The information in this bulletin applies to the academic year 2002-2003 and is accurate and current, to the extent possible, as of January, 2002. 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 does not discriminate on the basis of race, color, national and ethnic origin, disability, sexual orientation or preference, gender, or age in the administration of educational policies, admission policies, financial aid, employment, or any other university program or activity. 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 http://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 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 (1866 Southern Lane, Decatur, Georgia 30033-4097; telephone number 404-679-4501) to award baccalaureates, masters, doctorates, and professional degrees.

The Bulletin of Duke University, Volume 73, includes the following titles: The Fuqua School of Business; Nicholas School of the Environment; Undergraduate Instruction; the Graduate School; The Medical Center; The Divinity School; Information for Prospective Students; Information for Graduate Students; Summer Session; Graduate Program in Nursing; The School of Law; and Information and Regulations. Most bulletins are available online at http://www.registrar.duke.edu/webpage/bulletin.html.
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# Academic Calendar—2002-2003

## Summer 2002

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<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>27</td>
<td>Wednesday— Registration begins for Term I and/or Term II</td>
</tr>
<tr>
<td>May</td>
<td>16</td>
<td>Thursday— Term I classes begin</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Monday— Drop/ Add for Term I ends</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Monday— Memorial Day, classes in session</td>
</tr>
<tr>
<td>June</td>
<td>12</td>
<td>Wednesday— Last day to withdraw WP or WF from Term I courses</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Monday— Term I classes end</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>Tuesday— Reading period</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>Wednesday— Term I final examinations begin</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Thursday— Term I final examinations end</td>
</tr>
<tr>
<td>July</td>
<td>1</td>
<td>Monday— Term II classes begin</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Wednesday— Drop/ Add for Term II ends</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Thursday— Independence Day, classes in session</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>Friday— Last day to withdraw WP or WF from Term II courses</td>
</tr>
<tr>
<td>August</td>
<td>7</td>
<td>Wednesday— Term II classes end</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Thursday— Reading period</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Friday— Term II final examinations begin</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Saturday— Term II final examinations end</td>
</tr>
</tbody>
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## Fall 2002

<table>
<thead>
<tr>
<th>Month</th>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August</td>
<td>21</td>
<td>Wednesday— New student orientation begins; assemblies for new undergraduate students</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Thursday, 11 A.M.— Convocation for new undergraduate students. Chapel seating for first-year and new transfer students only</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>Monday, 8:00 A.M.— Fall semester classes begin</td>
</tr>
<tr>
<td>September</td>
<td>2</td>
<td>Monday— Labor Day, classes in session</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Friday, 5 P.M.— Drop/ Add ends</td>
</tr>
<tr>
<td>October</td>
<td>4-5</td>
<td>Friday-Saturday— Homecoming</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Sunday— Founders' Day</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Friday— Last day for reporting midsemester grades</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Friday, 7:00 P.M.— Fall break begins</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Wednesday, 8:00 A.M.— Classes resume</td>
</tr>
<tr>
<td></td>
<td>25-27</td>
<td>Friday-Sunday— Parents' and Family Weekend</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Wednesday— Registration begins for spring semester, 2003</td>
</tr>
<tr>
<td>November</td>
<td>22</td>
<td>Friday— Registration ends for spring semester, 2003</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>Saturday— Drop/ Add begins</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Wednesday, 12:40 P.M.— Thanksgiving recess begins</td>
</tr>
<tr>
<td>December</td>
<td>2</td>
<td>Monday, 8:00 A.M.— Classes resume</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Thursday— Fall semester classes end</td>
</tr>
<tr>
<td></td>
<td>6-8</td>
<td>Friday-Sunday— Reading period</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Monday— Final examinations begin</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Saturday, 10:00 P.M.— Final examinations end</td>
</tr>
</tbody>
</table>

1 The Nicholas School of the Environment and Earth Sciences, the Fuqua School of Business, the Marine Laboratory, and the Graduate Nursing Program may have different starting dates during the summer; consult the appropriate bulletins and schedules

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6 Academic Calendar—2002-2003
Spring 2003

January
8 Wednesday, 8:00 A.M. - Spring semester classes begin: ALL classes normally meeting on Mondays meet on this Wednesday only; Wednesday ONLY classes begin Wednesday, January 15
20 Monday - Martin Luther King, Jr. Day holiday; classes are rescheduled on Wednesday, January 8
22 Wednesday, 5 P.M. - Drop/ Add ends

February
21 Friday - Last day for reporting midsemester grades

March
7 Friday, 7:00 P.M. - Spring recess begins
17 Monday, 8:00 A.M. - Classes resume

April
2 Wednesday - Registration begins for fall semester, 2003, and summer 2003
18 Friday - Registration ends for fall semester, 2003; summer 2003 registration continues
19 Saturday - Drop/ Add begins
23 Wednesday - Spring semester classes end
24-27 Thursday-Sunday - Reading period
28 Monday, 9:00 A.M. - Final examinations begin

May
3 Saturday, 10:00 P.M. - Final examinations end
9 Friday - Commencement begins
11 Sunday - Graduation exercises. Conferring of degrees
University Administration

GENERAL ADMINISTRATION
Nannerl Overholser Keohane, Ph.D., President
Peter Lange, Ph.D., Provost
Thruston B. Morton III, B.A., President of Duke Management Company
Ralph Snyderman, M.D., Chancellor for Health Affairs and Executive Dean, School of Medicine
Tallman Trask III, M.B.A., Ph.D., Executive Vice-President
David B. Adcock, J.D., University Counsel
Joseph L. Alliata, M.B.A., Director of Athletics
John F. Burness, A.B., Senior Vice-President for Public Affairs and Government Relations
H. Clint Davidson, Jr., M.B.A., Vice-President for Human Resources
Sally M. Dickson, J.D., Vice-President for Institutional Equity
William J. Donelan, M.S., Vice-Chancellor for Health Affairs and Executive Vice-President/Chief Operating Officer, Duke University Health System
Tracy A. Futch, M.S., Vice-President for Information Technology and Chief Information Officer
N. Allison Halitom, A.B., Vice-President and University Secretary
Michael D. Israel, M.P.H., Vice-Chancellor for Health Affairs and Chief Executive Officer, Duke University Hospital
Michael J. Mandl, M.A., Vice-President for Financial Services
Larry Moneta, Ed.D., Vice-President for Student Affairs
John J. Piva, Jr., B.A., Senior Vice-President for Alumni Affairs and Development
Steven A. Rum, M.S., Vice-Chancellor for Development and Alumni Affairs
Robert S. Shepard, Ph.D., Vice-President for University Development
Robert L. Taber, Ph.D., Vice-Chancellor for Science and Technology Development
R. C. “Bucky” Waters, M.A., Vice-Chancellor for Special Projects
Gordon D. Williams, B.A., Vice-Chancellor for Medical Center Operations and Vice-Dean for Administration and Finance, School of Medicine
R. Sanders Williams, M.D., Vice-Chancellor for Academic Affairs and Dean of the School of Medicine
William H. Willimon, S.T.D., Dean of the Chapel

GENERAL ACADEMIC ADMINISTRATION
Peter Lange, Ph.D., Provost
Bruce W. Cunningham, Ph.D., Registrar
Cathy Davidson, Ph.D., Vice-Provost for Interdisciplinary Studies
David S. Ferriero, M.A., University Librarian and Vice-Provost for Library Affairs
John Harer, Ph.D., Vice-Provost for Academic Affairs
David Jamieson-Drake, Ph.D., Director of Institutional Research
Gilbert Merlo, Ph.D., Vice-Provost for International Affairs and Development
Amy Oates, B.A., Director, Educational Services and Systems
Michael P. Pickett, M.A., Special Assistant to the Provost for Academic Technology
James S. Roberts, Ph.D., Vice-Provost for Finance and Administration
Judith Ruderman, Ph.D., Vice-Provost for Academic and Administrative Services
James N. Sedow, Ph.D., Vice-Provost for Research
Lewis M. Siegel, Ph.D., Vice-Provost and Dean of the Graduate School

Arts and Sciences
William H. Chafe, Ph.D., Dean of the Faculty of Arts and Sciences and Vice-Provost for Undergraduate Education
Karla FC Holloway, Ph.D., Dean of the Humanities and Social Sciences
Berndt Mueller, Ph.D., Dean of the Natural Sciences
Robert J. Thompson, Jr., Ph.D., Dean of Trinity College
Robert F. Barkhau, B.S., Director of Facilities for Arts and Sciences
Charles W. Byrd, Jr., Ph.D., Associate Dean for Academic Affairs
Colleen Fitzpatrick, M.Ed., Associate Dean for Advancement
Thomas D. Mann, A.B., Associate Dean for Administration
Melissa J. Mills, M.B.A., Associate Dean for Computing
Lee W. Willard, Ph.D., Associate Dean for Academic Planning and Special Projects

Trinity College
Robert J. Thompson, Jr., Ph.D., Dean of Trinity College
Gerald L. Wilson, B.D., Ph.D., Senior Associate Dean for Administration; Social Sciences and Pre-Law
Martina J. Bryant, Ed.D., Associate Dean for Social Sciences and Pre-Business
Norman C. Keul, Ph.D., Associate Dean for Pre-Majors and Director of the Pre-Major Advising Center
Mary Nijhout, Ph.D., Associate Dean for Natural Sciences and Pre-Graduate School
Kay H. Singer, Ph.D., Associate Dean for Natural Sciences, Director of Health Professions Advising Center
Ellen W. Wittig, Ph.D., Associate Dean for Humanities
Paula E. Gilbert, Ph.D., Director of Continuing Education and University Summer Programs and Assistant Dean for Continuing Education and Summer Session
Caroline L. Lattimore, Ph.D., Assistant Dean for Social Sciences
Margaret Riley, Ph.D., Director of Foreign Academic Programs and Assistant Dean for Study Abroad

The Edmund T. Pratt Jr. School of Engineering
Kristina M. Johnson, Ph.D., Dean
Phillip L. Jones, Ph.D., Senior Associate Dean for Education
Constance E. Simmons, M.B.A., Assistant Dean for Undergraduate Affairs

Student Affairs
Larry Moneta, Ed.D., Vice-President for Student Affairs
William A. Christmas, M.D., F.A.C.P., Director of Student Health Service
R. James Clack, Ph.D., Director, Counseling and Psychological Services
Sue L. Coon, M.A., Director of Student Activities
Leon Dunkley, Jr., Ph.D., Director of the Mary Lou Williams Center for Black Culture
Thomas Halasz, M.Ed., and Donna Harner, B.A., Interim Co-Directors of the Career Center
Carlisle Harvard, B.A., Director of International House
Roger Kaplan, Ph.D., Director of the Freeman Center for Jewish Life
Karen Krahulik, Ph.D., Director of the Center for Lesbian, Gay, Bisexual, and Transgender Life
Donna Lisker, Ph.D., Director of the Women’s Center
Caroline Nisbet, M.A., Director, Resource Administration
Julian Sanchez, M.Ed., Director of the Center for Multicultural Affairs
Suzanne Wasiolek, M.H.A., J.D., LL.M., Assistant Vice-President and Dean of Students

Admissions and Financial Aid
Christoph O. Guttentag, M.A., Director, Office of Undergraduate Admissions
James A. Belvin, Jr., A.B., Director, Office of Undergraduate 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. Beginning as early as 1851, engineering courses were taught intermittently in the nineteenth century. 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://www.duke.edu/web/Archives/.

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, cure disease and promote health, through sophisticated medical research and thoughtful patient care; to provide wide ranging educational opportunities, on and beyond our campuses, for traditional students, active professionals and life-long learners using the power of information technologies; and to promote a deep appreciation for the range of human difference and potential, a sense of the obligations and rewards of citizenship, and a commitment to learning, freedom and truth.

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

**Resources of the University**

**The Faculty.** As previously noted, 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,” as President Nannerl O. Keohane has observed, 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 and 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.** The Duke libraries are the shared center of the university’s intellectual life, connecting people and ideas. The libraries are the principal gathering point for all faculty and students, across all disciplines and majors. Members of the Duke community come to the libraries for resources that support their academic pursuits as well as for thoughtful conversation with colleagues and lectures and other programs that enrich the campus culture. The William R. Perkins Library and its seven branches, together with the university archives and the separately administered libraries serving the schools of business, divinity, law, and medicine, comprise one of the nation’s top ten private university library systems. The combined book collections number more than five million volumes. Among the additional holdings available to students and faculty are 17.7 million manuscripts, 1.3 million public documents, tens of thousands of films and videos, audio recordings and serials, and more than 6,000 computer files. An array of resources and services is available electronically from the university’s libraries. Visit the Duke University libraries’ web site at www.lib.duke.edu to learn more.

*The William R. Perkins Library.* The William R. Perkins Library, the main library of the university, houses books, journals, and electronic resources supporting the humanities and the social sciences as well as a large collection of United States federal and state documents and public documents of many European and Latin American countries. The library is a depository for U.S., North Carolina, and European Community documents. An international focus is evident throughout the library collections, reflecting the global and interdisciplinary nature of contemporary scholarship and teaching as well as the historical strengths of area programs at the university. There are extensive research collections from and about South Asia, Latin America, Africa, Europe, Russia, and Poland, along with one of this country’s largest
collections of Canadiana. The East Asian Collection offers resources in Japanese, Chinese, and Korean on a variety of topics, with history, politics, literature, and language predominant. The newspaper collection includes many eighteenth century titles; strong holdings of nineteenth century New England papers; and antebellum and Civil War papers from North Carolina, South Carolina, Virginia, and Georgia; plus many European and Latin American papers.

The Rare Book, Manuscript, and Special Collections Library collections range from ancient papyri to records of twentieth century advertising. They number more than 200,000 printed volumes and more than 14 million items in manuscript and archival holdings. 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. Areas of particular strength are the history and culture of the American South, English and American literature, history of economic theory, British and American Methodism, and the history of modern advertising. Digitized versions of historical materials from the Rare Book, Manuscript, and Special Collections Library are developed by its Digital Scriptorium in collaborative projects with Duke faculty, students, and staff and made accessible via the Internet. The subject-focused branch libraries on the west campus (biological and environmental sciences, chemistry, and engineering and mathematics/ physics) collect books, journals, and reference materials needed by scholars working in the corresponding disciplines. Access to networked electronic resources and specialized databases is also available in the branches.

On the east campus the Music Library and the Music Media Center, located in the Mary Duke Biddle Music Building, are administered as a single unit within the Perkins Library system. The Music Library's rapidly expanding collection comprises music scores, 110,000 books on music, and over 200 music-related journals. The Music Media Center's 20,000-item collection includes DVDs, laser disks and videos, compact discs, cassettes, LP recordings, and more than 10,000 microforms.

The Lilly Library, also on the east campus, houses the university's principal collections for the visual arts, art history, drama, and philosophy. In addition, the Lilly Library is the primary provider of library service to first-year students.

In Beaufort, North Carolina, at the Marine Laboratory, the Pearse Memorial Library supports interdisciplinary education and research with a primary focus on the marine environment. The library's holdings encompass marine biology and biotechnology, oceanography, botany and biochemistry, and coastal resource management.

The Duke libraries participate in several consortial arrangements that extend the total resources available to students and faculty. The longest-standing affiliation (Triangle Research Libraries Network) is with the neighboring universities. The libraries at Duke, the University of North Carolina at Chapel Hill, North Carolina State University and North Carolina Central University share an online cataloging system. From the online catalog at Duke, it is possible to call up information about library holdings at all four institutions. With a TRLN card, students and faculty have direct borrowing privileges on all of the campuses. In all Duke libraries there are information desks where assistance is available during most open hours. Professional reference service is also available in all libraries. The primary responsibility of the reference librarians is to guide patrons in making the most effective use of materials owned by the library or accessible electronically. In addition to the individual support they provide, librarians also offer formal and informal instruction to groups of students, faculty, and university staff.

The university libraries sponsor many literary readings and other public programs each year, including the Engaging Faculty lecture series. These lectures are informal, interdisciplinary conversations that provide an opportunity for faculty to hear about the work of their colleagues in other departments and give students and the general public a chance to learn about current research at the university.
Tours of the Perkins Library are given frequently during the first few weeks of each semester. Information about other campus libraries may be obtained from the staff in each of the libraries. Handbooks about library services and facilities are also available in each of the libraries.

The Medical Center Library. The Medical Center Library, located in the Seeley G. Muudd 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 307,969 volumes are available, including the Trent Collection in the History of Medicine. Approximately 2,809 journal subscriptions are currently received and the library has extensive back files of older volumes. The collection contains over 2,103 audiovisual items. The Medical Library Education Center (MLEC), located on the lower level of the library, houses an electronic classroom for hands-on computer training, as well as an area focusing on multimedia programs. 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. Public workstations for searching databases and the online catalog are available in the reference area and other areas of the library. Detailed information on services and resources may be found in the information guides available at the library.

The School of Law Library. The School of Law Library, with over 550,000 volumes, serves both the university and the local legal community. It features comprehensive coverage of basic Anglo-American primary source materials, including nearly all reported decisions of federal and state courts, as well as current and retrospective collections of federal and state codes and session laws. Digests, legal encyclopedias, and other indexing devices provide access to the primary documents. A large section of the library collection is devoted to treatises on all phases of law, as well as history, economics, government, and other social and behavioral sciences relevant to legal research. The treatises are organized in the Library of Congress classification system and are accessible through the Duke University online catalog. Special treatise collections are maintained in several subject areas, including the George C. Christie collection in jurisprudence and the Floyd S. Riddick collection of autographed senatorial material. The library is a selective depository for United States government publications, with concentration on congressional, judicial, and administrative law materials. The library receives the records and briefs from the United States Supreme Court and the North Carolina Supreme Court and Court of Appeals. In addition to its U.S. holdings, the library holds substantial research collections in foreign and international law. The foreign law collection is extensive, with concentrations in Australia, Canada, France, Germany, Great Britain, India, and South Africa. The international law collection is strong in primary source and treatise material on both private and public international law topics. Undergraduate and graduate students whose course of study requires access to legal literature may use the library. However, access to the library may be restricted during certain times.

University Archives. The Duke University Archives, the official archival agency of the university, collects, preserves, and administers the records of the university having continuing administrative or historical value. The institutional archives, which also include published material, photographs, records of student groups and faculty, and selected memorabilia, are available for research under controlled conditions in 341 Perkins Library.

Resources of the University 15
The Office of Information Technology. The Office of Information Technology (OIT) is responsible for computing, telephony, and televideo services and support for the university community. OIT’s web site, at 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 Duke’s information technology resources.

Computing. All undergraduate residence halls and Central Campus apartments are wired for direct access to DukeNet, the campus-wide computer network. Members of the Duke community are assigned their own e-mail accounts, which they can use on their own computers or on computers stationed in labs throughout the campus. During the first weeks of school, OIT helps students establish their "dormnet" connections and provides them with a free Internet survival kit, software, and instructions to help them get started on the Internet.

SWAT (Students with Access to Technology) is a service conducted by a group of OIT-trained students and staff who assist students in dorms with connecting their personal computers to DukeNet. SWAT takes place at the beginning of each school year.

Help Desk. Help Desk staff are available to assist students with Duke supported software, hardware, and services. The Help Desk web site is at www.oit.duke.edu/helpdesk.
Computer Labs, E-mail Stations, and Quad Printers. There are twenty general-purpose computer labs across the four Duke campuses (East, West, North and Central). The labs have been designed to meet a wide spectrum of student needs and consist of Windows, Macintosh, Sun workstations, and high-speed network laser printers. In addition to the general-purpose computer labs, OIT oversees a number of e-mail stations and residential quad printer stations. The e-mail stations, which are heavily used, are located throughout public areas where students tend to congregate, for example, the Bryan Center, East Union, the Great Hall, and the Blue and White Room. The residential quad printer stations are located in the residential quads and provide students with the ability to print to a local networked laser printer. For additional information, visit www.oit.duke.edu/labs.

On-site Lab Support. If questions or problems arise while working in a computer lab or with the computer in their room, students can stop by the on-site support desk in Perkins or Brown computer labs to receive assistance from one of our consultants.

Technology Training. Hands-on training workshops are available to both graduate and undergraduate students on a number of popular software applications such as Dreamweaver, Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Mulberry, and 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/ats/training.

Telephones. Duke offers optional telephone service in on-campus residences. There is a monthly fee and a one-time setup fee for the local service, and long distance is billed on a per-minute basis. Domestic calls are billed at 7 cents a minute, while the rates for international calls vary by country. Other rate-based services include paging and cellular service. For more information, see www.oit.duke.edu/resserv.

Cable Television. DTV, Duke Cable Television, provides state-of-the-art cable TV service. Viewing options include EdNet, a free service offering educational and news programming; DevilVision, which contains over 40 entertainment and network channels; and other premium channel options and combinations. For more information, see www.oit.duke.edu/resserv/cabletv.htm.

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 Phytotron of the Southeastern Plant Environment Laboratories, located on the Duke campus; the Duke Forest, adjacent to the campus; the Duke University Primate Center in Duke Forest; the Triangle Universities Nuclear Laboratory; the Free Electron Laser Laboratory, also on campus; and the Brain Imaging and Analysis Center in the Medical School. The Levine Science Research Center, which opened in 1994, houses 341,000 gross square feet consisting of laboratories, office, and classroom space for interdisciplinary science research, state-of-the-art teaching laboratories, and shared instrumentation facilities. It also houses the Center for Cognitive Neuroscience. Undergraduates have the opportunity to pursue research in an array of science facilities with access to the LSRC and specialized instrumentation across the campus.

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

In Trinity College of Arts and Sciences and the Pratt School of Engineering, instruction is offered by university faculty who engage in research and in graduate and undergraduate teaching. Duke offers its undergraduates the opportunity to study with many internationally recognized experts in their disciplines and with faculty members who are jointly committed to undergraduate instruction and to the advancement of knowledge. The university recognizes that students learn not only through formal lectures, but also through the interplay of ideas among faculty members and students; thus, it offers undergraduates opportunities to test their ideas against those of their professors and to engage with those who have committed their lives to academic careers.

The university, if it is doing its job properly, is educating citizens of the United States and of the world, not only individuals aspiring to personal fulfillment. At Duke, the men and women who earn degrees are likely to become leaders in industry, government, and the professions. They will have influence on and will be influenced by the social fabric of which they are a part. The kind of people they become will matter not only to them and their families, but also to their communities, to the United States, and to the countries of the rest of the world.

Amidst changing external conditions, the university must ensure that students acquire the tools and flexibility to prepare them for life-long learning activities.

Trinity College of Arts and Sciences. Trinity College is the undergraduate liberal arts college within the School of Arts and Sciences. Situating the liberal arts college at the heart of a major research university provides Trinity students with opportunities to connect to the full array of faculty scholarship. Within Arts and Sciences, 563 Arts and Sciences faculty from 44 departments and programs teach in the undergraduate program.

The undergraduate educational experience is rated one of the finest in the country. Distinctive characteristics are interdisciplinary programs that build bridges among fields, emphasis on internationalization, and an innovative new undergraduate curriculum which affirms the values and skills of the liberal arts: critical thinking, problem solving, synthesis, and writing. The curriculum encourages the pedagogies of engagement, both within and outside the classroom, and opportunities for student research, internships, and service learning complement more formal coursework. Cross cultural fluency is integral, and some forty percent of Trinity students study abroad in semester, year, and summer programs. This innovative undergraduate course of study infuses students with the excitement of discovery and prepares them with the skills and experiences necessary for successful leadership and satisfying lives in the new millennium.

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.

Duke University Undergraduate Honor Code

An essential feature of Duke University is its commitment to integrity and ethical
conduct. The honor system at Duke helps to build trust among students and faculty and
to maintain an academic community in which a code of values is shared. Instilling a
sense of honor, and of high principles that extend to all facets of life, is an inherent aspect
of a liberal education.

As a student and citizen of the Duke University community:

I will not lie, cheat, or steal in my academic endeavors.
I will forthrightly oppose each and every instance of academic dishonesty.
I will communicate directly with any person or persons I believe to have been dishonest. Such communication may be oral or written. Written commu-
nication may be signed or anonymous.
I will give prompt written notification to the appropriate faculty member
and to the Dean of Trinity College or the Dean of the Pratt School of Engi-
neering when I observe academic dishonesty in any course.
I will let my conscience guide my decision about whether my written
report will name the person or persons I believe to have committed a viola-
tion of this Code.

I join the undergraduate student body of Duke University in a commitment to this
Code of Honor.
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 (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 courses, half courses, and quarter 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.

Effective for students matriculating in May 2000 and thereafter:

PROGRAM I (CURRICULUM 2000)

This innovative and ambitious 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 environment of the new millennium. The curriculum combines four interrelated features to form the general studies component: Areas of Knowledge, Modes of Inquiry, Focused Inquiries, and Competencies. Since a course may have several intellectual goals and intended learning outcomes, it may potentially and simultaneously satisfy more than one general studies 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. No degree requirements, except the requirement for thirty-four courses credits and continuation requirements, may be met by a course passed under the pass/fail option.

General Studies requirements consisting of the following:

Required Courses:

Areas of Knowledge. Three courses in each of the following four areas:

- Arts and Literatures (AL)
- Civilizations (CZ)
- Social Sciences (SS)
- Natural Sciences and Mathematics (NS/M). Two of the three courses must be natural science (NS) courses.
Required Inquiries and Competencies:

Modes of Inquiry. Two courses designated as offering exposures to each of the following two Modes of Inquiry:

– Quantitative, Inductive, and Deductive Reasoning (QID). One of the two courses must be a mathematics, computer science, or statistics course carrying the M code.

– Interpretative and Aesthetic Approaches (IAA)

Focused Inquiries. Two courses designated as offering exposures to each of the following three Focused Inquiries:

– Cross-Cultural Inquiry (CCI)
– Science, Technology, and Society (STS)
– Ethical Inquiry (EI)

Competencies. Courses designated as offering exposures to each of the following three competencies, as indicated below:

– Foreign Language (FL). One to three courses in the same language, determined by level of proficiency. The details of this requirement are explained in the section on competencies below.

– Writing (W). Three 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 courses designated as offering a research-intensive experience, one of which must be in the major (either first or second major).

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 studies requirements.

Independent Study courses do not count toward the general studies requirements except for the Research designation, if so designated. Classes entering in May 2002 and thereafter may submit one independent study coded R toward the requirement of writing-intensive courses (W) in the discipline.

Transfer courses and interinstitutional courses may be considered for approval to count toward the area of knowledge requirements. They do not count toward satisfying the inquiries and competencies requirements.

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 studies designations.

Small Group Learning Experiences:

– During the first year: one of the following: (1) a first-year seminar (i.e., 49S), (2) a 20-series seminar, (3) a FOCUS program seminar, or (4) any other full course designated as a seminar.

– During the junior and senior years: at least two full courses designated as seminars, tutorials, independent study, or a thesis.

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), four credits of dance/American Dance Festival technique/performance (i.e., eight half-credit courses), two credits for 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.

—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.”)

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

### General Studies Requirements

<table>
<thead>
<tr>
<th>Areas of Knowledge(^1) (Min. required)</th>
<th>Inquiries and Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modes of Inquiry</strong></td>
<td>Focused Inquiries</td>
</tr>
<tr>
<td>Quantitative, Inductive and Deductive Reasoning(^2)</td>
<td>Interpretive and Aesthetic Approaches</td>
</tr>
<tr>
<td>Arts and Literatures (3)</td>
<td></td>
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<tr>
<td>Civilizations (3)</td>
<td></td>
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<tr>
<td>Social Sciences (3)</td>
<td></td>
</tr>
<tr>
<td>Natural Sciences and Mathematics(^3) (3)</td>
<td></td>
</tr>
<tr>
<td>Other(^4)</td>
<td></td>
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<tr>
<td>Minimum Exposures Required(^5)</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 One of these must be a course coded M (mathematics, computer science, statistics).

3 Two of these courses must be in Natural Sciences. Mathematics as listed here refers also to computer science and statistics.

4 Courses offering exposures to Modes of Inquiry, Focused Inquiries, or Competencies that do not count toward Areas of Knowledge.

5 Students can receive credit for a maximum of two exposures that have been approved for a course.

6 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 100-level (other than FLAC courses) cannot be used to satisfy requirements in Areas of Knowledge, other Competencies, or Focused Inquiries. 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.

7 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.

8 Students entering in May 2002 or thereafter are required to complete two R courses, at least one of which must be in the student's first or second major. (Students who entered between May 2000 and April 2002 are required to complete one R course.)
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 further into two areas of knowledge, arts and literatures and civilizations, to assure that undergraduates engage the full range of substantive concerns and approaches in the humanities. Thus, reflecting this Duke tradition in liberal arts education, the new curriculum adopts the following division of courses— into the four areas of knowledge of arts and literatures, civilizations, social sciences, and natural sciences and mathematics. 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 three courses in each area. Within the Natural Sciences and Mathematics area, two of the three courses must be natural science (NS) courses.

Modes of Inquiry. There are many ways to acquire, transform, and communicate knowledge, and to reach understanding. The array of academic disciplines reflects this diversity in modes of inquiry. Underlying the diversity is a spectrum anchored, at one end, with reasoning rooted in logic and mathematics and, on the other, with approaches to knowledge that emphasize interpretation and the interaction between interpretation and aesthetic sensibility. Duke has chosen to organize the relatively broad and familiar modes of inquiry around the two anchors entitled: (1) Quantitative, Inductive, and Deductive Reasoning and (2) Interpretative and Aesthetic Approaches. Students must complete two courses offering an exposure to each of these two Modes of Inquiry.

Quantitative, Inductive, and Deductive Reasoning (QID). This Mode of Inquiry encompasses three broad areas: data acquisition and description; quantitative methods; and concepts or frameworks of deductive and inductive reasoning. QID forms the cornerstone of mathematics, the physical, biological, and computational sciences, and many aspects of the social sciences. It plays an essential and growing role in our increasingly technological society, as well as in the formation and design of political and economic policies that profoundly effect quality of life. Just as important as the knowledge of QID techniques is an awareness of their limitations and the possibility of their improper application. This is essential, even for those whose careers will not directly involve quantitative applications; it is important, for example, to understand how truth claims based on quantitative reasoning are developed and contested, as well as why there can be (and often are) conflicting views on important issues, each of which may be based on quantitative analyses of the same available data. One of the two courses taken to satisfy this requirement must be a mathematics, computer science, or statistics course carrying the M designation.

Interpretative and Aesthetic Approaches (IAA). A curriculum aiming at an integral education of the person is incomplete without offering exposure to ways of understanding that are primarily experiential and interpretative. The understanding of cultural modes of expression can be active and performative, as in theater, dance, music, the visual arts, and creative writing, or interpretative and hermeneutic, as in literary and cultural studies, the history of art, philosophy, and religious studies. Through this Mode of Inquiry students can develop an awareness and appreciation of the styles, designs, performances, arts, and narratives by which societies— in this and other cultures— organize their lives. The purpose of the requirement is to enable students to experience, perform, and interpret specific social texts, historical events, and cultural practices.

Focused Inquiry. In addition to Modes of Inquiry, there are 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 address issues pertaining to them throughout their lives and careers.
three areas of Focused Inquiry are (1) cross-cultural; (2) science, technology, and society; and (3) ethical inquiry. Students must take two courses providing exposures in each of these three Focused Inquiries.

**Cross-Cultural Inquiry (CCI).** This Focused Inquiry provides an academic engagement with the dynamics and interactions of culture(s) in a comparative or analytic perspective. This type of inquiry 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 cultural and cultural differences 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.

**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.

**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.

**Competencies.**

**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, whether at Duke or in a Duke-administered study abroad program. 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.

In acknowledgement of the differences in the acquisition process of non-cognate vs. cognate languages, coursework through the intermediate level may, in some cases be sufficient for specific non-cognate languages. Such exceptions must be approved by the director of undergraduate studies in the department of that non-cognate language. Greek and Latin, and Romance and Germanic languages are the cognate languages offered at Duke.

Russian and Spanish require an official written proficiency examination for foreign language placement. Students in French and German will be tested during the first week of classes to verify placement. Students who plan to continue studying any other language should consult with the director of undergraduate studies in that language.

2) For students who begin their language study 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, whether at Duke or in a Duke-administered study abroad program.

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 100-level (other than FLAC courses) cannot be used to satisfy requirements in Areas of Knowledge, other Competencies, or Focused Inquiries. FLAC courses (Foreign Language Across the Curriculum) are taught in a foreign language but offered in departments other than the foreign language and literature departments.

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. Classes entering in 2002 and thereafter are required to complete two research exposures, at least one of which must be in the major (either the first or the second major); for them one independent study coded R may be submitted for approval for the Writing (W) designation. Students who entered between May 2000 and April 2002 are required to complete one R course, which need not be in the major.
The Major. Students are expected to acquire 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. All majors require a minimum of ten courses, at least eight 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 students 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 recorded on the official record. See the chapter "Academic Procedures and Information" for the majors within each degree and for procedures on declaring a major.

Departmental 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. Departmental majors are available in art history, biological anthropology and anatomy, biology, chemistry, classical civilization, classical languages, computer science, cultural anthropology, earth and ocean sciences, economics, English, French studies, Germanic languages and literature, history, Italian and European studies, mathematics, music, philosophy, physics, political science, psychology, public policy studies, religion, Slavic languages and literatures, sociology, Spanish, theater studies, and visual arts. The courses required for a major are specified by the department. The requirements appear in the section following each department's course descriptions.

Program Major. Students may satisfy the requirement by completing work prescribed for a major in approved programs, often interdisciplinary. These programs include African and African-American studies, Asian and African languages and literature, Canadian studies, comparative area studies, environmental sciences, environmental sciences and policy, linguistics, literature, medieval and Renaissance studies, and women's studies. The requirements for these majors appear under each program in the chapter "Courses and Academic Programs."

Interdepartmental Major. A student may pursue an interdepartmental major program designed by the student and advisors, and approved by the directors of undergraduate studies in the departments involved, as an alternate means of satisfying the major requirement. An interdepartmental major consists of ten or more courses, at least eight of which must be at the 100 level or above, in two or more Trinity College departments or programs that offer a major. The number of courses must be equally apportioned among the participating departments. For procedures see the section on declaration of major or division in the chapter "Academic Procedures and Information."

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 three departments, in which multiple majors are already possible: (1) Art and Art History, (2) Classical Studies, and (3) 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 other 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: Applied Science, Early Childhood Education Studies; Film/Video/Digital; Health Policy; Human Development; Judaic Studies; Latin American Studies; Markets and Management Studies; Neurosciences; Perspectives on Marxism and Society; Primatology; Science, Technology, and Human Values; 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.

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.
Preceptorials, discussion sections, seminars, and tutorials may not be taken on the pass/fail basis, unless the course is offered only on that basis.

**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 American Dance Festival technique/performance courses (i.e., a total of eight half-credit courses); (3) no more than two credits for house courses; (4) no more than six credits for courses taken in professional schools; (5) no more than one semester-course credit from academic internships; and (6) no more than four semester-course credits in military science. (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 professional school and all 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 Elsewhere in the chapter "Academic Procedures and Information" and the Residence section below.

**Residence.** A residence period of eight semesters is the typical amount of time a student may take to earn either the Bachelor of Arts or the Bachelor of Science degree. This period may be extended for one or two semesters 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. A student will not be permitted residence of more than ten semesters in order to be graduated.

For the minimum residence period, at least seventeen courses must be satisfactorily completed at Duke. (Students matriculating prior to May 2000 should refer to the Bulletin of Undergraduate Instruction of their year of matriculation for information pertaining to residence.) If only seventeen courses are taken at Duke, they must include the student's last eight courses.

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**Effective for students who matriculated between May 1988 and April 2000:**

**PROGRAM I**

Program I provides for the experience and achievement that constitute a liberal education. The ability to organize ideas and to communicate them with clarity and precision is refined by completing the writing course and by the requirement for discussion in small groups. Knowledge of a foreign language contributes to an understanding of the nature of language itself and to perspectives on other cultures. Through courses in arts and literatures 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 reasoning help develop skills of inference and analysis. Finally, 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.

Students must complete the requirements listed below and explained, where necessary, on the following pages. No degree requirements, except the requirement for thirty-four course credits and continuation requirements, may be met by a course passed under the pass/fail option.

**Writing.** Students are required to demonstrate ability to write effective English prose by completing a course in expository writing, ordinarily University Writing Course 5, 7, or Writing 20.

**General Studies** consisting of courses in at least five of the following six areas of knowledge:
- Arts and Literatures (AL)
- Civilizations (CZ)
- Foreign Languages (FL)
- Natural Sciences (NS)
- Quantitative Reasoning (QR)
- Social Sciences (SS).

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*General Studies Requirements 29*
In four of these areas a student must take three courses; at least one of the three in each area must be at the 100-level.

In the remaining area a student must take two courses.

- Independent study courses do not count toward these areas.
- Advanced placement credits do not substitute for courses in these areas.
- Courses counting toward requirements in a major (and additional courses taken in the major department) do not count toward more than two of these areas.

The Major consists of the requirements for majors in the department or program in which a student wishes to obtain a bachelor’s degree (see below). These requirements are described under the course listing for each department or program.

The Minor. Minors are available although not required. They are described under the course listing for each department or program.

Elective courses. Advanced placement credits may function as elective courses. Other courses that a student is using as electives may or may not carry an area of knowledge designation.

Small Group Learning Experiences.
- During the first year: one of the following: (1) a first-year seminar (49S), (2) a 20-series seminar, (3) a FOCUS program seminar, or (4) any other full course designated as a seminar.
- During the junior and senior years: at least two full courses designated as seminars, tutorials, independent study, or a thesis.

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:
- At least twelve (12) courses at or above the 100-level.
- No more than: one credit of physical education activity (i.e., two half-credit activity courses), four credits of dance/ American Dance Festival technique/performance (i.e., eight half-credit courses), two credits for house courses (i.e., four half-credit house courses), six from a professional school (e.g., business, engineering, medicine, environment (courses numbered 200 or above), four in military science, and one credit from academic internships.
- The number of advanced placement and transfer credits allowed. (See the sections “Advanced Placement” and “Transfer of Work Elsewhere” in the chapter “Academic Procedures and Information.”)

General Studies (Distribution of Courses). Students achieve breadth and balance of intellectual experience by taking courses in at least five of the six areas of knowledge. Courses that can be taken to satisfy the distribution requirement are identified in the bulletin by a two-letter code (AL, CZ, FL, NS, QR, SS). In four of the areas of knowledge a student must take at least three courses. At least one of the three courses must be at the 100 or 200 level. In one additional area of knowledge a student is required to take at least two courses. Courses counting toward requirements in a major (and additional courses taken in the major department) do not count toward more than two of these areas.

For more information on the following, which are the same for this curriculum as for the succeeding curriculum, see the paragraphs above: The Major (departmental, program, interdepartmental majors); the Minor, Certificate Programs; Restrictions on Majors, Minors, Certificates; Small Group Learning Experiences; and Course Credits.

PROGRAM II

Nature and Purpose. Students who believe that their intellectual interests and talents would be better served outside the regular curriculum options under Program I are encouraged to explore the academic option offered through Program II. If admitted into Program II, students follow individualized degree programs to examine and explore a topic, question, or theme as a core area of study which is not generally 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.

Students who seek out Program II are, typically, those 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 website at http://www.aas.duke.edu/ProgramII/.

**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, as means of satisfying those ambitions.

The curricular program proposed by a Program II candidate must address the student's specific interests and must also meet the general expectations for a liberal education in Trinity College. It must be 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 and applications may be obtained from the Premajor 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: 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 in the chapter, "Academic Procedures and Information."

**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 transfers 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.

PREPARATION FOR GRADUATE AND PROFESSIONAL SCHOOLS

Students planning to enter a graduate or professional school should consult appropriate Internet sites and published information from the relevant advising offices (i.e., Pre-Law Advising Office, Pre-Business Advising Office, Pre-Graduate School Advising Office, Health Professions Advising Center) for general information and guidance. For specific information regarding courses and curriculum choices, students should seek input from their faculty advisors, directors of undergraduate studies, and pre-graduate and pre-professional advisors where appropriate. Information specific to particular graduate and professional schools can be obtained from the Internet 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 pre-professional school or pre-graduate 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 obtain a copy of "Preparing for Graduate Study in the Arts and Sciences,” a handbook available from the Premajor Advising Center, 04 Allen Building, and the 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 in the Directory of Graduate Programs published by the GRE board and Council of Graduate Schools. 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 pre-graduate study, 04 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 1D and 2D (or 51 and 52), Economics 83, and Mathematics 31 as those which develop analytical skills. For further information concerning undergraduate preparation, see the Prebusiness Handbook for Duke Seniors and Alumni and The Official Guide to MBA Programs, published by the Graduate Management Admission Council; these publications and other resource materials are available in the Prebusiness Advising Office, 02 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, a year each of inorganic and organic chemistry, and a year of general physics. 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 Admission Requirements of U.S. and Canadian Dental Schools, published by the American Association of Dental Schools. 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 the advisor for the health professions.

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 coursework in the natural sciences and behavioral sciences within a liberal arts curriculum. Up-to-date information on allied health professions and programs is best accessed through the Internet. The health professions advisor is available to meet with students interested in allied health professions.

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 1 or 1D, 2 or 2D, or 51D, 52D, 83; English 117A; History 177A; Philosophy 48; Political Science 91, 91D, 127, 177-178; 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, or consult the prelaw advisor in the college.

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 judicatures 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 the Divinity School.
The Edmund T. Pratt Jr. School of Engineering

Duke University offers in the Edmund T. Pratt Jr. School of Engineering programs of study which lead to the degree of Bachelor of Science in Engineering. Four programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). These programs are biomedical engineering, civil engineering, electrical 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:

**General Requirements**

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<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>Writing</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>Natural Science</td>
<td>4</td>
</tr>
<tr>
<td>Humanities and Social Sciences</td>
<td>5</td>
</tr>
<tr>
<td>Engineering and Applied Sciences</td>
<td>4</td>
</tr>
<tr>
<td>Digital Computation</td>
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</tbody>
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1. **Writing**
   - This requirement is met by completing Writing 20

2. **Mathematics**
   - This requirement is met by completing Mathematics 31, 32, and 103; plus 104 or 111 or 135.

3. **Natural Science**
   - This requirement is met by completing Chemistry 21L, Physics 51L and 52L, and an elective course in one of the natural science departments which presents fundamental knowledge about nature and its phenomena, preferably including quantitative expression.

4. **Humanities and Social Sciences**
   - This requirement is met by completing five courses selected from at least three of the following four areas of knowledge: Arts and Literatures (AL), Civilizations (CZ), Foreign Languages (FL), and Social Sciences (SS). At least one course must be classified SS. In order to provide depth in the subject matter, at least two of the five courses must be selected from a single department and at least one of those courses must be 100-level or above. This program of courses should reflect a thematic coherence and fulfill an objective appropriate to the engineering profession. Courses selected must be those which present essential subject matter and substance of the discipline. No skill courses can be used to fulfill this requirement.

