L: Computer Science 219


240. Applied Data Analysis for Environmental Sciences. QS One course. C-L: see Environment 210; also C-L: Modeling Biological Systems

242. Applied Regression Analysis. QS One course. C-L: see Environment 255; also C-L: Modeling Biological Systems

244. Linear Models. QS Multiple linear regression and model building. Exploratory data analysis techniques, variable transformations and selection, parameter estimation and interpretation, prediction, Bayesian hierarchical models, Bayes factors and intrinsic Bayes factors for linear models, and Bayesian model averaging. The concepts of linear models from Bayesian and classical viewpoints. Topics in Markov chain Monte Carlo simulation introduced as required. Prerequisite: Statistics 213 and 290 or equivalent. Instructor: Clyde. One course. C-L: Mathematics 217

250. Numerical Analysis. QS, R One course. C-L: see Computer Science 250; also C-L: Mathematics 221, Modeling Biological Systems

253. Applied Stochastic Processes. QS One course. C-L: see Mathematics 216

270. Statistical Methods for Computational Biology. One course. C-L: see Computational Biology and Bioinformatics 240

271. Statistical Genetics. One course. C-L: see Computational Biology and Bioinformatics 241; also C-L: Genome Sciences and Policy

277. Computational Structural Biology. QS, R One course. C-L: see Computer Science 263B; also C-L: Computational Biology and Bioinformatics 250

278. Computational Gene Expression Analysis. QS C-L: see Computational Biology and Bioinformatics 221; also C-L: Molec Genetics & Microbiology 221

280. Spatial Statistics. QS Modeling data with spatial structure; point-referenced (geostatistical) data, areal (lattice) data, and point process data; stationarity, valid covariance functions; Gaussian processes and generalizations; kriging; Markov random fields (CAR and SAR); hierarchical modeling for spatial data; misalignment; multivariate spatial data, space/time data specification. Theory and application. Some assignments will involve computing and data analysis. Consent of instructor required. Instructor: Gelfand. One course.

281. Modern Nonparametric Theory and Methods. QS Modern nonparametric approaches for exploring and drawing inferences from data. Topics may include: resampling methods,
nonparametric density estimation, nonparametric regression and classification, bootstrapping, kernel methods, splines, local regression, wavelets, support vector machines, nonparametric modeling for random distributions. Classical and Bayesian perspectives. Consent of instructor required. Instructor: Dunson. One course.

**290. Modern Statistical Data Analysis. QS** Introduction to statistical thinking, data management and collection, sampling and design, exploratory data analysis, graphical and tabular displays, summarizing data. Introduction to applied work. Computer orientation, statistical packages and operating systems, especially unix on high-speed workstations, and the statistical package S-Plus. Graphics and numerical computing. Examples from various disciplines. Instructor: Clyde or Reiter. One course.

**293. Special Topics in Statistics.** Prerequisite: Statistics 213 or consent of instructor. Pass/Fail grading only. Instructor: Staff. One course.

**294. Special Topics in Statistics.** Prerequisite: Statistics 213 or consent of instructor. Pass/Fail grading only. Instructor: Staff. One course.

**297. Topics in Probability Theory. QS** One course. C-L: see Mathematics 288

**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 Statistics 190AS and Statistics 190BS.

**For the A.B. Degree**

*Prerequisites.* Mathematics 31 (or 31L), 32 (or 32L or 32X), 103 (or 103X), and 104 (or 104C, 104X, or 107).

*Major Requirements.* Statistics 104/Mathematics 135. Statistics 114/Mathematics 136, or Statistics 213. Statistics 121 or Economics 139/239. Statistics 122, 190AS, and 190BS. Two additional courses above Statistics 114 (excluding 210, 213, 240, and 242). Only one independent study in statistical science can be used towards the major. Up to one statistical course from other departments can be used towards the major, provided the course is pre-approved by the director of undergraduate studies.

**For the B.S. Degree**

*Prerequisites.* Mathematics 31 (or 31L), 32 (or 32L or 32X), 103 (or 103X), and 104 (or 104C, 104X, or 107).

*Major Requirements.* Statistics 104/Mathematics 135. Statistics 114/Mathematics 136, or Statistics 213. Statistics 121 or Economics 139/239. Statistics 122, 190AS, and 190BS. Three additional courses above Statistics 114 (excluding 210, 213, 240, and 242). Only one independent study in statistical science can be used towards the major. Up to two statistical courses from other departments can be used towards the major, provided the courses are pre-approved by the director of undergraduate studies. One 100-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 31 (or 31L) and 32 (or 32L or 32X).

**Requirements.** Five additional courses in statistical science above the 100 level, only one of which can be from Statistics 101,102, 102B, 103, or 113. Economics 139 can be used in place of Statistics 121. Up to two courses from other departments can be used towards the major, provided the courses are pre-approved by the director of undergraduate studies.

**Theater Studies (THEATRST)**

Professor Beckwith, *Chair;* Assistant Professor of the Practice Hemphill, *Director of Undergraduate Studies:* Professors Beckwith, Brody, Burian, Clum, Finucci, Moi, Porter, and Stiles; Associate Professor Solterer; Assistant Professors Foster and Metzger; Professor Emeritus Randall; Professors of the Practice Bell, McAuliffe, Riddell, and Storer; Associate Professor of the Practice Damasceno; Assistant Professor of the Practice Hemphill; Adjunct Professor of the Practice Azenberg; Visiting Professor Malone; Lecturing Fellows Bend, Benfey, and 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.

49S. **First-Year Seminar.** ALP Topics vary each semester offered. Instructor: Staff. One course.

50. **Duke-Administered Study Abroad: Special Topics in Theater Studies.** ALP Topics differ by section. Instructor: Staff. One course.

89S. **Special Topics in Theater Studies.** Topics vary. May be repeated for credit. Instructor: Staff. One course.

95FCS. **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 95FCS

100S. **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

101S. 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.


103. American Drama and Film Since 1960 (DS4). ALP Focus on works which reflect the changes in American society since 1960; civil rights, feminism, gay liberation, and issues like the Vietnam War and post Cold War American hegemony. Plays by Albee, Mamet, Rabe, Kushner, and others. Films including Dr. Strangelove, Easy Rider, Apocalypse Now, and Malcolm X. Instructor: Clum. One course. C-L: Visual Studies 128C


105. Sport As Performance. ALP, CCI, 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 role of women and performance of gender in live sport and in the media are examined, as well as performance of race and nation in sport, including a unit on the Olympics. Lecture and discussion format; 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 105, Sociology 105

106. Contemporary Theater in Production. ALP Analysis of how contemporary theater is received by audiences, especially the Broadway audience. Focus on text analysis of dramatic literature that has been or is likely to be produced on Broadway, in resident theaters in the United States, or on the West End in London. Weekly writing assignments allow students to explore their responses to a range of contemporary dramatic literature. Not open to students who have taken the course as Theater Studies 131. Instructor: Staff. Half course.

107S. 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: Foster. One course. C-L: Music 122S, Literature 132AS

108. Shakespeare: Comedies and Romances. ALP One course. C-L: see English 129C; also C-L: Medieval and Renaissance Studies 129C

109. Shakespeare Before 1600. ALP, EI, R One course. C-L: see English 143; also C-L: Medieval and Renaissance Studies 182

110. Shakespeare after 1600. ALP, EI, R One course. C-L: see English 144; also C-L: Medieval and Renaissance Studies 183

114. After the Fall of the Empire: British and Irish Drama 1945 to the Present (DS4). ALP
The work of Osborne, Pinter, Stoppard, Edgar, Hare, Churchill, Kane, Friel, McGuinness and others. Instructor: Staff. One course.

116. Theater in London: Text. ALP Lecture version of Theater Studies 116S/English 176B. 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: Clum. One course. C-L: English 176B

116S. Theater in London: Text (DS2, DS3, or DS4). 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. (London summer program.) Instructor: Clum. One course. C-L: English 176BS

117. Drama of Greece and Rome. ALP, CCI One course. C-L: see Classical Studies 106; also C-L: Visual Studies 108A

120. Twentieth Century French Theater. ALP, CCI, FL One course. C-L: see French 154

120S. The Italian Theater. ALP, CCI One course. C-L: see Italian 151S

121S. National Dramas and Cabaret Nights: Theater in Modern Polish Culture. ALP, CCI, CZ One course. C-L: see Polish 184S; also C-L: International Comparative Studies 160FS

122AS. The Actress: Celebrity and the Woman. ALP, CCI, CZ One course. C-L: see Russian 183S; also C-L: Women's Studies 183S

122S. Chekhov. ALP, CCI, W One course. C-L: see Russian 177S; also C-L: International Comparative Studies

123S. Introduction to German Drama. ALP, CCI, FL One course. C-L: see German 133S; also C-L: International Comparative Studies

124. Modernist Classics (DS4). ALP, CCI One course. C-L: see Literature 155; also C-L: English 147

125S. Acting French. ALP, CCI, FL One course. C-L: see French 117S

126. Internship in New York. One course. C-L: see English 181C

126A. The Business of City Life. Half course. C-L: see English 181E

127S. What's Lost in Translation? Latin American Theater in English. ALP, CCI, CZ One course. C-L: see Spanish 129S; also C-L: International Comparative Studies 132S, Cultural Anthropology 135S


129. Special Topics in Dramatic Literature. ALP May be repeated for credit. Instructor: Staff. One course.

129B. Performance Traditions of the Middle East. ALP, CCI One course. C-L: see Literature 118; also C-L: Arts of the Moving Image 114, Islamic Studies

129S. Special Topics in Dramatic Literature, History, Theory, or Criticism. ALP May be repeated for credit. Instructor: Staff. One course.

130S. Special Topics in Performance Studies. ALP Topics vary by semester. May be repeated for credit. Topics course. Instructor: Staff. One course.

132. Gender in Dance and Theatre. ALP, CCI, CZ One course. C-L: see Dance 175; also C-L: Women's Studies 111, Cultural Anthropology 149A, Asian & Middle Eastern Studies 176, International Comparative Studies 170E, Study of Sexualities

132A. Asian American Theatre. ALP, CCI One course. C-L: see English 158

133. Dance and Dance Theater of Asia. ALP, CCI, CZ One course. C-L: see Dance 149; also C-L: Cultural Anthropology 149, Asian & Middle Eastern Studies 149, Religion 161C, International Comparative Studies 170C
134. History and Practice of the Dance and Dance-theatre of India. ALP, CCI, CZ One course. C-L: see Dance 147; also C-L: Cultural Anthropology 149B, Religion 161J, Asian & Middle Eastern Studies 154
137S. Screenwriting. ALP, W Advanced writing projects for feature film. Study of existing scripts and videos, application of techniques. Not open to students who have taken this course as FVD 107S. Instructor: Staff. One course. C-L: English 102S, Arts of the Moving Image 131S
138S. 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: Malone. One course. C-L: English 108BS, Arts of the Moving Image 131S
139S. Special Topics in Dramatic Writing. ALP May be repeated for credit. Instructor: Staff. One course.
140S. 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 required. Instructor: Staff. One course. C-L: Dance 140S
141S. From Stories to Movies. ALP, W The creation of scenes: writing, framing, storyboards, directing. Not open to students who have taken this course as FVD 119S. Instructor: Staff. One course. C-L: Arts of the Moving Image 132S
143S. Black Theater Workshop. ALP, CCI Explore race and culture in America through texts of Black playwrights. Scene study by racially diverse class to engender feedback process. Juxtaposition of playwright's race to societal standards of universal content; relevance of actor's race to playwright's issue; historical context of Black Arts "militant" plays of the 1960s-70s. Workshop culminates in public performance. Instructor: O'Berski. One course. C-L: African and African American Studies 143S
145S. Introduction to 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: Storer. One course.
146S. Shakespeare Studio. ALP Study in approaches to acting and directing 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 and director's work. Students will have opportunity to both act and direct in class exercises and projects. Extensive scenework. Prerequisite: Drama 131S or Theater Studies 145S and consent of instructor. Instructor: Staff. One course.
147S. Advanced Acting: Contemporary Texts. ALP Scene study based on reading, analysis, and research. Examination and development of performance/critical choices. Prerequisite: Theater Studies 145S and consent of instructor. Instructor: McAuliffe, O'Berski, or Storer. One course.
148S. 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.