5. **Engineering and Applied Sciences**
   - This requirement is met by completing one course from each of four of the following six areas: electrical science, information and computer science, mechanics (solid and fluid), materials science, systems analysis, and thermal science and transfer processes. See departmental requirements, which follow, for any specific courses to be included.

6. **Digital Computation**
   - Students are expected to have acquired digital-computer programming capability before their sophomore year. The programming capability may be satisfied by Advanced Placement or by passing Engineering 53L or Computer Science 6 or 100E.

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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. A minimum of 9 credits in mathematics, natural science, and statistics are required.

3. 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.
Departmental Requirements

Departmental Specifications 16 s.c. The department administering the major field of study will specify this requirement. In general, it will consist of both required courses and electives to be planned in consultation with the departmental advisor. Including the 4 credits in engineering and applied sciences listed under general requirements, a total of 13.0 credits in engineering work are required. See the individual departmental requirements, which follow.

Total Minimum Requirement1 34 s.c.

1A 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.
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. The student is encouraged to choose electives and select a sequence which develops broad intellectual interests.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 21L</td>
<td>1</td>
<td>Chemistry 22L</td>
<td>1</td>
</tr>
<tr>
<td>Writing 20 or Social Science or Humanities Elective</td>
<td>1</td>
<td>Physics 51L</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 31</td>
<td>1</td>
<td>Mathematics 32</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 53L</td>
<td>1</td>
<td>Social Science or Humanities Elective or Writing 20</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

**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 52L</td>
<td>1</td>
<td>Biomedical Engineering 163L</td>
<td>1</td>
</tr>
<tr>
<td>Electrical Engineering 61L</td>
<td>1</td>
<td>Biomedical Engineering 100L</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 103</td>
<td>1</td>
<td>Mathematics 111</td>
<td>1</td>
</tr>
<tr>
<td>Biomedical Engineering 83L or Mechanical Engineering 83L</td>
<td>1</td>
<td>Biology 25L</td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td>1</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>Total</td>
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</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>Biomedical Engineering 171 or Electrical Engineering 64</td>
<td>1</td>
<td>Biomedical Engineering 164L</td>
<td>1</td>
</tr>
<tr>
<td>Biomedical Engineering 110L or Engineering 75L</td>
<td>1</td>
<td>Mathematics 114</td>
<td>1</td>
</tr>
<tr>
<td>Biomedical Engineering 101L</td>
<td>1</td>
<td>Life Science Elective</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>4</td>
<td>Total</td>
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</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 207</td>
<td>1</td>
<td>Biomedical Engineering Elective</td>
<td>1</td>
</tr>
<tr>
<td>Statistics 113</td>
<td>1</td>
<td>Biomedical Engineering Elective</td>
<td>1</td>
</tr>
<tr>
<td>Biomedical Engineering Elective</td>
<td>1</td>
<td>Social Science or Humanities Elective</td>
<td>1</td>
</tr>
<tr>
<td>Biomedical Engineering Elective</td>
<td>1</td>
<td>Social Science or Humanities Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

Students preparing for medical school should schedule Chemistry 151L and 152L, and two life science electives before the end of their junior year by deferring some required courses to the senior year. Biomedical engineering electives generally include courses with biomedical engineering numbers other than required courses. Mechanical Engineering 126 may be taken also as a biomedical engineering elective.

Civil and Environmental Engineering Departmental Requirements

The program in civil and environmental engineering calls for concentration in one of two areas, either structural engineering and mechanics (S/M) or environmental engineering and water resources (E/W). Typically, by the end of the sophomore year, students have chosen the sequence of courses (S/M) or (E/W) that best satisfies their interests; however, because of the number of electives in the program, it is possible to
follow both sequences. Either sequence satisfies all of the requirements for the Bachelor of Science in Engineering degree in civil engineering.

**Freshman Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 21L</td>
<td>1</td>
<td>Physics 51L</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 53L</td>
<td>1</td>
<td>Civil Engineering 24L and/ or Engineering 25L 1</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 31</td>
<td>1</td>
<td>Mathematics 32</td>
<td>1</td>
</tr>
<tr>
<td>Writing 20 or Elective</td>
<td>1</td>
<td>Elective or Writing 20</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering 75L</td>
<td>1</td>
<td>Engineering 123L</td>
<td>1</td>
</tr>
<tr>
<td>Physics 52L</td>
<td>1</td>
<td>Civil Engineering 130L</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 103</td>
<td>1</td>
<td>Mathematics 111</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 150L or Elective</td>
<td>1</td>
<td>Civil Engineering 24L and/ or Engineering 25L 1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>4</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>Elective or Engineering 150L</td>
<td>1</td>
<td>Civil Engineering Course 2 or Elective</td>
<td>1</td>
</tr>
<tr>
<td>Statistics 113 or Elective</td>
<td>1</td>
<td>Statistics 113 or Elective</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 115</td>
<td>1</td>
<td>Civil Engineering Course 2 or Elective</td>
<td>1</td>
</tr>
<tr>
<td>Civil Engineering Course 2 or Elective</td>
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<td>Civil Engineering Course 2 or Elective</td>
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<td>Civil Engineering Course 2 or Elective</td>
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<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>Total</td>
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</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>Civil Engineering Course 2</td>
<td>1</td>
<td>Civil Engineering 192L or 193L 3</td>
<td>1</td>
</tr>
<tr>
<td>Civil Engineering Course 2</td>
<td>1</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>Elective</td>
<td>1</td>
<td>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 Students declaring a civil engineering major without having taken CE 24 and EGR 25 prior to their junior year should consult with the director of undergraduate studies to develop an approved curriculum.

2 Students selecting the S/M sequence should take the following CE courses [Junior Year: Fall Semester - CE 122L, CE 131L, Spring Semester - CE 133L, CE 139L; Senior Year: Fall Semester - CE 134L, Students selecting the E/W sequence should take the following CE courses [Junior Year: Fall Semester - CE 120L, CE 122L, Spring Semester - CE 123L, CE 130L or Elective; Senior Year: Fall Semester - CE 124L, Elective or CE 139L].

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

The regular program of electives shall include: at least one from ECE 61L, ECE 148L, ME 83L, ME 101L, BME 83L, or BME 145; at least five semester courses in humanities and social sciences; at least one course in the natural sciences; and in addition to specified CE courses, at least one civil engineering elective course at the 100 or 200 level.

**Electrical and Computer Engineering Departmental Requirements**

The general requirements and departmental requirements comprising the accredited electrical engineering major are all 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.

### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 21L</td>
<td>1</td>
<td>Physics 51L</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 31</td>
<td>1</td>
<td>Mathematics 32</td>
<td>1</td>
</tr>
<tr>
<td>Computer Science 6 or 100</td>
<td>1</td>
<td>Social Science or Humanities Elective</td>
<td>1</td>
</tr>
<tr>
<td>Social Science or Humanities Elective</td>
<td>1</td>
<td>Writing 20 or Social Science or Humanities Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical Engineering 61L</td>
<td>1</td>
<td>Electrical Engineering 62L</td>
<td>1</td>
</tr>
<tr>
<td>Physics 52L</td>
<td>1</td>
<td>Electrical Engineering 64</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 103</td>
<td>1</td>
<td>Mathematics 1A 1</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>4</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></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 1B 1</td>
<td>1</td>
<td>Mathematics 1C 1</td>
<td>1</td>
</tr>
<tr>
<td>Electrical Engineering 1A 2</td>
<td>1</td>
<td>Electrical Engineering 1B 2</td>
<td>1</td>
</tr>
<tr>
<td>Electrical Engineering 163L</td>
<td>1</td>
<td>Electrical Engineering 170L</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>4</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
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<td></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>Electrical Engineering 2A</td>
<td>1</td>
<td>Electrical Engineering Design Course</td>
<td>1</td>
</tr>
<tr>
<td>Electrical Engineering Elective</td>
<td>1</td>
<td>Electrical Engineering 2B</td>
<td>1</td>
</tr>
<tr>
<td>Engineering Elective 3</td>
<td>1</td>
<td>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>

1Students interested in computer engineering, signal processing and communications, or systems and robotics, should select Mathematics 104, 131, and 135 or Statistics 113. Students interested in solid state electronics and circuits or electromagnetic fields and optics should select Mathematics 111, 114, and 135 or Statistics 113.

2To be selected from two of the following areas: computer engineering; signal processing and communications; solid state electronics and circuits; systems and robotics; electromagnetic fields and optics, and photonics.

3To be selected from: mechanics (Engineering 75L or 123L, Mechanical Engineering 126L, or Biomedical Engineering 110); thermal sciences (Mechanical Engineering 101L, Electrical Engineering 176, Mechanical Engineering 150L, or Biomedical Engineering 145 or 202); or materials science (Mechanical Engineering 83L or Biomedical Engineering 83L or 215).

**Note:** The selection of approved electives should take into account a departmental requirement that a student must have accumulated by graduation time 11 electrical engineering courses, including an engineering design course to be taken in the junior or senior year of the program. This course must have as a prerequisite at least one course in the discipline; currently, Electrical Engineering 164, 251, 261, and 275 are approved. Engineering 23, Engineering 174, and Engineering 175 may not be counted toward the departmental requirement of 13.0 engineering courses. In addition, the program must include one course in computer methods (Engineering 53L or Computer Science 6 or
100E may be used to satisfy this requirement) plus one course in mechanics, materials science or thermal sciences.

A n up-to-date list of acceptable engineering design and engineering science courses may be obtained from the departmental office.

**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. This sequence of the courses is presented as an overview of the program and is one of two recommended sequences of the course requirements.

### Freshman Year

<table>
<thead>
<tr>
<th>First Semester courses</th>
<th>Second Semester courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 21L</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 31</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 53L or Elective¹</td>
<td>1</td>
</tr>
<tr>
<td>Elective² or Writing 20</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
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</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester courses</th>
<th>Second Semester courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering 75L</td>
<td>1</td>
</tr>
<tr>
<td>Physics 52L</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 103</td>
<td>1</td>
</tr>
<tr>
<td>Mechanical Engineering 83L</td>
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</tr>
<tr>
<td>Total</td>
<td>4</td>
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</table>

### Junior Year

<table>
<thead>
<tr>
<th>First Semester courses</th>
<th>Second Semester courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering 125L</td>
<td>1</td>
</tr>
<tr>
<td>Mechanical Engineering Elective²</td>
<td>1</td>
</tr>
<tr>
<td>Natural Science Elective³</td>
<td>1</td>
</tr>
<tr>
<td>Elective⁴</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>First Semester courses</th>
<th>Second Semester courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering 150L</td>
<td>1</td>
</tr>
<tr>
<td>Mechanical Engineering 141L</td>
<td>1</td>
</tr>
<tr>
<td>Mechanical Engineering Elective²</td>
<td>1</td>
</tr>
<tr>
<td>Elective⁴</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

¹Part 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. ME 21 is recommended as one of the freshman year electives. ROTC courses cannot be counted toward the 100-level requirement.

²Restricted to 100-level or higher.

³With the approval of the director of undergraduate studies, Electrical Engineering 61L or Physics 171L may be substituted.

⁴A list of disallowed courses is maintained in the dean’s office.

⁵Restricted to mathematics, statistics, or computer science at the 100-level or higher, or engineering at the 200 level. The following are strongly recommended: Mathematics 114, Statistics 113, or Computer Science 150. Students interested in graduate studies in engineering should take Mathematics 114.
Declaration of Major. A student is urged to declare a major by the time of 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 non-engineering 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.

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 junior or 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.

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.

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 in the Office of the Dean of Engineering.
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, Hudson Hall.

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.

Pass/Fail Grading Option. With the consent of the instructor and the faculty advisor, an engineering student may choose to be graded on a pass/fail basis in up to four unrestricted electives or social sciences-humanities electives within the thirty-four-course program. A student may take no more than one course on a pass/fail basis each semester.

Repetition of Courses. An engineering student who has earned a grade of D-, D, or D+ in a required mathematics course 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 P, 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 P, 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 P, 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 P, C-, or better in 25 s.c.

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 P, C-, or better.
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. Specifically, the two elective as well as up to two acceleration credits may be included in the graduation total for students graduating in seven 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 semesters. 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 studies requirements— the areas of knowledge or the inquiries and competencies.

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).

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, biology, chemistry, computer science, economics, English, French, German, history, Latin, 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 beyond the introductory course. Departmental policies regarding advanced placement may vary. AP scores of 4 or 5 in German, 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 to the Office of the University.
Registrar no later than the end of the sophomore year. See the following information concerning policies in the Department of Physics:

**Advanced Placement in Physics.** Neither credit nor advanced placement are 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 51 (equivalent to Physics 41 and 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.

For a score of 4 or 5 on the AP "Physics-C" exam the policy is as follows. (1) A score of 4 or 5 on the "Physics-C" Mechanics exam earns credit for Physics 21; a score of 4 or 5 on the "Physics-C" Electricity and Magnetism exam earns credit for Physics 22; these course numbers denote only AP credit and are not actual Duke courses. (2) To obtain credit for Physics 51 (equivalent to Physics 41 and Physics 53), a student must have a 4 or 5 on the "Physics-C" Mechanics exam and must earn a passing grade on an equivalency exam given by the department during the first week of classes. (3) To obtain credit for Physics 52 (equivalent to Physics 42 and Physics 54), a student must have a 4 or 5 on the "Physics-C" Electricity and Magnetism exam and must earn a passing grade on an equivalency exam given by the department during the first week of classes.

To be invited to take the equivalency exam, students must have the testing agency submit their AP scores to the Office of the University Registrar as soon as possible, but no later than the first day of classes. A letter will be sent to qualified students late in the summer giving details about the equivalency exam. Under no circumstances will a student be allowed to take the equivalency exam at other than the scheduled time during the first week of classes of the first semester at Duke. Additional information about the equivalency exams can be found at [http://www.phy.duke.edu/undergraduate/equivalency.html](http://www.phy.duke.edu/undergraduate/equivalency.html).

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. AP credit for courses repeated will be forfeited. In the Pratt School of Engineering, AP courses count toward the general requirements. AP courses do not count toward the general studies requirements, i.e., the areas of knowledge or the inquiries and competencies.

**International Placement Credit (IPC).** Duke University recognizes the International Baccalaureate Program, the French Baccalauréat, the British A-Level Examinations, the Hong Kong A-Level Examinations, the German Abitur, and the Swiss Federal Maturity 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 studies requirements and, thus, may not be used for the areas of knowledge or the inquiries and competencies; 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 an American college or university after commencement of the student's junior year of high school. (No pre-matriculation credit will be awarded for college course work completed on a study abroad program undertaken prior to matriculation at Duke.) 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 studies requirements– the areas of knowledge or the inquiries and competencies. 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. (See also the section on work taken during high school in this chapter.) In the Pratt School of Engineering, these courses may be used to satisfy distribution requirements toward the B.S.E. degree.
**College Board Tests.** Scores on College Board Tests are the basic criteria for placement in French, German, Spanish (101 and beyond), Latin, and mathematics. Course credit is not given for courses bypassed. The following tables will assist students in making reasonable course selections in the subjects indicated.

<table>
<thead>
<tr>
<th>Subject</th>
<th>College Board Achievement Score</th>
<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>French</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>240-410</td>
<td>French 1 or 14</td>
</tr>
<tr>
<td>2</td>
<td>420-490</td>
<td>French 2</td>
</tr>
<tr>
<td>3</td>
<td>490-630</td>
<td>French 15 or 63</td>
</tr>
<tr>
<td>4</td>
<td>590-630</td>
<td>French 76</td>
</tr>
<tr>
<td>5</td>
<td>640 plus</td>
<td>French 100-level course</td>
</tr>
<tr>
<td>German</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>200-410</td>
<td>German 1</td>
</tr>
<tr>
<td>2</td>
<td>420-490</td>
<td>German 2</td>
</tr>
<tr>
<td>3</td>
<td>490-620</td>
<td>German 65 or 69</td>
</tr>
<tr>
<td>4</td>
<td>590-650</td>
<td>German 66 or 69</td>
</tr>
<tr>
<td>5</td>
<td>630-660</td>
<td>German 117</td>
</tr>
<tr>
<td>6</td>
<td>660 plus</td>
<td>German 118 and beyond</td>
</tr>
<tr>
<td>Spanish</td>
<td>not applicable</td>
<td>Spanish 1-76</td>
</tr>
<tr>
<td>Latin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>200-520</td>
<td>Latin 1</td>
</tr>
<tr>
<td>2</td>
<td>530-620</td>
<td>Latin 63</td>
</tr>
<tr>
<td>3</td>
<td>640-690</td>
<td>Latin 91</td>
</tr>
<tr>
<td>4</td>
<td>700 plus</td>
<td>Latin 100-level</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>500-640</td>
<td>Mathematics 25L</td>
</tr>
<tr>
<td>2</td>
<td>680-800</td>
<td>Mathematics 31L, or with one year of high school calculus, Mathematics 41</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 69 or from 69 to 66 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 to students who have completed more than two years of French in high school.

2 Students should also check the Self-Placement Guidelines at: http://aaswebsv.aas.duke.edu/languages/french/placement/.

3 Students should also check the Self-Placement Guidelines at: http://aaswebsv.aas.duke.edu/languages/german/placement/.

4 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.

5 An exception may be granted in consultation with the director of undergraduate studies.

6 To place into these courses, students must take the Spanish online placement test at http://www.duke.edu/~ssearp/spanish/.

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, 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 Scholastic Aptitude Tests College Board SAT, Mathematics Achievement (Level I or Level II), or Advanced Placement Program (AP, either level AB or level BC) scores.
Placement testing is not offered during New Student Orientation in mathematics. New students who wish to continue the study of Spanish must register to take the online placement test before registration.

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 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.

Place 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, the department offers a written examination which is 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 during the high school years in which a grade of B- or better was earned may be considered for pre-matriculation credit at Duke upon receipt of the following documentation: an official transcript of all college courses sent directly from the college(s) attended to Duke; official verification from each college attended that all courses were taken on the college campus, taken in competition with degree candidates of that college, taught by regular members of the college faculty, and were a part of the normal curriculum of the college; and official notification by letter from the high school principal or guidance counselor that the credit earned was not used to meet high school diploma requirements. By policy, no college-level courses that appear on the high school transcript and no precalculus and English composition courses taken during the high school may yield pre-matriculation credits at Duke. (See the section on entrance credit in this chapter.)

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 ten courses taken in the United States at another four-year institution or while abroad on an approved program of study abroad (see the section on study abroad). Of these, no more than two transfer credits may be awarded for courses taken in the United States, whether in the summer, while withdrawn voluntarily from the college, or while on leave of absence for personal, medical, or financial reasons. International students who take courses in their home country for transfer will be subject to the same policies and limitations governing domestic credit. Full-time degree candidates in the Pratt School of Engineering may receive credit toward the Bachelor of Science in Engineering
degree for a maximum of four courses taken at another institution. No credit will be accepted for coursework taken while a Duke student is withdrawn involuntarily.

Only those courses taken in which grades of at least C- have been earned are acceptable 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. 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 or while abroad that, upon evaluation, yield transfer credit at Duke may carry the areas of knowledge codes, but not those for the inquiries or competencies. They could count toward the major, minor, or certificate if approved by the relevant academic unit. For purposes of this regulation, interinstitutional credits (see the section on agreement with neighboring universities) are not considered as work taken at another institution.

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

Approval forms for Duke students taking courses at institutions other than Duke may be obtained 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.

Transfer Credit for Students Transferring to Duke. Students transferring from a degree program in another regionally accredited institution may be granted credit for up to 17 semester-course credits. Students will not be awarded more than four course credits for one semester’s work at the institution from which they are transferring credit. Courses accepted for transfer in this circumstance may be given, upon evaluation, area of knowledge codes, but no codes for the inquiries and competencies. They could, however, 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 taken in the United States. This means that those transfer courses may not count toward satisfying the foreign language competency requirement. However, foreign language courses taken in Duke-approved study abroad programs may be approved to count toward the Foreign Language Competency requirement.

All 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 premajor advisor, the academic dean for premajor students, or the academic dean in the division of their interests. 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 special instructions and registration materials via ACES Web. Students prepare a course program via the ACES Web bookbagging function, 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 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.

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) 689-5800. 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 without special permission of the appropriate academic dean. See, however, the statement regarding the reciprocal agreement with the University of North Carolina at Chapel Hill, North Carolina Central University in Durham, and North Carolina State University at Raleigh.

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 Web, the online registration system. 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 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 pass/fail or audit basis. To withdraw from a course, students must obtain permission from their academic deans; 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 prior to the final four weeks of classes. After the drop/add period, students permitted to withdraw receive a WP (withdraw passing) or WF (withdraw failing) grade from the instructor. 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.

Course Changes for the Summer Terms. Course changes are accomplished through ACES Web, the online Web registration system. 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 ($75 per half-course or per audited 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 (eleventh day at the Marine Laboratory); the instructor then assigns a WP or WF grade. 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

Duke University, through the Office of Services for Students with Disabilities, 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 the Americans With Disabilities Act (ADA), a student must have a physical or mental impairment that substantially limits one or more major life activities such as, but not limited to, hearing, seeing, speaking, breathing, performing manual tasks, walking, caring for oneself, and learning. 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 individual can perform a major life activity.

Students requesting accommodations under the provisions of ADA (e.g., academic, accessibility, housing) must consult Dr. Emma Swain, Director, Office of Services for Students with Disabilities (919) 684-5917 or (919) 684-5824 TTY, to explore possible coverage. Students with other medical conditions that may require special assistance (e.g., housing, dining) must consult Duke Student Health Service at (919) 684-3367 for further information. Receiving accommodations or special assistance at another college or university does not necessarily qualify an individual for the same accommodations and/or assistance at Duke University. For academic assistance available to all Duke University students, see also the section on the Academic Resource Center in the chapter “Special Study Centers, Programs, and Opportunities.”

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. The minimum course load in the fall or spring term is four semester courses. 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 register for up to five and a half course credits, and up to six course credits with 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 if they have obtained written consent of the instructor. 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. Undergraduate students are normally not allowed to enroll in 300- or 400-level courses. Under exceptional circumstances, however, permission to do so may be granted, provided the instructor, the director of graduate studies, and the dean of the Graduate School agree.

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 who receive a D-, D, or D+ in any course in Trinity College are allowed to repeat the course at Duke. 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. Forms requesting to repeat a course are available in the offices of the academic deans.

Course Audit

Students who audit a course submit no daily work and take no examinations. 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, nolaboratory 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 half the university 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 Institute for Learning in Retirement; courses audited on the Microelectronics Center of North Carolina (MCNC) Network may be audited without concurrent enrollment in another course. 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 Education. Consult the chapter "Financial Information" for the appropriate fee schedule. Auditors must register on the Friday before classes begin.

Independent Study

Independent study enables a student to pursue individual research and reading in a field of special interest, under the supervision of a member of the faculty, which results in a substantive paper or report containing significant analysis and interpretation of a previously approved topic. (That substantial paper or report is to be done in the semester in which the student is registered for the independent study course.) A student, with the approval of the instructor and the director of undergraduate studies in the instructor’s department, may enroll in independent study for any term at Duke. In Trinity College, instructors of independent study courses are expected to meet with the students enrolled at least once every two weeks during the fall or spring and at least once each week during a summer term. Students are expected to complete a substantive paper for the course. Independent study courses do not count toward satisfying the general studies requirements except for the research designation. (Classes matriculating in May 2002 and thereafter may submit one independent study with an R designation for approval for a W designation only.)

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 or Division in Trinity College of Arts and Sciences

Before declaring a major in Trinity College, students work with their premajor 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 must declare their majors before the last day of classes in their fourth undergraduate semester. Forms for filing the official long-range plan are available on ACESWeb.

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.

A student may declare an interdepartmental major after receiving the approval of the directors of undergraduate studies of the departments involved; they or other advisors assist the student in preparing a program of course work. The major, which must be planned early in the undergraduate career, must consist of ten or more courses, including at least eight courses at the 100 level or above, in two or more Trinity College departments or programs that offer a major. One of them should be identified as primarily responsible for the student’s advising. The courses must be equally apportioned among the participating departments. A copy of the plan for the program, with a descriptive title, should be presented, along with the written approval of the directors of undergraduate studies, to the appropriate academic dean. A student who declares an interdepartmental major must satisfy all other requirements for Program I.

A student who wishes to declare a second major should do so in the Office of the University Registrar before registering for the final term. 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, Asian and African languages and literature, biological anthropology and anatomy, biology, Canadian studies, chemistry, classical civilization, classical languages, comparative area studies, computer science, cultural anthropology, earth and ocean sciences, economics, English, environmental sciences and policy, French studies, Germanic languages and literature, history, Italian and European studies, linguistics, literature, mathematics, medieval and Renaissance studies, music, philosophy, physics, political science, psychology, public policy studies, religion, Russian, sociology, Spanish, theater studies, visual arts, and women’s studies.

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

### Class Attendance, Excused Absences, and Tests

Responsibility for class attendance rests with the individual student, and since regular and punctual class attendance is expected, the student must accept the consequences of failure to attend. Instructors may refer to the student’s academic dean a student who is, in their opinion, absent excessively. A student who has missed examinations or deadlines for assignments because of documented illness or authorized representation of the university off-campus may receive an official excuse or approved extension from the academic dean. Excuses are not issued for absences from class, discussion sessions, or laboratories, only for missed course work defined previously. Officials in charge of groups representing the university are required to submit the names of students to be excused to the appropriate deans’ offices forty-eight hours before absences are to begin.

### 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 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. 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 prior to 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; see the section on quality of work in the chapter "Degree Programs"). 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 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. 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 officially scheduled time. Take-home examinations are due at the regularly scheduled hour of an examination, based on the time period of the class. In fall or spring courses where final examinations are not scheduled, examinations may not be given in the last week of classes. 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 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 after the examinations at the end of each term. Midterm advisory grade reports for freshmen are issued in the fall and spring.

**Passing Grades.** Passing grades are A, exceptional; B, superior; C, satisfactory; P, passing (see pass/fail option below); and D, low pass. These grades may be modified by a plus or minus. A Z 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 in this chapter.

**Failing Grades.** A grade of F or U (see pass/fail option below) indicates that the student has failed 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.

**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>Numerical Value</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 pass/fail courses, a “P” is not calculated into the grade point average, but a “U” (failing) is a part of that calculation. The semester and cumulative grade point averages are determined at the end of the fall and spring semesters and displayed for students on the academic history reports made available to them via ACES Web.

**Pass/Fail Option.** With the consent of the instructor, a student who has declared a major may register, following instructions included in registration information, for grading on a pass/fail basis in one elective course each semester and summer session. Courses in the major, the minor, and certificate programs cannot be taken pass/fail. Additionally, no other degree requirements, except the requirement for thirty-four course credits and the continuation requirements, may be met by a course passed under
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, for readmission to the college. Students admitted to degree programs from Continuing Education should consult their academic deans 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 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 maintain enrollment at Duke a student may not fail more than one full course in a summer term or a summer session. 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 the</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 courses¹</td>
</tr>
<tr>
<td>8th semester at Duke</td>
<td>26 semester courses at Duke, plus two additional courses¹</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.

**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
Changes in Status

(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 DDDF.

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 dean, 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 pass/fail basis. Grades of C-, P, 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.") For students withdrawing on their own initiative after the beginning of classes and prior to 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.

Students may be involuntarily withdrawn for academic reasons, financial reasons, and violation of academic regulations. The expectations pertaining to each are found in the chapters "Degree Programs," "Financial Information," and this chapter, "Academic Procedures and Information."

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 usually cannot be housed 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.

Leave of Absence. An upperclass student in good standing may apply in writing to the appropriate academic dean to take a leave of absence for one or two semesters; the deadline for application for a leave is the end of the registration period for the semester immediately preceding the leave. Students returning from approved medical, financial, personal, or study abroad 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 Residential Life by their published deadline noted above and provided that they lived on campus before taking their approved leave. Unless an exception for an emergency is authorized by the students’ academic deans, students applying after the course registration cited above will lose their priorities in university housing for the period following the leave.

Registration materials will be provided to a student on leave, but final registration is, of course, contingent upon the student’s fulfilling the terms of the leave. A student failing to register while on leave will be withdrawn from the university and will have to apply for readmission.

A student who undertakes independent study under Duke supervision and for Duke credit is not on leave of absence even if studying elsewhere. The student registers at Duke as a nonresident student and pays the appropriate fees or tuition at Duke. This 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 senior 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. 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.

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. 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 February 10 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 deans about course load requirements.

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

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

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 sends grade reports to students at the end of each term and midterm reports to first-year students and their parents or guardians. Additionally, other available information is provided routinely to parents and guardians of undergraduates by the Office of the Dean. They are sent copies of correspondence to students notifying them of changes in their academic standing or regarding unsatisfactory performance which may lead to academic dismissal or the necessity of attending summer school. Parents and guardians may also be alerted to emergency and extraordinary situations which may impinge upon a student’s well being.
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 placing 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 pass/fail 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) carry a normal academic load; (2) earn grades other than P in at least three semester courses; and (3) 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. All academic units offering a major have procedures for obtaining graduation with distinction, as does Program II. This recognition is separate and distinct from Latin Honors (see below). Interested students should consult the relevant directors of undergraduate study or Program II dean responsible for specific requirements of and eligibility for graduation with distinction. In general, majors with departments and programs 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 which 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.

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 Eta Sigma.** Elections to the national freshman honorary society, Phi Eta Sigma, are made at the end of the fall and spring semesters. Students who earn a 3.5 average in four or more semester courses in their first semester of enrollment, or those whose cumulative average at the end of their second semester is 3.5 or above in a program of eight or more semester courses, are invited to membership. Inquiries may be directed to Dr. Milton Blackmon, Duke chapter advisor, Box 90697, Duke University, Durham, NC 27708.

**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 website. 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 Rhett George, Department of Electrical Engineering. All other inquiries may be directed to the Secretary of Phi Beta Kappa, Box 99352, Duke Station, Durham, North Carolina 27708.

**Golden Key International Honour Society.** Membership to this international academic honors organization is by invitation only to the top 15 percent of juniors and seniors in all fields of study. Members gain leadership experience as chapter officers and delegates to regional conferences and international convention. Scholarships, such as the international GK Scholar Awards ($10,000) are won annually. A network of 500 corporate recruiting contacts is available to members seeking internships and employment. Chapter members plan service and academic projects with the advisor, Dr. Caroline Lattimore, Duke chapter advisor, Box 90739, Duke University, Durham, NC 27708.

**Tau Beta Phi.** 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 Program Coordinator in 103 West Duke Building. Specific information about deadlines and procedures is available through that office.

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, the diploma form, to be submitted during the fall registration period, is sent to prospective graduates at their acpub email addresses. If desired, paper copies can be obtained from the deans in Trinity College. In the Pratt School of Engineering, diploma forms are available in the dean's office.

Commencement

Graduation 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 two course credits of graduation at the end of the spring term may request to participate in the annual graduation exercises. The request must be made in writing and submitted to their academic dean by February 10. There is a delay of one month to two months in the mailing of September and December diplomas because diplomas cannot be issued until they are approved by the Academic Council and the Board of Trustees.

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 (see page 58), 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, address, 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 by the end of the first week of classes each term.
Academic Concerns: 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 about grades or administrative procedures in a course should be directed to the instructor of the course. 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 chairman 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 chairman.

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 an academic dean of Trinity College.

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 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, who will request information about the nature of the issue and about the earlier efforts made to deal with it.

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 of $300 to $3,000 are granted annually through the generosity of Duke alumnus and trustee Edward H. Benenson. Funds are awarded for fees, equipment, supplies, travel, production, and other educational expenses for projects in art, music, drama, dance, creative writing, and film/video proposed by undergraduates and graduating seniors of Trinity College and the Pratt School of Engineering. Application forms and instructions are available in February from the Institute of the Arts, 109 Bivins Building.
The Louis Sudler Prize in the Arts. An award is presented annually by the Institute of the Arts to a graduating senior who, in the opinion of a special institute committee, has demonstrated the most outstanding achievement in artistic performance or creation. The prize of $1,000 was established in 1963 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.

John M. Clum Distinguished Drama Graduate Award. This award is named for the distinguished founder of the Duke University Drama Program. The award recognizes an outstanding graduating senior who has made extraordinary contributions to the life of the program, and who has exhibited outstanding personal and professional qualities.

The Reynolds Price Award for Script-writing. This award is presented annually by the Drama Program to a Duke undergraduate for the best original script for stage, screen, or television.

The Augusto Lentricchia Award for Excellence in Directing. A prize of $250 is awarded annually to an undergraduate of Duke University for sustained excellence in directing for the stage or screen. The award is sponsored by the Drama Program through a continuing gift from Frank Lentricchia, who named the award in memory of his paternal grandfather, a man of few, but penetrating words, and a keenly observant and extraordinarily disciplined poet.

The Tommaso Lacovella Award for Excellence in Acting. A prize of $250 is awarded annually to an undergraduate of Duke University for sustained excellence in acting for the stage or screen. The award is sponsored by the Drama Program through a continuing gift from Frank Lentricchia, who named the prize in memory of his maternal grandfather, a captivating and exuberant storyteller who inspired him with his charismatic and surprising stories.

Dasha Epstein Award in Playwriting. This award is made to a current third-year Duke student with demonstrated promise in playwriting. It covers the costs of the student’s attending the two-week National Playwrights Conference held each summer at the Eugene O’Neill Theater Center in Waterford, Connecticut.

The Alex Cohen Award. This award offers grants for summer study and theater projects.

The 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 drama 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 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. A distinguished scholar of Renaissance English drama, Professor Emeritus Dale B.J. Randall was a member of the English Department faculty at Duke from 1957 to 1990 and of the Program in Drama from 1991 to 1999. He served as Interim Director of the latter in 1991-92.


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 an undergraduate of Duke University 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, who named the prize after Henry Schuman, 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 organist who is an undergraduate music major or a graduate...
student in performance practice. It is renewable as long as the recipient continues to study the organ and maintains satisfactory progress.

**The Larry and Violet H. Turner Scholarship.** Established by a gift of Larry Turner, class of 1935, the scholarship is given to an undergraduate demonstrating outstanding ability on a string instrument. Although recipients need not major in music, they are required to study privately. The scholarship covers 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 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, it is a competition for prose fiction (5,000-word limit) and poetry (200-line limit) is sponsored in the spring semester by the Department of English.

**The Rudolph William Rosati Fund.** Established in 1978 by Mr. W. M. Upchurch, Jr., this fund honors the memory of his friend, the late Mr. Rosati, a talented writer. Awards are given to encourage, advance, and reward creative writing among undergraduate students. A committee named by the provost oversees the program and distribution of the fund.

**Barbara Hermstein 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 E. Blake Byrne Scholarship.** This fund was created in 1986 by E. Blake Byrne (Trinity College, Class of 1957). The award is made by the Department of English to rising juniors with demonstrated talent in 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.

**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 is 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. Three Holton awards are given: an award for Brussels Fellows, 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 chairman 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 awards are given to students, chosen by the department, 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.

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 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. The 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 Institute of Public Policy, recognizing the graduating major with the highest academic achievement in public policy.

The Terry Sanford Departmental Award. This award is presented annually by the Sanford Institute 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. The Karl E. Zener Award is given to psychology majors who have demonstrated excellence in the study of psychology. The award, based on the student’s total grade record and a paper submitted to the award committee, 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 Comparative Anatomy. The parents and friends of James B. Rast, a member of the Class of 1958 of Duke University, endowed this award in his memory. The award, consisting of the Atlas of Descriptive Human Anatomy by Sobotta and bearing the James B. Rast Memorial bookplate, is given annually to the student who demonstrates the greatest achievement in the study of comparative anatomy.

CRC Outstanding Freshman Chemistry Award. A copy of the Chemical Rubber Company’s Handbook of Chemistry and Physics is awarded annually to a first-year student in chemistry. The basis for selection by a faculty committee is academic excellence.

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. The basis for selection is academic excellence and laboratory proficiency. The prize is a subscription to the journal Analytical Chemistry published by the American Chemical Society.

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The Chemistry Department Award. This prize is awarded annually to an outstanding senior chemistry major in the Bachelor of Science degree program. The basis for selection is the student’s independent research and interest in pursuing advanced work in chemistry. The award is a one-year scholarship 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 which 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 plaque displayed in the divisional office. The award is sponsored by Andrew J. and Vera Laska in memory of their son, Thomas Vadav Laska.

Estwing Award. Awarded annually to a graduating senior in the Division of Earth and Ocean Sciences by his/her peers in recognition of outstanding achievement in the earth and ocean sciences.

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 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. Sealey Scholaristic Award. This award is presented annually by the Engineers’ Student Government to that student 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. Sealey. 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 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 Milmow 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.

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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 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 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 academic achievement. The award consists of a certificate of recognition and the name of the recipient inscribed on a plaque displayed in the Engineering Building.

The Janet B. Chiang Grants. These grants provide for student projects with the goal of furthering Asian/Asian American understanding (qualifying projects would 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. An award is made annually to a student who best embodies Sirena’s ideals and interests and who has demonstrated academic excellence and an 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.

Richard K. Lublin Pre-Law Award. This award to an outstanding graduating senior who will be attending law school and who has excelled in academics, made a significant contribution to life at Duke, and evidences potential for success in law was established by Ms. Raymond Lublin in honor of her son Richard K. Lublin, Trinity ’61, a practicing attorney and former member of the Trinity College Board of Visitors.

Chester P. Middlesworth 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. The winner of this prize is chosen by a committee appointed by the president of the university.
Special Study Centers, Programs, and Opportunities
Campus Centers and Institutes

INTERNATIONAL AND AREA STUDIES PROGRAMS

Center for International Studies. The university’s Center for International Studies promotes, coordinates, and supports a wide array of research and teaching activities on international issues in Arts and Sciences and the professional schools. Faculty associated with the center come from diverse disciplines and reflect a wide range of intellectual interests. Their primary bond is a concern with peoples, events, movements, and institutions outside the United States; relations among nations; and activities and institutions in the United States that affect the rest of the world. The center fosters the belief that comparative knowledge and understanding of other cultures and societies are essential for an appreciation of the world in which we live and deserve primary emphasis in teaching and research in the university.

The functions of the center are to provide focus, structure, and support to the research efforts of associated scholars and to serve as a catalyst for the coordination of varied research undertakings. It also assists in dissemination of these undertakings and fosters international activities in educational, research, and governmental institutions in the local area and in the southeastern United States.

The Center for International Studies is involved in monitoring and initiating change in the international curricula of the undergraduate, graduate, and professional schools of the university. It has a special interest in undergraduate education and, through a variety of programs and activities, makes a contribution to the undergraduate academic experience. It seeks to attract students to the wide range of international and comparative courses available, and it offers awards to rising sophomores for summer travel and research overseas. In recognition of the excellence of its programs, Duke’s Center for International Studies has been designated a National Resource Undergraduate Center in International Studies by the U.S. Department of Education.

In addition, the center provides funding for graduate student and faculty travel and research, and for interdisciplinary faculty working groups and committees which sponsor programs such as visiting speakers, faculty seminars, conferences/symposia, film series, working papers and other activities. Thematic and area studies committees include:

- African Studies
- Comparative Islamic Studies
- Contemporary East Asian Popular Culture
- National Identity, Nationalism, and Ethnicity
- South Asian Studies
- Transitional Issues in the Former Soviet Union

Asian/Pacific Studies. This program, administered by the Asian/Pacific Studies Institute, supports and encourages Asian and Pacific studies with special emphasis on China, Japan, and Korea. Courses offered cover a range of disciplines including Asian culture, Chinese, Japanese, and Korean (language and literature); art history, business, cultural anthropology, economics, history, law, political science, psychology, religion, and sociology. The institute provides support for visiting speakers and conferences, library resources and research clusters. A limited number of 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 comparative area studies program (East
Asian concentration) or through Asian and African Languages and Literature. At the graduate level the institute offers a certificate and an M.A. in East Asian Studies.

**Canadian Studies Center.** The Canadian Studies Center 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 Canadian problems and comparisons of Canadian and American perspectives. Concentrations in Canadian studies are described in the chapter “Courses of Instruction.” Study abroad opportunities are available.

**Center for Latin American and Caribbean Studies.** The Center for Latin American and Caribbean Studies coordinates undergraduate and graduate education in Latin American and Caribbean Studies, and promotes research and dissemination of knowledge about the region. The center 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, the social sciences, Portuguese and Spanish. The center also sponsors visiting professors and lecturers from Latin America, a speakers series, conferences, and summer and academic year programs abroad. In addition, the center and the Institute of Latin American Studies at the University of North Carolina-Chapel Hill sponsor the Consortium in Latin American Studies, that includes yearly exchanges of faculty members from each institution and joint undergraduate and graduate student seminars as well as the annual Latin American Film Festival. For more information consult the academic coordinator at 2114 Campus Drive, Box 90254, Durham, NC 27708-0254; telephone (919) 681-3980; e-mail: las@duke.edu; web site: http://www.duke.edu/web/las.

**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 Comparative Area Studies majors.

**CENTER FOR DOCUMENTARY STUDIES**

The Center for Documentary Studies, an interdisciplinary educational organization affiliated with Duke University, is dedicated to advancing documentary work that combines experience and creativity with education and community life. Founded in 1989, CDS connects the arts and humanities to fieldwork, drawing upon photography, filmmaking, oral history, folklore, and writing as catalysts for education and change. CDS supports the active examination of contemporary society, the recognition of collaboration as central to documentary work, and the presentation of experiences that heighten our historical and cultural awareness. CDS achieves this work through
academic courses, research, oral history and other fieldwork, gallery and traveling exhibitions, annual awards, book publishing, community-based projects, and public events.

Center-sponsored courses taught at Duke University are open to area university students, who become involved in community settings where they conduct their own documentary work. The center also offers a non-credit certificate program in documentary studies, in conjunction with Duke Continuing Education, and an increasing number of workshops for teachers and students of documentary methods.

Other opportunities for student involvement include volunteer work with community-based projects, work-study positions, internships, and a limited number of graduate assistantships. For more information about CDS and current courses, internships, and volunteer opportunities, check the web site at http://cds.aas.duke.edu/ or consult the Education Director, Center for Documentary Studies, 1317 West Pettigrew Street, Durham, NC 27705; telephone (919) 660-3663; fax (919) 681-7600.

DEWITT WALLACE CENTER FOR COMMUNICATIONS AND JOURNALISM

The DeWitt Wallace Center for Communications and Journalism, located in the Terry Sanford Institute of Public Policy, focuses on the study of communications, mass media, and journalism as they relate to a globalized and interconnected world. 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 may become public policy majors and pursue a communications/journalism track. As future journalists, they gain a thorough understanding of the press in the policy-making process, 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. For further information write the center at Box 90241, call (919) 613-7330, or email media@pps.duke.edu. See also the section on public policy studies in the chapter “Courses and Academic Programs.”

ACADEMIC RESOURCE CENTER

The Academic Resource Center is composed of three programs— the Academic Skills Instructional Program, the Peer Tutoring Program, and the Office of Services for Students with Disabilities. It was established to offer academic support to students seeking assistance with their college studies and with the development of the requisite skills required to be successful students. It has a professional staff dedicated to enhancing the academic life of students through its three basic programs. All services of the center are offered without additional university fees and carry no course credit.

The Academic Skills Instructional Program (ASIP) offers students tools for critical thinking and assessment of their own learning needs in individual conferences. Areas to be explored may include time-task-self management, reading efficiency, note-taking, and preparation for and taking tests. Academic skills instructors also hold workshops in any of these areas for campus groups that request them. The Peer Tutoring Program provides free peer tutoring in introductory-level mathematics, chemistry, statistics, physics, biology, economics, computer science, engineering, and languages. The Office of Services for Students with Disabilities arranges accommodations for all students with physical or learning disabilities who have appropriate documentation. See also the section on Services for Students with Disabilities in the chapter “Campus Life and Activities”.

For further information, write or call the center, 211 Academic Advising Center, Box 90694 (East Campus), (919) 684-5917 for information on the Academic Skills Program, or (919) 684-8832 for the Peer Tutoring Program.
CONTINUING EDUCATION

Academic Study. Local adult residents are encouraged to pursue academic study at Duke (1) as potential degree candidates, for those who have not been full-time college students for at least four years and are now resuming or beginning a bachelor’s degree; (2) as non-degree students, for those with baccalaureates who now seek a sequence of undergraduate credit courses; and (3) as students completing the last year of work towards a degree at another institution. These students are given academic counseling by the Office of Continuing Education and Summer Session and are subject to most of the regulations set forth for degree candidates. Continuing education applications may be obtained from the Office of Undergraduate Admissions and must be returned to that office, accompanied by a $35 application fee, by August 1 for the fall semester and by December 1 for the spring semester.

Short Courses and Conferences. Short courses (noncredit) in the liberal arts are offered regularly throughout the year for those interested in personal enrichment or career advancement. Conferences, institutes, and training programs are conducted during the academic year and in the summer. Some are residential and others are designed for local participants. Some award continuing education units.

Test Preparation Program. Test preparation classes are offered in the fall and spring for the GRE, GMAT, and LSAT exams. These courses focus on the skills critical for a good test performance: test-taking techniques, time management, logical reasoning, and math and verbal skills.

Academic English Preparation Program for International Students. Designed to help the new non-native English-speaking international student—graduate, professional, or undergraduate—make a smooth transition to study at Duke, this program focuses upon providing upper level reading strategies, advanced composition instruction, improved listening and speaking skills including pronunciation, and cross-cultural training in understanding the university environment.

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

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

INSTITUTE OF THE ARTS

The Institute of the Arts is a center for the interdisciplinary presentation, support, production, and study of the arts. The institute coordinates artist residencies on campus and in the community, presents series in contemporary performance, world music/dance, and modern dance. Working with a representative faculty council, the institute coordinates and supports new curricular initiatives in the arts and develops cooperative programs between Duke and the surrounding community. A one-semester, off-campus residency program in New York City is offered every fall semester. The institute provides support for student and faculty projects in the arts and administers awards and prizes. For further information, inquiries should be made to Duke University Institute of the Arts, 109 Bivins Building, Box 90685, (919) 660-3356.

INSTITUTE OF STATISTICS AND DECISION SCIENCES

The Institute of Statistics and Decision Sciences (ISDS) is the academic statistics department at Duke. Founded in 1986, ISDS teaches undergraduate and graduate courses in statistics and related areas and provides statistical consulting services to
faculty and researchers in the Trinity College of Arts and Sciences and the Nicholas School of the Environment and Earth Sciences. ISDS faculty and students are involved in research in statistical sciences, with research activities ranging from the development of mathematical and computational methods to large-scale interdisciplinary projects in natural, life, and social sciences and engineering. In 2001-2002, major research emphases lie in the development of new statistical methodology, statistical education, computer modeling in science and engineering, statistics in environmental sciences and ecology, and bioinformatics and genomics.

Specialized Programs

FOCUS INTERDISCIPLINARY PROGRAMS

FOCUS (First-year Opportunities for Comprehensive, Unified Study) Interdisciplinary Programs offer first-year students a variety of programs in the fall semester, each featuring a cluster of courses with a common theme. Classes are small, interrelated, and mutually reinforcing; they provide opportunities for discussion from multiple perspectives. Since one of the aims of FOCUS is to encourage the integration of academic life with residential life, participants of each program live in the same residence halls together with non-FOCUS students.

FOCUS programs require participants to enroll in 4.5 courses, including two program seminars, University Writing 20, a half-credit FOCUS discussion and an elective. Courses in the programs satisfy the first-year seminar requirement. The discussion course is designed to provide a social setting for the debate of ideas related to the theme of the program as a whole or of topics of special interest intended to supplement the content of the seminars. It typically meets once a week.

A current FOCUS brochure and application form may be obtained from the FOCUS Interdisciplinary Programs office in the Academic Advising Center (919) 684-9371; e-mail FOCUS@pmac.duke.edu; web page http://pmac-www.aas.duke.edu/ focus). In 2001 the following programs were offered: Arts in Contemporary Society; Athens in the Golden Age; Biology, Technology, and Sociocultural Change; Changing Faces of Russia; Diversity and Identity; Exploring the Mind; Global Environment Change; Health Care and Society; Humanitarian Challenges at Home and Abroad; Modern America; Twentieth Century Europe; and Visions of Freedom. Similar programs will be offered in the fall of 2002.

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 Marines). 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 a four-year and a two-year curriculum leading to a commission as a second lieutenant. The four-year program consists of both the General Military Course (GMC), a course sequence 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 through four year scholarships. These scholarships pay up to full tuition, books, and a monthly tax-free stipend of $250-$400. All members of the POC receive the nontaxable stipend. 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, 303 North Building, (919) 660-1860 or visit www.duke.edu/afrotc.

The Army Reserve Officers’ Training Corps (AROTC). Army ROTC provides students of strong character with an opportunity to develop themselves as scholar/athlete/leaders and earn a commission as an Army officer. Two programs are available, the three- or four-year progression program and the two-year lateral entry program.

A three- or four-year program consists of the Basic Course (freshman and sophomore years) and the Advanced Course (junior and senior years). Direct entry into the Advanced Course (a two-year program) is possible under specific circumstances. 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. There is only one mandatory summer training requirement, National Advanced Leadership Camp (NALC), which takes place over a five-week period between the junior and senior years. All uniforms and some texts are provided.

Upon commissioning, 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 $600 textbook and equipment allowance, and $250-$400 per month for each month in school (up to $4,000 per year). Nonscholarship Advanced Course cadets also receive the $250-$400 monthly stipend. All of the above benefits are tax-free. Participants in NALC are paid one-half of the base pay of a second lieutenant.

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 Naval and Marine Corps officers upon graduation. Selected students may 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 four years of active duty service as a reserve officer is required upon graduation.

Nonscholarship students may be enrolled in the College Program. They take the same courses and wear the same uniform, 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 Marine Corps through the Marine Corps Option Program. Students seeking
further information on the NROTC program may call the Department of Naval Science, 225 North Building, (919) 660-3700.

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, and North Carolina Central University in Durham, 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 calendar 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 http://registrar.duke.edu/registrar/iimain.htm. 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 quality point ratio. The courses may be eligible for Area of Knowledge coding, but are not eligible for Curriculum 2000 Competencies and Inquires codes. 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 apply to the semester during which the Duke Robertson Scholars are in residence at the University of North Carolina at Chapel Hill.

Howard University. Duke students participating in the Duke/Howard University Exchange Program may spend a semester studying at Howard University in Washington, DC, while Howard undergraduates enroll for the same period at Duke. More information about this program, administered by Trinity College, is available in 02 Allen Building.

DUKE IN NEW YORK ARTS PROGRAM

The Institute-of-the-Arts-sponsored Duke in New York Arts Program is a fall-semester off-campus study program for juniors and seniors wishing to engage in an intensive study of the arts that includes an internship. The program has four components, each earning one Duke credit: two seminars taught by the faculty director from Duke (Institute of the Arts 101S and 103S); an arts internship (Institute of the Arts 102); and an elective course at New York University. The internships may be in the fields of visual or performing arts, museum and gallery management, literary arts, film and television, and related fields. A substantive paper is required. For more information, consult Kathy A. Silbiger, administrative director, (919) 660-3356.

LEADERSHIP AND THE ARTS

This program is a unique chance for fifteen Duke students to spend the spring semester in New York City studying leadership, policy, philanthropy, and creativity, and learning from people who make art and from others who organize and support it. The program includes four full-credit Duke courses. Two public policy courses are
required: "Leadership and Quality in the Arts" and "Policy, Philanthropy, and the Arts."
A third required course, "Opera at the Metropolitan," is a music course. For their fourth
course students may choose from a variety of tutorial and independent study options in
history, religion, art, literature, public policy, and other fields. Students can expect to see
more than forty plays and musicals on and off Broadway, as many as fifteen operas at
the Met, and a number of concerts and dance performances. Course assignments also
include visits to museums and galleries, and talks with working artists. Choreographers, actors, directors and producers, and supporters of the arts in
business, government, and the foundations join the weekly seminars for discussions.
Students interested in applying should consult the Hart Leadership Program in the
Terry Sanford Institute of Public Policy.

DUKE IN LOS ANGELES PROGRAM IN MEDIA ARTS AND INDUSTRIES

This interdisciplinary program is sponsored by the Program in Film and Video. It
offers students interested in the film, television, music recording, contemporary art, and
entertainment law industries an intensive spring-semester program in Los Angeles,
based at the University of Southern California. The program consists of a required
seminar taught by the Duke faculty director (Literature 197S: Special Topics in the
United States Culture Industries); Film/ Video/ Digital 112S: Media Arts Internship in
Los Angeles; and two courses at USC in either the School of Cinema-TV or the Division
of General Studies. A substantive internship paper is required. For more information,
consult Professor Jane Gaines, faculty director, or Lisa Poteet, administrative director,
(919) 660-3030.

DUKE UNIVERSITY MARINE LABORATORY
(Nicholas School of the Environment and Earth Sciences)

The Duke University Marine Laboratory is located within the Outer Banks, adjacent
to the historic seacoast town of Beaufort, North Carolina, with direct access to the
Atlantic Ocean, Cape Lookout National Seashore Park, sand beaches and dunes,
estuaries, wetlands, and maritime forests. The dynamic environment that reflects
collisions of oceanic currents offshore of the Outer Banks provides excellent
opportunities for marine study. A component of the Nicholas School, the Duke
University Marine Laboratory is an interschool teaching and research facility dedicated
to the study of coastal basic processes and human interactions with those processes. The
Beaufort campus of Duke has available dormitory and dining facilities, classroom
laboratories, research buildings, a specialized marine science library, as well as a variety
of vessels which are utilized in both teaching and research. A year-round seminar series
which includes both guest lecturers and the resident academic and research staff serves
to enrich the student community.

At the undergraduate level, the Marine Laboratory serves students in the natural
and environmental sciences as well as those in the social sciences, humanities, or
engineering who have adequate preparation. Academic programs include a fall
semester, spring Beaufort to Bermuda semester, and two five-week summer terms. The
academic programs integrate classroom lectures and laboratories with direct field and
shipboard experiences. For additional information and application materials, write to
the Admissions Office, Duke University Marine Laboratory, 135 Duke Marine Lab Rd.,
Beaufort, North Carolina 28516 (252-504-7502 or e-mail ml_admissions@env.duke.edu).

WASHINGTON SEMESTER PROGRAM (American University)

The Washington Semester Program offers students a chance to take advantage of
the resources of Washington, DC. During the program, students are immersed in
Washington culture as they work in the nation's capital with policy makers and business
professionals. Washington Semester students earn a full semester of credit by studying
in one of these areas: American politics (national government or public law), foreign policy, peace and conflict resolution, and justice. Further information is available in the Department of Political Science, 325 Perkins Library.

STUDY ABROAD (Office of Study Abroad)

A Duke student may earn credit for approved work completed during the academic year at a foreign 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 other institution involved. The responsible Duke departments, however, make the final decision on the final number of credits transferable. Students attending certain British and Japanese universities for the full academic year can transfer a maximum of eight courses. However, at certain British 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 who entered the U.S. on an F-1 or J-1 visa may receive a total of two transfer credits for study in their home country. They will be given a personal leave of absence.

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 Faculty Committee on Study Abroad:

1. a scholastic average of at least a B- (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;
4. permission for leave of absence once program plans are complete.

Lastly, a student on academic or disciplinary probation or one who does not meet academic continuation requirements will not be permitted to study abroad. 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 when the conditions outlined are met. Courses with this credit may, upon evaluation, carry area of knowledge codes; foreign language courses with this credit may be approved to carry the Foreign Language Competency code.

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 programs not administered by Duke will be charged a study abroad fee. See the chapter titled “Financial Information” for information concerning fees for studying abroad on non-Duke 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 in the Office of Study Abroad, 2016 Campus Drive. The Duke-administered programs are as follows:

**Austria.** From time to time Duke sponsors a term program in Vienna for members of the Department of Music.

**Bermuda (Beaufort to Bermuda).** The Duke University Marine Laboratory (DUML) offers a program each spring whereby students split their spring semester between DUML in Beaufort, North Carolina and the Bermuda Biological Station for research. More than 18 courses are available, including courses which can be used to meet science requirements.

**Bolivia, La Paz.** This semester or academic year interdisciplinary program in Latin American and Andean studies is based at the Universidad Mayor de San Andrés and the Universidad Católica Boliviana. Students take two core courses designed especially for the program, and select their remaining courses from regular Latin American studies offerings at the two host universities. Students live with families.

**China, Hangzhou.** In cooperation with Zhejiang University, Duke conducts a full semester program in Hangzhou. Participants must have at least one year of Chinese language. Students live in dormitories.

**Costa Rica.** This fall or spring semester program is co-sponsored by Duke and the Organization for Tropical Studies. Students take four core courses in tropical biology, ecology, and Spanish language. The program stresses full immersion in hands-on scientific and language-cultural studies. Students live for three weeks with families, and the remainder of the semester in dormitories at three research stations.

**France, Paris.** Duke offers a semester or academic year program in Paris in conjunction with the University of Paris, Emory University, and Cornell University. The language of instruction is French. Applicants must have completed four semesters of French plus one course at the 100-level or equivalent, with a grade average of at least B+. Priority is given to juniors and full-year applicants, although some participants may be admitted for one semester only.

**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. One year (fall or year program) or two years (spring program) of college-level German or its equivalent are required. In the fall semester, students with no previous German may complete first-year German.

**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 and Italian language and literature, and supplemental courses in music, political science, history, studio art, and architectural design. 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. Students live, eat, and take courses at the 17th-century Villa Corsi-Salvati in Sesto Fiorentino, located six miles from the center of Florence.
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.

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, Istituto Universitario di Architettura di Venezia, Duke University, Ludwig Maximilians Universität (Munich, Germany), Tel Aviv University, and Universitat Autònoma de Barcelona (Spain). Faculty from all six partner universities offer courses at VIU, providing students the opportunity to take courses from a variety of international scholars. 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 State University of St. Petersburg 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 Institute of Public Policy Studies offers departmental majors the opportunity to study during the fall semester of their senior year at the University of Glasgow. Students live on campus and take the program's special seminar in public policy in addition to three transfer credit electives from the general university curriculum.

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, economics, anthropology, history, and political science. The language of instruction is Spanish.

Tunisia, Tunis. The Department of Asian and African Languages and Literature and the Office of Study Abroad offer this interdisciplinary program in Mediterranean studies in the spring semester. The courses vary from year to year, but usually focus on various aspects of North American and Mediterranean history, geography, society, and culture. Three courses are taught in English, with the fourth being a French or Arabic language course. Accommodations are with English- or French-speaking Tunisian families.

Duke offers programs in cooperation with other universities during the fall and spring terms, allowing students to receive transfer credit for courses completed through direct enrollment in foreign institutions. These programs are not administered by Duke University. Students may apply to study at the following institutions:

Australia. Duke has agreements with a number of top Australian universities, allowing students to become members of outstanding teaching and research institutions in Australia for a semester or an academic year. The universities currently available are the Australian National University, James Cook University, the University of Melbourne, the University of New South Wales, the University of Queensland, the University of Sydney, the University of Tasmania, the University of Western Australia, and the University of Wollongong.

Britain. Duke has agreements with a number of top British universities, allowing students to become members of outstanding teaching and research institutions in Britain for a semester or academic year. The universities currently available are the University of London (King's College, Imperial College of Science, Technology and Medicine, the London School of Economics and Political Science, Queen Mary College, and University College); the University of Birmingham; the University of Bristol; the University of Durham; the University of Edinburgh; the University of Glasgow; the
University of Manchester; the University of St. Andrews; the University of Sussex; and the University of Warwick.

Canada, Montreal. Duke students participating in the Duke/McGill University Exchange Program may spend one semester or an academic year at McGill, located in the Quebec city of Montreal. Because the language of instruction at McGill is English, program applicants need not have studied French, although some knowledge of it would be advantageous.

Egypt, Cairo. Through an agreement with the American University in Cairo, Duke students may spend a semester or academic year taking regular classes with Egyptian students. They may enroll in general courses in the humanities, social sciences, and sciences, as well as in Arabic language and specialized courses in Middle Eastern studies.

England, Oxford. Through a special arrangement with two colleges at the University of Oxford, selected Duke students may spend their junior year at Oxford as regularly enrolled visiting students. The students are treated exactly like their British counterparts, and most of them live in college housing. Students may choose to concentrate their study in any one of the major fields in the humanities, social sciences or selected natural sciences. Each student is assigned a tutor. Applicants must have a very strong academic record; previous coursework in the subject to be pursued at Oxford is also required. Admission to this program is at the discretion of the University of Oxford.

Mexico. Duke students may enroll directly in two universities in Mexico for a semester or academic year. The Centro de Investigación y Docencia Económicas in Mexico City and the Universidad de las Américas in Puebla will consider Duke students who have two years of college level Spanish or the equivalent.

New Zealand. Duke has agreements with two universities in New Zealand, the University of Otago at Dunedin and the Victoria University of Wellington, which allows Duke students to enroll directly for a semester or academic year of studies.

South Africa. Duke students may enroll in three of the leading universities of South Africa with which Duke has agreements. Students may matriculate at the University of Cape Town, Rhodes University in Grahamstown, or at the University of Natal in its Durban or Pietermaritzburg Centres, and will become visiting students at these institutions for either a semester or an academic year.

A number of additional 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 2016 Campus Drive. All Trinity College and Pratt students are responsible for following the procedures and meeting the deadlines set forth in materials available at 2016 Campus Drive. In all cases, the assistant dean for study abroad must be informed in advance about a student’s plans.

Duke Summer Programs Abroad

The Office of Study Abroad, 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 times they will next be offered can be obtained from the Office of Study Abroad, 2016 Campus Drive.

Australia, Sydney. This two-course, six-week program focuses on Australian environmental studies and is based in Sydney at the University of New South Wales. One course, to be taught by a professor at the University of New South Wales, deals with Australian studies. The second course focuses on environmental/ecological issues and is taught by a professor of Duke University, who also directs the program. Students are housed in accommodations of the University of New South Wales.
Belgium/Netherlands. This two-course, six-week program will focus on a contextual study of Late Medieval, Renaissance, and Baroque art and culture in Belgium and the Netherlands. The double-credit course, Art and Cultural History of Flanders and the Netherlands from the Fifteenth through the Seventeenth Centuries, 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 Gent (Flanders). Participants visit numerous Dutch and Flemish cities and museums. Accommodations are in hotels.

China, Beijing. This two-course, eight-week program, based at Capital Normal University, 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 Office of Study Abroad, in collaboration with the Organization for Tropical Studies (OTS), offers two one-course, four-week programs in Costa Rica. The Tropical Ecology Program provides field-based, hands-on instruction of tropical biology at OTS's three field stations—Las Cruces, Palo Verde, and La Selva—each located in a distinct ecosystem. Students receive credit for Biology 134L: Fundamentals of Tropical Biology. One year of college-level biology is required. The Ethnobiology Program is based at the OTS station Las Cruces, home of the Wilson Botanical Gardens. The course, Biology 136L: Plantains, Iguanas and Shamans: An Introduction to Field Ethnobiology, involves the scientific study of the subsistence, medicinal, ceremonial, and aesthetic use of plants and animals by human societies. One semester of college-level biology and one semester of Spanish or the equivalent are required.

France, Paris. This two-course, six-week program provides the opportunity to take Duke courses in the ambience of Paris. Aspects of Contemporary French Culture (cross-listed with Comparative Area Studies) is a conversation course taught by a native French speaker; the second course is offered by the Duke director. Four semesters of college French or the equivalent are required. Students live in pensions or foyers.

Germany, Erlangen. (German Language and Culture Program.) Duke offers a program at the Friedrich-Alexander Universität at Nürnberg. The program (mid-May to the end of June) provides an opportunity to study classroom German at different levels while living with a German family and participating in study, day trips, and excursions. The courses are Introduction to German or Advanced Grammar Review, Composition, and Current Issues and Aspects of Contemporary German Culture (cross-listed with Comparative Area Studies). Two semesters of college German or the equivalent are required for the intermediate/advanced program.

Ghana, Accra. This two-course, six-week program examines the art, culture, and politics of Ghana and includes visits to sites such as an environmental project at Boti waterfalls, a monkey reserve, and former slave forts at Cape Coast and Elmina. Taught in English.

Greece. Two programs are offered in Greece: in some years, a Greek philosophy course is offered; in other years, a course in archaeology is offered. The programs concentrate on Athens and southern Greece and consist of on-site lectures at numerous sites of historical and archaeological interest throughout the area. Travel is provided in Greece by private coach. Accommodations are in hotels.

India, Mumbai (Bombay). The Department of Asian and African Languages and Literature offers a two-course, seven-week program in India. The program focuses on two themes: the role of the media, particularly film, in contemporary Indian culture, and on gender issues and their expression in daily Indian life. The first four weeks of the program are in Mumbai, the last three in Jaipur, Agra, and Delhi. Accommodations are in hotels.

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 Rome: History of the City 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.

**Italy, Venice.** This two-course, six-week program will focus on Venetian history, art, and literature. Courses will be taught in English under the direction of a Duke professor. Students live in a dormitory of the Venice International University on San Servolo Island.

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

**South Africa.** The Department of Biological Anthropology and Anatomy offers a two-course, six-week field-study program which offers students the opportunity to learn archaeological excavation methods while digging a prehistoric site, to learn paleontological survey techniques while looking for prehistoric human fossils, and to see original human fossils. Students enroll in Biological Anthropology and Anatomy 102L: Paleanthropological Field Methods and Biological Anthropology and Anatomy 101L: Quaternary Prehistory of Southern Africa. Prerequisite: Biological Anthropology and Anatomy 93.

**Spain.** This two-course, six-week program in Malaga and Madrid offers advanced Spanish students further language training as well as the opportunity to study Spanish culture, history, and politics. The two courses are 1) Spain, Yesterday and Today and 2) Art and Civilization. There will also be excursions to Barcelona, Salamanca, Toledo, Segovia, Granada, Sevilla, and Cordoba. All courses are conducted in Spanish, and students live with Spanish families.

**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 many theater productions in London and Stratford-upon-Avon. Accommodations are in a dormitory of the University College London.

**United Kingdom, London-Media.** This six-week program explores and analyzes British government and politics, the British media, and the relationship between the two. Students take a double-credit course, Politics and the Media in Britain, C-L: Comparative Area Studies, taught jointly by faculty of Duke University and British faculty members. Optional internships are available. Accommodations are in a dormitory.

**United Kingdom, Oxford.** This six-week session at New College, 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 Renaissance British Literature, Nineteenth-Century British Literature, Modern British History, Politics and Government in Britain since 1945, and Law: Personal Injuries in the United Kingdom and the United States.

**Special Summer Programs**

**DUKE SUMMER FESTIVAL OF CREATIVE ARTS**

The Duke Summer Festival of Creative Arts is administered jointly by the Summer Session Office, the Office of Student Activities, and the University Union. The festival provides an exciting, artistically stimulating environment for the campus and community. The Ciompi Quartet, Duke's well-known chamber music ensemble, will perform. Other special events such as jazz concerts, carillon recitals, dance performances, and film series are planned.
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.

PRECOLLEGE PROGRAM

During the summer of 2002, Duke University will offer a Term II program for academically talented rising high school seniors from all over the world. The PreCollege Program is designed to provide the academic challenge of college-level courses to qualified college-bound students and to help prepare them for the adjustments they will be making when they enter college. Students will enroll in two regular summer session classes with Duke undergraduates. Introductory level courses in the humanities, social sciences, and natural sciences will be offered for college credit. The students will live in supervised, air-conditioned university dormitories, eat their meals in the university dining halls, enjoy the opportunity of studying with distinguished members of the Duke faculty, and will have access to all university libraries and athletic facilities. In addition to the classroom experience, PreCollege students participate in a range of programs and activities designed to aid them in college selection, career exploration, and intellectual and social development. For further information consult the PreCollege Program, Duke University, Box 90747, Durham, North Carolina 27708 (919) 684-3847.
Campus Life and Activities
**Student Affairs**

The mission of the Division of Student Affairs is to promote and enrich students' education through teaching, mentoring, advising, and counseling through direct contact with students in their everyday lives. Student affairs educates students in community living, social skills, ethical behavior, citizenship and social justice, appreciation of the arts, leadership skills, coping with adversity, health and wellness, diversity, and adaptive skills for living.

The Division of Student Affairs complements the educational mission of the university by helping to connect many of the nonacademic components of the university to the academic experiences of the students. The residence halls, the athletic fields, and many student organizations play an important humanistic and holistic role in the students' university experience by developing leadership qualities, skills in interpersonal relationships, and appreciation for the care of the physical self. Thus, the university experience encompasses collectively the life of the mind, body, emotions, and, indeed, the spirit.

**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, with the exception of those who petition to live at home, are required to live in East Campus university residence halls. After the first year, students will reside in West Campus residence halls. After the second year, students may also elect to live in Central Campus apartments. Nearly 88 percent of the undergraduate student body lives on campus each year, a clear indication of student appreciation for and satisfaction with the residential experience. 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, the majority of which are coed. A faculty member lives in-residence in all but two of the first-year houses. All housing assignments are made by random lottery. Within the residence halls, single, double, or triple rooms are available.

Upperclass Residences. Upperclass students live in coed and single-sex residence halls on West Campus, Trent, 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 including residential fraternities and academically sponsored theme groups such as Arts, the Round Table, and Ann Firor Scott Women’s Studies. Other selective living groups include PRISM (multicultural theme), Wayne Manor (men’s social selective), and Cleland (women’s social selective). Within all upperclass houses, except those located in Edens and the West-Edens Link, there are triple as well as single and double rooms.

Central Campus provides another housing option for juniors and seniors—a community of university-owned and operated apartments which accommodate more than 800 undergraduate students. The remainder of the complex houses a cross-section of 200 students from various graduate programs.

University housing is considered to include all residence halls as well as Central Campus Apartments. Beginning in Fall 2002, all students will be 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. Juniors must choose to live either in West Campus residence hall rooms in Trent Drive Hall 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 the Office of Residence Life and Housing Services. The university provides free on-campus bus service, connecting East, West, North, and Central campuses.

All residence halls have resident advisors who live in-house and who are members of the Office of 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 valuable resource persons for students with a variety of questions or personal concerns, and enforcing university policies when individual or group behavior fails to conform to the standards set forth by members of the university community.

Within a residential quadrangle, a quadrangle council is elected from its constituent members to perform the dual roles of programming and governance. The primary purpose of the quadrangle 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 dues as a means of supporting the programming initiatives designed for the enrichment of the community in which they live. Representatives from each quadrangle 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 the Office 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. The Faculty Associates Program pairs faculty members 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 several of the first-year houses. 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.

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 is a food court offering a wide variety of foods, all in one location. The Oak Room, a tradition in Duke dining, offers restaurant service in a quiet, relaxed atmosphere. The Loop Pizza Grill offers gourmet salads, California- and Chicago-style pizza, and burgers. Breyers at Duke serves ice cream, shakes, and other frozen treats. 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 & Brews has bagels, sandwiches, assorted coffees, fresh-squeezed orange juice, yogurt, salads, and desserts. Just off the Bryan Center walkway, Pauly Dogs (located on the patio outside The Loop) 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, and salads, and desserts. The Armadillo Grill offers a variety of Tex-Mex options. 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 JD’s (soups/sandwiches), located at the Law School, and the Sanford Deli in the Sanford Institute for Public Policy. Quenchers Juice Bar in the Wilson Center offers refreshing drinks that complement a healthy lifestyle. The Center for Jewish Life has authentic Kosher dining options. The Perk (Perkins Library) is a traditional coffee bar, offering coffees, sandwiches, and pastries.

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. On Science Drive, Blue Express (LSRC Pratt Dining Commons) provides hot and cold sandwiches and entrees, snacks, desserts, and drinks.

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: Eruditio 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 the campus ministers and staff from the Roman Catholic, Jewish, Muslim, Hindu, and Protestant communities, and with other groups to provide a ministry which is responsive to the plurality of religious 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

Office of Residence Life and Housing Services. This office works with Duke students in a variety of ways and is dedicated to creating a residential community supportive of a rich educational experience. It advises individual students regarding personal problems, houses undergraduates in the residence halls, and assists students in planning and presenting educational and cultural programs within the residence halls.

Members of the Office of Residence Life and Housing Services staff advise and support a number of residentially-based governing bodies, notably the East Campus Council, the six quadrangle councils, Central Campus Council, and the Campus Council.

The Office of Residence Life and Housing Services also works with transfer students and oversees the university's response protocol to student emergencies.

Office of the Dean of Students. This office coordinates student leadership development programs, responds to student concerns, provides advising and support to Duke's student Greek organizations and administers the mediation program. The office plans and implements Parents and Family Weekend and New Student Orientation and coordinates the first-year student advisory counselors (FACs). FACs are upperclassmen 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 Office of the Dean of Students oversees undergraduate judicial affairs. Judicial affairs are handled by coordinating and applying the general rules and regulations of the university as well as working with all participants involved in the judicial process and coordinating with the advising system.

The Student Health Service. The Student Health Service, which provides medical care, advice, and education for all currently enrolled full-time students and part-time degree candidates, is administered by Student Affairs in concert with the Department of Community and Family Medicine, Duke University Medical Center.

The primary location for medical care is the Student Health Center in Duke South where students are seen, by appointment, 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, the Duke Family Medicine Center serves as a portal of entry to other health resources within the Duke medical community. If necessary, Duke University Police provides on-campus transportation to the health care facilities. A Student Physical Therapy Clinic in Card Gym is also available for consultation and treatment of minor sports-related injuries.

The health education component of Student Health is located at the Healthy Devil Education Center located within the Student Health Center in Duke South. A full-time health education staff is available to assist students in making informed decisions that lead to healthy lifestyles at Duke and beyond. Topics of concern and interest include alcohol and other drug usage, eating and nutrition, sexuality, and stress management. Programs, meetings, and consultations are provided for groups and individuals.
Information regarding the physical or mental health of Duke students is confidential, released only with the student’s permission. This policy applies regardless of whether the information is requested by university officials, friends, family members, or health professionals not involved in the student’s immediate care.

All currently enrolled full-time students and part-time degree candidates are assessed a student health fee for each enrolled semester. This covers most of the services rendered within the Student Health Service. An optional summer health fee for students who are not enrolled in summer sessions is also available and can be purchased at the Student Health Center. Waivers are based on access to campus facilities. Therefore, waivers can be granted if the student resides more than 50 miles away and does not come to campus for class, research, or other academic activity for the entire semester. Students studying at the Duke Marine Lab are not eligible for waiver.

In addition to the Student Health Service, the university makes available a plan of accident and sickness insurance to protect against the high cost of unexpected illnesses or injuries which 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 as well as the signature of the student or parent) that they are covered by other generally comparable insurance. International students, as well, are required to show proof of health insurance coverage (either the policy offered by Duke or comparable coverage) and may not assume responsibility for personal payment of health care cost.

Upon arrival on campus, all students should familiarize themselves with the Healthy Devil Online, at http://healthydevil.studentaffairs.duke.edu, the web page for Student Health, where information about hours of operation, available services, and other helpful information is posted. During the academic year they may call 681-WELL (681-9355) twenty-four hours a day for information or advice.

Counseling and Psychological Services. Counseling and Psychological Services (CAPS) provides a range of excellent 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 are addressed when they arise.

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 bulimia; and gay, lesbian, and bisexual 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. CAPS’ staff work with campus personnel, including administrators, faculty, student health staff, religious life staff, resident advisors, and student groups, in meeting mental health needs identified through such liaisons. 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. There are no additional costs for these services.

For additional information, see the Bulletin of Duke University: Information and Regulations, or call (919) 660-1000.

Career Center. The Career Center provides quality 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 primarily serves the students and alumni of Trinity College, the Pratt School of Engineering, and the Graduate School.

Career counselors are on staff to help students begin the process of discovering career interests and focus on career fields. Career specialists also work closely with the faculty and the deans of Trinity College by referring students whose interests are in application to graduate schools of the arts and sciences and professional schools of business, law, and medicine.

DukeSource is the center’s group of nearly 6,000 alumni and parent career advisors who offer advice in a wide variety of career fields. They have volunteered to provide career information, job-hunting strategies, and shadowing opportunities. A variety of internship options help students gain experience in areas of career interests.

Orientations to the programs of the Career Center are held at regular intervals throughout the year. Job search workshops on resume and cover letter writing, interview techniques, researching employers, aid students in their on-going search. Also, daily walk-in hours are available to students for quick questions and resume critiques. The Career Center library houses a collection of books, periodicals, and materials to aid in career exploration. Information is available on a wide range of career fields and employers. The library also houses a collection of resources listing summer and full-time opportunities in corporate, non-profit, education and government organizations.

Sexual Assault Support Services. Located in the Women’s Center, the Office of Sexual Assault Support Services offers advocacy, support, and twenty-four hour crisis intervention to survivors of rape, sexual assault, child sexual abuse, or relationship violence and to their friends and families. The SASS coordinator coordinates peer support networks, trains groups such as the resident advisors and peer educators, and initiates ongoing educational programs to alert students to problems of sexual assault and interpersonal violence. Call the SASS coordinator at (919) 684-3897 for more information.

Services for Students With Disabilities. Duke University is prepared to make reasonable academic adjustments and accommodations to allow students with disabilities full participation in the same programs and activities available to students without disabilities. The Office of Services for Students with Disabilities 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 the Americans with Disabilities Act (ADA), a student must have a physical or mental impairment that substantially limits one or more major life activities such as, but not limited to, hearing, seeing, speaking, breathing, performing manual tasks, walking, caring for oneself, and learning. 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 ADA (e.g., academic, housing) must consult Dr. Emma Swain, Director, Office of Services for Students with Disabilities, (919) 684-5917 or (919) 684-5824 TTY, to explore possible coverage. Students with medical conditions not covered under the provisions of ADA must consult 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 with success, a reduced course load will be authorized by the respective student's academic dean upon the recommendation of the director of the Office of Services for Students with Disabilities. Students so authorized (and for as long as they continue to enroll in a reduced course load) are exempted from meeting normal continuation requirements, but must pass at least three of four consecutive courses taken while enrolled on a part-time basis, or at least five of six consecutive courses while on an underload. Failure to meet this standard of academic performance will result in
a withdrawal for academic reasons. Students receiving the part-time accommodation are eligible for limited financial aid in accordance with federal, state, and university guidelines and may occupy university housing. Moreover, all students accommodated under this policy must have their request reviewed prior to the beginning of each term and are expected to return to full enrollment when their health or physical condition improves sufficiently. For further information regarding this policy, please consult Dr. Emma Swain, Director, Office of Services for Students with Disabilities.

Receiving accommodations or special assistance at another college or university does not necessarily qualify an individual for the same accommodations and/or assistance at Duke University. For academic assistance available to all Duke University undergraduate students, refer to the “Special Study Centers, Programs, and Opportunities” section on the Academic Resource Center.

The Vice-President for Institutional Equity is the designated compliance officer for the Americans with Disabilities Act of 1990 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)).

**Offices for Program Planning**

**The Office of Student Activities.** The Office of Student Activities helps enhance the climate of the campus through the programming efforts of such organizations as the University Union, Broadway at Duke, Duke Debate, and through advising student clubs and organizations.

The Office of Student Activities serves as a resource for student organizations, student leaders, the Duke University community and the community-at-large, in a manner which fosters an environment of trust and exploration of new experiences. As such, the staff members serve as educators and direct service providers, developing a community that strives toward excellence. To these ends, the office promotes the development of leadership skills through a variety of programs which both educate and support individual students and student organizations, while recognizing and saluting their efforts; is the central resource for information concerning student organizations, acting both as a liaison and an advocate; facilitates the financial management of organizational funds, providing both counsel and direct services.

**The Mary Lou Williams Center for Black Culture** provides the space in which black students can create a community to celebrate African and African American cultures. The center is a gathering place for the entire community of Duke University to increase its awareness and understanding of black people and black culture. It 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.

The Mary Lou Williams Center is located in the West Union Building on West campus and is composed of a main living area, an art gallery, the Dogon Room, two offices, and a kitchen. The art gallery features art by North Carolina artists or art by those whose work in some way contributes to the purpose of the center. The Dogon Room houses a library of some 500 volumes and displays art and material culture from Mali and Ethiopia.

The Mary Lou Williams Center sponsors a poetry and spoken word series featuring the creative work of African American poets and spoken word artists from across the state and the country. The center also offers academic classes, lectures, films and concerts. All of these efforts are designed to deal critically, supportively, and creatively in order to foster consciousness about the significance of culture in history and in the present.
The Women’s Center. Located in 126 Few Quad, across the traffic circle from the Allen Building, the Women’s Center works to promote 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 a wide variety of issues, including leadership, safety, harassment, health, campus climate concerns, personal and professional development, and the intersection of gender with race, class, and sexual orientation. The center seeks to assess and respond to the changing needs of the university community, to raise awareness of how gender issues affect both women and men on campus, and to serve as an advocate for individuals and groups experiencing gender-related problems, such as sexual harassment or gender discrimination. Duke’s office of Sexual Assault Support Services (providing twenty-four hour a day crisis counseling) is also housed in the Women’s Center.

The center offers programming internships and work-study jobs to students; houses an art gallery and 3,500 volume feminist lending library; and publishes VOICES, a yearly magazine addressing issues related to 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 the Women’s Coalition, BASES (a student-to-student mentoring program for first-year women), GWPN (Graduate and Professional Women’s Network), WISE (Women in Science and Engineering), and the Panhellenic Council. Open Monday through Friday, 8:30 a.m.-5:00 p.m., the center invites students to study in its lounge or browse through its library during business hours and makes its space available for student group meetings and programs in the evenings.

International House. International House serves as the center of co-curricular programs for internationals and U.S. Americans interested in other cultures and peoples. The mission of International House is: (1) to assist internationals and their families with orientation and acclimation; (2) to enhance cross-cultural interaction through programming and community outreach; and (3) to provide advocacy and support for the Duke international community. There are more than 1,200 international students nearly 100 countries enrolled at Duke. Programs include an intensive orientation program at the beginning of the academic year; the International Friends Program which pairs internationals with local families to promote friendship and cross-cultural learning; Duke Partners which pairs internationals with U.S. Americans for weekly conversation and language exchange; Speakers’ Panorama which arranges for internationals at Duke to present their countries to local organizations and schools; Friday Coffee Hours, a time for people of all nations to come together for refreshments and conversation; Cross-Cultural Training for groups interested in developing awareness and skills needed to manage cultural diversity at both interpersonal and organizational levels; Global Nomads, an organization for people who have lived outside their passport country because of a parent’s career choice; Spouses Program, a variety of weekly events to meet the special needs of spouses, and the International Association, a student-run group which sponsors culture nights, trips, sports, teams, and an annual campus-wide International Festival.

The Multicultural Center. The Multicultural Center, staffed by the Office of Multicultural Affairs, has responsibility for identifying and assisting with changes in the Duke University community which promote optimum growth and development for African-American, Asian-American, Latino-American, and Native American undergraduate and postbaccalaureate students. The office conducts such activities as public forums on student life, mentorship projects with university alumni, seminars on current issues for students of color, institutional research on development of students of color, and serves as a source on issues of students of color for the university community.
The Community Service Center. The Community Service Center is a clearinghouse for numerous volunteer and community service activities available to students, faculty, and employees. Through the center, members of the Duke community can become involved with student service groups and Durham area agencies doing everything from tutoring and mentoring, helping to care for people with AIDS, serving meals at local homeless shelters, to befriending senior citizens and earning work-study money in community service internships. The Community Service Center also sponsors speakers, special events, training sessions, and many other programs. In these ways, the center strives to raise awareness about contemporary social issues, to provide opportunities for students to link their service work and coursework, and to be a catalyst for creative partnerships between Duke University and the wider community.

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/a and members of neighboring communities. The center provides (1) a safe haven to discuss issues of sexuality as they relate to self, family, friends, and others; (2) a friendly and comfortable location for lesbians, gays, bisexuals, transgender persons and allies to socialize and discuss issues affecting the community; (3) a place for groups to meet and organize activities; (4) a resource center and library containing magazines, books, and information by, for, and about lesbians, gays, and bisexuals and transgender persons; (5) advocacy on lesbian, gay, bisexual, and transgender matters at Duke; and (6) 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/a to create a more hospitable campus climate.

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 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. These services include free legal advice, check cashing service, line-monitoring of basketball games, and a ride-rider service.

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. Seventeen National Interfraternity Council fraternities and ten National Panhellenic Council sororities are represented on campus as are five fraternities and five sororities governed by the National Pan-Hellenic Conference.

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 feature magazine (Tobacco Road), a science magazine (Vertices), a photography magazine (Latent Image), Duke's black literary publication (Prometheus Black), a journal of campus news and opinion (Duke Blue), Eruditio, a social science journal, and Blind Spot, a journal of science fiction and horror-inspired creative works, are published on a regular basis by students. In addition, the Duke Women's Handbook, the Course Evaluation On Line, an objective analysis of undergraduate courses, and a comprehensive yearbook, the Chanticleer, are 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 of all such franchised publications and produces the Blackburn Literary Festival, featuring some of today's most prominent authors. The Duke Engineer, 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.