149. Special Topics in Acting. ALP May be repeated for credit. Instructor: Staff. One course.

149A. Special Topics in Acting. ALP Topics vary each semester. Instructor: Staff. Half course.

149S. Special Topics in Acting. ALP May be repeated for credit. Instructor consent required. Instructor: Staff. One course.

150S. 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. Prerequisite: Theater Studies 148S or consent of instructor. Instructor: Hemphill. One course.

151. Theater in London: Performance. ALP Lecture version of Theater Studies 151S/English 176C. 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 176C

151S. 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: Clum. One course. C-L: English 176CS


153S. Acting For the Camera. ALP Introduction to film and television acting. Not open to students who have taken this course as FVD 117S. Consent of instructor required. Instructor: Staff. One course. C-L: Arts of the Moving Image 134S

154S. Performance & Social Change. ALP, EI One course. C-L: see Dance 154S

155S. 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

159S. Special Topics in Directing. ALP Topics vary each semester offered. Instructor: Staff. One course.

160S. 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 163S, Dance 160S

161S. 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 161S
162S. 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 162S

164S. Technical Theater. ALP Theoretical and aesthetic aspects of technical production for the theater its practical applications: artistic and budgetary assessment, tools and equipment, construction materials and techniques, and production implementation. Focus on costume, set, lighting, and sound designs of current Theater Studies productions. Instructor: Staff. One course. C-L: Dance 164S

165A. 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.

165B. Professional Internship. Same as 165A, but for work that extends over a full term. Consent of instructor required. Offered only on Satisfactory/Unsatisfactory basis. Instructor: Staff. One course.

168S. Entrepreneurship and International Arts Management. ALP, CCI Arts management theory and practices from a variety of cultures as they relate to entrepreneurship. Management of the creative process; the association between an entrepreneurial orientation and the organizational behavior and performance of nonprofit arts organizations. Instructor: Staff. One course. C-L: Markets and Management Studies

169S. Special Topics in Design, Management, and Production. ALP Topics in aspects of theatrical design and/or theater production and management, and their history, culture, and technology. May be repeated for credit. Instructor: Staff. One course.

171. Introduction to Film (DS4). ALP One course. C-L: see Literature 110; also C-L: English 101A, Arts of the Moving Image 101, Visual Studies 121A, Policy Journalism and Media

172. Studies in Film History (DS4). ALP One course. C-L: see English 185; also C-L: Literature 116, Visual Studies 115A

172A. Italian Cinema. ALP, CCI One course. C-L: see Italian 132; also C-L: Literature 112K, Arts of the Moving Image 111E, Visual Studies 126A

172B. Existentialist Cinema. ALP, CCI, CZ, EI, STS One course. C-L: see German 184; also C-L: Literature 112N, International Comparative Studies 183C, Visual Studies 118H, Arts of the Moving Image

173S. Introduction to Production. ALP, STS One course. C-L: see Arts of the Moving Image 130S; also C-L: Visual Studies 117AS, Information Science and Information Studies

174. 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/Torgovnick. One course. C-L: Arts of the Moving Image 129, Visual Studies 174

175A. Global Performance Art: History/Theory from 1950's to Present. ALP, CCI, CZ, EI One course. C-L: see Visual Studies 181; also C-L: Information Science and Information Studies 175, Literature 133C, Women's Studies 176

176. Criminality of Art. ALP The artistic process itself as an act of violation (works from the nineteenth and twentieth centuries). A study of plays (Brecht, Williams, Genet, Synge), films (The Killing of a Chinese Bookie; Henry; Portrait of a Serial Killer; King of Comedy;
Peeping Tom), fiction (Mao II; Wittgenstein's Nephew; and Bartleby the Scrivener) and non-fiction (Narrative of the Life of Frederick Douglass, an American Slave). Instructor: Lentriccia and McAuliffe. One course. C-L: Literature 131C, Visual Studies 128F


178. Special Topics in Film. ALP Topics vary. Instructor: Staff. One course.

178S. Special Topics in Film. ALP Topics Vary. Instructor: Staff. One course.

179S. Masculine Anxiety and Male-Male Desire in Drama and Film Since 1950. ALP, CCI Drama and film that deals with two related issues: masculine anxiety, which can be defined as anxiety about losing one's masculinity, and male-male desire. Works ranging from the 1950s (Tennessee William's Cat on a Hot Tin Roof) to the 1970s (Deliverance and The Deer Hunter) that problematize the relationship between male bonding and homophobia. Depictions of male-male desire and its relationship to masculinity, love, family, community, politics in plays and films from the United States, England, France, Italy, Spain, China, Taiwan, Argentina, and Mexico. Instructor: Metzger or staff. One course. C-L: Literature 125AS, Visual Studies 128GS

180. Special Topics: 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.

182. New Works in Process Workshop. ALP The development and staging of new plays from their first draft to production in the New Works Festival. Participation in the Festival (as directors, playwrights, actors, dramaturgs, designers, or stage managers). May be repeated for credit. Instructor: Storer and staff. One course.

183A. 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: Clum and staff. One course. C-L: Music 188A

183B. 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: Kelly or Malone. One course. C-L: Music 188B

184. 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: Staff. One course.

185A. Special Topics: Theater Studies Production. ALP, CCI 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.

189S. Senior Colloquium. ALP, R Major research project in production (acting, directing), critical writing, dramatic writing, or design. Instructor: McAuliffe. One course.
191. 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.

194T. 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.

197. Senior Distinction Project. Consent of instructor required. Instructor: Staff. One course.

229. Special Topics in Dramatic Literature. ALP Topics vary by semester. Consent of instructor required. Instructor: Staff. One course.

229S. Special Topics in Dramatic Literature. ALP Instructor: Clum or Foster. One course.

231S. Domesticity, Gender and Realism in the Twentieth Century American Drama. ALP Uses of domestic realism and the family romance to place the American family at the center of a wider social critique. Changing notions of gender roles. Alternatives to the conventional nuclear family. Instructor: Staff. One course. C-L: English 231S

233S. 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: Foster. One course. C-L: Literature 233S

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.

Two Theater Studies 101S “Reading Theater” Seminars, each on a different topic; or Theater Studies 116S “Duke in London (strongly recommended) and one Theater Studies 101S “Reading Theater” Seminar

135S: Dramatic Writing
145S: Introduction to Acting
155S: Directing
One 100-level design class
189S: Senior colloquium
Three additional 100-level courses in Theater Studies

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.
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 197) 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) comprised 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 Theater Studies 101S "Reading Theater" Seminar or Theater Studies 116S, "Duke in London." Four additional 100-level courses in Theater Studies.

Visual Studies

For courses in Visual Studies, see “Art, Art History, and Visual Studies (ARTSVIS/ARTHIST/VISUALST)” on page 132.

Women's Studies (WOMENST)

Professor Khanna (English), Director; Professor Wiegman; Associate Professors Campt, Rudy, Weeks, and Wilson; Affiliated faculty: Professors Allison (cultural anthropology), Brody (African and African American Studies), Fulkerson (divinity), Holloway (English), Koonz (history), Silverblatt (cultural anthropology), and Wald (English); Associate Professors Holland (English), Lubiano (African and African American Studies), Mottahedeh (literature), Nelson (cultural anthropology), Piot (cultural anthropology); Assistant Professor Stein (cultural anthropology); Adjunct faculty: Associate Professor Curtain (University of North Carolina); 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 identity as a 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 identity as a primary – though by no means transhistorical or universal – way 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.
Women's Studies Core Courses (WOMENST)

49S. 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.

50. Duke-Administered Study Abroad: Special Topics in Women's Studies. CCI Topics differ by section. Instructor: Staff. One course.

90. 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.

95FCS. Special Topics in Focus. Seminar for students in Focus Program only. Topics vary each semester offered. Instructor: Staff. One course.


101S. 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 106S

102. Food, Farming, and Feminism. CCI, EI, SS Viewing "agriculture," "nature," and "consumption" as pressing feminist themes an 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 form communities and developing nations. Instructor: Staff. One course.

102S. Food, Farming and Feminism. CCI, EI, SS Viewing "agriculture," "nature," and "consumption" as pressing feminist themes an 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 form communities and developing nations. Instructor: Staff. One course.

109S. Introduction to Study of Sexualities (DS4). CZ One course. C-L: see Study of Sexualities 115S

110. Film and the African Diaspora. ALP, CCI, SS One course. C-L: see African and African American Studies 101; also C-L: Visual Studies 104A

111. Gender in Dance and Theatre. ALP, CCI, CZ One course. C-L: see Dance 175; also C-L: Theater Studies 132, Cultural Anthropology 149A, Asian & Middle Eastern Studies 176, International Comparative Studies 170E, Study of Sexualities

112. Gender and Morality: Indian Perspectives. ALP, CCI, CZ, EI One course. C-L: see Religion 116A; also C-L: Ethics

114S. Daily Life in Antiquity. ALP, CCI, CZ One course. C-L: see Classical Studies 114S

115. Cyborgs. CCI, SS, STS One course. C-L: see Cultural Anthropology 143

117. Gender and Culture. CCI, SS One course. C-L: see Cultural Anthropology 113; also C-L: International Comparative Studies 101E, Study of Sexualities

129. Seventeenth-century Fictions of Women. ALP, CCI, FL One course. C-L: see French 129
130. 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 130

131S. Vampire Chronicles: Fantasies of Vampirism in a Cross-cultural Perspective. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 141S; also C-L: Cultural Anthropology 142, Literature 151M, International Comparative Studies 122E, Study of Sexualities 131S

135S. Clinical Issues for the LGBTQ Community. CCI, SS One course. C-L: see Study of Sexualities 135S; also C-L: Psychology 143S

137. African American Women and History. CCI, CZ One course. C-L: see African and African American Studies 137; also C-L: History 145C


139. Women, Gender, and Sexuality in U.S. History. CCI, CZ, EI, SS, W One course. C-L: see History 169A

140. 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 131

141. Gender, Work, and Organizations. CCI, SS One course. C-L: see Sociology 129; also C-L: Markets and Management Studies

142. Girl Culture, Media, and Japan. ALP, CCI, CZ One course. C-L: see Asian & Middle Eastern Studies 142; also C-L: Literature 165G

145S. Gender and Digital Culture. ALP, STS, W One course. C-L: see Information Science and Information Studies 145S; also C-L: Visual Studies 120BS, Cultural Anthropology 143B

147. Women in the Economy. CCI, EI, R, SS One course. C-L: see Economics 147

150. Selected Topics in Women's Studies. Topics vary, focusing on interdisciplinary work arising from feminist scholarship. Instructor: Staff. One course.