**Project WILD.** Project WILD (Wilderness Initiatives for Learning at Duke) is a unique student organization which, through the practice of experiential education (learning through doing), attempts to ease the transition period into college for Duke students. Run entirely by students, the program strives to teach self-worth, group awareness, and an appreciation of nature. The program has three primary components. The August Course is a twelve-day backpacking expedition in western North Carolina held prior to orientation. The House Course is taught each spring semester and includes a seven-day expedition. The Ropes Course Program is a two- to four-hour experience for groups or individuals and is available to the university community year round.

**Health, Physical Education, and Recreation.**

Besides offering a variety of classes (see the chapter "Courses of Instruction"), the Department of Health, Physical Education, and Recreation 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 forty-nine 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 thirty 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 one which yearly presents several performances, the water ballet club.
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 gymnasiums 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 Clemson, Duke, Florida State, Georgia Tech, Maryland, North Carolina at Chapel Hill, North Carolina State, Virginia, 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 chairman of the council is the official university representative at national and conference athletic meetings.

Judicial System and Regulations

Duke University expects and requires of all its students full cooperation in developing and maintaining high standards of 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 Bulletin of Duke University: Information and Regulations.

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 Judicial Code of the Undergraduate Community. Violations of the code and its accompanying university regulations by individuals and residential or nonresidential cohesive units are adjudicated before the Undergraduate Judicial Board, composed of representatives of the student body, the faculty, and the administration. The Judicial Code of the Undergraduate Community, the constitution of the board, the procedural safeguards, and the rights of appeal guaranteed to students are published in the Bulletin of Duke University: Information and Regulations for the undergraduate community.

**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.
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 preference, 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 Bulletin of Duke University: Information for Prospective Students 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 advised to take four years of mathematics and at least one year of physics or chemistry. All candidates for first-year standing must complete either the SAT-I examination or the ACT. Those students who choose to take the SAT-I should also complete three SAT-II exams, including the SAT-II Writing Subject test. Applicants for the Pratt School of Engineering should also take any SAT-II test in mathematics (level 1 or 2). Students wishing to continue study or gain course exemption in a foreign language should complete a SAT-II or Advanced Placement exam in that language. Even though the foreign language SAT-II is not required for admissions, we strongly recommend that students take the test before leaving high school. Students should refer to the Duke University web site, at http://www.duke.edu, and follow the appropriate undergraduate admissions links for the most recent information on SAT-II requirements for incoming students. The SAT-I and SAT-II 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-I or II 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 Education; they are subject to most of the regulations set forth for degree candidates.

Application Procedures

DEGREE STATUS

A Bulletin of Duke University: Information for Prospective Students and an application may be obtained from the Office of Undergraduate Admissions, Duke University, Box 90586, Durham, North Carolina 27708-0586. A nonrefundable processing fee of $65 must accompany the first part of the application. Students are encouraged to apply online through the admissions web site. Students who would like to make use of the Common Application are encouraged to do so if they prefer. The Common Application is generally available in secondary school guidance offices. A required supplement to the Common Application is available from the Office of Undergraduate Admissions or through the admissions web site.

A personal interview at Duke is not required for admission; students who find it possible to visit campus, however, may call to request an interview. Interviews with local alumni are also available for most applicants when Part I of the Duke application or the Common Application has been filed by the deadline. On-campus interviews cannot be granted from mid-December through May, when applications are under review.

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 with a nonrefundable deposit of $200.

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 I and II 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 pay a nonrefundable deposit of $200 by January 2. 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 Curriculum 2000, so students applying to transfer to Trinity College should plan to spend three years at Duke in order to meet the requirements for both Curriculum 2000 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-I 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 in the chapter "Academic Procedures and Information."

September (fall semester) transfer students submit a completed application by March 15, learn of their decisions by May 15, and respond to the university by June 1 with a nonrefundable deposit of $200. January 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 Undergraduate Admissions and must be returned to that office, accompanied by a $35 application fee, by August 1 for the fall semester and by December 1 for the spring semester.

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 Education, 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. (See the section on readmission procedures in the chapter "Academic Procedures and Information.")
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. A brochure describing in detail the various forms of financial aid may be obtained from the Office of Undergraduate Financial Aid, Box 90397, Duke University, Durham, North Carolina 27708-0397.

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>Academic Year, 2002-2003</th>
<th>Two Summer Terms, 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>(two semesters)</td>
<td>(one semester equivalent)</td>
</tr>
<tr>
<td>Tuition</td>
<td></td>
</tr>
<tr>
<td>Trinity College</td>
<td>$27,050</td>
</tr>
<tr>
<td>Engineering</td>
<td>$27,050</td>
</tr>
<tr>
<td>Residential Fee</td>
<td></td>
</tr>
<tr>
<td>Single Room</td>
<td>$5,619-6,739</td>
</tr>
<tr>
<td>Double Room</td>
<td>$4,251-5,097</td>
</tr>
<tr>
<td>Triple Room</td>
<td>$3,802-4,559</td>
</tr>
<tr>
<td>Food (projections include a meal plan service fee)</td>
<td></td>
</tr>
<tr>
<td>100% board plan</td>
<td>$3,978</td>
</tr>
<tr>
<td>75% board plan</td>
<td>$3,418</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>$875</td>
</tr>
<tr>
<td>Student Health Fee</td>
<td>$496</td>
</tr>
<tr>
<td>Recreation Fee</td>
<td>$170</td>
</tr>
<tr>
<td>Residential Program Fee</td>
<td>$70</td>
</tr>
</tbody>
</table>

1 This fee is optional.

It should be realized that additional expenses will be incurred which will depend to a large extent upon the tastes and habits of the individual. The average Trinity College student, however, can plan on a budget of approximately $38,310. The budget estimate for the summer (two terms, one semester equivalent) is $10,339. 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 are required to pay a nonrefundable first registration fee of $40, a one-time transcript processing fee of $30, and to make an advance deposit of $200. The deposit will not be refunded to accepted applicants who fail to matriculate.

* The figures in this section are projections and are subject to change.
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, $3,381; half course, $1,691; quarter course, $845. 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 non-degree 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 $333 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.

Payment of Accounts for Fall and Spring. The Bursar’s Office will issue statements to registered students for tuition, fees, and other charges approximately four to six weeks prior to the beginning of classes each semester. The Amount Due Now on the statement is payable by the due date as indicated on the statement. Inquiries can be made at the Bursar’s Office by email at bursar@duke.edu, by facsimile at (919) 684-3091, or by telephone at (919) 684-3531. Current account information is available on the ACES website. Office hours are from 9:00 a.m. to 4:00 p.m., Monday through Friday. As part of the admission agreement to Duke University, a student is required to pay all statements as presented. If full payment is not received, a late payment charge will be assessed on the subsequent statement, and certain restrictions, as stated below, will be applied. Failure to receive a statement does not warrant exemption from the payment of tuition and fees, nor from the penalties and restrictions. Statements are mailed to the student’s permanent home address as maintained by the student on the ACES website. Non-registered students will be required to make payment for the current term’s tuition and fees, as well as any past due balance at the time of registration.

Monthly Payment Option. The Monthly Payment Option Plan allows students and their parents to pay all or part of the academic year expenses in ten equal monthly payments from July 1 to April 1. The only cost is an annual, nonrefundable participation fee of $95. This participation fee can be paid by Visa or MasterCard. Monthly installment plan payments may be made by check or by bank draft. Questions regarding this plan should be directed to Tuition Management Systems (TMS) at (800) 722-4867. Information is also available at the TMS website, www.afford.com. At renewal, the plan can be extended to twelve months. The monthly payments can be increased or decreased without additional cost. As a TMS participant, you will continue to receive monthly statements from the Duke Bursar’s Office. These statements will reflect payments made to TMS, as well as any new transactions that are posted to your Bursar account.

Duke Student Insurance. Medical insurance is required for all full-time students and part-time degree-seeking students. Medical insurance coverage is required in addition to paying the mandatory student health fee. This requirement may be satisfied by providing proof of coverage by a private insurance policy, or by signing-up for the Duke-sponsored student insurance plan. Each academic year the insurance decision must be indicated on the ACES web site. On the ACES web site, registration may be made for the Duke-sponsored insurance plan or insurance coverage may be waived by indicating proof of coverage by a private policy (please be prepared to enter the policy name and number on the web site).
Restrictions for Outstanding Account Balances. An individual will be in default if the Amount Due Now, as listed on the statement, is not paid in full by the required due date. In addition to the assessment of late payment charges, a student in default will not be allowed to register for future semesters, to receive a transcript of academic records, to have academic credits certified, or receive a diploma at graduation. In addition, an individual in default may be subject to withdrawal from school and have the account referred to a collection agency.

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 $1,905 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 $1,809 for each 3 semester hour (s.h.) course, $2,412 for each 4 s.h. course, $1,206 for each half course (2 s.h.), and $3,618 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 $80 per term. All students at the Marine Laboratory are required to pay $66 per five-week registration period.

Music Fee. A fee of $168 will be charged for Music 81 and 85. A fee of $336 will be charged for Music 91 and 95.

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 $181 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 May, June, July, and August to current Duke students enrolled for Summer Session. The bill due date will be two 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 and the student's academic dean prior to the start of the term.

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 Thursday, May 2, 2002. Payment for Term II charges will be due on or before Monday, June 17, 2002. If payment is not received by these dates, registration will be canceled.

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 ($75 per half 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 should be directed to the Office of the University Registrar. Two days should be allowed for processing. (See Uni-
Duke Employees. With the permission of their supervisors, employees may, through the Office of Continuing Education and Summer Session, take up to two courses for credit or audit during any one semester or one 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. Half-time employees with one or more years of service who receive permission to take such courses are eligible for a 50 percent tuition benefit. This benefit applies only to nondegree work. Full-time (thirty or more hours a week) employees with two or more years of service who receive permission to take such courses are eligible for a 90 percent tuition benefit for credit course work and a 100 percent tuition benefit for audited course work. This benefit continues after degree candidacy has been attained. A tuition benefit may, under certain conditions, be available for spouses or spousal equivalents of employees. Employees should consult the Benefits Office, 2024 W. Main Street (919) 684-6723, to determine eligibility. Eligible employees must submit the Duke Educational Assistance Certification Form—available at the Benefits Office or on the Web at http://www.hr.duke.edu/benefits/education/edasstfm.PDF—at least one week in advance of payment date to obtain benefit certification. The director and assistant director of Continuing Education 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 $5,619 to $6,739 for the academic year; for a double room, the fee ranges from $4,251 to $5,097; for a triple room, the fee ranges from $3,802 to $4,559 per occupant. Apartment rates for upperclass students range from $3,453 to $4,300 per occupant.

Detailed information concerning the student's obligations under the housing contract and the consequences of failure to comply are published in the *Bulletin of Duke University: Information and Regulations.*

**Housing for Summer.** For detailed information on types and costs of accommodations available at Duke University for the Summer Session write: Office of Residence Life and Housing Services, 218 Alexander Avenue, Apartment B, Box 90451, Durham, North Carolina 27708-0451. Web site: www.housing.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 includes twelve prepaid meals per week at The Marketplace at East Union; plus dining plan debit account "points" for use at any of three cafeterias, ten fast food locations, three restaurants, three coffee bars, three convenience stores, concessions at athletic events, sodas and snacks from vending machines, and other food and beverages available at stores and lounges on campus. Additional meals may be purchased with "points" at any of these locations. Bike rentals are available on campus.

* The figures contained in this section are projections and are subject to change prior to the beginning of the Fall 2001 semester.
machines, and late night pizza and sub delivery from twelve local commercial vendors. The cost of the First Year Plan is $1,290 per semester for the twelve-meal plan plus one of three “points” plans (Plan G-I) which range from $465 to $590. Participation in the First Year Plan is required of all first-year students who reside on East Campus.

Upperclass students who live in the residence halls are required to participate in one of five dining plan debit accounts which allows access to all dining services. The five plan levels (Plan A - Plan E) range from $1,230 to $1,900 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 ($880 per semester).

Nonresident students are not required to participate in the dining plan; however, Plan F at a cost of $425 per semester is offered as an option.

An optional summer dining plan is provided in three plan levels ranging from $175 to $665 per summer term.

Students may also purchase a Flexible Spending Account (FLEX) which 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 a minimum balance of $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” 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 is required to request permission at the time of preregistration; therefore, no refunds are granted during the drop/ add period or subsequently for changes which involve carrying less than a full-time load.

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

Drop or Administrative Withdrawal Charges. Students who will not be attending a summer term or course for which they have registered must officially drop the course(s) prior to the beginning of the term whether or not they have paid tuition and fees. (See the section on course changes for the summer term in the chapter "Academic Procedures and Information.") Students who fail to drop the course(s) prior to the beginning of the term will be charged $150 per course ($75 per half-course or audit registration).

Refunds (Except Foreign 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 drops a course(s) or withdraws from the term after the third day.
2. There is a financial obligation of $150 per course ($75 per half-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, the Federal Pell Grant Program, the Federal Perkins Loan, and the Federal Stafford Student Loan Program. Because admissions decisions are made without reference to a student’s application for aid, 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 that 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. During the current academic year, over 43 percent of the student body receives more than forty-eight million dollars in aid of various types. Additional information is available on the University’s financial aid web site at www.finaid.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. Students applying for federal loans and grants need to complete only the FAFSA. The custodial parent should submit the PROFILE and FAFSA. The noncustodial parent must submit the Non-Custodial Parent’s Statement, the FAFSA, PROFILE, and other required documents, which may be completed through the financial aid office web site. A copy of all pages, including

* This policy does not apply to study abroad program students.
schedules and attachments, of both parents’ and student’s current federal income tax form must be submitted to the Financial Aid Office on or before May 1. Information provided on the FAFSA and the PROFILE will be verified through the use of the tax return.

Financial aid recipients wishing to operate a motor vehicle on campus must first register it with the Financial Aid Office. As an automobile represents an asset, the value of a financial aid recipient’s car will be considered in the estimation of a student’s need.

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, and a copy of all pages, including schedules and attachments, of the parents’ and student’s current federal income tax return. Application materials are available in mid-December. The deadline for the receipt of all application materials by the Financial Aid Office is May 1. Failure to meet this deadline will affect the type and amount of aid offered. All qualified students may receive need-based aid for up to eight semesters. Under certain circumstances consideration will be given to a ninth semester of eligibility.

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 are outlined on page 106 and 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 March 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 $3,000 to $8,000 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 four (4) years 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. 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 semester 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.

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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 2001-2002 freshman scholarship holders received full tuition 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 $2,000 grant for an approved independent project. At least one of the four years of the scholarship could be used abroad on an approved program.

Robertson Scholars. This history-making undergraduate scholarship program, created and funded by visionary alumnus Julian Robertson and his wife Josie, will select its first class of approximately thirty undergraduate scholars in Spring 2001. Half of these scholars will matriculate at the University of North Carolina (UNC)-Chapel Hill, and half at Duke University. All will 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, and living stipends at UNC-Chapel Hill or full tuition at 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, 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.

Lionel Hampton Scholarship. This award of $500 (not renewable) is given to an incoming freshman who demonstrates high proficiency in a musical instrument and strong potential in jazz performance.

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 from $500 to $2,500, 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 of approximately $1,000 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.

Richard Miles Thompson Scholarships in Music Composition. This scholarship with a stipend of up to $3,500 per year is available to a member of each entering class. It is renewable annually as long as the student meets the required standards for renewal. Students wishing to apply for this award will be required to submit examples of their composition. Eligibility is limited to students planning to major in music.
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 a student of a string instrument or voice. It is renewable for four years as long as the student meets the required standard for renewal.

The A. J. Fletcher Scholarship. This music scholarship of $7,500 is offered annually to an entering first-year student on a competitive basis who can demonstrate, by tape or audition talent and achievement in instrumental or vocal performance, or in the case of composition, a representative portfolio. Recipients are required to declare a major in music and to participate in a departmental ensemble every semester. It is renewable for four years as long as the student meets the required standard for renewal.

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, plus a $200 per month tax-free allowance for 10 months.

Army ROTC Scholarship Program. All freshman and sophomore 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 $500 in addition to providing a tax-free monthly stipend of $250-400 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 during the spring semester. 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 $200 per month 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 freshman African-American students, are provided to honor the late Reggie Howard, first black president of the student government. Five scholarships equal to full tuition are awarded each year. Scholarships are available for the four years of undergraduate study as long as the student maintains the academic average specified for renewal.

The Anne McDougall Memorial Award. The Anne McDougall Memorial Award for Women is awarded each year to one woman student studying psychology or a related field. Administered through women's studies, this $1,000 award is intended to provide encouragement and support for women who wish to pursue academic study and continue in the area of human service.

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. Shearer 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. Awards range from $1,000 to $5,000. 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. Awards range from $1,000 to $5,000. Interested students should apply to the director of the program.

Kohler Scholarships in Drama. Several awards each year ranging from $250 to $1,000 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. Awards range from $1,000 to $2,500; decisions are made by a special committee appointed by the Drama Program.

Dasha Epstein Scholarship in Playwriting. This scholarship is awarded to students interested in playwriting. The recipient of this award is chosen by a faculty committee from among applicants to Duke who qualify for financial aid.
The Roger Alan Opel Memorial Scholarship. A grant is awarded annually to a Duke student who will spend a year of undergraduate study at a British university. The student is selected on the basis of intellectual curiosity, academic ability, and financial need. The award was established by the parents of Roger Alan Opel, a senior at Duke University who was killed in November, 1971.

Alumni Endowed Scholarships. Three $8,000 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, are awarded annually.

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, and board, and the cost of a summer program.

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

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

The Perry Family Scholarship. Awarded to students from Winston-Salem and the Forsyth County area, this scholarship, valued at $5,000, 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 Harris Scholarships. Recipients of these scholarships will receive up to Federal 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.)

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 $1,800 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 which are available to students through Duke University are listed below:

Federal Perkins Loan. Loan funds supplied by the federal government and Duke University through Part E of Title IV of the Higher Education Act of 1965 are available to qualified students. Repayment of loans under this act normally begins six months after the student has graduated or leaves college, with complete payment scheduled within a ten-year period. Interest accrues at the rate of 5 percent annually, commencing six months after the borrower ceases to be at least a half-time student at an institution of higher education. This loan is part of the student's financial aid award.

Federal Stafford Student Loan Program. Loans under the Federal Stafford Student Loan program are available from banks or other incorporated state lending agencies. Duke University can arrange an alternate lender for students who are unable to obtain these loans through their home state agencies or local banks. Need as established by the federal government's formula will be considered in the university's decision regarding applications. The annual limit on a loan, which has a variable interest rate that is capped at 8.25 percent, is $2,625 for freshmen, $3,500 for sophomores, and $5,500 for juniors and seniors. Repayment begins six months after the student leaves school. Students may apply for Stafford loan funds by submitting a loan application directly to the External Loan Aid Office. In addition, loan applicants must submit the Free Application for Federal Student Aid to the federal processor. Additional information about this loan program may be obtained from the Undergraduate Financial Aid Office.

Federal Parents' Loan for Undergraduate Students Program. Parents may borrow up to the cost of education less financial aid through the Federal Parent Loan for Undergraduate Students (PLUS) program. Repayment of these loans begins sixty days after loan disbursement. Interest is based upon treasury bill rates but will be no higher than 9 percent and begins to accrue at the point repayment begins. Interested parents should contact their home state lending agency or the financial aid office.

Federal Unsubsidized Stafford Loan Program. All undergraduate students, regardless of need, are eligible to borrow an Unsubsidized Stafford Loan. The loan limits and the interest rate are the same as for the subsidized Stafford Loan described above. Although repayment of the principal begins six months after the student leaves school, interest payments begin 45 days after the first disbursement of the loan.

Duke Signature Select Loan is an alternative educational loan program developed specifically to help students meet the costs of higher education. Students with a credit worthy co-signer may borrow up to $15,000. Principal and interest payments can be deferred until after the completion of the borrower's education. For more information consult the External Loan Office.

Excel Loans. "Excel" is a supplemental educational loan program developed specifically to help families meet the costs of higher education. Credit-worthy families, regardless of income, may be eligible to borrow through this program. Annual loan amounts range from $2,000 to up to the cost of education less financial aid. The interest rate is variable, and Share offers several repayment options. For information call 1-800-EDU-LOAN.

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 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. The Office of Undergraduate Financial Aid maintains part-time employment listings for the campus and Durham area. All students interested in working during the school year should review the jobs listing in the career counseling section of the Duke Home Page (www.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.
Courses and Academic Programs
Definition of Terms

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

Courses taught in 2000-2001 or in 2001-2002 or scheduled for 2002-2003 are included in this chapter with full descriptions. Additional courses, which were offered prior to 2000-2001 and are likely to be taught in the future, are listed separately by number and title only under the heading Courses Currently Unscheduled. For courses that will be offered in 2002-2003, consult the 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.”)

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. Students who matriculated as degree candidates prior to May 2000 should give attention to the code or codes contained in the parentheses. Students matriculating as degree candidates in May 2000 and thereafter should give attention to the second set of codes. An explanation of the curriculum codes follows:

Curriculum codes for students matriculating prior to May 2000:

Areas of Knowledge:
- Arts and Literatures (AL)
- Civilizations (CZ)
- Foreign Languages (FL)
- Natural Sciences (NS)
- Quantitative Reasoning (QR)
- Social Sciences (SS)

Curriculum codes for students matriculating in May 2000 and thereafter:

Areas of Knowledge:
- Arts and Literatures (AL)
- Civilizations (CZ)
- Natural Sciences (NS) and Mathematics (M)
- Social Sciences (SS)

Modes of Inquiry:
- Quantitative, Inductive, and Deductive Reasoning (QID)
- Interpretative and Aesthetic Approaches (IAA)

Focused Inquiries:
- Cross-Cultural Inquiry (CCI)
- Science, Technology, and Society (STS)
- Ethical Inquiry (EI)

Competencies:
- Foreign Language (FL)
- Writing (W)
- Research (R)
Trinity College of Arts and Sciences
Professor Chafe, Dean of the Faculty of Arts and Sciences and Vice Provost for Undergraduate Education; Professor Thompson, Dean of Trinity College; Senior Associate Dean for Administration Wilson (Social Sciences); Associate Deans Bryant (Social Sciences), Keul (Pre-Major), Nijhout (Natural Sciences), Singer (Natural Sciences), and Wittig (Humanities); Assistant Deans Gilbert (Summer Sessions), Lattimore (Social Sciences), and Reilly (Study Abroad)

Aerospace Studies–Air Force ROTC (AERO SCI)
Professor Porter, Colonel, USAF, Chair; Visiting Assistant Professor Haley, Captain, USAF, Director of Undergraduate Studies; Visiting Assistant Professor Mika, Captain, USAF

Eligibility Requirements. All freshmen and sophomores, men and women, 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 either the General Military Course and a four-week field training encampment or a longer 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
1. Foundations of the United States Air Force. A survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps. Topics include: mission and organization of the Air Force, officerhood and professionalism, military customs and courtesies, Air Force officer opportunities, and an introduction to communication skills. Leadership Laboratory mandatory for AFROTC cadets. (May not be counted to satisfy graduation requirements.) Instructor: Haley. Half course.

21. 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. Pass/fail grading only. Instructor: Staff.

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. (May not be counted to satisfy graduation requirements.) Instructor: Haley. Half course.

Professional Officer Courses
All students selected to continue in Aerospace Studies must pursue the following courses.
Third Year
1055. 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: Mika. 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: Mika. 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: Porter. One course.


COURSES CURRENTLY UNSCHEDULED

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


70. Topics on the Third World and the West. Topics vary each semester. Instructor: Staff. One course.

71. Topics on the Third World and the West. Continuation of African and African American Studies 70. Instructor: Staff. One course.

74. Introduction to Jazz. (AL) AL, CCI, IAA One course. C-L: see Music 74

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


African and African-American Studies (AAAS)

Professor Payne, Director; Professors H. Baker, Darity, Gaspar, Holloway, McClain, and Powell; Associate Professors L. Baker, Lubiano, and Piot; Associate Research Professor Pierce Baker; Assistant Professors Glymph, Wallace, and Warren; Assistant Professor of the Practice El Hamel

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, Swahili and Arabic language courses are taught in the Asian and African Languages and Literature 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. Topics vary each semester. Instructor: Staff. One course.

71. Topics on the Third World and the West. Continuation of African and African American Studies 70. Instructor: Staff. One course.

74. Introduction to Jazz. (AL) AL, CCI, IAA One course. C-L: see Music 74

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

101. Film and the African Diaspora. (AL) (SS) AL, CCI, IAA, SS Theories and issues of representation and practice, with specific attention to culture, nation, and gender in contemporary and historic black films and filmmakers of Africa and the Diaspora. Instructors: Lubiano. One course. C-L: Film/Video/Digital


105S. FOCUS Program Seminars. Topics vary semester to semester. Open only to students in the FOCUS Program. Instructor: Staff. One course.

106. Introduction to African and African-American Studies. (CZ) CCI, CZ, IAA A broad overview of African origins and culture, the slave trade both in Africa and the Americas, the antebellum period in the Americas, the struggle for freedom by black people, and the post-1865 period. Not open to students who have taken African and African-American Studies 51. Instructor: Staff. One course.

107. Introduction to African Studies. (AL) (CZ) AL, CCI, CZ, IAA A variety of disciplinary perspectives in which the students may develop their study of Africa. Topics include concepts of Africa, Orientalism and European imperialism, impact of colonial rule, religious and cultural movements, rise of nationalism and pan-Africanism, issues of ethnicity and identities in modern Africa, gender issues and African literature, the place of "area studies" in the academy, civil society and democratic practice in contemporary Africa. Instructor: Staff. One course. C-L: Art History 107, Cultural Anthropology 136, English 180, History 115C, Political Science 174

110A. West African Rootholds in Dance. (AL) AL, CCI, IAA One course. C-L: see Dance 110A

110B. West African Rootholds in Dance. (AL) AL, CCI, IAA One course. C-L: see Dance 110B

113B. Europe's Colonial Encounter, 1492-1992. (CZ) CCI, CZ, EI, IAA One course. C-L: see History 113B


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

115B. History of Africa: From Early Modern Times to Independence. (CZ) CCI, CZ, IAA One course. C-L: see History 115B; also C-L: Comparative Area Studies, Women's Studies


120. Egyptian Art and Archaeology. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 120; also C-L: Classical Studies 118

121. Introduction to Asian and African Literature. (AL) AL, CCI, IAA One course. C-L: see Asian & African Languages and Literature Studies 121; also C-L: Literature 165C, Comparative Area Studies

122. Culture and Politics in Africa. (CZ) CCI, CZ Cultures and societies of Africa through the study of kinship, politics, economics, ecology, religion, and aesthetics in the context of colonialism and postcolonialism. Instructor: Piot. One course. C-L: Cultural Anthropology 122, Comparative Area Studies, Marxism and Society

123. Modernity, Ethnicity, and Colonialization. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Romance Studies 124; also C-L: Cultural Anthropology 130, Undergraduate Canadian Studies Program, Comparative Area Studies
124S. Slave Society in Colonial Anglo-America: The West Indies, South Carolina, and Virginia. (CZ) CCI, CZ, IAA, R One course. C-L: see History 124S; also C-L: Comparative Area Studies

126S. The Press and the Public Interest. (SS) SS One course. C-L: see Public Policy Studies 127S

127A. The Caribbean, 1492-1700. (CZ) CCI, CZ, IAA One course. C-L: see History 127A; also C-L: Comparative Area Studies, Latin American Studies

127B. The Caribbean in the Eighteenth Century. (CZ) CCI, CZ, IAA One course. C-L: see History 127B; also C-L: Comparative Area Studies, Latin American Studies

133. History of African-American Social Dance Forms of the Twentieth Century. (AL) AL, CCI, IAA, W One course. C-L: see Dance 133

134. Psychology of Ethnicity and Context. CCI, SS One course. C-L: see Psychology 134


136. Black Intellectual History. (AL) (CZ) AL, CCI, CZ, IAA An examination, within the context of Western ideas of intellectualism and intellectual history, of the way that black intellectualism manifest itself in the United States and the Caribbean, taking as its object for inquiry social relations and problems. Instructor: Lubiano. One course. C-L: Literature 163A

138S. Francophone Literature. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see French 168S; also C-L: Asian & African Languages and Literature Studies 168S, Undergraduate Canadian Studies Program, Comparative Area Studies, Latin American Studies

140. Jazz Saxophone Innovators. (AL) AL, CCI, IAA One course. C-L: see Music 140

141S. Special Topics in Jazz. (AL) AL Also taught as Music 141S. Prerequisite: Music 74 or consent of instructor. One course.

142. African-American Music in the Twentieth Century. (AL) AL, CCI, IAA One course. C-L: see Music 142

144. Swing as a Way of Life. (AL) AL, CCI, IAA One course. C-L: see Dance 144

145A. African-American History. (CZ) CCI, CZ, IAA One course. C-L: see History 145A

145B. African-American History. (CZ) CCI, CZ, IAA One course. C-L: see History 145B

147. Urban Education. (SS) 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: Education 147

148A. Introduction to Urban Politics. (SS) SS One course. C-L: see Political Science 103A

148B. Urban Poverty and the Urban Underclass. (SS) CCI, QID, SS One course. C-L: see Political Science 103B

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

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

150. Religion and Spirituality in the African Diaspora. (CZ) (SS) CCI, CZ, IAA, SS Religious examinations of culture and cultural processes in the African Diaspora. Exploring various religious traditions, beliefs, and practices to understand how they are
supported by and located within their unique communities of worship. Instructor: Staff. One course. C-L: Cultural Anthropology 150, Religion 160, Comparative Area Studies

151. Islamic Mysticism: Arabic (Western) Tradition. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 152A; also C-L: Medieval and Renaissance Studies 153A, Comparative Area Studies

152. African-American Religion and Identity. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 154

156. The Blues Aesthetic: African-American Art and Artists of the Twentieth Century. (AL) (CZ) AL, CCI, CZ, R One course. C-L: see Art History 176

157. Art, Architecture, and Masquerade in Africa. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 173; also C-L: Comparative Area Studies

160. Women in Islam: Fact and Fiction. (CZ) CCI, CZ, R One course. C-L: see Asian & African Languages and Literature Studies 190; also C-L: Religion 139, Comparative Area Studies, Women's Studies

161S. Economics of Slavery in the American South. (SS) SS One course. C-L: see Economics 161S

162A. Social Facts and Narrative Representations. (AL) AL, IAA One course. C-L: see Literature 162AS

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

165. History of the Working Class in the United States. (CZ) CCI, CZ, IAA One course. C-L: see History 165; also C-L: Marxism and Society

168S. The Atlantic Slave Trade. (CZ) CCI, CZ, IAA, R One course. C-L: see History 168BS; also C-L: Comparative Area Studies, Latin American Studies

169S. African-American Drama. (AL) AL, CCI, IAA Also taught as English 169S. Instructor: Staff. One course.

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

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

172S. Culture Heroes Across Cultures. (AL) AL, CCI, IAA Myths and folktales of the 'culture hero' from a cross-cultural perspective, including the ancient societies of the Near East and Mediterranean as well as early modern and contemporary cultures in Africa, the Caribbean, and North America. Instructor: Davis. One course. C-L: Classical Studies 174S, Distinguished Professor Course 180S

173. African-American Literature. (AL) AL, CCI, IAA, R One course. C-L: see English 164A

174. African-American Literature. (AL) AL One course. C-L: see English 164B

175S. The Southern Plantation as Historical Laboratory: Odyssey in Black and White, 1770-1970. (CZ) CCI, CZ, IAA, W One course. C-L: see History 175S

177S. Race and Equity. (SS) SS One course. C-L: see Public Policy Studies 173S

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

179. Separation and Inclusion. (SS) SS One course. C-L: see Public Policy Studies 174


182. A-F. African-American Literary Genres. (AL) AL, CCI, IAA, R One course. C-L: see English 166

190. 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

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report containing significant analysis and interpretation of a previously approved topic. Open to juniors and seniors. Consent of both instructor and director of undergraduate studies required. Instructor: Staff. One course.

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

192H. **The African Diaspora.** (SS) CCI, CZ, IAA, SS Concept of the African Diaspora studied through works on history, culture, aesthetics and literature, and materials taken from Africa, the Caribbean, the United States and Europe; multiple meanings of Diaspora, and its role in identity formation in the late 20th century cultures of the Atlantic basin. C-L: African and African American Studies 192H. Instructor: Piot. One course. C-L: Cultural Anthropology 191H

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.

195S. **Fugitive Slave (Maroon) Communities in New World Slave Societies.** Also taught as History 195S or 196S. Instructor: Gaspar. One course.

197S. **The Destruction and Aftermath of Slavery in the Americas: A Comparative Perspective.** (CZ) CCI, CZ Also taught as History 195S or 196S. Instructor: Staff. One course.

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.

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 African Cultural Studies.** (CZ) CZ One course. C-L: see Asian & African Languages and Literature Studies 200S; also C-L: Cultural Anthropology 288S, Literature 200S

209S. **Race, Class, and Gender in Modern British History.** (CZ) CCI, CZ, EI, IAA One course. C-L: see History 209S; also C-L: Study of Sexualities

216S. **Gender, Race, and Class.** (SS) IAA, SS One course. C-L: see Cultural Anthropology 216S; also C-L: Study of Sexualities, Women’s Studies

221S. **Ethnicity, Culture, and Family Processes.** (D, P). (SS) CCI, R, SS One course. C-L: see Psychology 221S

235S. **The Antebellum South.** (CZ) CCI, CZ, IAA One course. C-L: see History 235S

241. **Classical Islamic Theology and Ethics.** (CZ) CZ, EI, IAA One course. C-L: see Religion 241; also C-L: Medieval and Renaissance Studies 244

254. **Justice, Law, and Commerce in Islam.** (CZ) CZ, EI, IAA One course. C-L: see Religion 254; also C-L: Medieval and Renaissance Studies 254, Comparative Area Studies

255. **Anthropology as Public Discourse.** (SS) EI, SS One course. C-L: see Cultural Anthropology 255

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

269S. **Harlem Renaissance.** (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 269S
270S. Topics in African Art. (AL) (CZ) AL, CZ, IAA One course. C-L: see Art History 270S; also C-L: Comparative Area Studies.

273S. Public Policy and African-American Life. (SS) CCI, SS One course. C-L: see Public Policy Studies 273S.

278S. Race and American Politics. (SS) CCI, SS One course. C-L: see Political Science 278S.

279S. Race, Racism, and Democracy. (SS) SS One course. C-L: see Cultural Anthropology 279S.

292S. Slavery and Freedom in Africa, to 1960. (CZ) CCI, CZ, EI, R One course. C-L: see History 292S; also C-L: Comparative Area Studies.

299S. 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.

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.

THE MINOR

The minor requires five courses, one of which must be African and African-American Studies 106, and four of which must be at the level of 100 or above. Courses must be selected in each of the following areas:
a. Arts or Literature
b. History
c. Social, Religious, Economic, or Political Institutions/Processes.

**N.B.** Both program foci (Africa and the Americas) must be represented in the four-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 program director.

**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.

**Anthropology**

See the Department of Biological Anthropology and Anatomy and the Department of Cultural Anthropology for information about those majors.

**Applied Science (APLSCI)**

Adjunct Professor Guenther, *Director*

A certificate, but not a major, is available in this program.

The objective of the program in Applied Science is to develop the capability to apply academic knowledge to solutions of industrial and societal need through a multidisciplinary curriculum administered by the Department of Physics in collaboration with other science and engineering departments and industry. This program emphasizes design, modeling, and simulation skills applied in a team environment.

To qualify for the certificate students must take six courses, three of which are required courses; the other three are electives selected from nine departments. The three required courses are Topics in Applied Science (Physics 184), Capstone Design (Physics 193), and a computer programming course. No more than two of the six courses may also apply to the requirements of a major, including electives in the major.

**CORE COURSES**

The full descriptions of these two courses appear in the listing under the Department of Physics:

Physics 184. Topics in Applied Science
Physics 193. Capstone Design of Applied Science. Information on current design topics may be obtained from the program coordinator in the program office.

**OTHER PROGRAM COURSES**

These courses contain two of the four areas of emphasis: science; technology, and society; design; modeling; and simulation.

**Biology**

149. Comparative Biomechanics
184L. Experimental Cell and Molecular Biology
289L. Methods in Morphometrics
291. Mathematical Biology
293. Simulating Ecological and Evolutionary Systems
Biomedical Engineering
233. Modern Diagnostic Imaging Systems
235. Acoustics and Hearing

Civil Engineering
120L. Chemistry and Microbiology for Environmental Engineers
123L. Water Resources Engineering
134L. Metallic Structures

Computer Science
100. Program Design and Analysis II
150. Introduction to Numerical Methods and Analysis

Electrical and Computer Engineering
62L. Introduction to Electronics: Devices
163L. Introduction to Electronics: Integrated Circuits
176. Thermal Physics
214. Introduction to Solid-State Physics
216. Devices for Integrated Circuits
261. Full Custom VLSI Design
262. Analog Integrated Circuit Design
272. Electromagnetic Communication Systems
273. Optical Communication Systems
275. Microwave Electronic Circuits
284. Acoustics and Hearing

Mathematics
114. Applied Mathematical Analysis II
132S. Nonlinear Ordinary Differential Equations
133. Introduction to Partial Differential Equations
135. Probability
136. Statistics
160. Mathematical Numerical Analysis
196S. Seminar in Mathematical Modeling
224. Scientific Computing I
225. Scientific Computing II
228. Mathematical Fluid Dynamics

Mechanical Engineering and Materials Science
141L. Mechanical Design
160L. Mechanical Systems Design

Physics
171L. Electronics
181. Intermediate Mechanics
182. Electricity and Magnetism
184. Topics in Applied Science
185. Modern Optics I
193. Capstone Design of Applied Science
211. Quantum Mechanics

Arabic
For courses in Arabic, see Asian and African Languages and Literature.

Art and Art History (ARTSVIS/ARTHIST)
Professor Leighton, Chair; Associate Professor Rice, Director of Undergraduate Studies; Professors Bruzelius, Powell, and Wharton; Associate Professors Abe, Antliff, Stiles, and Van Miegroet; Assistant Professors Dillon and Weisenfeld; Associate Professors of the Practice Noland, Rankin, and Shatzman; Assistant Professor of the Practice Belkina; Adjunct Associate Professor Schroth; Adjunct Assistant Professor Schroder; Professor Emeritus Markman

Majors and minors in art history and visual arts are available in this department.

HISTORY OF ART (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.** (AL) (CZ) AL, CZ, IAA, R Topics vary each semester offered. Instructor: Staff. One course.

**52. FOCUS Program Topics in Art History.** (AL) (CZ) AL, CZ, IAA Open only to students in the FOCUS Program. Instructor: Staff. One course.

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

**69. Introduction to the History of Art.** (AL) (CZ) AL, CCI, CZ, IAA The history of western architecture, sculpture, and painting in a cultural context from prehistory to the Renaissance (c. 1400). Instructor: Staff. One course.

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

**70. Introduction to the History of Art.** (AL) (CZ) AL, CCI, CZ, IAA Continuation of Art History 69. From the Renaissance to the present. Instructor: Staff. One course.

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

**71. Introduction to Asian Art.** (AL) (CZ) AL, CCI, CZ, IAA The visual arts of Asia, primarily Chinese and Japanese sculpture, painting, and architecture; selected works in their historical context; the multiple ways in which the works have been understood in the past as well as the present. A range of art historical approaches and methods. Instructor: Abe or Weisenfeld. One course. C-L: Comparative Area Studies

**71D. Introduction to Asian Art.** (AL) (CZ) AL, CCI, CZ, IAA Same as Art History 71 except instruction provided in two lectures and one small discussion meeting each week. Instructor: Abe or Weisenfeld. One course. C-L: Comparative Area Studies

**97. Visual Culture Outside the United States, I.** (AL) (CZ) AL, CZ, IAA 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.** (AL) (CZ) AL, CZ, IAA See Art History 97. Instructor: Staff. One course.

**101S. FOCUS Program–Topics in Art History.** (AL) AL, IAA Open only to students in the FOCUS Program. Instructor: Staff. One course.

**102S. Topics in Contemporary Art.** (AL) (CZ) AL, CZ, IAA Offered in the Leadership and the Arts Program in New York. Instructor: Staff. One course.

**103. Representing Women in the Classical World.** (AL) (CZ) AL, CCI, CZ, IAA The lives of women in the Classical world viewed through the visual culture of Classical art. Through images of women in statues, reliefs, coins, and painting, the course explores the role of visual representation in communicating complex social and political messages. Issues such as the construction of gender, the expression of power and status, the
preservation of social hierarchies, the protection of normative values, and the manipulation and control of sexuality are considered. Instructor: Dillon. One course.

104. The Art and Architecture of Roman Spectacle. (AL) (CZ) AL, CCI, CZ, IAA
Gladiatorial games, wild beast hunts, elaborately-staged executions of condemned criminals, and chariot racing as some of the most popular forms of public entertainment in the Roman world. The ritual of these entertainments and spectacles, the circumstances of and occasions for their performance, and the form and elaboration of the venues—the amphitheater, the circus, the theater, and the stadium— in which they took place. Visual and literary representations of these spectacles. Instructor: Dillon. One course. C-L: Classical Studies 140

105. Art in the Hellenistic Age. (AL) (CZ) AL, CCI, CZ, IAA
The paintings, statues, and buildings of the Hellenistic kingdoms, in such culturally diverse places as Greece, Turkey, Egypt, Syria, Iraq, and Afghanistan, within context of such issues as power, ritual, acculturation, resistance, and "Hellenization." Spectacle culture in the Hellenistic world, questions of reception and memory, and more traditional art-historical themes of patronage and stylistic change. The vital role played by art in defining and expressing cultural change. Instructor: Dillon. One course. C-L: Classical Studies 132

106. Hellenistic Architecture. (AL) (CZ) AL, CCI, CZ, IAA
Survey of the major architectural traditions during the great age of Greek and Macedonian colonization, which saw important developments in urbanism and city planning. Focus on political, social, aesthetic, and technical aspects of Hellenistic architecture and the profound impact that the architectural forms of the period had on the city of Rome. Instructor: Dillon. One course. C-L: Classical Studies 141

107. Introduction to African Studies. (AL) (CZ) AL, CCI, CZ, IAA
One course. C-L: African and African American Studies 107, Cultural Anthropology 136, English 180, History 115C, Political Science 174

110. Gothic Cathedrals. (AL) (CZ) AL, CCI, CZ, IAA, 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. (AL) (CZ) AL, CCI, CZ, IAA, R
A survey of the origins and development of medieval church architecture from Late Antiquity to the High Middle Ages in the Mediterranean and Europe north of the Alps concentrating on the effects of the cult of relics, the inclusion of burials, the segmentation of the lay public, and different types of liturgical requirements on the shapes and spaces of religious buildings; the origins and development of fortifications and castles. Emphasis on monastic architecture and especially the buildings of the mendicant orders. Instructor: Bruzelius. One course. C-L: Medieval and Renaissance Studies 112B

112. The Art of Medieval Southern Italy. (AL) (CZ) AL, CCI, CZ, IAA, R
The art and architecture of southern Italy from the ninth through the fourteenth centuries. The wide range of cultural influences and mixtures of populations that characterized the Kingdom of Sicily and the impact of these rich and diverse importations on the art and architecture of the southern part of the peninsula. Special importance placed on the Islamic contribution to Italian art and its development under the Norman kings of Sicily. Instructor: Bruzelius. One course. C-L: Medieval and Renaissance Studies 113

113. Eighteenth-Century Art and Architecture. (AL) (CZ) AL, CZ, IAA
An introduction to the visual arts and architecture of the eighteenth century. Instructor: Staff. One course.

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114. The Aegean Bronze Age. (AL) CCI, IAA, W One course. C-L: see Classical Studies 155

115. Ancient Greece. (AL) CCI, IAA One course. C-L: see Classical Studies 147

120. Egyptian Art and Archaeology. (AL) CCI, IAA Art and architecture of the major urban centers of Egypt, Syria-Palestine, Mesopotamia, and Iran from the fourth millennium B.C. to the conquest of Alexander. Particular emphasis on architecture, sculpture, and painting. Instructor: Staff. One course. C-L: African and African American Studies 120, Classical Studies 118

123. Greek Art and Archaeology I: Geometric to Classical. (AL) CCI, IAA One course. C-L: see Classical Studies 123

124. Greek Art and Archaeology II: Classical to Greco-Roman. (AL) CCI, IAA One course. C-L: see Classical Studies 124


126B. Roman Architecture. (AL) CCI, IAA Cities and major monuments of the Roman world. The architecture of Republican Italy (with reference to Hellenistic and Etruscan predecessors) and of the transition to the Empire. Public (state-sponsored) and private monuments (funerary monuments, domestic architecture). Instructor: Staff. One course. C-L: Classical Studies 144

128. Art of the Roman Empire. (AL) CCI, IAA Art in the Roman world from Augustus to Theodosius. Emphasis on portraiture, private arts, and triumphal monuments; Rome's cultural imperialism and the impact of foreign cultural traditions on the evolution of Roman art. Instructor: Staff. One course. C-L: Classical Studies 128

130. Late Antique Christian Art. (AL) CCI, IAA The broad cultural significance of visual and architectural forms of religious expression from the late fourth through the sixth century. Treatment of the difference between modern and ancient viewing through the study and writing of ekphrasis - description. Evaluation of primary sources as vehicles for understanding the past. Consideration of the changing political and cultural uses made of the ancient monuments by reading and writing critical assessments of the histories written about them. Instructor: Wharton. One course. C-L: Classical Studies 130, Medieval and Renaissance Studies 130, Religion 130

132. Art of the Late Middle Ages. (AL) CCI, IAA Romanesque and Gothic art and architecture from the eleventh through the fourteenth centuries in Europe, with a special emphasis on comparative developments in Italy, France, Germany, and England. The artistic impact of monasticism, pilgrimage, the Crusades, and urbanization. The role of ecclesiastic, civic, and courtly patrons. Instructor: Bruzelius or Wharton. One course. C-L: Medieval and Renaissance Studies 131B

133. Colonial Art of the Andean Region. (AL) CCI, IAA Colonial art of the Andean region and its modifications through indigenous Aymara and Quechua conceptions of space and decoration. Special focus on iconology and the persistence of ancient indigenous myths within Christian images, the colonization of the imaginary through rituals and festivals. The rich variety of Andean textiles and weaving techniques. (Taught in Spanish in the Duke in the Andes Program.) Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 136, Latin American Studies

134. Topics in Medieval Art and Architecture. (AL) CCI, IAA 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

135. Topics in Italian Art and Architecture. (AL) CCI, IAA Topics vary from year to year. Consent of instructor required. (Taught in Italy.) Instructor: Staff. One course.
139. Aspects of Medieval Culture. (AL) (CZ) AL, CZ One course. C-L: Classical Studies 139, History 116, Medieval and Renaissance Studies 114

140. Topics in Renaissance Art. (AL) (CZ) AL, CCI, CZ, IAA Specific problems dealing with the iconography, style, or an individual master from c. 1300 to 1600. Subject varies from year to year. Instructor: Rice. One course. C-L: Medieval and Renaissance Studies 140C


143. The Art of the Counter Reformation. (AL) (CZ) AL, CCI, CZ, IAA, R Religious art in Catholic Europe during and following the Council of Trent. Rise of the new religious orders; the revival of interest in the early Church and the origins of Christian archaeology; the cult of saints and the veneration of relics; the Church’s use of art in its campaign against Protestantism; papal patronage and the monumentalization of Rome. Considers the validity of the concept of a counter-reformation style. Instructor: Rice. One course. C-L: Medieval and Renaissance Studies 143

148. Art of the Netherlands in the Fifteenth Century. (AL) (CZ) AL, CCI, CZ, IAA, R Early Netherlandish painting in the Burgundian Netherlands from Hubrecht and Jan van Eyck to Gerard David and Hieronymus Bosch. Cultural, historical, and intellectual environment in Flanders and Brabant; civic and courtly patronage in Doornik (Tournai), Ghent, Bruges, Mechlin, and Antwerp; new research strategies of contemporary evidence. Instructor: Van Miegroet. One course. C-L: Medieval and Renaissance Studies 148A

149. Aspects of Renaissance Culture. (AL) (CZ) AL, CZ One course. C-L: see Medieval and Renaissance Studies 115; also C-L: History 148A, Italian 125

150. Italian Baroque Architecture. (AL) (CZ) AL, CCI, CZ, IAA, R Architecture in Italy in the seventeenth and eighteenth centuries. Emphasis on the contributions of Bernini, Borromini, Cortona, Guarini, and Juvarrar. The evolution of building types, both secular and religious; town planning; garden and landscape history. Special attention to the cultural, economic, and political forces that shaped the Baroque city. Instructor: Rice. One course. C-L: Medieval and Renaissance Studies 150

151. Art of Italy in the Seventeenth Century. (AL) (CZ) AL, CCI, CZ, IAA, R Painting, sculpture, and the related arts: 1580-1700. The historical, social, and cultural context of artistic production in Baroque Italy; emphasis on the contributions of Caravaggio, the Carracci, Guido Reni, Bernini, Poussin. Instructor: Rice. One course. C-L: Medieval and Renaissance Studies 151C, Comparative Area Studies

153. Netherlandish Art and Visual Culture in the Seventeenth and Eighteenth Centuries. (AL) (CZ) AL, CCI, CZ, IAA, R A contextual study of northern Netherlandish art, seen through the major Dutch cities and towns where painters, such as Frans Hals and Johannes Vermeer, were at work. Rembrandt and his school; Dutch art in its historical, societal, moral, and psychological context. Instructor: Van Miegroet. One course. C-L: Medieval and Renaissance Studies 152B, Comparative Area Studies

156. French Art and Visual Culture in the Early Modern Period. (AL) (CZ) AL, CCI, CZ, IAA, R Students proficient in French will be encouraged to do some of the reading


158. History of Netherlandish Art and Visual Culture in a European Context. (AL) (CZ) AL, CCI, CZ, IAA 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: Medieval and Renaissance Studies 158, Comparative Area Studies 159

159. History of Netherlandish Art and Visual Culture in a European Context. (AL) (CZ) AL, CCI, CZ, IAA 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: Medieval and Renaissance Studies 159, Comparative Area Studies 159


161. Twentieth-Century American Art: Nationality and Identity. (AL) (CZ) AL, CZ, EI, IAA, R Twentieth-century American art from 1900 to the present, including major stylistic and theoretical developments and movements (the 'Harlem Renaissance,' the 'American Scene,' the 'New York School,' and others). Special attention to artistic activities emanating from such government-sponsored programs as the Works Progress Administration's Federal Arts Projects, the Farm Security Administration's Photography Unit, and the National Endowment for the Arts' various programs. Instructor: Powell. One course.


164. Documentary Photography and Social Activism in the Nuclear Age. (AL) (CZ) AL, CZ, EI, IAA 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: Comparative Area Studies, Film/Video/ Digital

165. Chinese Buddhist Art. (AL) (CZ) AL, CCI, CZ, IAA, R Chinese sculpture, painting, and architecture in relation to Buddhist texts, practice, and ritual from the fourth through the ninth century C.E. Introduction to precedents in Indian and Central Asian Buddhist art. Emphasis on the relationship between Buddhist and non-Buddhist imagery. Instructor: Abe. One course. C-L: Comparative Area Studies

166. Topics: Contemporary Chinese Art/Film. (AL) (CZ) AL, CCI, CZ, IAA The visual arts of China and Japan organized around a single theme or genre such as painting, Buddhist art, or cinema. Emphasis on the study of Asian visual arts and film from the
perspective of disciplines and categories of knowledge dominant in the Euro-American tradition. Instructor: Abe or Weisenfeld. One course. C-L: Comparative Area Studies


177. 20th Century Latin American Photography. (CZ) (FL) CCI, CZ, FL, IAA One course. C-L: see Spanish 177S


179. The History of Performance Art. (AL) (CZ) AL, CZ, IAA Works in the visual arts in which the primary means and medium of expression is the human body in happenings, Fluxus, demonstrations, destruction art, body art, and performance since 1955. Theoretical discussion focusing on the challenge that live art poses to the traditional paradigm of the art object. Instructor: Stiles. One course. C-L: Theater Studies 105, Comparative Area Studies, Women's Studies


180B. Later Japanese Art. (AL) (CZ) AL, CCI, CZ, EI, IAA 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: Comparative Area Studies


182. Japanese Architecture. (AL) (CZ) AL, CCI, CZ, IAA 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.

183. Etruscan Art and Architecture. (AL) (CZ) AL, CCI, CZ, IAA The art of the Etruscans, inhabitants of central Italy from the ninth through the second centuries B.C. Painting, sculpture, pottery, tomb architecture, domestic architecture, and portraiture. Theories of Etruscan origins; particular emphasis on Etruria’s contacts with other cultures (Greek, Roman, Anatolian) and the effects of these contacts on Etruscan artistic productions. Instructor: Staff. One course. C-L: Classical Studies 183


185. New Media in the Information Age. (AL) (CZ) AL, CCI, CZ, IAA Video, multimedia installation, web-based and computer art, digitally altered photography and surveillance, interactive art, and virtual reality. Artificial intelligence and artificial life, nano and endo technology, genetic engineering, and robotics. Topics include: postbiological body; merging of science, art, and psychology; the role of global information and economy in aesthetics; and the interface between computers and the war machine. Instructor: Stiles. One course.

186. Feminism in Art. (AL) (CZ) AL, CCI, CZ, IAA Feminist aesthetic and theoretical discourses from the end of the nineteenth century to the present internationally. Feminist aesthetic differences in generation, place, race, class, and ethnicity. Focus on how these differences shape the form, content, and behavior of feminist art, and contributed to modernism and postmodernism. Ethical questions regarding patriarchal institutions and aesthetic practices. How feminist art provokes change in cultural systems and social relations, and how women artists have negotiated ethical and political clashes of values. Instructor: Stiles. One course. C-L: Literature 133A, Women’s Studies 175

187. Dada and Surrealism. (AL) (CZ) AL, CCI, CZ, IAA 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

188. Topics in Early Modern Netherlandish Art and Material Culture. (AL) (CZ) AL, CCI, CZ, IAA Understudied aspects of European visual culture, with special attention to economic, social, and political history of early modern Netherlands in its relation to France, German, Spain, and the Americas. Organized around a single theme; both theme and analytical focus vary from year to year, depending on latest developments in research. Instructor: Van Miegroet. One course.


190. Berlin: Architecture and the City, 1871-1990. (AL) (CZ) AL, CCI, CZ, IAA Development of urban Berlin from the Gründerzeit (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
134 Courses and Academic Programs

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: Neckenig. One course. C-L: Comparative Area Studies

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.

193. Art and Culture of Mesoamerica. (AL) (CZ) AL, CZ The art of pre-Columbian Mesoamerica (Mexico, Guatemala, Belize, and Honduras) from the beginnings of permanent settlements through the coming of the Spaniards (2000 B.C.-1519 A.D.). The Olmec, Teotihuacan, Zapotec, Maya, Mixtec, and Aztec cultures, including the numerous indigenous writing systems, studied in order to understand sociopolitical and religious institutions. Instructor: Staff. One course. C-L: Comparative Area Studies

194. Maya Art and Culture. (AL) (CZ) AL, CZ The ancient Maya civilization of Mexico, Guatemala, and Belize explored through study of their material culture. Mayan religious and political iconography in conjunction with Mayan hieroglyphic writing. Approaches include those of archaeology, ethnohistory, and linguistics. Instructor: Staff. One course. C-L: Comparative Area Studies

195. Pre-Columbian Art and Culture of Andean South America. (AL) (CZ) AL, CZ The art of Peru, Bolivia, Ecuador, and Colombia from the beginnings of permanent settlements through the coming of the Spaniards (1534 A.D.), concentrating on sociopolitical and religious institutions. Instructor: Staff. One course. C-L: Comparative Area Studies

196. Gender and Modernism. (AL) (CZ) AL, CCI, CZ, IAA A study of art and gender politics from the late eighteenth century to the 1960s, with special attention to the interrelation of class, race, and gender, as well as definitions of the body politic. Neoclassicism, realism, impressionism, and a broad range of twentieth-century movements. Topics may include: gender and the French revolution; the 'Jew's body'; domesticity and modern art, gay and lesbian visual culture, the primitivized prostitute, and the gendering of the lower classes. Themes and chronological focus vary from year to year. Instructor: Antliff. One course.

197. Cubism and Culture. (AL) (CZ) AL, CCI, CZ, IAA The artists, styles, issues, and themes of the great variety of cubist art developed from the period 1907 to 1930s. Cubist aesthetics considered in light of the cultural politics of the period, including the emergence of nationalism before World War I, cultural propaganda of the wartime era, and the complex political terrain of the interwar period. Topics may include theories of tradition, primitivism, approaches to collage, relations to contemporary science and philosophy, the roles of gender and anarchism. Themes will be further contextualized in light of contemporary debates, encompassing Marxist, feminist, structuralist, and Bakhtinian approaches to the subject. Instructor: Antliff or Leighten. One course.

198. History of Photography, 1839 to the Present. (AL) (CZ) AL, CCI, CZ, IAA Major artists and movements in the history of the photographic medium, including visual and
Art and Art History (ARTSVIS/ARTHIST)  135

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: Film/Video/Digital

For Seniors and Graduates

202S. Topics in Roman Art. (AL) (CZ) AL, CCI, CZ, IAA, R Selected topics in the art and architecture of late republican and imperial Rome. Subject varies from year to year. Consent of instructor required. Instructor: Staff. One course. C-L: Classical Studies 227S

203A. Student-Curated Exhibition I. IAA Preparation and execution of an exhibition in the Duke Museum of Art by a small group of Art History majors; selection of theme and works, planning, and execution of all aspects of the exhibition including the writing of text labels and catalogue. Two semester sequence. Prerequisites: status as Art History major and consent of instructor. Instructor: Staff. One course.

203B. Student-Curated Exhibition II. IAA, W Continuation of Art History 203A. Prerequisites: status as Art History major and consent of instructor. Instructor: Staff. One course.

205S. Greek Architecture. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Classical Studies 233S

206S. Roman Architecture. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Classical Studies 235S

217. Islam and Islamic Art in India. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Religion 217; also C-L: Comparative Area Studies

218S. Topics in Islamic Architecture and Art. (AL) (CZ) AL, CCI, CZ, IAA, R Subject varies from year to year. Consent of instructor required. Instructor: Staff. One course.

227S. Roman Painting. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Classical Studies 236S

236S. Topics in Romanesque and Gothic Art and Architecture. (AL) (CZ) AL, CCI, CZ, IAA, 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. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Classical Studies 232S

238S. Greek Sculpture. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Classical Studies 231S

241. History of Netherlandish Art and Visual Culture in a European Context. (AL) (CZ) AL, CCI, CZ, IAA, 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, Comparative Area Studies

(Taught in the Netherlands.) Not open to students who have taken Art History 158-159. Instructor: Van Miegroet. One course. C-L: Medieval and Renaissance Studies 242, Comparative Area Studies

243S. Topics in Netherlandish and German Art. (AL) (CZ) AL, CCI, CZ, IAA, R Specific problems in northern Renaissance or baroque art such as the Antwerp workshops of the sixteenth century or a critical introduction to major artists such as Van Eyck, Bosch, Dürer, and Rubens. An analytical approach to their lives, methods, atelier procedures and followers; drawings and connoisseurship problems; cultural, literary, social, and economic context; documentary and scientific research strategies. Subject varies from year to year. Consent of instructor required. Instructor: Van Miegroet. One course. C-L: Medieval and Renaissance Studies 243S, Comparative Area Studies

247S. Topics in Italian Renaissance Art. (AL) (CZ) AL, CCI, CZ, IAA, R Topics in art and/or architecture from c. 1300 to c. 1600. Subject varies from year to year. Consent of instructor required. Instructor: Rice. One course. C-L: Medieval and Renaissance Studies 247S

256S. Inventing the Museum: Collecting and Cultural Discourses of the Nineteenth Century. (CZ) (FL) CZ, FL, IAA, R One course. C-L: German 256S

257S. Topics in Pre-Columbian Art and Culture. (AL) (CZ) AL, CCI, CZ, IAA, R Selected topics in pre-Columbian art and archaeology with an emphasis on the political and cultural context of the artifact. Subject varies from year to year. Consent of instructor required. Instructor: Staff. One course. C-L: Comparative Area Studies

260S. Topics in Italian Baroque Art. (AL) (CZ) AL, CCI, CZ, IAA, R Problems in Italian art and architecture from c. 1580 to c. 1750. Topics vary from year to year. Consent of instructor required. Instructor: Rice. One course. C-L: Medieval and Renaissance Studies 260S

268S. Black Visual Theory. (AL) (CZ) AL, CCI, CZ, EI, R Approaches to studying and theorizing African diasporal arts and black subjectivity in art historiography, iconology, and criticism, with focus on slavery, emancipation, freedom, cultural nationalism, as pertaining to peoples of African descent and as manifested in visual forms. Paintings, sculptures, graphics, and media arts from the early modern period to the present; the political edicts, philosophical tracts, autobiographies, and theoretical writings of individuals similarly preoccupied with these ideas. Instructor: Powell. One course.

269S. Harlem Renaissance. (AL) (CZ) AL, CCI, CZ, IAA, R The art and culture that was produced by and about African Americans (largely in the western metropoles) during the period roughly between the two world wars. Chronological overview, a focus on individual figures, and study of the criticism and creative writings of this period. Other topics include black migrations to urban centers, performance-as-a-visual-paradigm, racial and cultural primitivism, and an alternative, African American stream of early twentieth century visual modernism. Instructor: Powell. One course. C-L: African and African American Studies 269S

270S. Topics in African Art. (AL) (CZ) AL, CZ, IAA Specific problems of iconography, style, connoisseurship, or a particular art tradition in African art. Subject varies from year to year. Consent of instructor required. Instructor: Powell. One course. C-L: African and African American Studies 270S

271S. Topics in Art of the United States. (AL) (CZ) AL, CZ, EI, IAA, R Selected topics from colonial times to 1945, with emphasis on major cultural issues, movements, works, and/or artists. Consent of instructor required. Instructor: Powell. One course.

272S. Topics in Chinese Art. (AL) (CZ) AL, CCI, CZ, IAA, 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: Comparative Area Studies

274S. Topics in Japanese Art. (AL) (CZ) AL, CCI, CZ, IAA, 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: Comparative Area Studies

283S. Topics in Modern Art. (AL) (CZ) AL, CZ, IAA, 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, Leighton, or Stiles. One course. C-L: Comparative Area Studies

288S. Special Topics. (AL) AL 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.

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.

296S. Methodology of Art History. (AL) (CZ) AL, CZ, IAA, R, W American and European art historical methodologies and theoretical perspectives through analysis of selected classic texts in the field. Art history's relation to other disciplines. The invention of art and the rise of the elite object in the eighteenth and nineteenth century to the death of art with its collapse into popular culture in the late twentieth. Instructor: Staff. One course.

297S. Topics in Art since 1945. (AL) (CZ) AL, CZ, IAA, 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: Comparative Area Studies

299S. Critical Theory. (AL) (CZ) AL, CZ, IAA, R Understanding of the visual arts in terms of the theoretical developments in other disciplines (for example, literature, women's studies, Marxism, and anthropology). Focus on the writings of theory-centered art historians and critics. Consent of instructor required. Instructor: Stiles or staff. One course.

COURSES CURRENTLY UNSCHEDULED
100. Art and Architecture of Vienna
116. Athens
117. Pompeii
129. The History of Prints and Printmaking
144. Renaissance and Baroque Art History
145. Renaissance Art in Florence
146. Italian Renaissance Architecture
152. Art of the Netherlands in the Sixteenth Century
154. German Art in the Fifteenth and Sixteenth Centuries
155. Mercantile Culture and Art in the Netherlands
161. Nineteenth-Century Art, 1789-1848: Revolution to Revolution
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.


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

53. Drawing. (AL) AL, IAA Introduction to the visual language of drawing, including various media and processes. Learning to construct and develop drawings done from observation, through reference to other artists' work, and with frequent individual and group critiques. Consent of instructor required. Instructor: Staff. One course.

54. Two-Dimensional Design and Color. (AL) AL, IAA Experiments in form and color, with work from observation. Introduction to color theory in various media. Consent of instructor required. Prerequisite: Visual Arts 53. Instructor: Staff. One course.

55. Introduction to Graphic Design. (AL) AL, IAA Artists and art movements that shaped and continue to shape design history. Fundamental graphic design principles. Limited exposure to graphic design software. Consent of instructor required. Prerequisites: Visual Arts 53 and Art History 70 or comparable modern art history course. Instructor: Belkina. One course.


102. Figure Drawing. (AL) AL, IAA 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 53 and 54, and consent of instructor based on portfolio. Instructor: Staff. One course.

103. Graphic Design: Community Projects. (AL) AL, IAA Application of principles of graphic design, color, typography, and layout to create products serving a promotional purpose. Work with nonprofit organizations from the community as 'clients,' covering all phases of the design process. Prerequisites: Visual Arts 53 and 54, and consent of instructor. Instructor: Shatzman. One course.

105. Intermediate Drawing. (AL) AL, IAA, 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 53 and 54 and consent of instructor. Instructor: Staff. One course.

106. Digital Imaging. (AL) AL, IAA Photoshop and Illustrator used to introduce single and serial images for print and web output. Prerequisites: Visual Arts 55 and consent of instructor. Instructor: Belkina. One course.


110. Sculpture. (AL) AL, IAA 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. (AL) AL, IAA Studio practice in sculpture at the intermediate level. Group and individual discussion and critique. Prerequisite: Visual Arts 110 or consent of instructor. Instructor: Noland. One course.

115. Introduction to Photography. (AL) AL, IAA 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: Staff. One course.

116. Photography. (AL) (CZ) AL, CZ, IAA 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: Film/Video/Digital

117. Documentary Photography and the Southern Culture Landscape. (AL) AL, CCI, IAA 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: Staff. One course.

118S. American Communities: A Photographic Approach. (AL) (SS) AL, CCI, IAA, SS One course. C-L: see Public Policy Studies 176S; also C-L: Film/Video/Digital

119S. Advanced Documentary Photography. (AL) (SS) AL, IAA, SS One course. C-L: see Public Policy Studies 177S; also C-L: Film/Video/Digital

120. Painting. (AL) AL, IAA Studio practice in painting with individual and group criticism and discussion of important historic or contemporary ideas. Prerequisites: Visual Arts 54 or equivalent and consent of instructor. Instructor: Staff. One course.

121. Intermediate Painting. (AL) AL, IAA Further practice in painting, with emphasis on color and refinement of form. Prerequisites: Visual Arts 120 and consent of instructor. Instructor: Staff. One course.

130. Printmaking: Silkscreen. (AL) AL, IAA, 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 53, 54 and consent of instructor. Instructor: Shatzman. One course.

131. Printmaking: Lithography. (AL) AL, IAA, 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 53, 54 and consent of instructor. Instructor: Shatzman. One course.

133. Printmaking: Intaglio. (AL) AL, IAA, 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 53, 54 and consent of instructor. Instructor: Shatzman. One course.

143. Architecture. (AL) AL, IAA, R A study of the principles of architectural design. Application of these principles to the special architectural, civil, and environmental requirements of North Carolina. Architectural design problems formulated and analyzed through individual and group projects; case studies; field trips to area buildings and architectural firms; visits by architects and engineers. Open only to students in the FOCUS Program. Instructor: Staff. One course.

145. Public Art and Private Concerns. (AL) (CZ) AL, CZ, IAA Investigation of historical and contemporary examples of public art, its definition, purposes, and precedents. Public art seen against artistic intention and public reaction. Field trips to area installations; visits by artists and administrators in the field. Instructor: Staff. One course.


165S. Film Animation Production. (AL) AL, IAA One course. C-L: see Film/Video/Digital 102S

For Seniors and Graduates

200S. Theory of Design. (AL) AL, IAA Visual thinking and design innovations in historical and contemporary art. Formal analysis and discussion of important issues for students involved in creating art. Prerequisites: two courses in design and consent of instructor. Instructor: Staff. One course.

205. Advanced Drawing. (AL) AL, IAA, R Emphasis on the development of a body of work through the adventurous exploration of the possibilities of drawing. Intensive studio work is accompanied by research into topics of interest and class presentations. Prerequisites: Visual Arts 105 and consent of instructor. Instructor: Staff. One course.

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

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

220. Advanced Painting. (AL) AL, IAA Prerequisites: Visual Arts 120, 121 and consent of instructor. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

101. Book Illustration
132. Printmaking: Relief and Monotype
210. Advanced Sculpture
230. Advanced Printmaking

See also Institute of the Arts in this bulletin.

THE MAJOR

The student will elect a sequence of courses emphasizing either the history of art or visual art.
History of Art

Major Requirements. The major in art history requires at least ten courses. Two of the three introductory art history courses, Art History 69, 70, and 71, are required. Art History 71 will not fulfill the non-Western requirement. The other eight courses should be distributed across the fields of ancient, medieval, Renaissance/baroque, modern, and non-Western (pre-Columbian, African, Asian). Students must take one course in each of these five areas. One of these ten courses must be a 200-level seminar.

Students planning to attend graduate school should consider taking two 200-level seminars: Art History (ARTHIST) 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 (ARTHIST) 141, Fifteenth-Century Italian Art, is a logical preparation for Art History (ARTHIST) 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: Mathematics 31, 32, and either Mathematics 103 or Physics 51L, 52L; Visual Arts (ARTSVIS) 53 and either Visual Arts (ARTSVIS) 54 or 56; Institute of the Arts/Biology 45S; Engineering 75L or 83L. No more than four approved courses taken away from Duke (at other institutions or abroad) may count toward the requirements of the major.

Visual Arts

Major Requirements. The major in Visual Arts (ARTSVIS) requires at least ten courses. These include: two lower-level courses, Visual Arts (ARTSVIS) 53 (Drawing) and Visual Arts (ARTSVIS) 54 (Two Dimensional Design); and eight 100-level courses including two upper-level Art History courses. The remaining six courses must include a minimum of one course in each of the primary areas of instruction: painting, printmaking, and sculpture. Students are encouraged to enroll as seniors in an independent study and, during the spring of their senior year, Visual Arts 200S (Theory of Design). No more than four approved courses taken away from Duke may satisfy the requirements and prerequisites of the major. 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

A combined major in Art History and Visual Arts requires at least fourteen courses. These include: two lower-level courses; Visual Arts (ARTSVIS) 53, Drawing, and Art History (ARTHIST) 69, 70 or 71, 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 each of the primary areas of instruction: painting, printmaking, and sculpture. Students are encouraged to enroll as seniors in an independent study and, during the spring of that year, in Visual Arts (ARTSVIS) 200S, Theory of Design.

Departmental Graduation with Distinction

The department offers work leading to graduation with distinction. See the section on honors in this bulletin.

THE MINOR

Art History

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

Visual Arts

Requirements: Five courses in visual arts at the 100 level or above.
Institute of the Arts (ARTSINST)

The Institute of the Arts offers interdisciplinary courses, sponsors artist residencies, coordinates and promotes activities in the creative and performing arts, and works to extend the role of the artists at Duke into the surrounding community. Courses, festivals, and events sponsored by the institute bring together faculty and students in different art forms to encourage an interdisciplinary perspective. A semester-long off-campus program, Duke in New York Arts Program, offered each fall semester provides academic and professional experiences for selected juniors and seniors. For further information about the institute, inquire in 109 Bivins Building.

DUKE IN NEW YORK ARTS PROGRAM

The institute-sponsored Duke in New York Arts Program offers an intensive, off-campus experience for juniors and seniors wishing to spend a semester studying and working in an internship situation in the fields of visual and performing arts, museum and gallery management, theater, film, literary arts, and other related fields. The program has four components, each earning one credit: program seminars, Institute of the Arts 101S, 103S, 104S, of which students take two; an arts internship, Institute of the Arts 102; and an elective course at New York University.


102. Arts Internship in New York. Immersion in the professional art world through apprenticeship to a sponsoring artist or organization. Students will spend fifteen hours per week at the internship and will write a substantive paper containing significant analysis and interpretation of the relation of the students' sponsoring institution to the art form or 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 that art form or activity. Offered only on the pass/fail basis and open only to students admitted to the Duke in New York Arts Program. Instructor: Staff. One course.

103S. Arts Production, Promotion, and Presentation in New York. (SS) IAA, SS Analysis and investigation of the processes by which representative arts events and endeavors in New York are conceived, developed, produced, promoted, performed, and evaluated. Guest lectures by practitioners in these processes. Open only to students admitted to the Duke in New York Arts Program. Instructor: Staff. One course.

104S. Making the Book. (AL) AL, IAA, STS One course. C-L: see English 181AS

150. Managing the Arts. (AL) (SS) AL, SS Various aspects of planning, organization, promotion, resource development, and general operations of such typical nonprofit arts organizations as arts councils, museums and galleries, subscription series, orchestras, and dance and theatre companies. Private, public, and governmental support for the arts. Not open to first-year students. Instructor: Silbiger. One course. C-L: Dance 150, Markets and Management Studies

180. Special Topics. (AL) AL Subjects associated with visiting artists-in-residence in the institute. Discussions and lectures conducted by guest artists on aspects of their work, views of the arts, associations with other disciplines. Previous topics have included "George Balanchine and Contemporary Ballet" and "Theater for Social Change." Topics announced each semester. Instructor: Staff. Half course.

181. Special Topics. (AL) AL See Institute of the Arts 180. Instructor: Staff. One course.

191. 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. Consent of instructor required. Instructor: Staff. One course.
COURSES CURRENTLY UNSCHEDULED
100. Art and Its Making
122. The Arts in Contemporary Culture
130S. Interdisciplinary Arts: Performance Seminar
Asian and African Languages and Literature (AALL)

Professor Cooke, Chair; Associate Professor Ching, Director of Undergraduate Studies; Assistant Professors Yoda and Zakim; Associate Professors of the Practice Khanna and Endo; Assistant Professors of the Practice, Lee, Kim, and Natavar; Lecturers Cai and Yao-Lahusen; Instructors Kurokawa, Mutima, Plesser, and Saito; Affiliated faculty: Professor Lawrence (religion); Assistant Professors Jonassaint (romance studies), and Nickerson (religion)

A major or a minor is available in this program.

Asian and African Languages and Literature provides instruction in several languages and literatures of Asia and Africa. Languages offered are Arabic, Chinese, Hebrew, Hindi, Japanese, Korean, Persian, and Swahili. The program offers Arabic, Chinese, Hebrew, Hindi, Japanese, and Korean literature courses, many in translation.

ASIAN AND AFRICAN LANGUAGES AND LITERATURE (AALL)
49S. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.
125. Bilingualism. (SS) CCI, QID, 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 125
127S. From Ottoman Empire to Turkish Empire: Narrative and Culture. (AL) AL, CCI, IAA One course. C-L: see Turkish 120S
137. Contemporary Culture in South Asia. (AL) (CZ) AL, CCI, CZ, IAA Contemporary cultures in South Asia and the global diaspora. Perspectives on cinema, television, and radio along with traditional literary media. Ways in which pasts are constructed by popular media to secure a relation to modernity. The themes and dilemmas which recur in various South Asian cultures and their diverse resolutions. The fiction of Mohan Rakesh, the poetry of Tagore and Kamala Das, the cinema of Satyajit Ray, Pakistani television dramas. Instructor: Khanna. One course. C-L: Comparative Area Studies
138. The Media in Modern India. (CZ) (SS) CCI, CZ, IAA, SS The influence of modern media on Indian society. Comparative study of the role of media in other South Asian cultures. Topics include: traditional sources of new knowledge; the role of print media during colonization and in the postcolonial period; the emergence of radio; contemporary use of film and television. (Taught in summer program in Bombay.) Instructor: Khanna. One course. C-L: Comparative Area Studies
139. Gender and Expressive Culture in India. (AL) (CZ) AL, CCI, CZ, IAA An examination of how gender is constructed and expressed in different contexts within...
daily Indian life. Focus on the dynamic relationship between dominant representations of men and women, and their own self-representations. Through reading and fieldwork analyzing complex forms of culture, students will investigate the social and religious factors that shape gender roles and their expression in performance both formal and informal, sacred and secular, public and private. Taught in India. Instructor: Natavar. One course. C-L: Religion 113, Cultural Anthropology 123, Comparative Area Studies, Women's Studies

149. Dance and Dance Theater of Asia. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Dance 149; also C-L: Cultural Anthropology 149, Theater Studies 149

150S. Chinese Modernism in Post-Mao Era. (AL) AL, CCI, IAA Mainland Chinese aesthetic modernity in the 1980s and 1990s examined through the study of narrative fiction and films. Instructor: Staff. One course. C-L: Comparative Area Studies

151. Indian Dance and Hindu Cosmology. (AL) (CZ) AL, CCI, CZ, IAA Introductory survey of both folk and classical dance forms of India in relation to their spiritual origins, themes, and performance. The practice of the classical dance style of North India and the theoretical study of the relationship of Indian dance and Hindu cosmology. Instructor: Natavar. One course. C-L: Dance 152, Religion 151

153. East Asian Cultural Studies. (AL) (CZ) AL, CCI, CZ, IAA East Asia as a historical and geographical category of knowledge emerging within the various processes of global movements (imperialism, colonialism, economic regionalism). Instructor: Ching or Yoda. One course. C-L: Cultural Anthropology 146, Comparative Area Studies

155S. Introduction to Israeli Culture. (AL) (CZ) AL, CCI, CZ, IAA 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: Zakim. One course. C-L: Comparative Area Studies

156. Representing the Holocaust. (AL) (CZ) AL, CCI, CZ, IAA 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. Instructor: Zakim. One course. C-L: Literature 165B

158. Jewish Culture in the Mediterranean. (AL) (CZ) AL, CCI, CZ, IAA Literary and philosophical texts and ideas, art, and music against the background of the social and economic histories of the various Sephardic Jewish communities throughout the Mediterranean. Instructor: Zakim. One course. C-L: Religion 155, Literature 163E

160. Introduction to the Civilizations of Southern Asia. (CZ) CCI, CZ, IAA 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, Comparative Area Studies

161. Introduction to the Civilizations of Southern Asia. (CZ) CCI, CZ, IAA Continuation of Asian and African Languages and Literature 160. Not open to students who have taken Religion 161. Instructor: Staff. One course. C-L: Cultural Anthropology 102, History 194, Religion 145, Comparative Area Studies

162. Modern Japanese Literature and Culture. (AL) (CZ) AL, CCI, CZ, IAA 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. Instructor: Ching or Yoda. One course. C-L: Comparative Area Studies

163. Korean Literature in Translation. (AL) AL, CCI, IAA 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, Comparative Area Studies


1665. Mediterranean Lives. (AL) (CZ) AL, CZ Autobiographies of famous writers of the Mediterranean region from the fifth century until today. Texts read both as literary documents and as testimonies of a particular time in a shared place. Readings from Tunisia, Lebanon, Egypt, Palestine, Algeria, Morocco, France, as well as Durrell’s *Spirit of Place*. Films by Tunisian directors that tell the stories of their lives. Directors will attend classes for discussion of their films. Instructor: Cooke. One course. C-L: Comparative Area Studies

1685. Francophone Literature. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see French 1685; also C-L: African and African American Studies 138S, Canadian Studies, Comparative Area Studies, Latin American Studies


171. Japanese Cinema. (AL) (CZ) AL, CCI, CZ, IAA 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. Instructor: Yoda. One course. C-L: Film/Video/Digital

1725. Chinese Literature and Culture in Translation. (AL) (CZ) AL, CCI, CZ, IAA 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: Wang. One course. C-L: Literature 165A

1805. Intellectuals/Culture/History: Modern China in Transition. (AL) (CZ) AL, CCI, CZ, IAA Debates over politics, ideology, high culture, and popular culture in China since the 1920s. Topics include: Marxism, the Cultural Revolution; the modernist narratives of “world history”; the postmodern turn of debunking universal history; the 1990s’ resurgence of Mao Zedong fever, the Chinese search for modernity; the revival of neo-nationalism and new conservatism; and state sponsorship and the new meanings of ‘culture as leisure.’ Instructor: Staff. One course. C-L: Comparative Area Studies

184. Music in East Asia. (AL) (CZ) AL, CCI, CZ, IAA East Asian musicians and their instruments, genres, performance traditions, and contexts. Study of the relationship of music to social, religious, historical, and philosophical trends informed by listening to the musical forms themselves in recorded and live performances. Instructor: Kramer. One course. C-L: Music 134

185. Music in South Asia. (AL) (CZ) AL, CCI, CZ, IAA South Asian musicians and their instruments, genres, performance traditions, and contexts. Study of the relationship of music to social, religious, historical, and philosophical trends informed by listening to the musical forms themselves in recorded and live performances. Instructor: Kramer. One course. C-L: Music 135
190. **Women in Islam: Fact and Fiction. (CZ)** CCI, CZ, R The forces influencing the lives of Muslim women from the seventh to the twentieth century. Geographical or historical focus may change. Themes to include: imperialism and resistance, family, religion, literature. Research paper required. Instructor: Cooke. One course. C-L: African and African American Studies 160, Religion 139, Comparative Area Studies, Women's Studies

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.

195. **Special Topics.** Topics vary each semester. Instructor: Staff. One course.

196S. **Special Topics in Advanced Film, Video, or Audio Production. (AL)** AL, IAA Topics will vary each semester. Instructor: Staff. One course.


198. **Special Topics in Asian and African Literature and Culture. (AL)** (CZ) AL, CZ, IAA Focus will be on historical developments, important instruments and genres, and cultural contents for musical performance, preservation, and adaptation. Instructor: Staff. One course.


250S. **Chinese Modernism in Post-Mao Era. (AL)** AL, CCI, IAA, R Mainland Chinese aesthetic modernity in the 1980s and 1990s examined through the study of narrative fiction and films. (Same as Asian and African Languages and Literature 150S but requires extra assignments.) Research paper required. Instructor: Staff. One course.

252. **Special Topics in Asian and African Literature. (AL)** AL, R Topics vary each semester. Instructor: Staff. One course.

253. **East Asian Cultural Studies. (AL)** (CZ) AL, CCI, CZ, IAA, 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, Comparative Area Studies

262. **Modern Japanese Literature and Culture. (AL)** (CZ) AL, CCI, CZ, IAA, 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, Comparative Area Studies

280S. **Intellectuals/Culture/History: Modern China in Transition. (AL)** (CZ) AL, CCI, CZ, IAA, R Debates over politics, ideology, high culture, and popular culture in China since the 1920s. Topics include: Marxism, the Cultural Revolution; the modernist narratives of 'world history'; the postmodern turn of debunking universal history; the 1990s resurgence of Mao Zedong fever; the Chinese search for modernity; the revival of neo-nationalism and new conservatism; and statesponsorship and the new meanings of 'culture as leisure.' (Same as Asian and African Languages and Literature 180S but requires extra assignments.) Research paper required. Instructor: Staff. One course.

288S. **Seminar on Modern Chinese Cinema. (CZ)** (FL) CZ, IAA, 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: Comparative Area Studies

COURSES CURRENTLY UNSCHEDULED
148S. Literature and Revolution: From the May Fourth to the Post-Mao Era
173S. Women in Arab Literature
177. South Asian Women's Literature
182S. The Forbidden Books: Issues of Censorship in China
199. Asian and African Languages and Literature Honors Seminar
203S. Gender and War
259. The Best-Seller: Cultural Populism in the 1990s' China

ARABIC (ARABIC)
2. Elementary Arabic. (FL) FL Continuation of Arabic 1. Prerequisite: Arabic 1 or equivalent. Instructor: Sheehi. One course.
35. Conversational Egyptian and Contemporary Culture. (FL) 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. (FL) 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: Sheehi. One course.
64. Intermediate Arabic. (FL) FL Continuation of Arabic 63. Prerequisite: Arabic 63 or equivalent. Instructor: Sheehi. One course.
125. Advanced Arabic. (AL) (FL) AL, 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: Comparative Area Studies
126. Advanced Arabic. (AL) (FL) AL, FL Continuation of Arabic 125. Prerequisite: Arabic 125 or equivalent. Instructor: Staff. One course. C-L: Comparative Area Studies
137. Qur'anic Studies. (AL) (FL) AL, CCI, FL, IAA Introduction to the reading, recitation, grammatical study, and exegesis of selected Qur'anic texts. Prerequisite: Arabic 63, 64 or consent of instructor. Instructor: Staff. One course. C-L: Comparative Area Studies
183. Topics in Arabic. (AL) (FL) AL, 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: Comparative Area Studies
184. Topics in Arabic. (AL) (FL) AL, FL Continuation of Arabic 183. Prerequisite: Arabic 126 or consent of instructor. Instructor: Cooke. One course. C-L: Comparative Area Studies
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.

COURSES CURRENTLY UNSCHEDULED

100. North African Culture

CHINESE (CHINESE)

1. Elementary Chinese. (FL) 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) FL Continuation of Chinese 1. Prerequisite: Chinese 1 or equivalent. Instructor: Lee. One course.