150S. Selected Topics in Women's Studies. Seminar version of Women's Studies 150. Instructor: Staff. One course.

151. Contemporary Israeli Cinema. ALP, CCI, EI One course. C-L: see Asian & Middle Eastern Studies 161; also C-L: Arts of the Moving Image 111H, Literature 112M, Jewish Studies 140, Cultural Anthropology 161

159S. 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.

160S. Feminism in Historical Contexts. 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.

161. Money, Sex, Power. CCI, CZ, SS Same as Women's Studies 161S except instruction provided in lecture format. Instructor: Staff. One course.
161S. Money, Sex and 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: Study of Sexualities

162. Gender and Popular Culture. CCI, SS Same as Women's Studies 162S except instruction is provided in lecture format. Consent of instructor required. Instructor: Staff. One course. C-L: Visual Studies 129A

162S. Gender and Popular Culture. CCI, SS An analytic investigation of ways popular cultural forms produce and reinforce gender relations. Prerequisite: Women's Studies 90 or 160 or consent of instructor. Instructor: Staff. One course. C-L: Visual Studies 129AS

163S. 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. Prerequisite: Women's Studies 90 or 160 or consent of instructor. Instructor: Staff. One course.

164S. 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. Instructors: Pierce-Baker, Wiegman, Rudy, and staff. One course. C-L: Study of Sexualities 145S

165. 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 143

166S. 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.


167S. 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 150S

168A. 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 130

168S. 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 130S
169S. Transnational Feminism. CCI, EI, 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 104BS

170AS. Queer Theory. 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. Instructor: Staff. One course. C-L: Study of Sexualities 140S

172S. Popular Fictions (DS4). ALP One course. C-L: see Literature 151BS; also C-L: English 171BS


176. Global Performance Art: History/Theory from 1950's to Present. ALP, CCI, CZ, EI One course. C-L: see Visual Studies 181; also C-L: Information Science and Information Studies 175, Literature 133C, Theater Studies 175A

177. Experimental Art and Its Ethics since 1945. ALP, CCI, CZ, EI One course. C-L: see Art History 168; also C-L: Literature 133B, International Comparative Studies 101A, Ethics

179. Melodrama East and West. ALP, CCI One course. C-L: see Asian & Middle Eastern Studies 179; also C-L: Literature 151J, International Comparative Studies 170A, Visual Studies 105E

181S. Travel, Gender, and Power. CCI, SS One course. C-L: see Cultural Anthropology 191QS; also C-L: Asian & Middle Eastern Studies 157S, Literature 132BS

182S. Anthropology of Space. CCI, SS One course. C-L: see Cultural Anthropology 191BS; also C-L: Literature 143BS

183S. The Actress: Celebrity and the Woman. ALP, CCI, CZ One course. C-L: see Russian 183S; also C-L: Theater Studies 122AS

187. The French Love Story. ALP, CCI One course. C-L: see French 192; also C-L: Literature 151K


189. Gender and Sexuality in Latin America. CCI, CZ, SS One course. C-L: see Cultural Anthropology 191J; also C-L: International Comparative Studies 130B, Latin American Studies, Study of Sexualities

190. Advanced Topics in Women's Studies. SS Lecture version of Women's Studies 190S. Instructor: Staff. One course.

190S. Advanced Topics in Women's Studies. Topics vary, focusing on advanced interdisciplinary work arising from feminist scholarship. Instructor: Staff. One course.

191. 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.


192. 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.

193. 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.


211S. Gender, Identity, and Public Policy. R, SS One course. C-L: see Public Policy Studies 211S; also C-L: Political Science 216S

212S. Film Feminisms. ALP, CCI, CZ One course. C-L: see Literature 212S; also C-L: Arts of the Moving Image

219S. Topics in Sexuality and Gender Studies. ALP, CCI One course. C-L: see Italian 220S

281S. Masculinities. CCI, CZ, R, SS One course. C-L: see Cultural Anthropology 281S

297S. Teaching Race, Teaching Gender. CCI, SS One course. C-L: see African and African American Studies 297S; also C-L: History 297S, Literature 225S

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 a complete list updated each semester.

African and African American Studies
115A. History of Africa: From Antiquity to Early Modern Times
115B. History and Modern Africa
129. Culture and Politics in the Caribbean

Art History
167. Modernism, Avant-gardism, and Visual Art, 1900-1945
187. Dada and Surrealism

Arts of the Moving Image
104. Film Theory

Cultural Anthropology
110. Advertising and Society: Global Perspective
113. Gender and Culture
116S. Advertising and Masculinity
126. Muslim World: Transformations and Continuities
141. Self and Society

English
321. Studies in Renaissance Literature

French
160. Topics in Sexuality and Gender Studies

History
115A. History of Africa: From Antiquity to Early Modern Times
115B. History and Modern Africa
169A. Women, Gender, and Sexuality in U.S. History
351. Colloquia

International Comparative Studies
101E. Gender and Culture
101F. Muslim World: Transformations and Continuities
182B. Italian Women Writers

Italian

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135. Italian Women Writers
137. Modernism, Avant-gardism, and Visual Art, 1900-1945

**Jewish Studies**
40. Judaism
40S. Judaism
103. Women in the Biblical Tradition: Image and Role

**Linguistics**
120. Advertising and Society: Global Perspective

**Literature**
114. Film Theory
123. Special Topics in Women Writers
125. Special Topics in Gender and Sexuality

**Medieval and Renaissance Studies**
234A. Early Christian Asceticism

**Philosophy**
122. Philosophical Issues in Feminism
203S. Contemporary Ethical Theories

**Political Science**
187S. Politics and the Libido
289S. Contemporary Ethical Theories

**Portuguese**
121S. Geographies of the Erotic: Brazilian Literature in Translation

**Psychology**
106. The Psychology of Gender
113A. Self and Society
208S. Seminar in Emotion

**Public Policy Studies**
140S. Women as Leaders

**Religion**
40. Judaism
40S. Judaism
119. Muslim World: Transformations and Continuities
125. Women and Sexuality in the Christian Tradition
138. Gender in Religion in the United States
234. Early Christian Asceticism

**Russian**
132S. Women in Contemporary Russian Society
169. Women and Russian Literature
269. Women and Russian Literature

**Sociology**
111. Wealth, Power, and Inequality
118. Sex, Gender, and Society
149. Sexuality and Society
150. The Changing American Family
155. Organizations and Management
160. Advertising and Society: Global Perspective

**Study of Sexualities**
195S. Senior Seminar in Study of Sexualities

**Visual Studies**
110E. Advertising and Society: Global Perspective
121G. 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. Thinking Gender: An Introduction to Feminist Theory (Women’s Studies 159S) and a senior seminar (Women’s Studies 195S) are required, along with three of the following:

- 160. Feminism in Historical Context
- 161. Money, Sex, Power
- 161S. Money, Sex, Power
- 162. Gender and Popular Culture
- 162S. Gender and Popular Culture
- 163S. Interpreting Bodies: Identity and Beyond
- 164S. Race, Gender, and Sexuality
- 165. Gender and Political Theory
- 166S. Nature, Culture and Gender
- 167S. Feminist Ethics
- 168S. Gender, Sexuality and Human Rights
- 169S. Transnational Feminism
- 170S. Queer Theory

The remaining five courses are electives and may be chosen from the recommended list and from Women’s Studies offerings. Students may take no more than two independent study courses, which must be approved by the Director of Undergraduate Studies. In addition, students may 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.

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. Thinking Gender: An Introduction to Feminist Theory (Women’s Studies 159S) is required, along with two courses from the following:

- 160. Feminism in Historical Context
- 161. Money, Sex, Power
- 161S. Money, Sex, Power
- 162. Gender and Popular Culture
- 162S. Gender and Popular Culture
- 163S. Interpreting Bodies: Identity and Beyond
- 164S. Race, Gender, and Sexuality
- 165. Gender and Political Theory
- 166S. Nature, Culture and Gender
- 167S. Feminist Ethics
- 168S. Gender, Sexuality and Human Rights
169S. Transnational Feminism
170S. Queer Theory

In addition, students choose two courses from the recommended list and Women’s Studies offerings.

In addition to offering courses, and a major and minor representing a focus in women’s studies, the program sponsors lectures, films, discussions, conferences, internships, 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 Web site: www.duke.edu/womstud/.

Thompson Writing Program (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; Senior Lecturing Fellow Rego, Director of Faculty Development and Assessment; Senior Lecturing Fellow Russell, Director of the Writing Studio; Professor of the Practice Gopen; Lecturing Fellows Caputo, Case, Cooke, Dowland, Drogin, Dueck, Ennis, Erlien, Erol, Hall, Hallenbeck, Jeffries, Kane, Kelly, Klaits, Kraus-Friedberg, Mantler, Mapes, Middleton, Odendahl-James, Reaves, Reilly, Shah, Smith, Watkins, Wesolowski, and Wilhite

The Thompson Writing Program has three components: (1) the First-Year Writing Program (Writing 20), (2) the Writing-in-the-Disciplines Program, and (3) the Writing Studio, a tutorial service for undergraduates.

All undergraduates are required to complete Writing 20: 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 20 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.

10. 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 20. 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 10 does not satisfy either the Writing 20 or the WID requirements. Permission of Director of First-Year Writing required. Instructor: Staff. Half course.

15. Writing Workshop for Non-Native Speakers of English. Designed to provide additional support for non-native speakers of English enrolled in Writing 20. Students will become familiar with writing texts that meet the expectations of American academic audiences while strengthening word usage, academic vocabulary, and grammar. Topics include: creating theses, articulating arguments, summarizing, paraphrasing and quoting, avoiding plagiarism, understanding citation conventions, and utilizing effective reading strategies. Focus on increasing awareness of the intercultural norms of academic writing. Does not satisfy the W20, WID, or seminar requirements. Instructor permission required. Taken concurrently with W20. 1.25 hours per week. Instructor: Caputo. Half course.

20. Academic Writing. Instruction in the complexities of producing sophisticated academic argument, with attention to critical analysis and rhetorical practices. Instructor: Staff. One course.
190S. Special Topics: Writing in the Disciplines. Topics vary by section. Topics course. Instructor: Staff. One course.

191. 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 20. Consent of instructor and Director of the Thompson Writing Program required. Instructor: Staff. One course.

Pratt School of Engineering
Professor Katsouleas, Dean; Senior Associate Dean for Education Glass; Associate Deans Absher, Franzoni, and Simmons

• For courses in Engineering (Interdepartmental), see page 667.
• For courses in Biomedical Engineering, see page 205.
• For courses in Civil and Environmental Engineering, see page 680.
• For courses in Electrical and Computer Engineering, see page 690.
• For courses in Mechanical Engineering and Materials Science, see page 703.