2A. Abridged Elementary Chinese II. (FL) FL Prerequisite: Chinese 1A and consent of instructor. Instructor: Staff. One course.

25A. Abridged First-Year Chinese for Advanced Beginners. (FL) FL Offered in summer. Designed for students who can speak a little in Mandarin Chinese or only converse in other Chinese dialects about personal information or daily topics. Students who began studying Chinese at high school or previously attended a short-term intensive Chinese language course outside of Duke University may consider taking this course. All four language skills are emphasized. Students wishing to make sufficient progress during the summer to advance to Chinese 35 or above in the fall semester of next year should take both Chinese 25A and 25B. Instructor: Staff. One course.

25B. Abridged First-Year Chinese for Advanced Beginners. (FL) FL Continuation of Chinese 25A. Prerequisite: Chinese 25A. Instructor: Staff. One course.

35. First-Year Chinese for Advanced Beginners. (FL) 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-Lahusen. One course.

36. First-Year Chinese for Advanced Beginners. (FL) 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-Lahusen. One course.


64. Intermediate Chinese. (FL) FL Continuation of Chinese 63. Prerequisite: Chinese 63. 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. (CZ) (FL) CCI, CZ, 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-Lahusen. One course. C-L: Comparative Area Studies

126. Advanced Chinese. (CZ) (FL) CCI, CZ, FL Continuation of Chinese 125. Prerequisite: Chinese 63, 64 or equivalent. Instructor: Yao-Lahusen. One course. C-L: Comparative Area Studies
135. Readings in Modern Chinese. (AL) (FL) AL, 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. (AL) (FL) AL, CCI, FL Continuation of Chinese 135. Conducted in Chinese. Prerequisite: Chinese 135 or equivalent. Instructor: Cai. One course.


183S. Topics in Modern Chinese. (AL) (FL) AL, 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: Comparative Area Studies

184S. Topics in Modern Chinese. (AL) (FL) AL, 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. Consent of instructor required. Instructor: Staff. One course. C-L: Comparative Area Studies

188S. Seminar on Modern Chinese Cinema. (CZ) (FL) CCI, CZ, FL, IAA 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 in the three different locations, the relationship of politics and aesthetics of the new cinema, soap operas as the new forum for public debates on popular culture, and debate over the relationship between Euro-American modernist discourse and the national cinema. Prerequisite: Chinese 184S or advanced oral and written proficiency in Mandarin Chinese. 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. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

Courses Offered in the Duke Study in China Program at Capital Normal University


129A. Special Topics in Modern Chinese. (CZ) (FL) 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. (CZ) (FL) 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.

193. Directed Study on Contemporary China. (FL) FL 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. Instructor: Staff. One course.

HEBREW (HEBREW)

1. Elementary Modern Hebrew. (FL) FL Introduction to speaking, understanding, reading, and writing modern Hebrew. Language laboratory. Instructor: Plesser. One course. C-L: Judaic Studies

2. Elementary Modern Hebrew. (FL) FL Continuation of Hebrew 1. Prerequisite: Hebrew 1 or equivalent. Instructor: Plesser. One course. C-L: Judaic Studies

63. Intermediate Modern Hebrew. (FL) FL Reading, composition, conversation, and language laboratory. Prerequisite: Hebrew 1, 2 or equivalent. Instructor: Plesser. One course. C-L: Judaic Studies

64. Intermediate Modern Hebrew. (FL) FL Continuation of Hebrew 63. Prerequisite: Hebrew 63 or equivalent. Instructor: Plesser. One course. C-L: Judaic Studies

100. Duke-Administered Study Abroad: Advanced Special Topics in Hebrew. CCI Topics differ by section. Instructor: Staff. One course.

125S. Advanced Modern Hebrew. (AL) (FL) AL, CCI, FL, IAA 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. Prerequisite: Hebrew 64 or equivalent. Instructor: Zakim. One course. C-L: Comparative Area Studies, Judaic Studies

126S. Advanced Modern Hebrew. (AL) (FL) AL, CCI, FL, IAA Continuation of Hebrew 125S. Prerequisite: Hebrew 125S or equivalent. Instructor: Zakim. One course. C-L: Comparative Area Studies, Judaic Studies

183S. Topics in Modern Hebrew. (AL) (FL) AL, CCI, FL Readings and other material, including films, television, and radio broadcasts. Exercises in composition. Prerequisite: Hebrew 126S or consent of instructor. Instructor: Zakim. One course.

184S. Topics in Modern Hebrew. (AL) (FL) AL, CCI, FL Continuation of Hebrew 183S. Prerequisite: Hebrew 126S or consent of instructor. Instructor: Zakim. 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. C-L: Judaic Studies
HINDI (HINDI)

1. Elementary Hindi. (FL) FL Conversation, basic grammar, and vocabulary; introduction to the Devanagari script and the reading of graded texts. Instructor: Natavar. One course.

2. Elementary Hindi. (FL) FL Continuation of Hindi 1. Prerequisite: Hindi 1. Instructor: Natavar. One course.


100. Duke-Administered Study Abroad: Advanced Special Topics in Hindi. CCI Topics differ by section. Instructor: Staff. One course.

125. Advanced Hindi. (AL) (FL) AL, CCI, FL Proficiency in reading, writing, and speaking. Prerequisite: Hindi 64 or equivalent. Instructor: Khanna. One course.

126. Advanced Hindi. (AL) (FL) AL, CCI, FL Continuation of Hindi 125. Prerequisite: Hindi 125 or equivalent. Instructor: Khanna. One course.

183S. Topics in Hindi. (AL) (FL) AL, CCI, FL Readings in prevailing literary and mass media forms. Prerequisite: Hindi 126 or consent of instructor. Instructor: Khanna. One course. C-L: Comparative Area Studies

184S. Topics in Hindi. (AL) (FL) AL, CCI, FL Continuation of Hindi 183S. Prerequisite: Hindi 126 or consent of instructor. Instructor: Khanna. One course. C-L: Comparative Area Studies

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.

JAPANESE (JPN)


2. Elementary Japanese. (FL) FL Continuation of Japanese 1. Prerequisite: Japanese 1 or equivalent. Instructor: Endo. One course.

3. Intermediate Japanese. (FL) FL Practice on advanced grammar; speaking, reading, and writing. Prerequisite: Japanese 2 or equivalent. Instructor: Endo. One course.


126. Advanced Japanese. (AL) (FL) AL, CCI, FL Continuation of Japanese 125. Prerequisite: Japanese 125 or equivalent. Instructor: Kurokawa. One course. C-L: Comparative Area Studies


184S. Topics in Japanese. (AL) (FL) AL, CCI, FL Continuation of Japanese 183S. Consent of instructor required. Instructor: Ching. One course. C-L: Comparative Area Studies
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.

205S. Seminar in Japanese. (AL) (FL) AL, CCI, FL Topics vary each semester. Prerequisite: Japanese 184 or equivalent. Instructor: Yoda. One course.

206S. Seminar in Japanese. (AL) (FL) AL, CCI, FL Topics vary each semester. Prerequisite: Japanese 184 or equivalent. Instructor: Yoda. One course.


KOREAN (KOREAN)

1. Elementary Korean. (FL) FL Introduces phonological system and Hanqui, the Korean writing system, enabling students to read and write basic texts using elementary grammar. Will develop ability to communicate basic information and to take part in daily transactions. Instructor: Kim. One course.

2. Elementary Korean. (FL) FL Continuation of Korean 1. Focus on developing oral and aural fluency for daily communication situations, acquiring basic literacy skills; developing grammatical knowledge required for complex sentence building. Prerequisite: Korean 1 or equivalent. Instructor: Kim. One course.

63. Intermediate Korean. (FL) FL Focus on developing ability to communicate in written Korean and enhancing fluency and appropriateness of speech. Prerequisites: Korean 1 and 2 or equivalent. Instructor: Kim. One course.

64. Intermediate Korean. (FL) FL Focus on developing skills for reading, writing, verbal communication, and structure of the Korean language. Prerequisite: Korean 63 or equivalent. Instructor: 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. (AL) (FL) AL, CCI, FL Focus on developing interpretive and expressive abilities in Korean. Prerequisites: Korean 63 and 64 or equivalent. Instructor: Kim. One course.

126. Advanced Korean. (AL) (FL) AL, CCI, FL Organized around two major topics: Pansori novels and modern Korean history. Prerequisite: Korean 125 or equivalent. Instructor: Kim. One course.

183. Topics in Korean. (AL) (FL) AL, CCI, FL Focus on developing interpretive and expressive abilities through reading and discussions of essays, short stories, and newspaper articles. Prerequisite: Korean 126 or equivalent. Instructor: Staff. One course.

184. Topics in Korean. (AL) (FL) AL, CCI, FL Continue developing interpretive and expressive abilities through reading and discussions of essays, short stories, and newspaper articles. Prerequisite: Korean 183 or equivalent. 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. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.
PERSIAN (PERSIAN)
2. Elementary Persian. (FL) FL Continuation of Persian 1. Instructor: Lawrence. One course.
64. Intermediate Persian. (FL) FL Continuation of Persian 63. Instructor: Lawrence. One course.
100. Duke-Administered Study Abroad: Advanced Special Topics in Persian. CCI Topics differ by section. Instructor: Staff. One course.
101. Introduction to Persian Literature. CCI An introduction to classical Persian literature through the reading and translation of selected prose and poetry texts. Prerequisite: Persian 64 or the equivalent, and consent of instructor. Instructor: Lawrence. One course.

COURSES CURRENTLY UNSCHEDULED
1. Elementary Persian
2. Elementary Persian
63. Intermediate Persian
64. Intermediate Persian
101. Introduction to Persian Literature

SWAHILI (SWAHILI)
1. Elementary Swahili. (FL) FL Swahili language and culture with emphasis on conversation. Intensive work in language laboratory; drill sessions with native speakers. Instructor: Mutima. One course.
2. Elementary Swahili. (FL) FL Continuation of Swahili 1. Instructor: Mutima. One course.
63. Intermediate Swahili. (FL) FL Continuation of Swahili 1 and 2. Emphasis on contemporary Swahili literature. Instructor: Mutima. One course.
100. Duke-Administered Study Abroad: Advanced Special Topics in Swahili. CCI Topics differ by section. Instructor: Staff. One course.
191. 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. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

THE MAJOR
Asian and African Languages and Literature 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 and examines

Asian and African Languages and Literature (AALL) 153
contemporary national and ethnic cultures of Asia and Africa 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 four following areas: Arabic, Chinese, Hindi, or Japanese. Students wishing to concentrate in modern Hebrew or Korean should consider taking a minor in Asian and African Languages and Literature. The major is organized in accordance with three overlapping structures, as reflected in the following requirements:

I. Within the area of concentration, the student will acquire advanced linguistic skills in Arabic, Chinese, Hindi, or Japanese language and a comprehensive knowledge of a single culture related to each language. The major provides exposure to different methodologies for interpreting indigenous literary and cultural tradition. Seven (7) semester courses are required for this category. They include: (1) four language courses (63, 64, 125, 126 or above) at the intermediate and advanced level; (2) three courses at or above the 100-level on the literature or culture of the target language, one of which must be taken within the Asian and African Languages and Literature department. Majors should consult with their Arabic, Chinese, Hindi, or Japanese advisors for appropriate courses from other departments.

II. Within the larger framework of Asian and African Languages and Literature, the student is required to complete two (2) semester courses as follows: Introduction to Asian and African Literature and Culture (Asian and African Languages and Literature 121) and the Senior Seminar (Asian and African Languages and Literature 200S). These courses aim at helping the student to establish cross-cultural links with students concentrating in other Asian and African languages.

III. The major in Asian and African Languages and Literature also requires students to analyze critically the issue of indigenous cultural identities. The program fosters a view of literature and culture that is at once local and global. This view draws on theoretical inquiries into indigenous cultural identities associated with such conceptual categories as gender, class, ethnicity, nation, aesthetics, and sexuality. Therefore, every student is required to complete a one (1) semester course at or above the 100 level, not originating in the Asian and African Languages and Literature department on literary and cultural theory, or one Asian and African Languages and Literature course outside the student’s language of concentration (for example, the study of another AAIL language or literature) that includes an examination of the above conceptual categories. Students should consult with their advisors in choosing a course appropriate to their own plan of study and to their capstone experience.

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 two faculty advisors (one from the literature faculty and one from the faculty of the practice) in their area of concentration. The final
papers for the senior seminar will be prepared in consultation with the major advisors and a faculty member outside the field 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 Africa. Areas of concentration include: Arabic, Chinese, modern Hebrew, Hindi, or Japanese.

The minor offers two tracks: (1) Concentration in an Asian and African Language and (2) Asian and African Languages and Literature. Five courses are required in each track.

1. **Minor in an Area of Language Concentration:** includes Arabic, Chinese, modern Hebrew, Hindi, or Japanese. Five courses are required as follows: Four language courses beyond the level of 02. (Students are expected to take 63, 64, 125, and 126; however, students with proficiency of intermediate level or higher must take 183 and 184, or upper-level reading courses, for example, Chinese 181, Japanese 205, 206, Arabic 137, or independent studies courses to fulfill the four-course requirement). One 100-level Asian and African Languages and Literature or culture course in translation, open to all students without language prerequisites.

2. **Minor in Asian and African Languages and Literature.** Five courses are required as follows: Two language courses at the intermediate level (63 and 64) or above; one 100-level Asian and African Languages and Literature course in translation on the literature or culture of the area of concentration; one 100-level course in another Asian and African Languages and Literature language, literature, or culture outside of the language of concentration; Asian and African Languages and Literature 121 (Introduction to Asian and African Literature and Culture).

**Astronomy**

For courses in astronomy, see Physics.

**Biochemistry**

For courses in biochemistry, see Medicine (School)- Graduate (School) Basic Science Courses Open to Undergraduates; also see biology and chemistry majors.

**Biological Anthropology and Anatomy (BAA)**

Professor Kay, Chair; Assistant Professor Churchill, Director of Undergraduate Studies; Professors Bassett, Cartmill, Glander, Hylander, Simons, Smith, Terborgh, and van Schaik; Associate Professors Roth and Taylor; Assistant Professors Drea, Pope, and Schmitt; Assistant Research Professors Brockman, Digby, Holt, Lemelin, Vinyard, and Weil; Adjunct Professor Larsen; Adjunct Associate Professor Wright; Adjunct Assistant Professors Anderson, Berger, and Overdorff; Instructor Johnson; Research Scientists Crissey and Struhsaker; Research Associates Ankel-Simons, Madden, Wall, and Williams; Lecturing Fellow Chatrath; Adjunct Museum Scientist Brink

A major or minor is available in this department. Biological anthropology and anatomy is an interdisciplinary department centered 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 and ecology, primate paleontology, and functional and comparative anatomy. Significant opportunities for independent research are found at the Duke Primate 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 Primate Center and in the department’s laboratories in the Medical Center, which also afford opportunities to study comparative anatomy from an adaptive and evolutionary perspective. Students interested in the Primatology Program should be aware that Biological Anthropology and Anatomy 93D is a program requirement. For further information on the Primatology Program contact the program chair at the department.

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

50S. FOCUS Program Special Topics. (NS) NS Open only to students in the FOCUS Program. Instructor: Staff. One course.


93. Introduction to Biological Anthropology. (NS) NS, STS Human behavior and anatomy from an evolutionary perspective. The historical development of pre-Darwinian evolutionary thinking; Darwin’s contribution to evolutionary theory; Mendel’s work on genetics; modern synthesis framing the study of human origins and behavior in the context of modern evolutionary biology; primate behavior and evolution; a survey of human paleontology and human biology (emphasizing variation and adaptation); the origins of human social organization and culture. Instructor: Staff. One course.

93D. Introduction to Biological Anthropology. (NS) NS, STS Same as Biological Anthropology and Anatomy 93 except instruction is provided in lectures and one small laboratory meeting each week. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Biological Anthropology and Anatomy. Topics differ by section. Instructor: Staff. One course.

101L. Quaternary Prehistory of Southern Africa. (NS) NS, R A combined laboratory and lecture course covering the extant fauna and flora of southern Africa, Quaternary fauna and flora (focusing on the Cornelian and Florisian Land Mammal Ages), paleoenvironmental reconstruction, MSA archeology, dating methods applicable to the Quaternary, and Quaternary geology. Taught in South Africa (summer program) with guest lectures by South African archeologists, palynologists, and geologists. Labs emphasizing work with recent and fossil faunal material and with Middle Stone Age artifacts. Prerequisite: Biological Anthropology and Anatomy 93. Instructor: Brink. One course.

102L. Paleoanthropological Field Methods. (NS) NS, R A hands-on program of instruction covering methods of maintaining archeological provenence (grid systems, stratigraphic reconstruction, point provenencing techniques, and field recording), use of mapping technology (infrared theodolite and global positioning systems, with an overview of geographic information systems), working with topographic maps and aerial photos, recording of geological profiles, recovery and preparation of fossils, and basic identification of animal fossils and stone tools. Taught in the field in South Africa during the summer. Prerequisite: Biological Anthropology and Anatomy 93. Instructor: Churchill. One course.

111. Dance Science: An Evolutionary Approach to Functional Anatomy. (AL) (NS) AL, NS, QID, R Human skeletal and muscular anatomy taught from an evolutionary perspective. Focus on anatomy relevant to dancers and other performing artists. Taught in both studio and laboratory settings. Students participate in original research on posture and movement. Consent of instructor required. Instructors: Williams and Schmitt. One course. C-L: Dance 111
132. Human Evolution. (NS) NS  Evolutionary biology of the hominidae. Anatomical and behavioral adaptations and phylogeny of fossils and living primates including Homo sapiens. Prerequisite: Biological Anthropology and Anatomy 93 or equivalent. Instructor: Churchill, Simons, or staff. One course.

132S. Human Evolution Seminar. (NS) NS, W A writing-intensive seminar version of Biological Anthropology and Anatomy 132. Prerequisite: Biological Anthropology and Anatomy 93 or equivalent. Instructor: Churchill, Simons, or staff. One course.

133L. The Human Body. (NS) NS  Human gross anatomy seen from a functional and evolutionary perspective. Laboratory involving study of prosected cadavers and other anatomical preparations. Prerequisite: Biological Anthropology and Anatomy 93. Instructor: Cartmill or staff. One course.

134L. Anthropology of the Skeleton. (NS) 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: Biological Anthropology and Anatomy 93 or Biology 25L. Instructor: Churchill. One course.

135. Human Functional Anatomy. (NS) 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: Biological Anthropology and Anatomy 93 and 133L or 134L. Instructor: Churchill. One course.

136. Human Biology. (NS) NS  An introduction to human biology from an evolutionary perspective. Focus on biological variability and its genetic and ecological underpinnings, with an emphasis on modern human variation and adaptation. Principles of heredity, development, evolution, adaptation, population growth and regulation, and epidemics; examples from various human populations. Prerequisite: Biological Anthropology and Anatomy 93 or Biology 25L. Instructor: Churchill. One course.

137. Ecology and Adaptation of Hunters and Gatherers. (NS) CC1, 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: Biological Anthropology and Anatomy 93 or Biology 25L. Instructor: Churchill. One course.

143. Primate Ecology. (NS) NS  A survey of primate ecology and behavior. Prerequisite: Biological Anthropology and Anatomy 93 or consent of instructor. Instructor: Glander, Simons, van Schaik, or staff. One course.

144L. Primate Field Biology. (NS) NS, QID, R, W  Survey of field methods used to document primate behavior. Laboratory includes observations of free-ranging primates at the Duke Primate Center. Prerequisite: Biological Anthropology and Anatomy 93 or Biology 25L. Instructor: Brodman, Digby, Drea, or Pope. One course.

146. Sociobiology. (NS) NS, STS  Sociobiological theory reviewed and applied to the social behavior of nonhuman primates, hominids, and humans. Prerequisite: Biological Anthropology and Anatomy 93. Instructor: van Schaik. One course. C-L: Study of Sexualities.
146S. Sociobiology Seminar. (NS) NS, STS Sociobiological theory reviewed and applied to the social behavior of nonhuman primates, hominids, and humans. A writing-intensive seminar version of Biological Anthropology and Anatomy 146. Prerequisite: Biological Anthropology and Anatomy 93. Instructor: van Schaik. One course. C-L: Study of Sexualitys


172L. Primate Anatomy. (NS) NS, W The comparative anatomy of primates from the perspective of adaptation and phylogeny. Laboratory includes some dissection or prosection of human and nonhuman primates. Prerequisite: Biological Anthropology and Anatomy 93. Instructor: Kay or staff. One course.

173L. The Primate Skeleton. (NS) NS, QID, 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: Biological Anthropology and Anatomy 93. Instructor: Williams or staff. One course.

180. Current Issues in Biological Anthropology and Anatomy. (NS) NS Selected topics in methodology, theory, or area. Instructor: Staff. One course.

180L. Current Issues in Biological Anthropology and Anatomy. (NS) NS Same as Biological Anthropology and Anatomy 180 except in laboratory format. Instructor: Staff. One course.

180S. Current Issues in Biological Anthropology and Anatomy. (NS) NS Same as Biological Anthropology and Anatomy 180 except in seminar format. Instructor: Staff. One course.

183S. Primate Social Complexity and the Evolution of Intelligence. (NS) 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.

184. Primate and Tropical Forest Conservation. (NS) NS Main concepts of conservation biology, both at the species and community level, focusing on tropical rain forest habitats and primates. Relevant aspects of biogeography, ecology and demography; tropical deforestation, causes and consequences; conservation strategies (objectives, design of protected area networks, threats). Instructor: van Schaik. One course.

192. Tutorial in Biological Anthropology. Directed reading, tutorial, or individual project in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or other approved product. Typically involves substantial library research, regular discussion with the faculty supervisor, and the production of a review paper that seeks to thoughtfully analyze, critique, and synthesize the literature on a previously approved topic. Open only to qualified juniors and seniors, 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.

193. 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 and seniors, 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.

195S. Senior Seminar. Prerequisites: BAA 93, a 100-level course in biological anthropology and anatomy, and consent of director of undergraduate studies. Instructor: Staff. One course.

196S. Senior Seminar. Prerequisites: BAA 93, a 100-level course in biological anthropology and anatomy, and consent of director of undergraduate studies. Instructor: Staff. One course.

For Seniors and Graduates

238S. Functional and Evolutionary Morphology of Primates. (NS) NS History and functional significance of locomotor and feeding adaptations, craniofacial morphology, sense organs, and reproductive systems in primates, including Homo sapiens. Consent of instructor required. Prerequisite: Biological Anthropology and Anatomy 172L and consent of instructor required. Instructors: Cartmill, Kay, or staff. One course.

240S. Hominid Socioecology. (NS) 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: Biological Anthropology and Anatomy 93(D) or 132. Instructor: van Schaik. One course.

243S. Comparative Primate Ecology. (NS) NS, R Advanced readings and discussion of current papers and monographs in primate ecology with special emphasis on comparative studies. Prerequisites: Biological Anthropology and Anatomy 93, Biological Anthropology and Anatomy 143 recommended. Instructor: Glander or staff. One course.

244L. Methods in Primate Field Ecology. (NS) NS, Q1D, R Survey of field methods used in the study of primate ecology, including the habitat assessment, mapping, and behavioral observations using computer technology. Laboratory includes observations of primates at the Duke University Primate Center. Prerequisite: Biological Anthropology and Anatomy 93; Biological Anthropology and Anatomy 143 recommended. Instructor: Glander or staff. One course.

245S. Primate Social Evolution. (NS) NS, R Ecological determinants of, and biological constraints on, social strategies and systems, with an emphasis on primates. Prerequisite: Biological Anthropology and Anatomy 93; 143, 144L, or 146; or consent of instructor. Instructor: van Schaik. One course.

246. The Primate Fossil Record. (NS) 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: Biological Anthropology and Anatomy 93 or consent of instructor. Instructor: Simons. One course.

249S. Microevolution and Sociobiology. (NS) NS The relationship between resource distribution, social structure, and rate and direction of evolutionary change, including speciation. Mating systems, dispersal patterns, and mechanisms of new social group formation examined from the perspective of their effects on the genetic structure of populations and species radiations. Prerequisite: Biological Anthropology and Anatomy 93 or Biology 25L; Biology 120 recommended. Instructor: Pope. One course.

250. Biometry. (QR) M, QID A practically oriented overview of the statistical analysis of biological data. Topics include data collection and experimental design, methods and techniques of data organization, use of computing programs and packages, applications of appropriate parametric and nonparametric statistical techniques, assumptions and problems encountered with biological data analysis, and interpretation of results. Prerequisites: Consent of instructor and Mathematics 136, Psychology 117, Sociology 133, Statistics 10D, 110, 112, 114, 213, or equivalent. Instructor: Staff. One course.

280L. Special Topics Laboratory. (NS) NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

280S. Seminar in Selected Topics. (NS) NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

281L. Special Topics Laboratory. (NS) NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

281S. Seminar in Selected Topics. (NS) NS Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

287S. Macroevolution. (NS) 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, 31L, or 32L or other course in plant or animal diversity; recommended, Biology 120 or equivalent. Instructor: Roth. One course. C-L: Biology 287S

289L. Comparative Mammalian Anatomy. (NS) 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.

290. Pattern and Process in Vertebrate Development. (NS) NS Research results on developmental processes applied to classic problems of comparative vertebrate biology. Specific focus to vary, but to include cell differentiation and migration, induction, cell-cell interaction and cell mechanics as well as craniofacial morphogenesis, development and evolution, developmental constraints and comparative embryology. Prerequisites: course in comparative or human anatomy and consent of instructor. Instructor: Smith. One course. C-L: Biology 290

COURSES CURRENTLY UNSCHEDULED

185. Current Issues in Primatology
233S. Nature and Nurture in Animal and Human Development
248S. Evolution of Mammals
292S. Topics in Morphology and Evolution
293. Evolutionary Theory
294. Evolutionary Theory

THE MAJOR

For the A.B. Degree

Prerequisite. Biological Anthropology and Anatomy 93 or 93D.
Corequisites. Biology 25L or equivalent.

Major Requirements. Nine courses are required, not including the above prerequisites and corequisites, distributed in the following manner:
• Biological Anthropology and Anatomy 132.
• At least four courses numbered 100 or above selected from the Biological Anthropology and Anatomy present course listings.
• At least four other courses numbered 100 or above in Biological Anthropology and Anatomy or approved courses numbered 100 or above in other social and biological sciences departments (for example, Biology 108L, 110L, 120, 201L, 201S, 215, 234S, 237L, and 287L; Cultural Anthropology 100, 114, 125, and 145; Earth and Ocean Sciences 145 and 172L; Psychology 103, 111, 112, 139, and 150S).

For the B.S. Degree

Prerequisite. Biological Anthropology and Anatomy 93 or 93D.
Corequisites. Biology 25L or equivalent; Chemistry 11L and 12L or 21L and 22L, and 151L; Mathematics 31 and 32; Physics 51L and 52L, or 53L and 54L.

Major Requirements. Eight courses numbered 100 or above are required in the biological and geological sciences, not including the above prerequisites and corequisites. Of these eight courses, at least five courses must be selected from the biological anthropology and anatomy present course listings; up to three courses in other biological sciences, psychology, or earth and ocean sciences, approved by the advisor. One of these eight courses must include related laboratory/field experience; an independent study course or the research internship or seminar in primatology may be counted toward the field experience requirement, if appropriate. At least one of the courses must concern statistics or quantitative methods (Biological Anthropology and Anatomy 250, Statistics 100 level or Psychology 117, or equivalent). At least two of these eight courses must be at the 200 level. Some courses in earth and ocean sciences are strongly encouraged for students with interests in paleontology.

Departmental Graduation with Distinction

Students must be ranked in the top 25 percent of Biological Anthropology and Anatomy majors, as determined by G.P.A., both at the time of application and at the time of graduation, to be eligible to participate in special work leading to graduation with distinction in Biological Anthropology and Anatomy. 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 secretary 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 Biological Anthropology and Anatomy. Students normally prepare their papers in independent studies over the course of the senior year working in close collaboration with their committees.

Students working towards a Certificate in Primatology whose G.P.A.'s qualify them for graduation with distinction may receive both. In order to do so, the research project completed during Primatology 186S and Primatology 187S must be presented to the student's committee. Students pursuing both a Certificate in Primatology and graduation with distinction are advised to work closely with their honors committee during the design and implementation of their certificate research.

The Minor

Requirements. Biological Anthropology and Anatomy 93 or 93D; one course (from approved list) in comparative anatomy or paleontology; one course (from approved list) in behavior and ecology; two elective courses, numbered 100 or above, in biological anthropology and anatomy. The director of undergraduate studies may approve other courses to satisfy requirements in the two subfields.
Biology (BIOLOGY)

Professor Smith, Chair; Associate Professor Wray, Director of Undergraduate Studies; Lecturer Grunwald, Associate Director of Undergraduate Studies; Professors Barber, Brandon, Clark, Crowder, Forward, Gillham, Kiehart, Knoerr, Livingstone, McClay, Nicklas, H. Nijhout, Nowicki, Ramus, Rausher, Reynolds, Schlesinger, Shaw, Siedow, Terborgh, Tucker, Uyenoyama, Vilgalys, Vogel, White, and Wilbur; Associate Professors Bejsovec, Cunningham, Jackson, Dong, Fehon, Manos, Morris, Rittschof, Roth, Sun, Willis, and Wilson; Assistant Professors Alberts, Johnsen, Lutzoni, McShea, Pei, and Pryer; Professors Emeriti Anderson, Bookhout, Boynton, W. Culberson, Fluke, Gregg, Hellmers, Johnson, Naylor, Schmidt-Nielsen, Searles, Stone, Strain, Wainwright, Ward; Associate Professor of the Practice Motten; Associate Professors of the Practice Armaleo, Lemons, and Mercer; Research Professors C. Culberson and Klopfer; Adjunct Professors Antonovics, Funk, Kress, Osmond, Peet, Rogers, Swofford, and Wagner; Adjunct Associate Professors DePriest, Lacey, M. Nijhout, Kohorn, and Zimmer; Adjunct Assistant Professors Eubanks, Gastreich, and Matlock; Adjunct Professor of the Practice Hartshorn; Instructors Broverman, Eason, Hyman, Perz-Edwards, and Reid

A major and a minor are available in biology.

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 Biological Anthropology and Anatomy, Chemistry, and Psychology 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 25L 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 25L) and satisfies the prerequisite requirement for students planning to major in biology (see below).

10L. Marine Biology. (NS) 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


20L. Introductory Biology. (NS) 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) 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: Nijhout, Nowicki, Smith, and Willis. One course.

26AL. Diversity of Life. (NS) NS Integrated survey of biological diversity covering all five kingdoms—Monera, Protista, Plantae, Fungi, and Animalia—from an evolutionary and functional perspective. Emphasis on phylogenetic relationships for examining
distinctive characteristics of each kingdom and major groups within kingdoms. Laboratory exercises coordinated with lectures with emphasis on live material to present ecological and functional anatomical features of wide variety of representative taxa. Field trips to distinctive habitats in North Carolina. May be taken before Biology 25L. Not open to students who have taken Biology 26BL. Instructor: Motten. One course.

26BL. Defining Moments in Organismal Evolution. (NS) NS The evolution of organismal diversity can be viewed as a series of important events through time. Defining moments include the evolution of photosynthesis, eukaryotic life, sexual recombination, variation in life-history, and multicellularity. Examples from the five kingdoms considered in a phylogenetic context. Historical relationships among organisms discussed using evidence from morphology, gene sequences, and biogeography. Laboratory includes inventory of organismal diversity and practical exercises to study historical relationships. Not open to students who have taken Biology 26A,L. Instructors: Cunningham and Manos. One course.

42. Life's Beginnings. (NS) NS, QID, 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.


44. Evolution and Society. (NS) NS, QID, STS Examines the differing views of man’s place in the natural world before and after publication of On the Origin of Species. Reconstructs the evidence that led Darwin to the idea of natural selection. Critically tests the tenets of the theory of evolution. Explores the role of evolutionary thinking in contemporary society and the consequences of its applications. Intended for non-biology majors. Instructor: Broverman. One course.

46. AIDS and Other Emerging Diseases. (NS) NS, QID, 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.

47. The Biology of Dinosaurs. (NS) NS, QID, 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.

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

52. Duke-Administered Study Abroad: Special Topics in Biology. (NS) NS Topics differ by section. Instructor: Staff. One course.

53. Introduction to Oceanography. (NS) NS, QID One course. C-L: see Earth and Ocean Sciences 53

91. The Green World: Exploring Plant Biology. (NS) NS, QID, STS Survey of basic plant biology principles and their application to contemporary society and technology
issues. Evolutionary origin of plants; plant growth, form, physiology, and reproduction; economic and ethnobotany; ecology and biodiversity of plant communities. Applications include: loss of genetic diversity in crop species, bioprospecting for medicinal plants, risks and benefits of genetically-modified plants, control of invasive plant species, and management practices to conserve distinctive plant communities. Investigative experiments, field trips to interesting locales on and off campus. Intended for non-science majors. Instructor: Motten. One course.

93S. FOCUS Program Topics in Biology. (NS) NS Open only to students in the FOCUS Program; for first-year students with consent of instructor. Instructor: Staff. One course.

101. Biogeography in an Australian Context. (NS) 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. Instructor: Searles. One course.


103L. General Microbiology. (NS) 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, Siedow, or Vilgalys. One course.


105. Introduction to Mathematical Biology. (NS) NS, QID A first course applying mathematics to biological problems. Topics drawn from cell and molecular biology, molecular evolution, enzyme catalysis, biochemical pathways, and developmental biology. Prerequisite: Mathematics 103 or equivalent. Instructor: Mercer. One course.

108L. Developmental and Comparative Anatomy of Vertebrates. (NS) NS The embryology, anatomy, and evolutionary development of vertebrate organ systems. Prerequisite: Biology 25L. Instructor: Staff. One course.

109. Conservation Biology and Policy. (NS) 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 (Beaufort) and Rubenstein (visiting summer faculty). One course. C-L: Marine Sciences

110L. Ecology. (NS) NS 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: Livingstone, Morris, Reid, or Wilson. One course.

111. Principles of Animal Morphology. (NS) NS, R Animal structure, from three different perspectives: (1) function, (2) development, and, (3) evolution. Consent of instructor required. Recommended: a course in animal diversity (Biology 26A,L, 26B,L, or 174L). Instructor: Roth. One course.

112. Population Biology. (NS) NS, QID How and why the abundances of animals and plants change in space and time. Growth of human and other populations, ecological interactions between populations (competition, predation, and mutualism), and

114L. Biological Oceanography. (NS) NS, QID, 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 and Bermuda.) Prerequisite: Biology 25L. Instructors: Ramus or staff (Beaufort); Lipschultz and Schneiter (Bermuda). One course. C-L: Marine Sciences

118. Principles of Genetics and Cell Biology I. (NS) NS Structure and function of genes and proteins in organisms ranging from bacteria to humans. Topics include: physical properties of DNA and chromosomes; protein structure and function; transcription and translation of genetic information; segregation, recombination, and linkage of genes; evolution of genes and proteins; identification and cloning of genes; regulation of gene expression; postranslational control of protein function; manipulating protein expression and function through genetic engineering. Prerequisites: Biology 25L and Chemistry 12L or 22L. Instructor: Bejsovec, Grunwald, or Staff. One course. C-L: Genetics Program

119. Principles of Genetics and Cell Biology II. (NS) NS The role of genes and proteins in mediating basic cellular and developmental 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 developmental processes. Prerequisite: Biology 118. Instructor: Fehon or McClay. One course. C-L: Genetics Program

120. Principles of Evolution. (NS) NS, QID Evidence for evolution; mechanisms of micro- and macro-evolutionary change. Genetic change in populations. Ecological, behavioral, molecular forces influencing genetic change. Speciation; phylogenetic reconstruction. Prerequisite: Biology 25L. Instructor: Rausher, Roth, or staff. One course.

121. Evolution of Animal Form. (NS) NS A survey of animal life in the context of an 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. Instructor: McShea. One course.

122. Population Genetics. (NS) NS, QID 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 25L or equivalent. Instructor: Uyenoyama. One course.

123. Analysis of Ocean Ecosystems. (NS) 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: Barber. One course. C-L: Marine Sciences

124. Molecular Evolution. (NS) NS, QID 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. Instructor: Mercer. One course.
125L. Biology and Conservation of Sea Turtles. (NS) NS, STS Biology including the anatomy, physiology, behavior, life histories, and population dynamics of sea turtles linked to conservation issues and management. Focus on threatened and endangered sea turtle species, with special attention to science and policy issues in United States waters. Includes field experience with the animals and with their habitat requirements. Sea turtle assessment and recovery efforts, fishery-turtle interactions, population modeling and state/national/international management efforts. Students are encouraged to enroll for Biology 109 Conservation Biology and Policy concurrently. (Given at Beaufort.) Prerequisite: introductory biology. Instructor: Crowder, Wyneken (visiting summer faculty), or staff. One course. C-L: Marine Sciences

126. Marine Mammals. (NS) NS, QID, 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: Marine Sciences

126L. Marine Mammals. (NS) NS, QID, 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: Marine Sciences

127L. Marine Microbial Ecology. (NS) NS, QID, R Microbial physiology and ecology within the context of biogeochemical processes. Quantitative modeling of microbial control of biogeochemical processes. Lectures, field trips, and laboratory exercises illustrating and employing the research techniques of microbial ecology to investigate microbial processes controlling nutrient cycling in the open ocean and coral reefs of Bermuda. (Given at Bermuda.) Prerequisites: introductory biology and chemistry. Instructor: Staff (Bermuda). One course. C-L: Marine Sciences

128L. Estuarine Ecology. (NS) NS A study of the biological, physical, and chemical processes that structure estuarine communities. Field and laboratory techniques and data interpretation are considered. Not open to students who have taken Environment 208L. (Given at Beaufort.) Prerequisite: introductory biology and chemistry. Instructor: Kirby-Smith. One course. C-L: Marine Sciences

129L. Marine Ecology. (NS) NS, QID, 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 and at Bermuda, spring.) Prerequisite: introductory biology. Instructors: Crowder or Kirby-Smith (Beaufort); Lipschultz and Smith (Bermuda). One course. C-L: Marine Sciences

132S. Marine Biodiversity. (NS) NS, QID Marine biodiversity in the context of theoretical ecology and environmental physiology. Topics include methods for quantifying and evaluating diversity and biological diversity in major marine habitats. Primary literature examples focus on quantifying human impacts and developing conservation measures. (Given at Bermuda.) Prerequisite: introductory biology. Instructor: Coates (Bermuda). Half course. C-L: Marine Sciences

133S. Molecular Approaches to Questions of Physiology, Ecology, and Evolution in the Marine Environment. (NS) NS Techniques of molecular biology as they relate to physiological, ecological, and evolutionary questions. Examples from the subcellular to
global scale taken from classic and contemporary readings from the primary scientific literature. Each participant in the course presents a critical analysis of the literature on a chosen subject. (Given at Bermuda.) Prerequisite: introductory biology. Instructor: Trapido-Rosenthal. Half course. C-L: Environment 133S, Marine Sciences

134. Fundamentals of Tropical Biology. (NS) 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 Las Cruces, Costa Rica.) Prerequisite: Biology 25L or equivalent. Instructor: Gastreich. One course.

134L. Fundamentals of Tropical Biology. (NS) NS Laboratory version of Biology 134. Field activities and independent field research projects. (Taught in Las Cruces, Costa Rica, summer). Prerequisite: Biology 25L or equivalent. Instructor: Gastreich. One course. C-L: Latin American Studies

135L. Research Methods in Tropical Biology. (NS) NS, R Field-based course stressing student design and implementation of ecological projects in tropical habitats. Introduces basic concepts in statistical populations, sampling techniques, and experimental design and hypothesis testing. Topics include: measuring abiotic micro- and macromagnetic 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. Demonstrates different ecological zones. (Taught in Las Cruces, Costa Rica.) Prerequisite: Biology 25L or equivalent. Instructor: Staff. One course. C-L: Latin American Studies

136L. Plantains, Iguanas, and Shamans: An Introduction to Field Ethnobiology. (NS) 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. Instructor: Gómez, Las Cruces Biological Station/Wilson Botanical Garden. One course.

139. Ethnobotany. (NS) NS, STS Human uses of plants for food, for medicine, as materials for clothes, tools, building, and ornamentation, as well as for rituals and ceremonies, with emphasis on traditional knowledge of indigenous peoples. Adaptive interactions between plants and people in different environments. Instructor: Eubanks. One course.

140L. Plant Diversity. (NS) NS Major groups of living plants, their evolutionary origins and phylogenetic relationships. Fee for field trip. Prerequisite: Biology 25L or equivalent. Instructor: Shaw. One course.

142L. Plant Systematics & Evolution. (NS) NS The interdisciplinary nature of plant systematics and its importance in modern society. Phylogenetic principles and methods of analysis used to recognize major families of vascular plants. The origin and phylogenetic relationships of early land plants and flowering plants, and the evolution of floral form and function, pollination, and breeding systems. Sources of taxonomic evidence including morphology, anatomy, embryology, chromosomes, palynology, secondary plant compounds, proteins, and DNA. Traditional and modern identification tools, including molecular taxonomic methods. Field trips. Instructors: Lutzoni and Pryer. One course.
144L. Comparative Anatomy of Vascular Plants. (NS) NS, R  A comparative study of basic cell types, tissues, and organs of vascular plants. Correlation of anatomical information with pertinent literature, application of anatomy to problems in systematics and evolution, and the interrelationship between structure and function. Special emphasis on individual research which utilizes the data and techniques of the course and results in a major original research paper and oral presentation. Prerequisite: one year of biology or consent of instructor. Instructor: White. One course.

145L. Fossils and Their Applications. (NS) NS, QID One course. C-L: see Earth and Ocean Sciences 145L

149. Comparative Biomechanics. (NS) NS, QID The structure and operation of organisms in relation to the quantitative mechanics of solids and fluids. Prerequisites: Mathematics 31 and Physics 51L or equivalents. Instructor: Vogel. One course. C-L: Applied Science

150L. Physiology of Marine Animals. (NS) NS, QID, 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: Biology 25L and Chemistry 12L or 22L. Instructor: Forward. One course. C-L: Marine Sciences


152. Molecular Plant Physiology. (NS) NS Principal physiological processes of plants, including respiration, photosynthesis, water relations, and factors associated with plant morphogenesis. Prerequisites: Biology 25L and Chemistry 12L or 22L; organic chemistry is desirable. Instructors: Pei, Siedow, and Sun. One course.