Engineering (Interdepartmental) (EGR)

10. 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. Staff: Instructor. Half course.

20L. 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.

24. Introduction to Environmental Engineering and Science. Materials and energy balances applied to environmental engineering problems. Water pollution control, applied ecology, air quality management, solid and hazardous waste control. Environmental ethics. {1.0 ES} Prerequisite: Chemistry 18, 19, or 31. Instructor: Peirce. One course.

25L. 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.

31FCS. 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.

32FCS. Mapping Engineering into Biology. 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.

**49S. First-Year Seminar.** Topics vary each semester offered. Instructor: Staff. One course.

**53L. 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.

**54L. Simulations in JAVA.** Development of interactive computer simulations in JAVA using Reality.java, a library that includes graphical objects such as spaceships, planets, and standardized functions for Newtonian mechanics. Introduction to object-oriented programming, linked and inherited structures, and aspects of computational mathematics such as stability and computational error, orbital mechanics, collision detection, strategy, etc. Prerequisite: Engineering 53L or Computer Science 6 or Computer Science 100E. Instructor: Staff. One course.

**60. Science and Policy of Natural Catastrophes.** NS, SS, STS In this interdisciplinary course students will conduct a life cycle analysis of a natural disaster. Invited experts will discuss 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. Students will attend the lecture component of the course and complete on-line quizzes to demonstrate understanding of the material presented. Additionally, they will prepare on individual paper (~ 10 pages) on a relevant topic and one group paper, the results of which will be presented to the class. Instructor: Schaad. One course. C-L: Public Policy Studies 107, Environment 161

**61. Natural Catastrophes: Rebuilding from Ruins.** NS, SS, STS Research Service Learning Gateway course where students will conduct a life cycle analysis of natural disasters. Invited experts will discuss meteorologic, hydrologic and geologic factors that cause disasters; explore how societies plan 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. 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 carry out response activities over Spring Break in an area ravaged by a natural disaster. They will keep a journal (audio and 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 a project which might stem from the course and their experiences. Instructor: Schaad. One course. C-L: Public Policy Studies 109, Environment 162

**75L. 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 32 and Physics 61L. Instructor: Albertson, Dolbow, Gavin, Hueckel, Laursen, Nadeau, or Virgin. One course.

**107. 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.

108S. 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: Ethics, Global Health, Global Health, Markets and Management Studies, Marine Science and Conservation

115. 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 107. Instructor: Peirce. One course. C-L: Economics 112, Modeling Biological Systems

119L. 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: EGR 53L, EGR 75L, MATH 103, and PHYSICS 62L, or equivalents, or permission of instructor: Instructor: Gustafson. One course.

123L. 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 75L and Mathematics 103 or consent of instructor. Instructor: Dowell, Hall, Knight, or Virgin. One course.


153. Numerical Computing for Engineers. Numerical computing with applications for engineering in a C/C++ language environment. Computer programs will be developed to implement numerical algorithms and solve engineering problems. Course topics include: solution of simultaneous sets of equations, eigenvalues, singular value decomposition, root-finding in non-linear equations, solution of ordinary differential equations, optimization, and spectral analysis. Prerequisites: Math 107 and either Engineering 53, Computer Science 6, Computer Science 100 or equivalent. Instructor: Staff. One course. C-L: Modeling Biological Systems

165. 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.
171. **Total Quality Systems.** An interdisciplinary approach to principles and practice in the applications of total quality concepts to engineering operations and business managements; practice in using tools of statistical process control; practice in using quality tools of management and operations; principles of continuous quality improvement; definitions and applications of Total Quality Management (TQM); case studies; personal effectiveness habits and social styles; assignments and projects in team building using tools learned, communication; group problem solving; practice in professional verbal and written technical communications. Prerequisite: junior or senior standing. Instructor: Staff. One course.

175. **Aesthetics, Design, and Culture.** An examination of the role of aesthetics, both as a goal and as a tool, in a culture which is increasingly dependent on technology. Visual thinking, perceptual awareness, experiential learning, conceptual modeling, and design will be explored in terms of changes in sensory environment. Design problems will be formulated and analyzed through individual and group design projects. Instructor: Staff. One course. C-L: Visual Studies 114A

176S. **Global Climate Change.** A project course. Examination of scientists' concerns about global warming, the controversy about whether the effect is real, "greenhouse gasses," which may cause warming of the globe, and the impacts that scientists believe will occur. Topics include sea rise, effects on human health, and impacts on food supply. Student projects will focus on the potential engineering solutions such as renewable energy (solar, wind). Prerequisite: junior or senior standing. Instructor: Staff. One course.

183. **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.

184. **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.

190L. **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: CE 24L, ENV 130 and ME 121. One course. One course.

**Biomedical Engineering (BME)**

Professor Truskey, Chair; Associate Professor Wolf, Director of Undergraduate Studies; Assistant Professor of the Practice Gimn, Associate Director of Undergraduate Studies; Professors R. Anderson, Barr, Chilkoti, Collins, Dewhirst, Erickson, Gauthier, Glower, Grill, Guilak, Henriquez, Izzatt, Jaszcak, Johnson, Katz, Laursen, Leong, Lopez, Massoud, Myers, Needham, Neu, Nicolelis, Nolte, Reichert, Samei, Setton, Simon, Smith, Song, Toth, Trahey, Vo-Dinh, von Ramn, Warren, Yuan, and Zalutsky; Associate Professors Dobbs, Lobach, MacFall, Ramanujam, Sommer, and Tornai; Assistant Professors Bursac, Gersbach, Idriss, K. Nightingale, Mukundan, Tian, Wax, Wong, and You; Professors Emeriti Burdick, Clark, Friedman, Hammond, Hochmuth, McElhaney, and Plosney; Associate Research Professors Bass, R. Nightingale, and Turkington; Assistant Research
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.*

Biomedical engineering is the discipline in which the physical, mathematical, and engineering sciences and associated technology are applied to biology and medicine. Contributions range from computer modeling and simulation of physiological systems through development of medical instrumentation and experimental research to solutions of practical clinical problems. The goal of the Biomedical Engineering Program at Duke University is to prepare students for a) professional employment in areas such as the medical device industry, engineering consulting, and biotechnology, b) graduate work in biomedical engineering, or c) entrance into medical school. The program is flexible to match the student’s interests. Options exist for dual majors and to provide specific knowledge in biomedical imaging and measurement systems, biomaterials and biomechanics, bioelectricity, and molecular, cellular and tissue engineering. Design experience is developed and integrated throughout the curriculum and includes capstone design courses. Many students gain valuable design experience in the course of independent student projects within the research laboratories and programs of the BME department.

The undergraduate curriculum specifies that a student select 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: Bioelectricity, Biomaterials and Biomechanics, Molecular Cellular and Tissue Engineering, and Imaging and Measurement Systems.

Biomedical engineering in bioelectricity involves the use of large-scale computer modeling, scientific visualization, and experimental data acquisition and analysis of electrical activity in the brain and heart tissue to increase basic understanding of normal and abnormal behavior. 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 cellular 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

* Engineering and Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET) 111 Market Place, Suite 1050, Baltimore, MD 21202, telephone (410) 347-7700
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:
(C) Satisfies an Area Core Class
(D) Satisfies the Design requirement
(G) Satisfies a General BME Elective
(BB) Satisfies a Biomechanics and Biomaterials Area Elective
(MC) Satisfies a Molecular, Cellular and Tissue Engineering Area Elective
(EL) Satisfies a Bioelectricity Area Elective
(IM) Satisfies an Imaging and Measurement Systems Area Elective

8. 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 53L or equivalent; limited to freshmen. Instructor: Henriquez or K. Nightingale. One course.

100L. 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. Prerequisites: Mathematics 103 and Biology 25L or equivalent; or consent of the instructor. Instructor: Gimm, Tian, Truskey, You, or Yuan. One course.

101L. Electrobiology. 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 153L, and Mathematics; 107 or consent of the instructor. Instructor: Barr, Bursac, Grill, Henriquez, or Neu. One course. C-L: Neuroscience 158L

120. 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. One course. Instructor: Boyd. One course.

153L. 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 62L; or consent of instructor. Instructor: Grill, Izatt, Malkin, K. Nightingale, or von Ramm. One course.

154L. Biomedical Electronic Measurements II. Further 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. Prerequisite: Electrical and Computer Engineering 51L or Biomedical Engineering 153L and Biomedical Engineering 171 or Electrical and Computer Engineering 54L; or the consent of the instructor. Instructor: Malkin, Trahey, Wax, or Wolf. One course.

155. Safety of Medical Devices (GE, IM). 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 demonstrate safety of a selected medical device. Prerequisite: sophomore standing; corequisite: Physics 62L or equivalent. Instructor: S. Smith. One course.

165. Intermediate Topics (GE). Intermediate subjects or selective topics related to programs within biomedical engineering. Consent of instructor required. Instructor: Staff. One course.

171. 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 153L or Electrical and Computer Engineering 51L or and Mathematics 107; or consent of the instructor. Instructor: Barr, Izatt, or Neu. One course.

190. 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.

191. 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.

192. 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.

193. Projects in Cardiovascular Biomedical Engineering (GE). Projects in emerging cardiovascular technologies. Primarily for Engineering Research Center fellows who express a desire for and who have shown aptitude for research in emerging cardiovascular technologies. Consent of instructor required. Instructor: Staff. One course.

194. Projects in Cardiovascular Biomedical Engineering (GE). Projects in emerging cardiovascular technologies. Primarily for Engineering Research Center fellows who express a desire for and who have shown aptitude for research in emerging cardiovascular technologies. Consent of instructor required. Prerequisite: Biomedical Engineering 193. Instructor: Staff. One course.

195. Projects in Cardiovascular Biomedical Engineering (GE). Projects in emerging cardiovascular technologies. Primarily for Engineering Research Center fellows who express a desire for and who have shown aptitude for research in emerging cardiovascular technologies. Consent of instructor required. Prerequisite: Biomedical Engineering 194. Instructor: Staff. One course.

201L. Electrophysiology (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. Students choose a relevant topic area for detailed study and report. Not open to students who have taken Biomedical Engineering 101L or equivalent. Instructor: Barr, Bursac, Grill, Henriquez, or Neu. One course. C-L: Neuroscience 201L

202L. Fundamentals of Biomaterials and Biomechanics (AC or GE). This course will cover principles of physiology, materials science and mechanics with particular attention to topics most relevant to biomedical engineering. Areas of focus include the structure-functional relationships of biocomposites including biological tissues and biopolymers; extensive treatment of the properties unique to biomaterials surfaces; behavior of materials in the physiological environment, and biomechanical failure criterion. The course includes selected experimental measurements in biomechanical and biomaterial systems. Prerequisites: Math 108; Engineering 75L or Biomedical Engineering 110L; Mechanical Engineering 83L or Biomedical Engineering 83L. Instructor: Staff. One course.

204. Measurement and Control of Cardiac Electrical Events (GE, IM, EL). 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 101L and 153L or equivalents. Instructor: Wolf. One course.