154. Fundamentals of Neuroscience. (NS) NS, QID One course. C-L: see Psychology 135; also C-L: Neurobiology 154, Neurosciences Program

155L. Biochemistry of Marine Animals. (NS) NS, QID, 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: Biology 25L; and Chemistry 11L and 12L, or 21L and 22L. Instructor: Rittschof. One course. C-L: Marine Sciences

156L. Sensory Physiology and Behavior of Marine Animals. (NS) NS, QID, R, W Sensory physiological principles with emphasis on visual and chemical cues. Laboratories will use behavior to measure physiological processes. (Given at Beaufort.) Prerequisites: Biology 25L and Chemistry 12L. Instructors: Forward and Rittschof. One course. C-L: Marine Sciences
166. Evolution and Ecology of Animal Behavior. (NS) NS 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 25L. Instructor: Alberts. One course.

168. Comparative Psychology. (NS) NS One course. C-L: see Psychology 120

176LA. Marine Invertebrate Zoology. (NS) NS, R Structure, function, and development of invertebrates collected from estuarine and marine habitats. Not open to students who have taken Zoology 274L. One course (fall, spring, and Summer Term II); one and one-half courses (Summer Term I). (Given at Beaufort fall, spring, and summer or at Bermuda, spring.) Prerequisite: Biology 25L. Instructors: Dimock (Beaufort) or Kirby-Smith (Beaufort). One course. C-L: Marine Sciences

176LB. Marine Invertebrate Zoology. (NS) NS Structure, function and development of invertebrates collected from estuarine and marine habitat. Not open to students who have taken Zoology 274L. (Given at Bermuda, spring.) Prerequisite: Biology 25L. Instructors: Barnes and Coates (Bermuda). One course.

184L. Experimental Cell and Molecular Biology. (NS) NS, R, W Experimental approaches to contemporary questions in cell and molecular biology. Practical laboratory training in molecular genetics, protein chemistry and other methods used in the rapidly developing field of biotechnology. Experiments include cloning and sequencing genes, characterizing gene regulation and exploring protein structure/function relationships and subcellular localization. Prerequisite: Biology 118 or 119. Instructor: Armaleo. One course. C-L: Applied Science, Genetics Program

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. A maximum of three courses of 190, 191, 192, 193T, and 197T may count toward the biology major. 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 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. A maximum of three courses of 190, 191, 192, 193T, 297, and 298 may count toward the biology major. Instructor: Staff. One course.

192. Research Independent Study. R Continuation of Biology 191. Open to all qualified students with consent of supervising instructor and director of undergraduate studies. A maximum of three courses of 190, 191, 192, 193T, 297, and 298 may count toward the biology major. Instructor: Staff. One course.

193T. Tutorial. For junior and senior majors with consent of director of undergraduate studies and supervising instructor. A maximum of three courses of 190, 191, 192, 193T, 297, and 298 may count toward the biology major. Instructor: Staff. One course.

195S. Seminar in Biology. (NS) NS Instructor: Staff. One course.

197T. Tutorial. For junior and senior majors with consent of director of undergraduate studies and supervising instructor. A maximum of three courses of 190, 191, 192, 193T, 297, and 197T may count toward the major. Instructor: Staff. Half course.

199S. Current Research in Biology. (NS) EI, NS, W Students selected for funding for independent research under the Howard Hughes Fellowship Program 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.
For Seniors and Graduates

201LS. Animal Behavior. (NS) NS  Survey of past developments and current controversies in animal behavior. Extensive readings, followed by individual experimental or descriptive projects in the laboratory or field (or Primate Center). Recommended background: Biology 25L, Biology 151L, and statistics, or equivalents. Instructor: Alberts or Klopfer. One course.

201S. Animal Behavior. (NS) NS  Nonlaboratory version of Biology 201L,S. Instructor: Alberts or Klopfer. One course.

205L. Experiments in Developmental and Molecular Genetics. (NS) NS, R  Experimental approaches in development and genetics using animal and plant models. Laboratory training in molecular genetics, immunochemistry, microscopy, protein chemistry, and genetics screening. Experiments include immunological localization, in situ hybridization, polymerase chain reaction, genetic screening, embryo manipulation, microscopic imaging, and mutant analysis. Prerequisite: Biology 118; recommended, prior or concurrent registration in Biology 119. Instructor: Perz-Edwards and Bejsovec, Dong, Fechon, or McCloy. One course.

206S. Controversies in Biology. (NS) NS, R, STS  A contentious theme for reading, discussion, and an individual or joint paper. Illustrative past topics: the nature of the creative process, causality in biological thought, the lack of political impact of many scientific developments. Open to nonmajors. Instructor: Klopfer. One course.

209L. Field Ecology. (NS) NS, R  Ecosystem, community, and physiological ecology of temperate plants and animals studied through hands-on experimentation. Biological processes as affected by biotic and abiotic 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. Prerequisite: Biology 25L, Mathematics 31, Biology 110L, or other course in ecology, or consent of instructor. Instructor: Reid. One course.


211L. Microbial Ecology and Evolution. (NS) NS  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, evolutionary ecology, evolution of drug resistance, and microbial genomics. Prerequisite: Biology 25L, 103L, 118, or consent of instructor. Instructor: Vilgalys. One course.

212LS. Phycology. (NS) NS  Morphological and ecological characteristics of common freshwater and marine algae and principles of their classification. Instructor: Searles. One course.

215. Tropical Ecology. (NS) NS, STS  One course. C-L: see Environment 217; also C-L: Latin American Studies

216L. Limnology. (NS) NS  Lakes, ponds, and streams; their origin, development, geochemistry, energy balance, productivity, and the dynamics of plant and animal communities. Laboratory includes field trips. Offered biennially. Prerequisites: Biology 25L, Chemistry 12L or 22L, Mathematics 32, and physics; or equivalents; or consent of instructor. Instructor: Livingstone. One course.

217. Ecology and Global Change. (NS) 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: Biology 25L or equivalent; recommended: Biology 110L or equivalent. Instructor: Jackson. One course.

218L. Barrier Island Ecology. (NS) NS, QID, R One course. C-L: see Environment 218L; also C-L: Marine Sciences

219L. Coastal Ecosystem Processes. (NS) NS, QID One course. C-L: Environment 224L, Marine Sciences

220L. Mycology. (NS) NS Survey of the major groups of fungi with emphasis on life history and systematics. Field and laboratory exercises. Instructor: Vilgalys. One course.


229LS. Paleocology. (NS) NS Global change over the last two million years. Prerequisites: two semesters of biology or geology; and one semester each of calculus, chemistry, and physics; or consent of instructors. Instructors: Clark and Livingstone. One course.

232. Microclimatology. (NS) NS One course. C-L: see Environment 232

234S. Problems in the Philosophy of Biology. (NS) NS, STS One course. C-L: see Philosophy 234S


241L. Field Botany. (NS) NS Identification and recognition of the vascular flora of the Carolinas. Frequent field trips to representative habitats. Prerequisite: introductory plant identification course or consent of instructor. Instructor: Wilbur. One course.

242L. Field Botany of North Carolina's Wetlands. (NS) NS One course. C-L: see Environment 237L


244. Principles of Immunology. (NS) NS, R One course. C-L: see Immunology 244

245L. Peat Mosses and Peatlands. (NS) NS Ecology of Sphagnum-dominated peatland habitats. Ecology, genetics, and systematics of peat mosses. Field trips to peatland habitats and identification of peat moss species. Prerequisite: one course in plant diversity or consent of instructor. Instructor: Shaw. One course.

256S. Speciation. (NS) 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. Instructor: Shaw. One course.

257L. Molecular Systematics and Evolution. (NS) NS Descriptive and experimental procedures used to assess evolutionary diversity for analysis of population genetics and systematic relationships. Laboratory problems, discussion, and individual research projects. Prerequisites: basic course work in systematics, evolution, and genetics. Instructor: Vilgalys. One course.
261. Photosynthesis. (NS) NS Principles of photosynthesis: developmental, mechanistic, regulatory, and ecological aspects of the photosynthetic process. Prerequisite: Biology 152 or equivalent. Instructor: Siedow. One course.

264S. Advanced Topics in Marine Ecology. (NS) NS Half course. C-L: see Environment 269S; also C-L: Marine Sciences

265. Physiological Plant Ecology. (NS) NS The physiological approach to interpreting adaptation in plants, with emphasis on terrestrial seed plants. Prerequisites: Biology 110L and 152 or equivalents. Instructor: Jackson. One course.

265L. Physiological Plant Ecology. (NS) NS The physiological approach to interpreting adaptation in plants, with emphasis on terrestrial seed plants. Prerequisites: Biology 110L and 152 or equivalents. Instructor: Staff. One course.

266. Statistical Analysis of Ecological Data. (NS) (QR) NS, QID Methods of statistical analysis, including experimental design, ANOVA, regression, longitudinal data, intervention studies, survival analysis. Lectures supplemented by student projects that involve application of techniques to data. Prerequisite: 1 year of undergraduate statistics. Instructors: Clark and Lavine. One course. C-L: Environment 241, Statistics 231

267L. Community Ecology. (NS) NS, QID Mechanisms that determine the distribution and abundance of plants and animals: geology, climate, physiography, soils, competition, predation, and history. Lectures focusing on ecological principles developed through mathematical and quantitative methods. Seminars and weekend field trips. Prerequisite: an introductory ecology course. Instructor: Christensen or Clark. One course.

268. Ecological Theory and Data. (NS) NS, QID Goals and contributions of ecological theory. Formulation of models and applications to data. Topics include demography, population growth, community interactions, food webs, metapopulations, disturbance, structure, stochasticity, chaos, and patchiness. Model development, analysis, and interpretation. Discussions focus on classical and current primary literature. Analysis of data using SPlus, making use of likelihood models, bootstrapping, and Bayesian approaches. Prerequisites: one year each of calculus and statistics. Instructor: Clark. One course. C-L: Environment 231

268L. Ecological Theory and Data. (NS) NS, QID Laboratory version of Biology 268/Environment 231. Prerequisites: one year each of calculus and statistics. Instructor: Clark. One course. C-L: Environment 231L

272. Biogeochemistry. (NS) NS, STS One course. C-L: Earth and Ocean Sciences 272

274L. Marine Invertebrate Zoology. One course. C-L: see Environment 295L; also C-L: Marine Sciences

276S. Animal Communication and Social Behavior. (NS) NS, QID, R, W Current topics in animal social behavior, with emphasis on form and function of animal signals, based on reading and analysis of current papers in the primary literature. Co-taught with a parallel Biology course offered at UNC-CH, "Animal Societies and Communication." Prerequisite: Biology 166 or Biology 201L or equivalent. Instructor: Nowicki. One course.

278S. Topics in Animal Behavior. (NS) NS To provide graduate students with broad-based exposure to critical topics in behavioral ecology. Rotation among 3 topics in successive years: (1) The genetic basis of behavior (2) behavior and the genetic structure of populations (3) behavioral ecology. Each seminar in these series is stand-alone; none are pre-requisites for the others. Because genetic techniques play an increasing role in behavioral studies, two of the three seminars focus on genetic topics in behavioral ecology. Instructor: Alberts. One course.

279S. Developmental Biology Colloquium. (NS) NS Lectures, seminars, and discussion of current topics in developmental biology. Prerequisites: Biology 118 and/or 119 or equivalent. Instructor: McClay. One course.
2805. Genetic Engineering and Biotechnology. (NS) 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 118 and 119 or consent of instructor. Instructor: Sun. One course.

281. DNA, Chromosomes, and History. (NS) NS, STS Past and present research on evolution, genetics, and chromosome biology. The curious path to our present understanding of inheritance including how genes got put on chromosomes and the fluctuating fortunes of DNA. Implications of current research on chromosome and genome organization for evolutionary biology. Prerequisite: an introductory course in genetics or cell or molecular biology, or consent of instructor. Instructor: Nicklas. One course. C-L: Genetics Program

284. Molecular Population Genetics. (NS) NS, QID Theoretical and computational basis of evolutionary biology at the sequence level. Models of nucleotide and amino acid substitution; distance measures; distance methods for phylogeny reconstruction; tests of neutrality, adaptive selection, and hitchhiking; methods for distinguishing between common ancestry and adaptation; case histories of molecular evolution. For graduate students and upper-level undergraduates with coursework in genetics or evolution or mathematics. Instructor: Uyenoyama. One course.

285S. Ecological Genetics. (NS) NS Interaction of genetics and ecology and its importance in explaining the evolution, diversity, and distribution of plants and animals. Prerequisites: Biology 120 and consent of instructor. Instructor: Staff. One course. C-L: Genetics Program

286. Evolutionary Mechanisms. (NS) NS, QID Population ecology and population genetics of plants and animals. Fitness concepts, life history evolution, mating systems, genetic divergence, and causes and maintenance of genetic diversity. Prerequisites: Biology 25L and 120 or equivalents. Instructors: Rausher and Uyenoyama. One course. C-L: Genetics Program

287S. Macroevolution. (NS) NS One course. C-L: see Biological Anthropology and Anatomy 287S


289L. Methods in Morphometrics. (QR) M, QID Techniques for the acquisition and analysis of quantitative data for describing and comparing biological form. Topics include: image capture and analysis; two- and three-dimensional digitization; and multivariate and geometric techniques such as allometric analysis, outline and landmark-superposition methods, and deformation models. Background in statistics and linear algebra recommended. Instructor: Mercer. One course. C-L: Applied Science

290. Pattern and Process in Vertebrate Development. (NS) NS One course. C-L: see Biological Anthropology and Anatomy 290

292. Population Ecology. (NS) NS Explains key questions in population ecology from a theoretical perspective. Topics include demography and dynamics of structured populations, stochastic population dynamics, and life history characteristics. Prerequisites: Biology 110L or 112 and consent of instructor. Instructors: Morris and Wilson. One course.


295S. Seminar. (NS) NS Seminar. Consent of instructor required. Variable credit. Instructor: Staff

297. 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. Open to juniors and seniors only with consent of supervising instructor. A maximum of three courses of 190, 191, 192, 193T, 297, and 298 may count toward the biology major. Continued in Biology 298. Instructor: Staff. One course.

298. Research Independent Study. R Continuation of Biology 297. Open to juniors and seniors only with consent of supervising instructor. A maximum of three courses of 190, 191, 192, 193T, 297, and 298 may count toward the biology major. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED
24L. Introduction to Biology
113L. Behavioral Ecology
158L. Introduction to Modern Microscopy
164D. Developmental Biology
225T. Special Problems
269. Advanced Cell Biology

THE MAJOR
The Bachelor of Arts and the Bachelor of Science degrees are offered with a major in biology or 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 seventeen courses is required for this major.
Prerequisites. Biology 25L and 26L (A or B), or equivalent.
Corequisites. Chemistry 11L and 12L or 21L and 22L; Mathematics 25 and 26; plus three science-related courses selected from an approved list of such courses.
Major Requirements. A minimum of eight full courses in at least eight course registrations in the biosciences, not including the above prerequisites and 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 core course in genetics (Biology 118) and one core course in any three of the following: cellular and developmental biology (Biology 119); organismal structure and function; ecology; and evolution and systematics. These courses are prerequisites to many of the advanced courses in these subject areas. 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 three independent study or tutorial courses may be counted toward the eight course minimum. A maximum of one approved course of a non-biological character may be counted toward the eight course minimum. At least one of these eight courses must be at the 200-level in Biology or an approved alternate. The 200-level requirement may be satisfied by an independent study in the biological sciences at the 200-level. Biochemistry 227 does not satisfy the 200-level requirement. Among the eight courses for the major and the three science-related corequisite courses there must be at least eight full courses at the 100-level or above. 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 seventeen courses is required for this major.

Prerequisites. Biology 25L and 26L (A or B), or equivalent.

Corequisites. Chemistry 11L and 12L or 21L and 22L, and Chemistry 151L; Mathematics 31L and 32L; Physics 51L or 53L and 52L or 54L. Additional corequisites may be required for particular areas of concentration (see below).

Major Requirements. A minimum of eight full courses in at least eight course registrations in the biosciences, not including the above prerequisites and corequisites or courses specified not for science majors; two of these courses must include related laboratory experience; one laboratory independent study course may be counted toward the laboratory requirement. The eight courses must include one core course in genetics (Biology 118) and one core course in any three of the following: cellular and developmental biology (Biology 119); organismal structure and function; ecology; and evolution and systematics. These courses are prerequisites to many of the advanced courses in these subject areas. 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 three independent study or tutorial courses may be counted toward the eight course minimum. A maximum of one approved course of a non-biological character may be counted toward the eight course minimum. At least one of these eight courses must be at the 200-level in Biology or an approved alternate. The 200-level requirement may be satisfied by an independent study in the biological sciences at the 200-level. Biochemistry 227 does not satisfy the 200-level requirement. The elective courses acceptable for a biology major with an area of concentration (see below) are defined by the requirements for that concentration.

For Areas of Concentration

Students may elect to complete requirements in specified areas of concentration. Currently available areas of concentration in the biology major are: animal behavior, biochemistry, cell and molecular biology, ecology, evolutionary biology, genetics, marine biology, neuroscience, pharmacology, and plant systematics. For information on areas of concentration see the director of undergraduate studies.

The Negotiated Major

Students with unusual interests in biology may arrange a negotiated concentration of study. After appropriate discussion with departmental faculty, a student may devise
a program of study which must be endorsed by two members of the faculty and approved by the director of undergraduate studies. The statement of the proposed program must make clear why the negotiated major is more appropriate than a conventional major. Such a program must be arranged before the start of a student's fifth semester. The only formal limitation on this approach to the major is that it include at least five courses in biology to meet minimum Trinity College requirements.

**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 (Biology 191, 192, 297, 298) or in an appropriate biological science department at Duke University. 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. Only a single level of distinction is offered in biology. See the director of undergraduate studies for more details.

**THE MINOR**

**Minor Requirements.** Five courses in Biology, including Biology 25L or the equivalent, but not including advanced placement credit (Biology 19); the five courses may be selected from Biology 26L (A or B) or any course numbered 100 or above in Biology. Of these, a minimum of three courses must be at the 100-level or above. The director of undergraduate studies may approve other courses to satisfy these requirements.

**For 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: animal behavior, cell and molecular biology, ecology, evolutionary biology, genetics, marine biology, plant systematics. Completion of the requirements for an area of concentration will be noted on the student's transcript. For more information on the courses approved for each area of concentration see the director of undergraduate study.

**Canadian Studies (CANADIAN)**

Professor Thompson (history), *Director*; Professors Gereffi (sociology), Goodwin (economics), Healy (environment), Kornberg (political science), O'Barr (cultural anthropology), Smith (sociology), Tiryakian (sociology), Vidmar (law), and Wood (history); Associate Professors Byers (law), French (history), and Mayer (public policy studies and political science); Assistant Professors Jonaiassaint (romance studies) and Shanahan (sociology); Professor Emeriti Cahow (history); Associate Research Professor Keineg (romance studies); Instructor Wittmann (geography)

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.

**CANADIAN STUDIES COURSES (CANADIAN)**

98. Introduction to Canada. (SS) C-L: History 98, Political Science 98, Sociology 98, Comparative Area Studies

100. Duke-Administered Study Abroad: Advanced Special Topics in Canadian Studies. Topics differ by section. Instructor: Staff. One course.

103S. Geography of Canada. (SS) C-L: Comparative Area Studies

184S. Canadian Issues. (SS) C-L: Cultural Anthropology 184S, History 184S, Political Science 184S, Sociology 184S, Comparative Area Studies

185S. The Canadian Health Care System. (SS) C-L: Cultural Anthropology 185S, Political Science 185S, Public Policy Studies 187S, Sociology 185S, Comparative Area Studies


OTHER COURSES

The following courses 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

123. Modernity, Ethnicity, and Colonization
138S. Francophone Literature

Asian & African Languages and Literature Studies

168S. Francophone Literature

Cultural Anthropology

110. Advertising and Society: Global Perspective
130. Modernity, Ethnicity, and Colonization

Economics

265S. International Trade
268S. Current Issues in International and Development Economics

English

120. Advertising and Society: Global Perspective
186AS. Canadian Literature in English

French

168S. Francophone Literature
169. The Contemporary Novel in French Canada

History

186D. Across the Great Divides: United States and Canadian Wests in the Nineteenth and Twentieth Centuries
119A. Native American History
183S. Canada from the French Settlement
North American Studies
110. Introduction to North America

Political Science
180. Media in Comparative Perspective (B)
203S. Issues in Politics and the Media in the United States (A)
277. Comparative Party Politics (B)

Romance Studies
124. Modernity, Ethnicity, and Colonization

Sociology
160. Advertising and Society: Global Perspective
160D. Advertising and Society: Global Perspective
170. Mass Media
171. Comparative Health Care Systems
182. Media in Comparative Perspective (B)

SPECIAL TOPICS COURSES

English
170. North American Literature

French
141S. Twentieth-Century Novel in French, Canada and Quebec

History
196S. U.S. and Canadian Agrarian Movements

North American Studies
120. North American Issues
283S. Seminar in North American 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 and Medicine (School)–Graduate (School)
Basic Science Courses Open to Undergraduates.

Chemistry (CHEM)
Professor Simon, Chair; Professor Bonk, Director of Undergraduate Studies; Lecturer Montague-Smith, Associate Director of Undergraduate Studies and Supervisor of First-year Instruction; Professors Baldwin, Beratan, Crumbliss, Lochmüller, McGown, McPhail, Palmer, Pirrung, Shaw, Toone, and Yang; Associate Professor MacPhail; Assistant Professors Craig, Fitzgerald, Grinstaff, Liu, and Widenhoefer; Professors Emeriti Arnett, Chesnut, Hobbs, Poirier, Quin, Smith, Strobel, Wells, and Wilder; Adjunct Professors Chao, Feldman, Kiserow, Lee, and Porter; Adjunct Associate Professor DeGrado; Lecturer Woerner; Instructor Roy
A major or minor is available in this department. Courses with laboratories include fifty to sixty hours of laboratory work per term.

19. **General Chemistry Credit.** Pre-matriculation credit awarded on the basis of national/international examinations in chemistry such as College Board, International Baccalaureate, British Advanced Level. Depending on examination performance, placement may be for Chemistry 22L, 23L, or 151L. One course.

21L. **General Chemistry.** *(NS)* NS, QID Emphasizes stoichiometry and atomic and molecular structure, with emphasis on applications to related fields such as biology and materials science. Laboratory work includes both qualitative and quantitative analysis. Prerequisite: one year of high school chemistry, a score of 610 on the Mathematics SAT or its equivalent, or consent of the supervisor of first-year instruction. Instructor: Staff. One course.

21L. **General Chemistry.** *(NS)* NS, QID Emphasizes thermodynamics, chemical kinetics and equilibrium with emphasis on applications to related fields such as biology and materials science. Laboratory work includes both qualitative and quantitative analysis. Prerequisite: Chemistry 21L or consent of the supervisor of first-year instruction. Instructor: Staff. One course.

22L. **Accelerated General Chemistry.** *(NS)* NS, QID An intensive introductory course for well-prepared students, covering in one semester the major topics of Chemistry 21L and 22L. Laboratory work includes both qualitative and quantitative analysis. Students may not receive credit for both Chemistry 22L and Chemistry 23L. Prerequisite: score of 3, 4, or 5 on the Chemistry Advanced Placement Examination or a satisfactory score on a Duke-administered chemistry placement examination. Instructors: Crumbliss or staff. One course.

26S. **Introduction to Research in Chemistry.** *(NS)* 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 11L or 19. Instructor: Staff. One course.

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

50. **Duke-Administered Study Abroad: Special Topics in Chemistry.** Topics differ by section. Instructor: Staff. One course.

83. **Chemistry, Technology, and Society.** *(NS)* NS, QID, 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.

100. **Duke-Administered Study Abroad: Advanced Special Topics in Chemistry.** Topics differ by section. Instructor: Staff. One course.

117. **Inorganic Chemistry.** *(NS)* NS, QID Bonding, structures, and reactions of inorganic compounds studied through physical chemical concepts. Prerequisite: Chemistry 161 or 162L. Instructor: Crumbliss, Grinstaff, McPhail, or Palmer. One course.

131. **Analytical Chemistry.** *(NS)* NS, QID 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: Fitzgerald, Lochmüller, or McGown. One course.
133L. Analytical Chemistry Laboratory. (NS) NS, QID Laboratory experiments designed to accompany Chemistry 131. Corequisite: Chemistry 131. Instructor: Staff. Half course.

151L. Organic Chemistry. (NS) NS, QID The structures and reactions of the compounds of carbon. Laboratory: techniques of separation, organic reactions and preparatons, and systematic identification of compounds by their spectral and chemical properties. Prerequisite: Chemistry 22L, or 23L, or 19, or consent of director of undergraduate studies. Instructor: Baldwin, Craig, Pirrung, Toone, or Widenhoefer. One course.

152L. Organic Chemistry. (NS)NS, QID Continuation of Chemistry 151L. Prerequisite: Chemistry 151L. Instructor: Baldwin, Craig, Pirrung, Toone, or Widenhoefer. One course.


158. Physical Organic Chemistry. (NS) NS, QID Organic reaction mechanisms including fundamental techniques and specific mechanistic classes. Prerequisites: Chemistry 152L and one semester of physical chemistry. Instructor: Staff. One course.

161. Elements of Physical Chemistry. (NS) NS, QID Survey of physical chemistry including quantum chemistry, molecular structure, molecular spectroscopy, thermodynamics, and kinetics. Chemistry 163L should be taken concurrently. Prerequisites: Chemistry 12L or 22L or 23L or 19, Mathematics 32L, and Physics 52L (or 54L) or consent of instructor. Instructor: Staff. One course.

166. Physical Chemistry. (NS) NS, QID 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.


176. Biophysical Chemistry. (NS) NS, QID 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 1965. Prerequisite: Chemistry 161 or 165, or Biochemistry 227 (or Chemistry 175) or consent of instructor. Instructor: MacPhail or Shaw. One course.
180L. Advanced Laboratory Techniques. (NS) NS, QID 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.

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. Half or one course.


195S. Seminar (Howard Hughes Forum in Chemistry). (NS) EI, NS, W Howard Hughes Seminar for students engaged in independent study in chemistry or chemistry-related areas. Includes case studies of ethical issues in science and instruction in the development and preparation of a research proposal. Consent of instructor required. Instructor: Staff. One course.

196S. Seminar. (NS) NS, QID Selected topics in physical chemistry of biological macromolecules. Students may not receive credit for both Chemistry 176 and 196S. Prerequisites: Chemistry 163L or 167L and 175 or Biochemistry 227. Instructor: Shaw. One course.

197S. Seminar. (NS) NS, QID Special topics in chemistry. Prerequisite: Chemistry 161 or 165; Chemistry 175 or Biochemistry 227 recommended. Instructor: Staff. One course.

For Seniors and Graduates

275. Advanced Studies. (NS) NS, QID (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.


COURSES CURRENTLY UNSCHEDULED

11L. Principles of Chemistry
12L. Principles of Chemistry
31S. Advanced Chemical Fundamentals
151M. Organic Chemistry
152M. Organic Chemistry
152P. Preceptorial

THE MAJOR

Differing major programs are offered under the baccalaureate degrees, including concentrations in the areas of biochemistry, pharmacology, and environmental chemistry. The Bachelor of Arts degree programs permit greater flexibility in allowing students to select an area of concentration while satisfying the junior-senior small group learning experience requirements through seminar courses (option one) or through
independent study in chemistry or related departments (option two). The Bachelor of Science degree program, accredited by the American Chemical Society, provides in-depth preparation for graduate study in chemistry.

For the A.B. Degree

Prerequisites. Chemistry 21L and 22L; or 23L; or 19. Mathematics 31L, 32L (or 41); Physics 51L, 52L (or 53L, 54L).

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, 157, 158, 166, 176, 195S, 196S, 198S, Biochemistry 227, 228.
2. One of the following: Chemistry 117, 157, 158, 166, 176, Biochemistry 227, plus Chemistry 191, 192 or the equivalent in a natural science, mathematics, engineering, or a basic science department in the School of Medicine.
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 two of the following: Mathematics 104, Mathematics 111, Mathematics 114, Mathematics 131.
   c. Biology emphasis. Biochemistry 227 plus two of the following: Biology 118, 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 21L and 22L; or 23L; or 19. Mathematics 31, 32 (or 31L, 32L or 41); and Physics 51L, 52L (or 53L, 54L).

Major Requirements. Chemistry 117, 131, 133L, 151L, 152L, 165, 166, 167L, 168L, 180L, plus three additional courses selected according to one of the following four options. Note that only options one and two are certified by the American Chemical Society.

Option One. Certified by the American Chemical Society.

Biochemistry 227. Plus two courses of independent study: Chemistry 191, 192, or two approved independent study courses in a science department in Trinity College, the Medical School, the Nicholas School of the Environment and Earth Sciences, or the Pratt School of Engineering.

Option Two. Certified by the American Chemical Society.

Biochemistry 227. Plus one of the following: Chemistry 157, 158, 176, 195S, 196S, 198S, 275 or 276. Plus one course of independent study: Chemistry 191 or an approved independent study course in a science department in Trinity College, the Medical School, the Nicholas School of the Environment and Earth Sciences, or the Pratt School of Engineering.

Option Three. Not certified by the American Chemical Society.

One of the following: Chemistry 157, 158, 176, 195S, 196S, 198S, 275 or 276. Plus two courses of independent study: Chemistry 191, 192, or two approved independent study courses in a science department in Trinity College, the Medical School, the Nicholas School of the Environment and Earth Sciences, or the Pratt School of Engineering.
Option Four. Not certified by the American Chemical Society.

At least one of the following: Chemistry 191 or 192. Plus one (or none) of the following: Chemistry 157, 158, 176, 195S, 196S, 198S, 275 or 276. Plus one approved advanced lecture course in a science department in Trinity College, the Medical School, the Nicholas School of the Environment and Earth Sciences, or the Pratt School of Engineering.

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 concentration in biochemistry. Certification of this concentration is designated on the official transcript.

For the A.B. Degree with Concentration in Biochemistry

Prerequisites. Chemistry 21L and 22L; or 23L; or 19; Mathematics 31, 32 (or 31L, 32L or 41); Physics 51L, 52L (or 53L, 54L); and 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 157, 158, 166, 176, 191, 195S, 198S; Biology 118, 184L, 191; or any advanced course in biochemistry.

For the B.S. Degree with Concentration in Biochemistry

Prerequisites. Chemistry 21L and 22L; or 23L; or 19; Mathematics 31, 32 (or 31L, 32L or 41); Physics 51L, 52L (or 53L, 54L); and 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 191, Biology 191, or Biochemistry 210.

Recommendations. Mathematics 103; Chemistry 180L*, 192, 195S, 198S; 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 21L and 22L; or 23L; or 19. Mathematics 31, 32 (or 31L, 32L or 41); Physics 51L, 52L (or 53L, 54L); and Biology 25L, Biochemistry 227.

Major requirements: Chemistry 131/133L, 151L, 152L, 161 (or 165, 166), 163L (or 167L); either Chemistry 198S or Pharmacology 150; plus Pharmacology 233; plus 2 semesters of independent study (Chemistry 191, 192 or Pharmacology 191, 192).

For the B.S. Degree with Concentration in Pharmacology

Prerequisites. Chemistry 21L and 22L; or 23L; or 19; Mathematics 31, 32 (or 31L, 32L or 41); Physics 51L, 52L (or 53L, 54L); and Biology 25L, Biochemistry 227.

Major Requirements. Chemistry 117, 131/133L, 151L, 152L, 161 (or 165*), 163L (or 167L*), 176 (or 166*); either Chemistry 198S or Pharmacology 150; plus Pharmacology 233; plus 2 semesters of independent study (Chemistry 191, 192 or Pharmacology 191, 192).

Recommendations. Mathematics 103, Chemistry 180L*, 192, 195S, 198S; Biology 184L, 192; advanced courses in pharmacology.

*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, and 180L (Half course).
The Concentration in Environmental Chemistry

In cooperation with the Nicholas School of the Environment, the Chemistry Department offers both an A.B. and a B.S. degree in chemistry with a concentration in environmental chemistry. Certification of the concentration is designated on the official transcript.

For the A.B. Degree with Concentration in Environmental Chemistry

Prerequisites. Chemistry 21L and 22L; or 23L; or 19; Mathematics 31, 32 (or 31L, 32L or 41); Physics 51L, 52L (or 53L, 54L); plus two of the following: Biology 25L, Earth and Ocean Sciences 41, Earth and Ocean Sciences 120.

Major Requirements. Chemistry 131, 133L, 151L, 152L, 161 (or 165, 166) and 163L (or 167L); plus two of the following: Environment 240, 241, and 242; plus one of the following: Chemistry 117, 157, 158, 166, 176, 191, 195S, 198S; Biology 110L; Environment 191, 243, 298.02; or Earth and Ocean Sciences 272.

For the B.S. Degree in Chemistry with Concentration in Environmental Chemistry

Prerequisites. Chemistry 21L and 22L; or 23L; or 19; Mathematics 31, 32 (or 31L, 32L or 41); Physics 51L, 52L or (53L, 54L); plus two of the following: Biology 25L, Earth and Ocean Sciences 41, Earth and Ocean Sciences 120.

Major Requirements. Chemistry 117, 131 and 133L, 151L, 152L, 161 (or 165*) and 163L (or 167*L); 176 (or 166*); two of the following: Environment 240, 241 or 242, plus one of the following: Chemistry 191, Environment 191.


Departmental Graduation with Distinction

The department offers a program for Graduation with Distinction in chemistry. See the section on honors in this bulletin.

The program involves two semesters of independent study, taken either in the Chemistry Department (Chemistry 191, 192) or, with the prior approval of the coordinator of independent study, in an appropriate science department in Trinity College, the Pratt School of Engineering, the Nicholas School of the Environment, or the School of Medicine. A research paper based upon the independent study and nomination by the research supervisor form the basis for consideration by a departmental committee. The committee may recommend the student for Graduation with Distinction in chemistry.

The Minor

Requirements. Chemistry 21L, or 19; any four of the following courses: Chemistry 22L or 23L; any Chemistry courses at the 100 level or above, Biochemistry 227, Biochemistry 228, Biology 155L, Environment 240, 241, 242, Pharmacology 150, 160, 233.

Classical Studies (CLST)

Professor Davis, Chair; Professor Rigsby, Director of Undergraduate Studies; Professors Boatwright, Burian, Clay, Davis, and Stanley; Associate Professor Janan; Assistant Professors Parker and Woods; Professors Emeriti Newton, Oates, and Richardson

Majors and minors are 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)

*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, and 180L (Half course).
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. (CZ) CCI, CZ, IAA
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. Instructor: Staff. One
course.

12S. Roman Civilization. (CZ) CCI, CZ, IAA
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. Instructor: Staff. One
course.

49S. First-Year Seminar. CCI, IAA
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, IAA
Topics in classical literature and/or art and archaeology differ by section. Instructor:
Staff. One course.

53. Greek History. (CZ) CCI, CZ, IAA
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. Instructor: Parker or staff. One
course. C-L: History 53

54. Roman History. (CZ) CCI, CZ, IAA
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. Instructor:
Boatwright or Parker. One course. C-L: History 54

100. History of Ancient Philosophy. (CZ) CCI, CZ
One course. C-L: see Philosophy 100

101. Science and Technology in the Ancient World. (CZ) CCI, CZ, IAA, STS
Technical
innovation and scientific thought in the ancient Near East, Greece, and Rome.
Instructor: Rigsby. One course. C-L: History 178A

102. History of Greek and Roman Civil Law. (CZ) CCI, CZ, EI, IAA
The development
of law from the early Greek polis and Rome of the XII Tables to the Digest of Justinian,
emphasizing civil law and procedure. Instructor: Oates. One course. C-L: History 182C

103. Religion in Greece and Rome. (CZ) CCI, CZ, IAA, R
Religious thought, rituals,
and institutions as revealed in literature and art from Homer to late antiquity.
Instructor: Rigsby. One course. C-L: Religion 105

105. Ancient and Medieval Epic. (AL) AL, CCI, IAA
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: Burian, Davis, or Janan. One
course.

106. Drama of Greece and Rome. (AL) AL, CCI, IAA
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 Clay. One course. C-L: Theater Studies 117

107. The Ancient Family: Comparative Histories. (CZ) CCI, CZ, IAA Definitions of the family throughout the ancient Mediterranean (Egypt, Palestine, Anatolia, Greece, and Italy), roles of women, men, children, and slaves; use of household space; marriage and sexuality, death, and inheritance. Their relevance to the present day. Instructor: Staff. One course. C-L: Women's Studies


109. The World of the Greek Theater. (AL) (CZ) AL, CCI, CZ, IAA 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.

110. Aristotle. (CZ) One course. C-L: see Philosophy 123

111. The Classical Tradition. (AL) (CZ) AL, CCI, CZ, IAA The influence of Greek and Roman antiquity and the ideology of the 'classical' on later western cultures from the Middle Ages to the present day, with particular attention to literature, the arts, and historical thought. Instructor: Burian. One course.

116. The Pagan World of the Divine Comedy. (AL) AL, CCI, IAA One course. C-L: Distinguished Professor Course 190S, Medieval and Renaissance Studies 116


118. Egyptian Art and Archaeology. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 120; also C-L: African and African American Studies 120

119. Age of Augustus. (CZ) CCI, CZ, IAA Augustus (63 B.C.-A.D. 14), the person, politician, and genius of a new age. His impact on contemporary historical, biographical, and literary writings, and on the architecture of his new empire, its coinage, and his own portraiture. Instructor: Staff. One course.

120. Principles of Archaeology. (CZ) CCI, CZ, EI, W Introduction to the many disciplines of archaeology, using a survey of cultures and civilizations to explain archaeological techniques, methods, theory, results, and ethics. Instructor: Staff. One course.

123. Greek Art and Archaeology I: Geometric to Classical. (AL) (CZ) AL, CCI, CZ, IAA, W Architecture, sculpture, and painting from the geometric to the classical period (tenth-fourth century B.C.). Instructor: Staff. One course. C-L: Art History 123

124. Greek Art and Archaeology II: Classical to Greco-Roman. (AL) (CZ) AL, CCI, CZ, IAA, W Architecture, sculpture, painting, and mosaics from the classical to the Greco-Roman period (fourth century B.C. to first century A.D.). Instructor: Staff. One course. C-L: Art History 124

125. The Art of the Roman Empire. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 125

126. Late Antique Christian Art. (AL) (CZ) AL, CCI, CZ, IAA, W One course. C-L: see Art History 130; also C-L: Medieval and Renaissance Studies 130, Religion 130

130. Art in the Hellenistic Age. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 135

139. Aspects of Medieval Culture. (AL) (CZ) AL, CZ One course. C-L: Art History 139, History 116, Medieval and Renaissance Studies 114
140. The Art and Architecture of Roman Spectacle. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 104
141. Hellenistic Architecture. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 106
144. Roman Architecture. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 126B
145. Rome: History of the City. (AL) (CZ) AL, CCI, CZ, IAA On-site study of the development of Rome's urban plan and its major monuments through the ages; the influence of the ancient Republic and Empire, the Papacy, and the modern secular state; change and continuity in artistic forms and daily life. (Summer program in Italy.) Instructor: Staff. One course. C-L: Art History 126A
147. Ancient Greece. (AL) (CZ) AL, CCI, CZ, IAA On-site study of the cultures in Greece from Neolithic to Medieval, concentrating on Athens, the Peloponnese, Crete, and the Cyclades. Summer program in Greece. Instructor: Staff. One course. C-L: Art History 115
148. The Ancient City. CCI, IAA 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. (AL) AL, CCI, IAA Instructor: Staff. One course.
148B. Political, Social, and Cultural Context. (CZ) CCI, CZ, IAA Instructor: Staff. One course.
149. Venetian Civilization and Its Mediterranean Background. (AL) (CZ) AL, CCI, CZ, IAA 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.
150S. The Ancient Novel. (AL) (CZ) AL, CCI, CZ, IAA The development of prose fiction (Greek, Roman, Jewish, Byzantine) from the fourth century B.C. to the Middle Ages; works such as Petronius' Satyricon and Longus' Daphnis and Chloe read in translation; their influence on the evolution of the modern novel. Instructor: Stanley. One course.
151S. The Discovery of the Old World: Utopias, Ancient and Modern. (AL) AL, CCI, EI One course. C-L: Distinguished Professor Course 198S, Medieval and Renaissance Studies 1985
155. The Aegean Bronze Age. (AL) (CZ) AL, CCI, CZ, IAA, W Application of archaeological techniques and procedures to problems in the development of the Minoan and Mycenaean civilizations. Instructor: Staff. One course. C-L: Art History 114
174S. Culture Heroes Across Cultures. (AL) AL, CCI, IAA One course. C-L: African and African American Studies 172S, Distinguished Professor Course 180S
180. Special Topics in Classical Studies. CCI Instructor: Staff. One course.
183. Etruscan Art and Architecture. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 183
191. Independent Study. Directed reading or individual projects. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.
192. Independent Study. Directed reading or individual projects. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.
193. Research Independent Study. Research independent study in a field of special interest under the supervision of a faculty member, culminating in a substantive and significant
paper or project on 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 See Classical Studies 193. 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.

195S. Junior-Senior Seminars in Classical Studies. (AL) (CZ) AL, CCI, CZ, IAA, R Specific aspects of the history, art, and literature of classical Greece and Rome. Open only to qualified juniors and seniors; some knowledge of classical studies and history desirable, but not strictly necessary; research paper required. Instructor: Staff. One course.