206L. 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: Biomedical Engineering 110L and 153L or equivalents. Instructor: Laursen. One course. C-L: Civil Engineering 206

207. 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; heterogeneous versus homogeneous reaction systems. Biomedical and biotechnological applications are discussed. Prerequisites: Biomedical Engineering 100L and Mathematics 108; or consent of the instructor. Instructor: Friedman, Katz, Truskey, or Yuan. One course. C-L: Civil Engineering 207, Mechanical Engineering and Materials Science 207, Modeling Biological Systems

208. Theoretical and Applied Polymer Science (GE, BB). One course. C-L: see Mechanical Engineering and Materials Science 211

210. Molecular Basis of Membrane Transport (GE, MC, EL). 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 25L or equivalent, Mathematics 107 or equivalent. Instructors: Friedman or Neu. One course. C-L: Neuroscience 240

211. Theoretical Electrophysiology (GE, EL). Advanced topics on the electrophysiological behavior of nerve and striated muscle. Source-field models for single-fiber and fiber bundles lying in a volume conductor. Forward and inverse models for EMG and ENG. Bidomain model. Model and simulation for stimulation of single-fiber and fiber bundle. Laboratory exercises based on computer simulation, with emphasis on quantitative behavior and design.
Readings from original literature. Prerequisite: Biomedical Engineering 101L or 201L or equivalent. Instructor: Barr or Neu. One course. C-L: Neuroscience 241

212L. Theoretical Electrocardiography (GE, EL). Electrophysiological 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 101L or 201L or equivalent. Instructor: Barr. One course.

213. Nonlinear Dynamics in Electrophysiology. Electrophysiological behavior of excitable membranes and nerve fibers examined with methods of nonlinear dynamics. Phase-plane analysis of excitable membranes. Limit cycles and the oscillatory behavior of membranes. Phase resetting by external stimuli. Critical point theory and its applications to the induction of rotors in the heart. Theory of control of chaotic systems and stabilizing irregular cardiac rhythms. Initiation of propagation of waves and theory of traveling waves in a nerve fiber. Laboratory exercises based on computer simulations, with emphasis on quantitative behavior and design. Readings from original literature. Prerequisite: Biomedical Engineering 101L or 201L or equivalent. Instructor: Barr. One course.

215. 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. Prerequisite: Biomedical Engineering 83L and 100L or their equivalent or consent of instructor. Instructor: Reichert. One course. C-L: Mechanical Engineering and Materials Science 215

216. 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 207 or equivalent. Instructor: Truskey or Yuan. One course.

217. Cell Mechanics and Mechanotransduction. This course examines 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 covered 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 will critically evaluate current literature and analyze models of cell mechanics and mechanotransduction. Prerequisites: Engineering 75 and Biomedical Engineering 207
or equivalent, knowledge of cell biology and instructor consent. Instructor: Truskey. One course.

**218. 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: Biomedical Engineering 83L or Mechanical Engineering 83L. Instructor: Chilkoti or Reichert. One course.

**220L. Introduction to Biomolecular Engineering (GE, BB, MC).** Structure of biological macromolecules, recombinant DNA techniques, principles of and techniques to study protein structure-function. Discussion of biomolecular design and engineering from the research literature. Linked laboratory assignments to alter protein structure at the genetic level. Expression, purification, and ligand-binding studies of protein function. Consent of instructor required. Instructor: Chilkoti. One course.

**221. Modeling and Engineering Gene Circuits.** 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 100L or consent of instructor. Instructor: You. One course.

**222. 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: Mathematics 107 and Physics 62L. Instructor: von Ramm. One course.

**227L. Design in Biotechnology (DR or GE, MC, BB).** Design of custom strategies to address real-life issues in the development of biocompatible and biomimetic devices for biotechnology or biomedical applications. Student teams will work with a client in the development of projects that incorporate materials science, biological transport and biomechanics. Formal engineering design principles will be emphasized; overview of intellectual properties, engineering ethics, risk analysis, safety in design and FDA regulations will be reviewed. Oral and written reports, and prototype development will be required. This course is intended as a capstone design course for the upper-level undergraduate biomedical engineering students with a focused interest in bimolecular science, biotechnology, transport, drug delivery, biomechanics and related disciplines. Prerequisites: BME 207, Statistics 113, or equivalent. Instructors: Gimm. One course.

**228. 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 207 or equivalent. Instructor: Truskey. One course.
230. Tissue Biomechanics (GE, BB). Introduction to the mechanical behaviors of biological solids and fluids with application to tissues, cells and molecules of the musculoskeletal and cardiovascular systems. Topics to be covered include static force analysis and optimization theory, biomechanics of linearly elastic solids and fluids, anisotropic behaviors of bone and fibrous tissues, blood vessel mechanics, cell mechanics and behaviors of single molecules. Emphasis will be placed on modeling stress-strain relations in these tissues, and experimental devices used to measure stress and strain. Student seminars on topics in applied biomechanics will be included. Prerequisites: Biomedical Engineering 110L or Engineering 75L; Mathematics 108. Instructor: Myers or Setton. One course.

231. 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: Biomedical Engineering 110L or Engineering 75L; Mathematics 108. Instructor: Myers or Setton. One course.

233. 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), and nuclear magnetic resonance imaging. Prerequisite: Biomedical Engineering 171, junior or senior standing. Consent of instructor required. Instructor: Smith or Trahey. One course. C-L: Modeling Biological Systems

233A. Modern Medical Diagnostic Imaging Systems. This course covers the mathematics, physics, and instrumentation of several modern medical imaging modalities starting with a review of applicable linear systems theory and relevant principles of physics. Modalities studied include X-ray photography (film-screen and electronic), computerized tomography, ultrasound and nuclear magnetic resonance imaging. Consent of instructor required. Instructor: MacFall. One course.

234. 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 154 or graduate standing. Instructor: Wax. One course.

235. Acoustics and Hearing (GE, 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: Biomedical Engineering 171 or equivalent and Mathematics 107. Instructor: Collins or Trahey. One course. C-L: Electrical and Computer Engineering 284

236L. Biophotonic Instrumentation (DR or GE, IM). 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. In this part, student teams are presented with a design challenge, and work through the steps of engineering design culminating in building a
prototype solution to the design challenge. Lecture topics include engineering design, intellectual property protection, engineering ethics, and safety. Prerequisites: Biomedical Engineering 154L and Statistics 113. Instructor: Izatt or Wax. One course.

237. Biosensors (GE, IM, MC). Biosensors are defined as the use of biospecific recognition mechanisms in the detection of analyte concentration. The basic principles of protein binding with specific reference to enzyme-substrate, lectin-sugar, antibody-antigen, and receptor-transmitting binding. Simple surface diffusion and absorption physics at surfaces with particular attention paid to surface binding phenomena. Optical, electrochemical, gravimetric, and thermal transduction mechanisms which form the basis of the sensor design. Prerequisites: Biomedical Engineering 83L and 100L or their equivalent and consent of instructor. Instructor: Reichert or Vo-Dinh. One course.

239. 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 207 and consent of instructor. Instructor: Katz. One course.

240L. Environmental Molecular Biotechnology (GE, MC). One course. C-L: see Civil Engineering 239L

242L. Introduction to Bionanotechnology Engineering. 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: BME 83L and BME 100L or consent of instructor. One course.

246. Computational Methods in Biomedical Engineering (GE). Introduction to practical computational methods for data analysis and simulation with a major emphasis on implementation. Methods include numerical integration and differentiation, extrapolation, interpolation, splining FFTs, convolution, ODEs, and simple one- and two-dimensional PDEs using finite differencing. Introduction to concepts for optimizing codes on a CRAY-YMP. Examples from biomechanics, electrophysiology, and imaging. Project work included and students must have good working knowledge of Unix, Fortran, or C. Intended for graduate students and seniors who plan on attending graduate school. Prerequisite: Engineering 53L or equivalent, Mathematics 107 or equivalent, or consent of instructor. Instructor: Henriquez. One course. C-L: Modeling Biological Systems


248. Tissue Engineering (GE, 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: Mathematics 108 or consent of instructor. Instructor: Bursac. One course.

252. 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 154L. Instructor: Wolf. One course. C-L: Neuroscience 252

253. 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, neural 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: BME 101/201 or equivalent. Instructor: Henriquez. One course. C-L: Neuroscience 253

254. 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.

256. Neural Prosthetic Systems. This course will cover several systems that use electrical stimulation or recording of the nervous system to restore function following disease or injury. For each system the course will cover the underlying biophysical basis for the treatment, the technology underlying the treatment, and the associated clinical applications and challenges. Systems to be covered include cochlear implants, spinal cord stimulation of pain, vagus nerve stim. for epilepsy, deep brain stim. for movement disorders, sacral root stim. for bladder dysfunction, and neuromuscular electrical stim. for restoration of movement. Prerequisites: Biomedical Engineering 101L, Biomedical Engineering 153L, and consent of instructor. Instructor: Grill. One course.

258L. Genome Science & 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: Tian. Variable credit. C-L: Computational Biology and Bioinformatics 222, Genome Sciences and Policy

260L. Devices for People with Disabilities (DR or GE, IM, BB). 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. Prerequisite: Biomedical Engineering 154L and Statistics 113. Consent of instructor required. Instructor: Bohs or Goldberg. One course.

261L. Electronic Designs for the Developing World (DR or GE, IM). 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. Designs must be based on microcontroller or
equivalent electronic circuitry. 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. Prerequisites: Biomedical Engineering 154L and Statistics 113. Consent of instructor required. Instructor: Malkin. One course.

262L. Design for the Developing World (DR or GR). 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 154L and Statistics 113. Consent of instructor required. Instructor: Malkin. One course.

264L. Medical Instrument Design (DR or GE, IM). 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 154L and Statistics 113, or equivalent or senior
standing. Instructor: Malkin, S. Smith, Trahey, or Wolf. One course.

265. Advanced Topics in Biomedical Engineering. Advanced subjects related to programs
within biomedical engineering tailored to fit the requirements of a small group. Consent of
instructor required. Instructor: Staff. One course.

265L. Advanced Topics with Lab. To be used as a "generic" course number for any advanced
topics course with lab sections. Instructor: Staff. One course.

275. Introduction to Biofluid Mechanics. 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 musculoskel-
etal systems), applications to diagnosis and therapy, (e.g. drug delivery and devices).
Prerequisite: Biomedical Engineering 207. Instructor: Katz. One course.

THE MAJOR

The major requirements are included in the minimum total of thirty-four courses listed
under general requirements and departmental requirements. The following specific courses
or their approved alternatives must be included: Biomedical Engineering 100, 153, 154,
171; two Area of Interest Core classes: (Biomedical Engineering 201L, 202L, 207, 233);
two electives from one selected Area of Interest (BB, MC, EL, or IM); two general (G)
BME electives; and one Biomedical Engineering design course (D) (Biomedical

Civil and Environmental Engineering (CE)

Professor Albertson, Chair; Associate Professor of the Practice Schaad, Associate Chair;
Associate Professor of the Practice Nadeau, Director of Undergraduate Studies; Professors
Albertson, Barros, Deshusses, Dolbow, Haff, Laurensen, Katul, Malin, Hueckel, Petroski,
Porporato, Trangenstein, Virgin, and Wiesner; Associate Professors Boadu, Ferguson,
Gavin, Kabala, Kasibhatla, and Peirce; Assistant Professors Khlystov, Hsu-Kim, Gunsch,
and Scruggs; Professors Emeriti Brown and Wilson; Associate Professors of the Practice
Nadeau and Schaad; Adjunct Associate Professor Vallero; Lecturer Brasier
A major is available in this department. The civil engineering program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.*

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 a degree program in civil 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,

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* Engineering and Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET) 111 Market Place, Suite 1050, Baltimore, MD 21202, telephone (410)347-7700
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.

24L. **Introduction to Environmental Engineering and Science.** One course.

100. **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.

116. **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: Statistics 113 and consent of instructor for nonengineering students. Instructor: Staff. One course.

120L. **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 18, 19, 31, or consent of instructor. Instructor: Hsu-Kim, Khlystov. One course. C-L: Energy and the Environment

122L. **Fluid Mechanics.** Physical properties of fluids; fluid-flow concepts and basic equations; continuity, energy, and momentum principles; dimensional analysis and dynamic similitude; viscous effects; applications emphasizing real fluids. Selected laboratory work. Corequisite: Engineering 123L. Instructor: Boadu, Kabala, Laursen, or Medina. One course.

123L. **Water Resources Engineering.** Descriptive and quantitative hydrology, hydraulics of pressure conduits and measurement of flow, compound pipe systems, analysis of flow in pressure distribution systems, open channel flow, reservoirs and distribution system storage. Groundwater hydrology and well-hydraulics. Probability and statistics in water resources. Selected laboratory and field exercises, computer applications. Prerequisite: Civil Engineering 122L. Instructor: Kabala or Medina. One course.

124L. **Biological Principles in Environmental Engineering.** Fundamentals of microbiology related to biological environmental engineering processes. Topics include microbial metabolism, molecular biological tools, mass balance, and reactor models. Applications to include unit processes in wastewater treatment, bioremediation and biofiltration. Laboratory included. Field trips to be arranged. Prerequisite: Civil Engineering 122L. Instructor: Deshusses, Gunsch. One course. C-L: Energy and the Environment

130L. **Uncertainty Design and Optimization.** Principles of design as a creative and iterative process involving problem statements, incomplete information, conservative assumptions, constraining regulations, and uncertain operating environments. Parameterization of costs and constraints and formulation of constrained optimization problems. Analytical and numerical solutions to constrained optimization problems. Evaluation of design solutions via sensitivity and risk analysis. Application to design problems in civil and environmental engineering. Prerequisite: EGR 75L. One course. Instructor: Gavin or Scruggs. One course.

131L. **Matrix Structural Analysis.** Development of stiffness matrix methods from first principles. Superposition of loads and elements. Linear analysis by hand and computer of plane and space structures comprising one-dimensional truss and beam elements. Prerequisites: Engineering 75L and Mathematics 103 or Mathematics 107. Instructors: Gavin, Laursen, or Virgin. One course.
133L. 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 75L. Instructor: Nadeau. One course.


141. 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.

142. 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.


162. Architectural Engineering II. Design and integration of building subsystems (enclosure, space, structural, environmental-control) in the design of a medium-sized building. Prerequisite: Civil Engineering 161 or consent of instructor. Instructor: Brasier. One course.

172. 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 173 and 174. Consent of instructor and program director required. Instructor: Staff. One course.


175. Analytical and Computational Solid Mechanics. Investigation and application of intermediate concepts of mechanics, expanding upon elementary ideas covered in Engineering 75L. 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 75L, Math 103 and 107 or consent of instructor.
Instructor: Laursen or Dolbow. One course. C-L: Mechanical Engineering and Materials Science 175, Modeling Biological Systems

185. Engineering Sustainable Design and Construction. 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: EGR 75 or ECE 27 or consent of instructor. Instructor: Schaad. One course.

192. 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 Engineering 131L, 133L, 134L. Instructor: Nadeau. One course.

193. 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 Engineering 120L, 123L, 124L. Instructor: Schaad. One course. C-L: Global Health

197. 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.

198. 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.


equivalent and undergraduate courses in solid and/or fluid mechanics. Instructor: Kabala. One course. C-L: Modeling Biological Systems


205. 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 Engineering 201 or consent of instructor. Instructor: Nadeau. One course.

206. Elasticity (GE, BB). One course. C-L: see Biomedical Engineering 206L

207. Transport Phenomena in Biological Systems (AC or GE, BB). One course. C-L: see Biomedical Engineering 207; also C-L: Mechanical Engineering and Materials Science 207, Modeling Biological Systems


210. Intermediate Dynamics: Dynamics of Very High Dimensional Systems. One course. C-L: see Mechanical Engineering and Materials Science 210

211. 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 123L and Mathematics 108 or consent of instructor. Instructor: Franzoni. One course. C-L: Mechanical Engineering and Materials Science 234


characteristics, hydrologic instrumentation, and computer simulation models. Prerequisite: Civil Engineering 122L or consent of instructor. Instructor: Medina. One course.


229. 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.

230L. Aerosol Measurement Techniques for Air Quality Monitoring and Research. Principles of measurements and analysis of 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: Khlystov. One course.


238. 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.

239L. 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: CE 123L/ BIO 25 or consent of the instructor. Instructor: Gunsch. One course. C-L: Biomedical Engineering 240L

240. Chemical Fate of Organic Compounds. One course. C-L: see Environment 240

241. 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.

242. 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.
Prerequisite: Civil and Environmental Engineering 120L or Environment 160 or equivalent. Instructor: Hsu-Kim. One course. C-L: Environment 242

**243. 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 Engineering 124L. Instructor: Kabala. One course.

**244. 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.

**245. 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. Prerequisites: Civil Engineering 122L and Mathematics 111 or equivalents. Instructor: Medina. One course.

**246. 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 Engineering 124L or consent of instructor. Instructor: Staff. One course.


**248. 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 Engineering 124L or consent of instructor. Instructor: Staff. One course. C-L: Environment 248


**250. 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: CE124L or graduate standing or consent of the instructor. Instructor: Gunsch. One course.

**251. 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. C-L: Modeling Biological Systems

**252. 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 Engineering 131L or consent of instructor. Instructor: Virgin. One course. C-L: Mechanical Engineering and Materials Science 252

254. 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, 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: Dolbow and Laursen. One course. C-L: Mechanical Engineering and Materials Science 254

255. 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: CE/ME 254 or consent of instructor. Instructor: Laursen. One course. C-L: Mechanical Engineering and Materials Science 255

256. Computational Methods for Evolving Discontinuities. Presents an overview of advanced nomenclature 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: CE 254, CE 255, or instructor consent. Instructor: Dolbow. One course. C-L: Mechanical Engineering and Materials Science 256

260. 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 Engineering 122L and Mathematics 108, or consent of instructor. Instructor: Kabala. One course.

262. 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. Prerequisites: Mathematics 108 and either Civil Engineering 122L or 123L, or consent of instructor. Instructor: Kabala. One course.

263. Multivariable Control. One course. C-L: Electrical and Computer Engineering 263, Mechanical Engineering and Materials Science 263

264. 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 mathemati-
265. 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.

269. 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: CE 241 or consent or instructor. Instructor: Staff. One course.

270. 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 108 or Physics 52L or consent of instructor. Instructor: Boadu. One course.


273. 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: Staff. One course.

279. Introduction to Atmospheric Chemistry. NS One course. C-L: see Environment 279

281. Experimental Systems. Formulation of experiments; Pi theorem and principles of similarity; 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.

283. 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.

292. 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 CE 192, CE 193, or CE 293. Consent of instructor required. Instructor: Nadeau. One course.

293. 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 CE 192, CE 193, CE 292. Instructor: Schaad. One course.

THE MAJOR

The major requirements are included in the minimum of thirty-four courses listed under general requirements and departmental requirements. The following specific courses must be included. All majors must take Engineering 25L, 53L, 75L, 115, 123L, and 150L: Civil and Environmental Engineering 24L, 100, 122L, 130L, and 139L. Majors choosing the structural engineering and mechanics sequence must take Civil and Environmental engineering 131L, 133L, 134L and 192. Majors choosing the environmental engineering and water resources sequence must take Civil and Environmental Engineering 120L, 123L, 124L and 193.

Electrical and Computer Engineering (ECE)

Professor Collins, Chair; Associate Professor Board, Associate Chair; Associate Professor of the Practice Huettel, Director of Undergraduate Studies; Professors Brady, Brown, Carin, Chakrabarty, Fair, Glass, Joines, Jokerst, Krolík, Liu, Massoud, Nolte, Smith, and Trivedi; Associate Professors Brooke, Cummer, Kedem, Sorin, and Teitsworth; Assistant Professors Dwyer, Kim, Reynolds, Roy Choudhury, Stiff-Roberts, Willet, and Yoshie; Professors Emeriti Casey, George, Marinos, Owen, Wang, and Wilson; Professor of the Practice Ybarra; Associate Professor of the Practice Gustafson; Assistant Research Professors Morizio, Tantum, and Wolter; Adjunct Professors Derby and Guenther; Adjunct Associate Professors Janet and Ozev; Adjunct Assistant Professor Remus; Visiting Professors Kaiser and McCumber

The educational mission of the Department of Electrical and Computer Engineering is to facilitate the development of graduates who are highly technically skilled, well rounded, productive, and ethical individuals versed in social, economic, political, and environmental issues. Our goals are to develop within each student a robust repertoire of professional skills, to provide each with avenues for exploring diverse interests, and to launch each successfully into one of a variety of careers offering lifelong learning, service, and leadership within their own local, national, and global communities. To achieve our mission, the department puts forth the following educational objectives for the extremely capable students entering the ECE program.

Our graduates
1) will be prepared to enter careers in academia, industry, or government with problem solving and technical skills that will facilitate their advancement into leadership roles in the profession of electrical and computer engineering or
related areas;

2) will utilize their analytical skills, knowledge of modern engineering tools, and interdisciplinary project-based learning to function effectively in positions that require creative solutions, involve coordination of multiple disciplines, and concern for positive societal outcomes; and

3) will be prepared to solve problems based upon fundamental knowledge of electrical and computer engineering, abilities to engage in life-long learning, and in-depth exposure to the humanities and social sciences.

The Electrical and Computer Engineering (ECE) program is fully accredited by the Engineering Commission of the Accreditation Board for Engineering and Technology (ABET)* 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 12 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 new 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.

27L Fundamentals of Electrical and Computer Engineering. Students learn core ECE concepts, providing a foundation on which subsequent courses build. These concepts

* Engineering Accrediation Commission of the Accreditation Board for Engineering and Technology (ABET) 111 Market Place, Suite 1050, Baltimore, MD 21202, telephone (410) 347-7700
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 53L. Corequisite: MATH 32. Instructor: Huettel or Ybarra. One course.

51L. 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, 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 53L, and either Electrical and Computer Engineering 27L or Biomedical Engineering 153L. Instructor: Brooke or Massoud. One course.

52L. Introduction to Digital Systems. Techniques for the analysis and design of combinational and sequential networks via manual and automated methods. Introduction to hardware description languages. Introduction to simple computer systems, including their lower-level architecture, assembly language programming, and computer arithmetic. Lab stresses simulation of target circuits and physical realization with both discrete and high-complexity programmable components. Final design project. Prerequisite: Engineering 53L, and either Electrical and Computer Engineering 27L or Biomedical Engineering 153L. Instructor: Board, Dwyer, or Sorin. One course.

53L. 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. Prerequisites: Engineering 53L, Mathematics 107 and either Electrical and Computer Engineering 27L or Biomedical Engineering 153L. Instructor: Carin, Cummer, Joines, Liu, or Smith. One course.

54L. 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 53L, and either Electrical and Computer Engineering 27L or Biomedical Engineering 153L. Instructor: Collins, Gustafson, or Huettel. One course.

122. Modern Optics I. NS One course. C-L: see Physics 185; also C-L: Visual Studies 123A

123. Photonic and Electronic Design Projects. Photonic and electronic design problems obtained from industry are solved by teams of students. Required student response includes: formulation and written presentation of proposed problem solution, execution and evaluation of approved design solution, and written and oral presentation of final design performance, all for faculty review. Completed design must consider cost, performance, manufacturability. Students must address design solution impact on: environment, health, safety, society, and public policy as appropriate. Ethical issues as well as proper handling
of intellectual property are discussed and used to guide the design process. Prerequisites: Electrical and Computer Engineering 163L and Electrical and Computer Engineering 122. Instructor: Guenther. One course.

**135. Opto-Electronic Design Projects.** Teams of students design an opto-electronic board-level system to a published specification. The system is built, tested, and compared to the design specifications. Optical, analog, digital, and radio frequency (RF) components are used to complete the projects. Group tasks include resource planning and management using GANTT charts, project budgeting, estimating product Bill of Materials costs, background study of the standard specification and component characteristics, testing of an evaluation board, interaction with component vendors, design of the team's board, submission of that design to a quick-turnaround board fabrication foundry, assembly of the purchased components onto the fabricated board, and board-level system test. The opto-electric board design incorporates considerations such as cost, economic viability, environmental impact, ethical issues, manufacturability, and social and political impact. Prerequisite: Electrical and Computer Engineering 51L and Junior or Senior standing in ECE or EE. Instructor: Brooke, Jokerst. One course.

**141. Linear Control Systems.** Analysis and design of feedback control systems. Block diagram and signal flow graph system models. Servomechanism characteristics, steady-state errors, sensitivity to parameter variations and disturbance signals. Time domain performance specifications. Stability. Root locus, Nyquist, and Bode analysis; design of compensation circuits; closed loop frequency response determination. Introduction to time domain analysis and design. Prerequisite: Electrical and Computer Engineering 54L or consent of instructor. Instructor: Gustafson. One course.

**142. Introduction to Robotics and Automation.** Fundamental notions in robotics, basic configurations of manipulator arm design, coordinate transformations, control functions, and robot programming. Applications of artificial intelligence, machine vision, force/torque, touch and other sensory subsystems. Design for automatic assembly concepts, tools, and techniques. Application of automated and robotic assembly costs, benefits, and economic justification. Selected laboratory and programming assignments. Prerequisites: Electrical and Computer Engineering 54L. Instructor: Janet. One course. C-L: Mechanical Engineering and Materials Science 142, Information Science and Information Studies


**149L. 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 62L, Electrical and computer Engineering 27L or Engineering 119L. Instructor: Klenk. One course. C-L: Mechanical Engineering and Materials Science 149L

**152. Introduction to Computer Architecture.** Architecture and organization of digital computer systems. Processor operation, computer arithmetic, instruction set design. Assembly language programming. Selected hardware and software exercises culminating in the design, simulation, and implementation in FPGA technology of the major components of a complete computer system. Not open to students who have taken Computer Science 104. Prerequisite: Electrical and Computer Engineering 52L and Computer Science 100E.
Instructor: Board or Sorin. One course. C-L: Information Science and Information Studies, Modeling Biological Systems

153. 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 110. Prerequisites: Computer Science 100 and 104. Instructor: Chase or Ellis. One course.

154. 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 152 or equivalent and consent of instructor. Instructor: Board. One course. C-L: Modeling Biological Systems


158. Web Technologies. Introduction to the programming languages, authoring tools, and other technologies needed to design and implement effective sites on the World Wide Web. Topics include HTML, Javascript, cgi-bin, multimedia, and security. Students lead many class sessions; course project is to design or redesign a web site of interest to the Duke or Durham communities. Satisfactory/Unsatisfactory grading only. Prerequisite: knowledge of at least one programming language at level of Computer Science 1. Instructor: Board. Half course. C-L: Information Science and Information Studies

159. Discrete Mathematics. Mathematics as applied to finite and infinite collections of discrete objects, including techniques for solving engineering problems involving finite and infinite sets, permutations and combinations of elements, discrete numeric functions, finite and infinite sums. Mathematical methods needed to tackle real-world problems in computer engineering, applied mathematics, computer science, and engineering. Instructor: Staff. One course.

162. Fundamentals of Microelectronic Devices. Fundamentals of semiconductor physics and modeling (semiconductor doping technology, carrier concentrations, carrier transport by drift and diffusion, temperature effects, semiconductor device models). Principles of semiconductor device analysis (current-voltage and capacitance-voltage characteristics). Static and dynamic operation of semiconductor contacts, PN junction diodes, MOS capacitors, MOS field-effect transistors (MOSFETs), and bipolar-junction transistors (BJTs). SPICE models and parameter extraction. Prerequisite: Electrical and Computer Engineering 51L. Instructor: Massoud. One course.

163L. Introduction to Electronics: Integrated Circuits. Analysis and design of electronic circuits in bipolar and MOS technologies, with emphasis on both large-signal and small-

**164L. Electronic Design Projects.** Electronics/photonics project laboratory in which multidisciplinary teams of students build and test custom designed circuits or electronic/photononic systems. Students gain experience in the design/build/test/demonstrate process. Requirements include: a design plan incorporating engineering standards and realistic constraints, a timeline indicating project milestones, a written project report, and oral presentations to the class. The completed design must consider most of the following: cost, environmental impact, manufacturability, ethics, health and safety, social and political impact. Prerequisites: Electrical and Computer Engineering 163L (or Biomedical Engineering 154L with consent of instructor) and at least one of 52L, 141 or 180. Instructor: Brooke, George, Jokerst, Ybarra. One course.

**171. Applications of Electromagnetic Fields and Waves.** Solution techniques applied to static and dynamic field problems. Discussions and example applications include the following topics: waves and transmission lines, waveguides and resonators, antennas and radiation, and electromagnetic forces and energy. Prerequisite: Electrical and Computer Engineering 53L. Instructor: Carin or Joines. One course.

**176. 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 176. Prerequisites: Mathematics 103 or equivalent and Physics 51L, 62L or equivalent. Instructor: Staff. One course.

**180. 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 54L and Statistics 113 or Mathematics 135 or Electrical and Computer Engineering 255 or permission of instructor. Instructor: Huettel or Nolte. One course.


189. **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 54L and Statistics 113 or Mathematics 135 or Electrical and Computer Engineering 255 or permission of instructor. Instructor: Willett. One course. C-L: Information Science and Information Studies, Modeling Biological Systems

191. **Undergraduate Research in Electrical and Computer Engineering.** For juniors only. Half course or one course each. Instructor: Staff. Variable credit.

192. **Undergraduate Research in Electrical and Computer Engineering.** For juniors only. Half course or one course each. Instructor: Staff. Variable credit.

193. **Undergraduate Research in Electrical and Computer Engineering.** For seniors only. Half course or one course each. Instructor: Staff. Variable credit.

194. **Undergraduate Research in Electrical and Computer Engineering.** For seniors only. Half course or one course each. Instructor: Staff. Variable credit.

195. **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.

196. **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.

197. **Projects in Electrical and Computer Engineering.** A course which may be undertaken only by seniors who are enrolled in the graduation with distinction program or who show special aptitude for individual project work. Elective for electrical and computer engineering majors. Consent of director of undergraduate studies required. Half course to two courses each. Instructor: Staff. Variable credit.

198. **Projects in Electrical and Computer Engineering.** A course which may be undertaken only by seniors who are enrolled in the graduation with distinction program or who show special aptitude for individual project work. Elective for electrical engineering majors. Consent of director of undergraduate studies required. Half course to two courses each. Instructor: Staff. Variable credit.

211. **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 107 or equivalent. Instructor: Brady, Brown, or Stiff-Roberts. One course.

214. **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 143L or Electrical and Computer Engineering 211. Instructor: Teitsworth. One course.

215. **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 211 or consent of instructor. Instructor: Staff. One course.


227. Quantum Information Science. 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: ECE 211 or Physics 211 or equivalent. Instructor: Kim. One course. C-L: Physics 272


243. 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, bioinformation, 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 107, Statistics 113 or Mathematics 135, Computer Science 6, or consent of instructor. Instructor: Collins or P. Wang. One course.

245. Digital Control Systems. Review of traditional techniques used for the design of discrete-time control systems; introduction of "nonclassical" control problems of intelligent machines such as robots. Limitations of the assumptions required by traditional design and analysis tools used in automatic control. Consent of instructor required. Instructor: Staff. One course.


251. 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 52L and Senior/graduate student standing. Instructor: Derby. One course.

252. Advanced Computer Architecture I. QS, R One course. C-L: see Computer Science 220; also C-L: Modeling Biological Systems


254. 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 152 or equivalent. Instructor: Sorin. One course. C-L: Computer Science 225

255. Probability for Electrical and Computer Engineers. Basic concepts and techniques used stochastic modeling of systems with applications to performance and reliability of computer and communications system. Elements of probability, random variables (discrete and continuous), expectation, conditional distributions, stochastic processes, discrete and continuous time Markov chains, introduction to queuing systems and networks.
Prerequisite: Mathematics 107. Instructor: Trivedi. One course. C-L: Computer Science 226, Information Science and Information Studies, Modeling Biological Systems


259. Advanced Computer Architecture II. QS One course. C-L: see Computer Science 221; also C-L: Modeling Biological Systems

260. CMOS VLSI Design Methodologies. Emphasis on full-custom chip design. Extensive use of CAD tools for IC design, simulation, and layout verification. Techniques for designing high-speed, low-power, and easily-testable circuits. Semester design project: Groups of four students design and simulate a simple custom IC using Mentor Graphics CAD tools. Teams and project scope are multidisciplinary; each team includes students with interests in several of the following areas: analog design, digital design, computer science, computer engineering, signal processing, biomedical engineering, electronics, photonics. A formal project proposal, a written project report, and a formal project presentation are also required. The chip design incorporates considerations such as cost, economic viability, environmental impact, ethical issues, manufacturability, and social and political impact. Prerequisites: Electrical and Computer Engineering 52L and Electrical and Computer Engineering 163L. Some background in computer organization is helpful but not required. Instructor: Chakrabarty. One course.


264. 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 equipments, test generation, fault simulation, and built-in-self-test, and automated circuit synthesis including architecture generation, circuit synthesis, fault 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: ECE 163L. Permission of instructor required. Instructor: Staff. One course.

265. 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 52L or equivalent. Instructor: Chakrabarty. One course.

266. 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 54L and Electrical and Computer Engineering 163L or equivalent. Instructor: Staff. One course.

267. 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 52L or equivalent. Instructor: Chakrabarty. One course.

268. 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 53L. Instructor: Carin, Joines, Liu, or Smith. One course.


270. 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 53L or equivalent. Instructor: Joines. One course.
Electrical and Computer Engineering 271 or consent of instructor. Instructor: Carin or Liu. One course.

278. 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 271), or consent of instructor. Instructor: Liu. One course.

279. 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 53L. Instructor: Cummer. One course.


282. 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 281 or equivalent with consent of the instructor. Instructor: Collins, Krolik, Nolte, Tantum, or Willett. One course. One course.


284. Acoustics and Hearing (GE, IM). One course. C-L: see Biomedical Engineering 235

285. 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 281 or consent of instructor. Instructor: Nolte. One course.

286. Digital Processing of Speech Signals. Detailed treatment of the theory and application of digital speech processing. Modeling of the speech production system and speech signals; speech processing methods; digital techniques applied in speech transmission, speech synthesis, speech recognition, and speaker verification. Acoustic-phonetics, digital speech modeling techniques, LPC analysis methods, speech coding techniques. Application case studies: synthesis, vocoders, DTW (dynamic time warping)/HMM (hidden Markov modeling) recognition methods, speaker verification/identification. Prerequisite: Electrical
and Computer Engineering 182 or equivalent or consent of instructor. Instructor: Staff. One course.

288. 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 space-time 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: Staff. One course.


299. 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: Staff. One course.

322. Quantum Electronics. Quantum theory of light-matter interaction. Laser physics (electron oscillator model, rate equations, gain, lasing condition, oscillation dynamics, modulation) and nonlinear optics (electro-optic effect, second harmonic generation, phase matching, optical parametric oscillation and amplification, third-order nonlinearity, optical bistability.) Prerequisite ECE 211, Physics 211, or equivalent. Instructors: Stiff-Roberts or Yoshie. One course. One course.


376. Lens Design. Paraxial and computational ray tracing. Merit functions. Wave and chromatic aberrations. Lenses in photography, microscopy and telescopy. 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 122 or 274. Instructor: Brady. 3 units. One course.

THE MAJOR

The requirements for the Electrical Engineering (EE) and Electrical and Computer Engineering (ECE) majors are included in the minimum total of 34 courses listed under the
general requirements and departmental requirements. The program of study must include an approved engineering design course taken in the junior or senior year of the program.

**Mechanical Engineering and Materials Science (ME)**

Professor Laursen, Chair; Associate Professor Bliss, Director of Undergraduate Studies; Professors Bejan, Cocks, Dowell, Garg, Hall, Laursen, Marszalek, Needham, Shaughnessy, and Tan; Associate Professors Bliss, Curtarolo, Ferrari, Howle, Knight, Zauscher, and Zhong; Assistant Professors Chen, Lazarides, Mann, Protz, Yellen, and Zhao; Professor of the Practice Franzoni; Associate Research Professor Tang; Assistant Research Professors Simmons and Thomas; Senior Research Scientist Kielb; Adjunct Professor Lorente; Adjunct Assistant Professor Stepp

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.*

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, and mechanical and thermal systems, and through better understanding of dynamic processes involving these systems. They have a wide involvement in many industries including aerospace, biomechanical and biomedical engineering, construction, electronics, manufacturing, national defense, power generation, and transportation. 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. Although individual engineers may specialize within their industry positions or in graduate study, each must have the background needed to contribute in any of several technical areas, to combine knowledge of multiple topics when necessary, and to interact with members of other disciplines and professions in accomplishing broad goals. Thus the mechanical engineer's program of study must include fundamental grounding in mathematics and basic sciences, 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. Furthermore, 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.

With these considerations in mind, the educational objectives of the undergraduate mechanical engineering program are to graduate students who:

- identify and address significant needs and challenges in engineering and society, and effectively communicate solutions
- advance in professional careers that may encompass a broad range of endeavors, both technical and non-technical
- exhibit intellectual depth and creativity in employment, advanced education, and research
- uphold high ethical standards and show a commitment to the betterment of society through service and professional work

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,

* Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET) 111 Market Place, Suite 1050, Baltimore, MD 21202, telephone (410)347-7700
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.

**83L. 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 18, 19, or 31 and Engineering 75L or Biomedical Engineering 110L. Instructor: Curtarolo, Lazarides, Simmons, or Zauscher. One course.


**121. Energy Engineering and the Environment.** Efficiencies of both new and established energy sources and conversion methods. Evaluation of alternative energy technologies by statistical information and by modeling using principals of fluid mechanics, thermodynamics and heat transfer. Electricity generation by fossil fuels, nuclear, solar, wind and hydro. Space heating and cooling by traditional methods and by solar. 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. Prerequisite: ME 101L Thermodynamics. Instructors: Cocks and Knight. One course. C-L: Energy and the Environment

**125L. 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 119 and Math 107. Instructor: Ferrari, Garg. One course.

**126L. 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 123L and Mechanical Engineering 101L, Co-requisite or prerequisite: Mathematics 108. Instructor: Bliss, Howle, Knight, Shaughnessy, or Zhong. One course.

**131L. 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 20L, 75L, 123L, and Math 108. Instructor: Franzoni, Howle, Laursen, Zhao. One course.
135. 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 used 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: ME125L. Instructor: Kielb. One course.

141L. 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 123L and Mechanical Engineering 131L. Instructor: Franzoni, Howle, or Knight. One course.


160L. 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 125L, 141L, and 150L. Instructor: Kielb or Knight. One course.

165. 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.

166. 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.


172. 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 173 and 174. Consent of instructor and program director required. Instructor: Staff. One course.
173. **Engineering Undergraduate Fellows Projects.** Continuation course for Engineering Undergraduate Fellows, contingent upon satisfactory completion of 172. Consent required. Instructor: Staff. One course.

174. **Engineering Undergraduate Fellows Projects.** Final continuation course for Engineering Undergraduate Fellows, contingent upon satisfactory completion of 172 and 173. Consent required. Instructor: Staff. One course.

175. **Analytical and Computational Solid Mechanics.** One course. C-L: see Civil Engineering 175; also C-L: Modeling Biological Systems

183. **Power Generation.** Basic concepts of thermodynamics, heat transfer, and fluid flow applied to power generation processes. Nuclear reaction theory and reactor technology; fossil fuel combustion theory and modern boiler practice. Power plant ancillary equipment and processes. Design considerations and analyses include economic and environmental factors. Instructor: Staff. One course.

187. **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.

188. **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.

197. **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.

198. **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.


204. **Plates and Shells.** One course. C-L: see Civil Engineering 204

207. **Transport Phenomena in Biological Systems (AC or GE, BB).** One course. C-L: see Biomedical Engineering 207; also C-L: Civil Engineering 207, Modeling Biological Systems

209. **Soft Wet Materials and Interfaces.** The materials science and engineering of soft wet materials and interfaces. Emphasis on the relationships between composition, structure, properties and performance of macromolecules, self assembling colloidal systems, linear polymers and hydrogels in aqueous and nonaqueous liquid media, including the role of water as an “organizing” solvent. Applications of these materials in biotechnology, medical technology, microelectronic technology, and nature’s own designs of biological materials. Instructor: Needham. One course.


213. Physical Metallurgy. An advanced materials science course focusing on the relationships between structure and properties in metals and alloys. Conceptual and mathematical models developed and analyzed for crystal structures, elastic and plastic deformation, phase transformations, thermodynamic behavior, and electrical and magnetic properties. Prerequisites: Mechanical Engineering 83L and 101L. Instructor: Staff. One course.

215. Biomedical Materials and Artificial Organs (GE, BB). One course. C-L: see Biomedical Engineering 215

216. Mechanical Metallurgy. An advanced materials science course dealing with the response of materials to applied forces. Mechanical fundamentals; stress-strain relationships for elastic behavior; theory of plasticity. Metallurgical fundamentals; plastic deformation, dislocation theory; strengthening mechanisms. Mechanical behavior of polymers. Applications to materials testing. Prerequisites: Engineering 75L and Mechanical Engineering 83L. Instructor: Staff. One course.


218. 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: Tan. One course.

221. Compressible Fluid Flow. Basic concepts of the flow of gases from the subsonic to the hypersonic regime. One-dimensional wave motion, the acoustic equations, and waves of finite amplitude. Effects of area change, friction, heat transfer, and shock on one-dimensional flow. Moving and oblique shock waves and Prandtl-Meyer expansion. Prerequisite: ME126 or equivalent. Instructor: Shaughnessy. One course.

225. 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: ME126 or equivalent. Instructor: Staff. One course.

226. 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, constitutional equations for a Newtonian fluid, the Navier-Stokes equations, and boundary conditions on velocity and stress at material interfaces. Instructor: Shaughnessy. One course.


229. 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. C-L: Modeling Biological Systems


231. 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.


233. 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 107 or 111. Consent of instructor required. Instructor: Ferrari. One course.

234. 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 123L and Mathematics 108 or consent of instructor. Instructor: Franzoni. One course. C-L: Civil Engineering 211

235. **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.

236. **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 108 or equivalent or consent of instructor. Instructor: Bliss. One course.

237. **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: ME126 and Mathematics 108 or equivalent. Instructor: Bliss. One course.


239. **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 237. Instructor: Hall. One course.


241. **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
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gases and electrolyte distribution, wave propagation near boundaries and in complex media, transport equations in continuum limit. Consent of instructor required. Instructor: Yellen.

252. Buckling of Engineering Structures. One course. C-L: see Civil Engineering 252

254. Introduction to the Finite Element Method. One course. C-L: see Civil Engineering 254

255. Nonlinear Finite Element Analysis. One course. C-L: see Civil Engineering 255

263. Multivariable Control. One course. C-L: Civil Engineering 263, Electrical and Computer Engineering 263

265. 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.

268. 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.

270. 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 230 or equivalent and consent of instructor. Instructor: Garg. One course.

275. Product Safety and Design. An advanced engineering design course that develops approaches to assessing and improving the safety of products and product systems. Safety is presented in terms of acceptable risk and analyzed through legal case studies. Probabilistic decision making; risk economics; risk analysis and assessment. Corequisite: Mechanical Engineering 160L. Instructor: Staff. One course.

276. Designs and Decisions. Successful engineering entrepreneurship requires both the creation of new devices and processes and the ability to make rational selections among design alternatives. Design methodology is presented that fosters creativity and introduces TRIZ (the Russian acronym for Theory of Inventive Problem Solving). Decisions among design alternatives are structured and analyzed in graphical and probabilistic terms: tree diagrams; sampling theory; hypothesis testing; and confidence levels. Corequisite: Mechanical Engineering 160L or consent of instructor. Instructor: Staff. One course.


281. 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.

282. 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 108 or consent of instructor. Instructor: Staff. One course.

THE MAJOR

The major requirements are included in the minimum total of thirty-four courses listed under the general requirements and departmental requirements. Specific courses which must be included are Engineering 20L, 53L, 75L, 119L, and 123L; Mechanical Engineering 83L, 101L, 125L, 126L, 131L, 141L, 150L, and 160L.
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