203. Ancient Political Philosophy. (SS) CCI, EI, IAA, SS One course. C-L: see Political Science 223

204. Plato. (CZ) CZ One course. C-L: see Philosophy 211S

211S. Aristotle. (CZ) CZ One course. C-L: see Philosophy 217S

222. Fifth- and Fourth-Century Greece. (CZ) CCI, CZ, IAA, R From the Persian Wars to the dominance of Philip of Macedon. Instructor: Rigsby. One course. C-L: History 260


224. The Roman Republic. (CZ) CCI, CZ, IAA, R The rise of Rome, to its mastery of the Mediterranean; the political, social, and cultural consequences. Instructor: Boatwright or Rigsby. One course. C-L: History 263

225. The Roman Empire. (CZ) CCI, CZ, IAA, R The foundation, consolidation, and transformation of Roman rule from Augustus to Diocletian. Instructor: Boatwright. One course. C-L: History 264

226. Late Antiquity. (CZ) CCI, CZ, IAA, R The institutional, intellectual, religious, and social transformation of the late Roman Empire. Instructor: Rigsby. One course. C-L: History 266

227S. Topics in Roman Art. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 202S

231S. Greek Sculpture. (AL) (CZ) AL, CCI, CZ, IAA, R Free standing, relief, and architectural sculpture from the Archaic period to the Hellenistic age, representing changing aesthetic, social, and political aims. Instructor: Staff. One course. C-L: Art History 238S

232S. Greek Painting. (AL) (CZ) AL, CCI, CZ, IAA, R From the Late Bronze Age to the fourth century B.C. with emphasis on archaic and classical Athenian vase painters. Instructor: Stanley. One course. C-L: Art History 237S

233S. Greek Architecture. (AL) (CZ) AL, CCI, CZ, IAA, R Development of form and function in the various religious, civic, and domestic building types, from the Bronze Age through the Hellenistic period. Instructor: Staff. One course. C-L: Art History 205S

235S. Roman Architecture. (AL) (CZ) AL, CCI, CZ, IAA, R Development of design and engineering in the architecture of ancient Rome; major building forms, public and private, and the principal styles focusing on the late Republic through the empire. Instructor: Boatwright or Richardson. One course. C-L: Art History 206S


260. The Byzantine Empire. (CZ) CCI, CZ, IAA, R History, politics, religion, and art and architecture of the Byzantine Empire from the late Roman Empire to the Turkish conquest. Instructor: Rigsby. One course. C-L: Medieval and Renaissance Studies 260A

COURSES CURRENTLY UNSCHEDULED
129. The Age of Justinian
135. Alexander the Great
161. Athens
162. Pompeii
177. Perspectives in Archaeology
220S. Topics in Greek Art
221. Archaic Greece
230S. Topics in Early Christian and Byzantine Art
258. The Hellenistic and Roman East

GREEK (GREEK)
1. Elementary Greek. (FL) FL Structure of the language (grammatical forms, syntax, vocabulary, and pronunciation); introduction to reading. Instructor: Staff. One course.

2. Elementary Greek. (FL) FL Second half of Greek 1-2; required for credit for Greek 1. Prerequisite: Greek 1. Instructor: Staff. One course.

11A. Modern Greek. (FL) FL Credit for transfer of elementary or intermediate level grammar and literature courses offered abroad. This number may be applied to successive courses, which may count towards the university’s foreign language requirement but will not count towards majors or minors in the department of Classical Studies. Instructor: Staff. One course.


15. Intensive Intermediate Greek. (FL) FL Second year of ancient Greek in one course offered only in the summer. Instructor: Staff. Two courses.

63. Intermediate Greek. (FL) FL Readings in classical Attic prose literature. Prerequisite: Greek 2 or equivalent. Instructor: Staff. One course.


76. Advanced Intermediate Greek. (FL) FL Euripides and Homer. Prerequisite: Greek 63 or 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.


103S. Greek Literature II. (AL) (FL) AL, CCI, FL, IAA Thucydides and Aristophanes. Instructor: Staff. One course.


191. Independent Study. Directed reading or individual projects. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

192. Independent Study. Directed reading or individual projects. 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 and significant paper or project on 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 See Greek 193. 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. Readings in Greek Literature. (AL) (FL) AL, CCI, FL, IAA Instructor: Staff. One course.


211. Greek Literature in the Roman Empire. (AL) (FL) AL, CCI, FL, IAA Readings in the Second Sophistic, the novel, history, philosophy, and poetry. Instructor: Rigsby. One course.

217T. Greek Prose Composition. (FL) CCI, FL The course content is determined by the needs of the students enrolled. Instructor: Staff. One course.


222. The Historians. (AL) (FL) AL, CCI, FL Readings and studies in the major Greek historians Herodotus, Thucydides, and Xenophon. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED
10. Accelerated First-Year Greek.
205. Greek Lyric Poets
207. The Dramatists
209. Introduction to Hellenistic Literature
226. The Orators

LATIN (LATIN)
1. Elementary Latin. (FL) FL Study of the structure of the language (forms, vocabulary, syntax, and pronunciation); selected readings in prose and poetry. Course credit contingent upon completion of Latin 2. Instructor: Staff. One course.

2. Elementary Latin. (FL) FL Second half of Latin 1-2; required for credit for Latin 1. Prerequisite: Latin 1. Instructor: Staff. One course.

15. Intensive Intermediate Latin. (FL) FL Second year Latin offered only in the summer. Instructor: Staff. Two courses.


76. Advanced Intermediate Latin. (FL) 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. (FL) 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: Davis. One course.


102S. Life in the Late Republic: Scandal and Sensuality. (AL) (FL) AL, CCI, FL, IAA Cicero’s Pro Caelio and poems by Catullus, and the dramatic cultural changes and explosive passions taking place on the eve of the Republic’s disintegration. Instructor: Janan or staff. One course.

103A. Advanced Latin. (AL) (FL) AL, CCI, FL, IAA See Latin 102A. Instructor: Staff. One course.

103S. The Age of Augustus: Retrospection and Reform. (AL) (FL) AL, CCI, FL, IAA Readings in Livy and in Horace's Odes to illuminate Augustan culture's self-aware revision of the past as a blueprint for the future. Instructor: Boatwright or Janan. One course.

105S. Ovid: The Metamorphoses. (AL) (FL) AL, CCI, FL, IAA The poem studied as narrative, as the grandest Roman anthology of myths, and as Ovid's statement on Augustanism. Instructor: Davis or Janan. One course.

106S. Roman Satire. (AL) (FL) AL, CCI, EI, FL A survey of the genre, concentrating on Horace and Juvenal, their literary strategies and ethical arguments. Instructor: Staff. One course.

108S. Lyric Poetry. (AL) (FL) AL, CCI, FL, IAA Readings in the works of Catullus and Horace. Instructor: Davis or Janan. One course.

111S. Latin Love Elegy I. (AL) (FL) AL, CCI, FL, IAA Introduction to the conventions of Latin love elegy and their development in Propertius, Tibullus, and Ovid. Instructor: Davis or Janan. One course.

112S. Roman Comedy. (AL) (FL) AL, CCI, FL, IAA Representative plays of Plautus and Terence with studies of the genre and its Greek forebears. Instructor: Staff. One course.
140S. Nero and His Time. (CZ) 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. (AL) (FL) AL, CCI, FL, IAA Prerequisite: the completion of second-year or third-year Latin, depending on the topic. Instructor: Staff. One course.

191. Independent Study. Directed reading or individual projects. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

192. Independent Study. Directed reading or individual projects. 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 and significant paper or project on 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 See Latin 193. 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. Readings in Latin Literature. (AL) (FL) AL, CCI, FL, IAA Instructor: Staff. One course.

207S. Vergil’s Aeneid. (AL) (FL) AL, CCI, FL, R Intensive analysis of all of Vergil’s Aeneid, focusing on text and historical context, complemented by research papers and reports. Instructor: Davis or Newton. One course.

211S. Latin Love Poetry II. (AL) (FL) AL, CCI, FL, IAA A analysis of erotic themes in the works of Propertius, Tibullus, and Ovid, plus examples of “proto-elegy” by Catullus. Close attention to the stylistics of the poems, their place in the traditions of Latin love elegy, and their relation to other phenomena (historical, political, social) of the Augustan period. Instructor: Davis, Janan, or Richardson. One course.

217S. Latin Prose Syntax and Style. (FL) CCI, FL Latin prose composition combined with analysis of the style and syntax of select Latin prose authors. Instructor: Staff. One course.

221S. Medieval Latin. (AL) (FL) AL, CCI, FL, IAA Selected works of the Latin Middle Ages from Prudentius to the humanists. Genres studied include the hymn, sequence, drama, lyric, saints' lives, chronicle, epic, and epistle. Instructor: Newton or Woods. One course. C-L: Medieval and Renaissance Studies 221C


COURSES CURRENTLY UNSCHEDULED

116S. Lucretius
204. Epic of the Silver Age
205. The Roman Novel
206S. Cicero
214S. The Historians
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 and 12S or 54, 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 Area Studies (COMPAREA)

Associate Research Professor Lewis and Associate Professor Wigen, Co-Directors

A major or minor is available in this program.

The undergraduate major in comparative area studies offers a Bachelor of Arts degree to students interested in the interdisciplinary study of societies and cultures of two particular regions of the world. Students complement their primary concentration with work in a second world area and 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.

Comparative Area 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 secondary concentration imparts 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 comparative area studies majors double-major in comparative area 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 director 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 or on Another Campus. 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. Comparative Area Studies runs a program of grants and awards for majors. A competition is held in the fall to select a small group of upperclass majors to organize a symposium on a comparative/global issue during the spring semester. 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 Comparative Area Studies 140 and Comparative Area Studies 200S), 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 director. To meet the general studies requirement of Program I, courses in the major from only two areas of knowledge may be counted. For a complete description of each course, including cross-listings, consult the listing in the Duke University bulletin under the appropriate department or program.

COMPARATIVE AREA STUDIES COURSES

50. Duke-Administered Study Abroad: Special Topics in Comparative Area Studies. CCI Topics differ by section. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Comparative Area Studies. CCI Topics differ by section. Instructor: Staff. One course.


115S. Global Historical Geography. (CZ) (SS) CCI, CZ, R, SS Geographical dimensions of global history, focused on cartographic depiction. Spatial relations among the world’s civilizations, states, and ethnic groups. Relationships between the physical environment and historical developments. Prerequisite: Comparative Area Studies 110 or consent of instructor. Instructor: Lewis. One course.

125. Comparative Approaches to Global Issues. (CZ) (SS) 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: Staff. One course. C-L: Cultural Anthropology 125, History 137, Political Science 125, Religion 183, Sociology 125, Marxism and Society

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.

150S. Comparative Area Studies Honors Seminar. (CZ) CCI, CZ, R Open to seniors majoring in Comparative Area Studies. Consent of instructor required. Instructor: Staff. One course.
191. 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. 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, 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. 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.

200S. Advanced Topics in Comparative Area Studies. Topics vary, focusing either on specific world regions or particular comparative/global issues. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

109. Contemporary Global Issues (D)

INTRODUCTORY COURSES

Cultural Anthropology
94. Introduction to Cultural Anthropology
145A. Music of the World’s Peoples

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

Literature
98. Introduction to the Study of Literature and Society

Music
136. Music of the World’s Peoples

Political Science
92. States, Markets, and Democratization: Introduction to Comparative Politics
145D. Globalization and Public Policy

Public Policy Studies
185D. Globalization and Public Policy

Religion
45. Religions of Asia

COMPARATIVE/GLOBAL ISSUES COURSES

African and African American Studies
121. Introduction to Asian and African Literature
160. Women in Islam: Fact and Fiction
168S. The Atlantic Slave Trade

Art History
168. Art since 1945: Modernism and Postmodernism
169. Documentary Photography and Social Activism in the Nuclear Age
179. The History of Performance Art

Asian & African Languages and Literature Studies
121. Introduction to Asian and African Literature
190. Women in Islam: Fact and Fiction
Cultural Anthropology
108. Fantasy, Mass Media, and Popular Culture
110. Advertising and Society: Global Perspective
114. Languages of the World
117. Global Culture
119. Language, Culture, and Society
126. Muslim World: Transformations and Continuities
137. Gender Inequality
139. Marxism and Society
189S. Feminist Ethnography
234S. Political Economy of Development: Theories of Change in the Third World

Economics
140. Comparative Economic Systems
148. History of Economic Thought
219S. Economic Problems of Underdeveloped Areas
240. Comparative Economic Systems
286S. Economic Growth and Development Policy

Education
139. Marxism and Society

English
114. Languages of the World
120. Advertising and Society: Global Perspective

History
112A. The World in the Twentieth Century
112B. The World in the Twentieth Century
120. History of Socialism and Communism
129S. Madness and Society in Historical Perspective
132. Modern World Environmental History, 1500 to the Present
168BS. The Atlantic Slave Trade
186. Marxism and Society
207A S. Geographic Perspectives in History I: Atlantic Worlds
207BS. Geographic Perspectives in History II: Asian and Pacific Worlds
208AS. Decentering the Cultural Map: Boundary Zones as Counter-Cores
239. History of Socialism and Communism

Linguistics
102. Languages of the World

Literature
181. Marxism and Society

Music
119S. The Humanities and Music
156S. Music History II: From 1650 to 1850
157. Music History III: After 1850

Political Science
107. Environmental Politics and Policies in the Industrial World
116S. Post-World War II Europe and East Asia: A Comparative Perspective
147. Environmental Politics and Policies in the Developing World
148D. Environmental Politics Beyond Borders
155. The Politics and Economics of Developing Areas
176. Perspectives on Food and Hunger
180. Media in Comparative Perspective
206S. Political Participation: Comparative Perspectives
231S. Crisis, Choice, and Change in Advanced Democratic States
234S. Political Economy of Development: Theories of Change in the Third World
277. Comparative Party Politics
284S. Public Policy Process in Developing Countries

Public Policy Studies
107. Environmental Politics and Policies in the Industrial World
143D. Environmental Politics Beyond Borders
147. Environmental Politics and Policies in the Developing World
284S. Public Policy Process in Developing Countries
286S. Economic Growth and Development Policy
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<th>Religion</th>
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<td>103. Islam in East and Southeast Asia</td>
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<td>119. Muslim World: Transformations and Continuities</td>
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<td>139. Women in Islam: Fact and Fiction</td>
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<td>150. Mysticism</td>
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<th>Russian</th>
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<tr>
<td>155. Special Topics in Russian and American Culture</td>
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<td>159. Women’s Autobiographies in European Contexts: Telling the Self in Russia, France, and Britain</td>
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<th>Sociology</th>
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<td>118. Sex, Gender, and Society</td>
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<td>126. The Challenges of Development</td>
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<td>139. Marxism and Society</td>
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<td>142. Organizations and Global Competitiveness</td>
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<td>143. Management and Labor Relations</td>
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<td>145. Nations, Regions, and the Global Economy</td>
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<td>160. Advertising and Society: Global Perspective</td>
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<td>160D. Advertising and Society: Global Perspective</td>
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<td>170. Mass Media</td>
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<td>171. Comparative Health Care Systems</td>
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<td>234B. Political Economy of Development: Theories of Change in the Third World</td>
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<th>Theater Studies</th>
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<td>165. The History of Performance Art</td>
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**AREA COURSES: AFRICA**

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<th>African and African American Studies</th>
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<tr>
<td>114AS. Islam in West Africa</td>
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<td>115A. History of Africa: From Antiquity to Early Modern Times</td>
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<td>115B. History of Africa: From Early Modern Times to Independence</td>
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<td>122. Culture and Politics in Africa</td>
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<td>150. Religion and Spirituality in the African Diaspora</td>
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<td>168S. The Atlantic Slave Trade</td>
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<td>171. From Apartheid to Democracy in South Africa</td>
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<td>270S. Topics in African Art</td>
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<td>292S. Slavery and Freedom in Africa, to 1960</td>
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<th>Art History</th>
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<td>270S. Topics in African Art</td>
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<th>Cultural Anthropology</th>
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<td>122. Culture and Politics in Africa</td>
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<td>150. Religion and Spirituality in the African Diaspora</td>
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<td>114AS. Islam in West Africa</td>
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<td>115B. History of Africa: From Early Modern Times to Independence</td>
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<td>171. From Apartheid to Democracy in South Africa (B)</td>
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<td>160. Religion and Spirituality in the African Diaspora</td>
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**AREA COURSES: EAST ASIA**

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<th>Art History</th>
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<td>170. Chinese Buddhist Art</td>
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<td>172. Topics: Contemporary Chinese Art/ Film</td>
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<td>180A. Early Japanese Art</td>
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<td>180B. Later Japanese Art</td>
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<td>181A. Japanese Print Culture</td>
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<td>272S. Topics in Chinese Art</td>
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<td>274S. Topics in Japanese Art</td>
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<th>Asian &amp; African Languages and Literature Studies</th>
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<tr>
<td>150S. Chinese Modernism in Post-Mao Era</td>
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<td>153. East Asian Cultural Studies</td>
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162. Modern Japanese Literature and Culture
163. Korean Literature in Translation
165S. Modern Arabic Literature and Culture
180S. Intellectuals’ Culture/History: Modern China in Transition
253. East Asian Cultural Studies
262. Modern Japanese Literature and Culture
288S. Seminar on Modern Chinese Cinema

Chinese
125. Advanced Chinese
126. Advanced Chinese
183S. Topics in Modern Chinese
184S. Topics in Modern Chinese

Cultural Anthropology
146. East Asian Cultural Studies
163. Foundations of Chinese Civilization
254. East Asian Cultural Studies
260. Modern Japanese Literature and Culture

Economics
142S. Chinese Economy in Transition
242S. Chinese Economy in Transition

History
101K. Topics in Chinese Civilization
142A. China: Roots of Revolution
142C. Chinese Food in History
143A. Ancient and Early Modern Japan
143B. The Emergence of Modern Japan
207BS. Geographic Perspectives in History II: Asian and Pacific Worlds

Japanese
183S. Topics in Japanese
184S. Topics in Japanese

Political Science
111. Contemporary Japanese Politics
133. Japan in World Politics
169. Chinese Politics
272. China and the World

Public Policy Studies
142S. Chinese Economy in Transition
242S. Chinese Economy in Transition

EAST ASIA SPECIAL TOPICS COURSES

Political Science
100A. Duke Summer Program: Korea-Taiwan II
100U. Duke Summer Program: Korea-Taiwan I. Comparative Analysis of Democratic Institutions in East Asia
100V. Duke Summer Program: Korea-Taiwan II.

Sociology
10B. Comparative Sociology: Asia

AREA COURSES: EASTERN EUROPE

History
110. History of Eastern Europe in Modern Times
120. History of Socialism and Communism
239. History of Socialism and Communism

Political Science
105. The Politics of Democratization in Eastern Europe

AREA COURSES: LATIN AMERICA

African and African American Studies
123. Modernity, Ethnicity, and Colonization

Art History
193. Art and Culture of Mesoamerica
194. Maya Art and Culture
195. Pre-Columbian Art and Culture of Andean South America
257S. Topics in Pre-Columbian Art and Culture

**Cultural Anthropology**
130. Modernity, Ethnicity, and Colonization
140S. Cultural Diversity in the Andes

**History**
136A. Introduction to Contemporary Latin America
136B. Biography and Politics in Latin America
136C. Nineteenth-Century Latin America: Building Postcolonial Nations
174B. Modern Latin America

**Latin American Studies**
198. Special Topics in Latin American Studies

**Medieval and Renaissance Studies**
210A. History of the Spanish Language

**Political Science**
151. Dictators and Democrats in Modern Latin America
151A. Dictators and Democrats in Modern Latin America
151B. Presidents, Parties, and Legislatures: The Institutions of Modern Latin American Democracies
253S. Comparative Government and the Study of Latin America

**Portuguese**
111S. Research Seminar in Contemporary Lusophone Issues

**Romance Studies**
124. Modernity, Ethnicity, and Colonization

**Spanish**
115. Introduction to Spanish-American Literature
116. Introduction to Spanish-American Literature
121. Latin-American Literature in Translation
124. Special Topics in Latin American Studies
140CS. Cultural Diversity in the Andes
140S. Literature of the Discovery and Conquest of America
144S. Duke in Andes: Special Topics
145S. Literature of the Hispanic Minorities of the United States
146. The Spanish-American Novel
147S. Latin-American Women Writers
175S. Hispanic Literature and Popular Culture
210S. History of the Spanish Language

**LATIN AMERICA SPECIAL TOPICS COURSES**

**Sociology**
110D. Comparative Sociology: Latin America

**AREA COURSES: MIDDLE EAST**

**African and African American Studies**
151. Islamic Mysticism: Arabic (Western) Tradition
160. Women in Islam: Fact and Fiction
254. Justice, Law, and Commerce in Islam

**Arabic**
125. Advanced Arabic
126. Advanced Arabic
137. Qur'anic Studies
183. Topics in Arabic
184. Topics in Arabic

**Asian & African Languages and Literature Studies**
155S. Introduction to Israeli Culture
165S. Modern Arabic Literature and Culture
166S. Mediterranean Lives
190. Women in Islam: Fact and Fiction

**Cultural Anthropology**
126. Muslim World: Transformations and Continuities
147. Introduction to Islamic Civilization
148. Introduction to Islamic Civilization

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200 Courses and Academic Programs
Hebrew
125S. Advanced Modern Hebrew

History
101G. Introduction to Islamic Civilization
152. The Modern Middle East

Medieval and Renaissance Studies
134C. Jewish Mysticism
146A. Introduction to Islamic Civilization
153A. Islamic Mysticism: Arabic (Western) Tradition
254. Justice, Law, and Commerce in Islam

Religion
119. Muslim World: Transformations and Continuities
134. Jewish Mysticism
139. Women in Islam: Fact and Fiction
152A. Islamic Mysticism: Arabic (Western) Tradition
152B. Islamic Mysticism: Perso-Indian (Eastern) Traditions
254. Justice, Law, and Commerce in Islam
294. The Religion and History of Islam

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
127B. The Caribbean in the Eighteenth Century

Canadian Studies
98. Introduction to Canada
103S. Geography of Canada
184S. Canadian Issues
185S. The Canadian Health Care System
282S. Canada

Cultural Anthropology
124. American Indian Peoples
184S. Canadian Issues
185S. The Canadian Health Care System
282S. Canada

English
186AS. Canadian Literature in English

History
98. Introduction to Canada
108D. Across the Great Divides: United States and Canadian Wests in the Nineteenth and Twentieth Centuries
124S. Slave Society in Colonial Anglo-America: The West Indies, South Carolina, and Virginia
127A. The Caribbean, 1492-1700
127B. The Caribbean in the Eighteenth Century
145A. African-American History
183S. Canada from the French Settlement
184S. Canadian Issues
184S. Labor, Immigration, and the Asian American Experience
282S. Canada

Political Science
98. Introduction to Canada
184S. Canadian Issues
185S. The Canadian Health Care System
282S. Canada

Public Policy Studies
187S. The Canadian Health Care System

Sociology
98. Introduction to Canada
184S. Canadian Issues
185S. The Canadian Health Care System
282S. Canada
Spanish
143S. Literature of the Discovery and Conquest of America
145S. Literature of the Hispanic Minorities of the United States

AREA COURSES: RUSSIA

Economics
293S. Russian Economic History

History
146S. Introduction to Russian Civilization
161. History of Modern Russia
180. The Soviet Experience
185A. Socialist Realism: Soviet Literature of the 1930s and 1940s
201S. The Russian Intelligentsia and the Origins of the Revolution
202S. The Russian Revolution
262. The Soviet Experience

Literature
112A. Soviet Cinema
164A. Post-Stalinist and Contemporary Soviet Literature

Political Science
165. Politics and Foreign Policy of Russia
276S. Media in Post-Communist Societies

Public Policy Studies
131S. Law, Culture, and the Russian Legal Tradition
243S. Media in Post-Communist Societies

Russian
103S. Studies in the Russian Language and Culture
104S. Studies in the Russian Language and Culture
106S. Soviet Civilization: History and Its Mythologies
130. Soviet Cinema
135. Contemporary Russian Media
135A. Contemporary Russian Media
149S. Russian Culture in the Era of Terror: A Reexamination
157S. Law, Culture, and the Russian Legal Tradition
160. The Classics of Russian Twentieth-Century Literature
161. Masterpieces of Nineteenth-Century Russian Literature I
162. Masterpieces of Nineteenth-Century Russian Literature II
170. Russian Dissident and Emigré Literature
175. Tolstoy
176. Dostoevsky
177S. Chekhov
179S. Selected Topics in Russian Literature
182. Socialist Realism: Soviet Literature of the 1930s and 1940s
183. Post-Stalinist and Contemporary Soviet Literature
190S. Introduction to Russian Civilization
195. Advanced Russian
196. Advanced Russian: Readings, Translation, and Syntax
261. Masterpieces of Nineteenth-Century Russian Literature I
262. Masterpieces of Nineteenth-Century Russian Literature II
269. Women and Russian Literature

Theater Studies
122S. Chekhov

AREA COURSES: SOUTH ASIA

Art History
217. Islam and Islamic Art in India

Asian & African Languages and Literature Studies
137. Contemporary Culture in South Asia
138. The Media in Modern India
139. Gender and Expressive Culture in India
160. Introduction to the Civilizations of Southern Asia
161. Introduction to the Civilizations of Southern Asia
Cultural Anthropology
101. Introduction to the Civilizations of Southern Asia
120. South Asia: Institutions and Change
123. Gender and Expressive Culture in India
147. Introduction to Islamic Civilization
148. Introduction to Islamic Civilization
191. South Asia: Institutions and Change

History
101G. Introduction to Islamic Civilization
139B. Modern South Asia
193. Introduction to the Civilizations of Southern Asia

Medieval and Renaissance Studies
146A. Introduction to Islamic Civilization
147A. Introduction to Islamic Civilization

Religion
113. Gender and Expressive Culture in India
144. Introduction to the Civilizations of Southern Asia
145. Introduction to the Civilizations of Southern Asia
146. Introduction to Islamic Civilization
152B. Islamic Mysticism: Perso-Indian (Eastern) Traditions
217. Islam and Islamic Art in India

AREA COURSES: WESTERN EUROPE

Art History
151. Art of Italy in the Seventeenth Century
153. Netherlandish Art and Visual Culture in the Seventeenth and Eighteenth Centuries
158. History of Netherlandish Art and Visual Culture in a European Context
159. History of Netherlandish Art and Visual Culture in a European Context
167. Twentieth-Century Art, 1900-1945: The Avant-garde and Modernism
190. Berlin: Architecture and the City, 1871-1990

Cultural Anthropology
182. Contemporary European Issues

Distinguished Professor Course
192. French Existentialism: 1940-1960

Economics
60. Economics of a United Europe
146. Adam Smith and the System of Natural Liberty

French
104S. French for Current Affairs
117S. Contemporary Ideas
137. Aspects of Contemporary French Culture
139. French Civilization
140. France in the Making: Language, Nation, and Literary Culture in Premodern Europe
145S. Topics in Renaissance Literature and Culture
152. The Early French Novel
153. The French Enlightenment
154S. Upheavals That Made Modern France
155. Insiders and Outsiders of Nineteenth-Century France
256. Modern Literature and History

German
126S. Rilke, Kafka, Mann
130S. From Enlightenment to Classicism
131S. Extraordinary Stories: Short German Prose of the 19th Century
139S. Introduction to German Drama
137S. Introduction to Twentieth-Century German Women Writers
152S. Berlin in Literature and Culture
153. Aspects of Contemporary German Culture
155. Advanced German Cultural Studies
245S. The Twentieth Century
247S. Postwar German Literature
270. Consciousness and Modern Society
History
107A. Tudor/Stuart Britain
107B. Modern Britain
117. Early Modern Europe
135B. Weimar and Nazi Germany
135C. Germany and the Cold War
138. Reformation Europe
154BS. Upheavals That Made Modern France
171A. Women in the Middle Ages and Renaissance
251B. Topics in Intellectual History of Europe, 1450-1650
268S. England in the Seventeenth Century

Italian
115. Italian Women Writers
118S. Italian Literature and Popular Culture
123. Aspects of Italian Literature
159S. Topics in Sexuality and Gender Studies

Medieval and Renaissance Studies
107A. Tudor/Stuart Britain
118. Early Modern Europe
138. Renaissance and Reformation Germany
140A. France in the Making: Language, Nation, and Literary Culture in Premodern Europe
151C. Art of Italy in the Seventeenth Century
152B. Netherlandish Art and Visual Culture in the Seventeenth and Eighteenth Centuries
158. History of Netherlandish Art and Visual Culture in a European Context
160S. Topics in Renaissance Literature and Culture
210A. History of the Spanish Language
251B. Topics in Intellectual History of Europe, 1450-1650
268S. England in the Seventeenth Century

Music
143. Beethoven and His Time
144. Bach and His Time
145. Mozart and His Time

Political Science
115. Politics and Society in Germany
135. Political Development of Western Europe
136. Comparative Government and Politics: Western Europe
231S. Crisis, Choice, and Change in Advanced Democratic States
232. Political Economy: Theory and Applications

Spanish
133. Contemporary European Issues
137. Topics in Contemporary Spanish Culture
171. Literature of Contemporary Spain
210. History of the Spanish Language
251S. Spanish Film
280. The Cultures of Immigration in Spain

Theater Studies
123S. Introduction to German Drama

THE MAJOR
Corequisite Foreign Language Requirement. Four (4) 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, in the following cases students may substitute one or two nonlanguage courses to meet this requirement: (1) if a second year of a language is not taught at Duke, or (2) if no language course is available at a sufficiently advanced level. In these cases, approved humanities or social science courses taught in a foreign language, or a year of general linguistics or literature in translation, may be substituted for the second year of language. The specific language courses are too numerous to list.
Area advisors should be consulted for specific approval of the language choice if it does not conform to the list below.

**Africa:** Swahili; Arabic; relevant European language, such as French or Portuguese, may be used if appropriate to specific programs.

**East Asia:** Chinese, Japanese, Korean.

**Eastern Europe:** Relevant Eastern Europe language, such as Polish or Estonian.

**Latin America:** Spanish; Portuguese for specialization in Brazil.

**Middle East:** Arabic, Persian; modern Hebrew for specialization in Israel.

**North America:** French or Spanish.

**Russia:** Russian.

**South Asia:** Hindi-Urdu.

**Western Europe:** French, German, Italian, Portuguese, Spanish.

### Major Requirements

1. **Introductory Courses:** Two (2) introductory courses emphasizing comparative issues from two different departments. One of these courses must be Comparative Area Studies 110, Global Human Geography. See list above for other introductory courses.

2. **Primary Area Courses:** Four (4) semester courses in the geographical area of special interest (the area of the language studied), with strong commendation for multidisciplinary course selection. Areas and courses are listed above. Others may be selected with the consent of the director.

3. **Secondary Concentration:** The secondary concentration must be in another geographic area. Students must take two (2). Qualifying courses are listed above.

4. **Two (2) Comparative/Global Issues Courses.** To satisfy the comparative/global issue requirements of the major, each student must elect one comparative/global issue course and also take Comparative Area Studies 125, Comparative Approaches to Global Issues. Comparative Area Studies 125 will be coordinated by faculty members affiliated with comparative area studies. The purpose of this course is to teach students the various strategies that can be employed in making appropriate comparisons within and across distinct regions of the world. The course will offer a lecture/discussion format, and students will be asked to write a series of brief papers that reflect the cross-cultural and interdisciplinary objectives of the major. Normally, students should take this course in their sophomore or junior year, not in their senior year.

### Honors Seminar

For Graduation with Distinction, the student must complete a research project in the senior year, in the Comparative Area Studies 150S senior seminar. Candidates must apply in their junior year. 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 Director, Comparative Area Studies, 107C West Duke Building.

### THE MINOR

**Corequisite.** Two courses in a foreign language appropriate to the primary geographic area.

**Requirements.** Five courses, at least three of which must be at the 100-level or above, and including Comparative Area Studies 110 (Global Human Geography), Comparative Area Studies 125 (Comparative Approaches to Global Issues), two courses in a primary geographic area, one course in a secondary geographic concentration.
Computer Science (COMPSCI)

Professor Biermann, Chair; Associate Professor of the Practice Lucic, Associate Chair; Associate Professor of the Practice Ramm, Director of Undergraduate Studies; Professor of the Practice Astrachan, Director of Undergraduate Studies for Teaching and Learning; Professors Agarwal, Behringer, Edelsbrunner, Ellis, Harer, Marinos, Palmer, Reif, Rose, Smith, Trivedi, Vitter, and Utku; Associate Professors Board, Greenside, Henriquez, Kedem, Sun, and Wagner; Assistant Professors Arge, Chase, Lebeck, Parr, Vahdat, and Yang; Professors Emeriti Gallie, Loveland, Patrick, and Starmer; Associate Professor of the Practice Rodger; Assistant Professor of the Practice Forbes; Adjunct Professor Coughran; Adjunct Associate Professors Chatterjee and Fu; Adjunct Assistant Professors Littman, Markas, Pitsianis, Narten, and Yousif; 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.

In cooperation with the Microelectronics Center of North Carolina (MCNC), the University of North Carolina at Chapel Hill, and other MCNC-affiliated universities in North Carolina, the department sponsors advanced computer science and other high technology courses originating at other universities. These are available through a closed circuit television and data network belonging to MCNC. Contact the Department of Computer Science for further information on the availability of such courses.

1. **Computer Science Fundamentals. (QR)** M, QID
   An overview for students not intending to major in computer science. Computer programming, symbolic and numeric computation, electric circuits, architectures, translation, time complexity, noncomputability, and artificial intelligence. Not open to students having credit for Computer Science 6 or higher. Instructors: Biermann, Forbes, or Ramm. One course.

4. **Introduction to Programming. (QR)** M, QID
   A study of clear thinking and problem solving using the computer. Representation, problem decomposition, and structured or object oriented programming. Students learn a modern computer language and develop skills by solving a variety of symbolic and numerical problems. Not intended as an introduction to the major. Instructor: Duvall. One course.

6. **Introduction to Program Design and Analysis I. (QR)** M, QID
   Problem-solving techniques using a computer, top-down decomposition and object-oriented solution methodologies, introduction to programming, programming in the C/C++ language, introduction to UNIX and programming environments, recursion, analysis of execution times, linked data structures, searching, and sorting. Normally the first course for majors in computer science who have no programming experience. Instructor: Astrachan, Duvall, Forbes, Ramm, or Rodger. One course.

6L. **Introduction to Program Design and Analysis I. (QR)** M, QID
   Same as Computer Science 6 except requires a separate lab. Instructor: Staff. One course.

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

90. **Duke-Administered Study Abroad: Special Topics in Computer Science.** Topics differ by section. Instructor: Staff. One course.

97S. **Minds and Computers: Foundations of Artificial Intelligence. M, QID, 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, gameplaying 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.


106. Programming Languages. (QR) M, QID Syntax and semantics of programming languages. Compilation, interpretation, and programming environments; including programming languages such as Algol, PL/1, Pascal, APL, LISP, and Prolog. Exercises in programming. Prerequisite: Computer Science 104. Instructor: Wagner. One course.

108. Software Design and Implementation. (QR) M, QID 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.

110. Introduction to Operating Systems. (QR) M, QID 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 or Ellis. One course.

120L. Introduction to Switching Theory and Logic Design. (QR) M, QID 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 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 Malanos. One course.

124. Computer Graphics. (QR) M, QID 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. One course.

130. Introduction to the Design and Analysis of Algorithms. (QR) M, QID 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 or equivalent and three semesters of college mathematics. Instructor: Aige or Ref. One course.

140. Mathematical Foundations of Computer Science. (QR) M, QID An introduction to theoretical computer science including studies of abstract machines, the language hierarchy from regular to recursively enumerable sets, noncomputability, and
complexity theory. Prerequisites: Computer Science 100 and Mathematics 103. Instructor: Rodger. One course.

148. Logic and Its Applications. (QR) M, QID One course. C-L: see Mathematics 188; also C-L: Philosophy 150


150. Introduction to Numerical Methods and Analysis. (QR) M, QID 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: Applied Science


181S. Computer Science Seminar. (QR) M, QID, 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.

189S. Computer Science Education Research Seminar. A project-based course involving discussion of current research in 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: 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. (QR) M, QID Topics from various areas of computer science, changing each year. Prerequisite: Computer Science 100 or equivalent. Instructor: Staff. One course.
For Seniors and Graduates

206. Programming Languages. (QR) M, QID Information binding, data structures and storage, control structures, recursion, execution environments, input/output; syntax and semantics of languages; study of PL/1, Fortran, Algol, APL, LISP, SNOBOL, and SIMULA; exercises in programming. Prerequisite: Computer Science 100. Instructor: Wagner. One course.

208. Programming Methodology. (QR) M, QID Practical and theoretical topics including structured programming, specification and documentation of programs, debugging and testing strategies, choice and effective use of programming languages and systems, psychology of computer programming, proof of correctness of programs, analysis of algorithms, and properties of program schemata. Prerequisite: Computer Science 100. Instructor: Staff. One course.

210. Operating Systems. (QR) M, QID 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 or Ellis. One course.

212. Distributed Information Systems. (QR) 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. One course.


216. Data Base Methodology. (QR) M, QID Basic concepts and principles. Relational, hierarchical, and network approaches to data organization; data entry and query language support for data base systems; theories of data organization; security and privacy issues. Not open to students who have taken Computer Science 241. Prerequisites: Computer Science 104 and either 109 or equivalent. Instructor: Yang. One course.

218. Compiler Construction. (QR) M, QID Models and techniques used in the design and implementation of assemblers, interpreters, and compilers. Lexical analysis, compilation of arithmetic expressions and simple statements, specifications of syntax, algorithms for syntactic analysis, code generation and optimization techniques. Instructor: Wagner. One course.

220. Advanced Computer Architecture I. (QR) M, QID Fundamental aspects of advanced computer architecture design and analysis, with consideration of interaction with compilers, operating systems, and application programs. Topics include processor design, pipelining, caches (memory hierarchies), virtual memory, and advanced storage systems, and simulation techniques. Advanced topics include a survey of parallel architectures and future directions in computer architecture. Prerequisite: Computer Science 104 or equivalent. Instructor: Kedem, Lebeck, or Wagner. One course.

221. Advanced Computer Architecture II. (QR) M, QID Fundamental aspects of parallel computer architecture design and analysis, including hardware/software tradeoffs, interactions with compilers, operating systems, run-time libraries, and
parallel applications. Topics include parallel programming, message passing, shared memory, cache coherence, cache consistency, bus-based shared memory, distributed shared memory, interconnection networks, synchronization, on-chip parallelism. Prerequisite: Computer Science 220 or equivalent. Instructor: Lebeck. One course.


232. Mathematical Analysis of Algorithms. (QR) M, QID Techniques for efficient implementation and precise analysis of computer algorithms. Combinatorial mathematics and elementary probability. Emphasis on obtaining exact closed-form expressions describing the worst-case or average-case time and space requirements for particular computer algorithms, whenever possible. Asymptotic methods of analysis for obtaining approximate expressions in situations where exact expressions are too difficult to obtain or to interpret. Prerequisites: Mathematics 103 and 104 or equivalents. Instructor: Vitter. One course.

234. Computational Geometry. (QR) M, QID 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, Edelsbrunner, or Reif. One course.

235. Topics in Data Compression. (QR) M, QID 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: Markas or staff. One course.

236. Parallel Algorithms. (QR) M, QID Models of parallel computation including parallel random access machines, circuits, and networks; NC algorithms and P-completeness; graph algorithms, sorting algorithms, network routing, tree contraction, string matching, parsing algorithms; randomization and derandomization techniques. Prerequisite: Computer Science 230 or equivalent. Instructor: Reif. One course.


238. I/O-Efficient Algorithms. (QR) M, QID Design and analysis of I/O-Efficient (or external memory) algorithms for problems involving massive datasets. Memory
models and algorithm design paradigms. External memory algorithms for sorting and searching, graph problems, geometric problems, string problems and scientific computing problems. Implementation of I/O-Efficient algorithms. Prerequisites: Computer Science 230 or equivalent. Instructor: Arge. One course.

240. Computational Complexity. (QR) M, QID Turing machines, undecidability, recursive function theory, complexity measures, reduction and completeness, NP, NPC-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. One course.

248. Philosophy of Computing. (CZ) CZ, QID, STS The conceptual foundations of computing with respect to conceptual, explanatory, and empirical criteria. Focus on: formal symbol manipulation, recursive function theory, effective computability, computational complexity, digitality, and information processing. Non-standard approaches such as connectionism, dynamics, and artificial life. Not open to students who have taken Philosophy 156. Prerequisite: Either 3 courses in computer science and 1 in philosophy; or 3 courses in philosophy and 1 in computer science; or consent of instructor. Instructor: Smith. One course. C-L: Philosophy 256


260. Introduction to Computational Science. (QR) M, QID, R Introduction for students and faculty to computing resources that facilitate research involving scientific computing: contemporary computers, programming languages, numerical software packages, visualization tools, and some basic issues and methods for high performance algorithm design. Prerequisite: programming experience in Fortran or C, calculus, numerical linear algebra or equivalent. Instructor: Greenside, Rose, or Sun. One course.

264. Nonlinear Dynamics. (QR) M, QID, R Introduction to the core areas of artificial intelligence from a quantitative perspective. Topics include planning in deterministic and stochastic domains; reasoning under uncertainty, optimal decision making; computer speech, computer vision, and robotics; machine learning, supervised and reinforcement learning; natural language processing; agents. Minimal overlap with Computer Science 270. Prerequisite: Computer Science 100 or consent of instructor. Instructor: Parr. One course.

274S. Computational Linguistics Seminar. (QR) M, QID, R Readings and research seminar on topics related to the processing of English or other natural languages:
syntax, semantics, pragmatics, discourse, and others. Prerequisite: Computer Science 270 or consent of instructor. Instructor: Biermann. One course. C-L: Linguistics 274S

296. Advanced Topics in Computer Science. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED
109. Program Design and Construction
198S. Seminar in Research Practice and Methodology
222. Introduction to VLSI Systems
223. Application Specific VLSI Design
242. Logic for Computer Science
252. Numerical Methods for Partial Differential Equations
256. Functional Analysis for Scientific Computing
266. Communication, Computation, and Memory in Biological Systems
291. Reading and Research in Systems
292. Reading and Research in Algorithms and Complexity
293. Reading and Research in Scientific Computing
294. Reading and Research in Artificial Intelligence

THE MAJOR

For the A.B. Degree

Prerequisites. Mathematics 31, 32.

Major Requirements. Computer Science 6, 100, 104, 108, 110, and 130; two electives at the 100 level or above; one in mathematics, and one in computer science or electrical engineering; and Mathematics 135 or Statistics 103. If Mathematics 135 is elected, it is recommended that it be followed by Mathematics 136. Students must complete at least five additional courses at the 100-level or above (excluding the above listed requirements). The five courses may be a mixture of courses in computer science and/or one other department, or with the approval of the director of undergraduate studies, may consist of a coherent plan of courses drawn from multiple departments.

For the B.S. Degree

Prerequisites. Mathematics 31, 32, 103, 104; one of the following pairs of courses: Chemistry 11L, 12L or Chemistry 21L, 22L or Physics 51L, 52L or Physics 53L, 54L or Physics 41L, 42L.

Major Requirements. Computer Science 6, 100, 104, 108, 110, 130, 140, and 150; two elective courses at the 100-level or above in computer science, electrical engineering, or mathematics; Electrical Engineering 151; Mathematics 135 or Statistics 103; and Mathematics 124 or 187. If Mathematics 135 is selected, it is recommended that Mathematics 136 be taken also.

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**

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.

**INTERNSHIP 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)**

Associate Professor Allison, Chair; Associate Professor Baker, Director of Undergraduate Studies; Professors Apte, O’Barr, and Quinn; Associate Professors Ewing, Litzinger, Piot, Silverblatt, and Starn; Assistant Professors Jackson, Nelson, Thomas, and Warren; Professor Emeriti Friedl; Adjunct Professors Andrews (Slavic languages), Butters (English), Conley, Mignolo (romance studies), and Reddy (history); Adjunct Associate Professor Tetel (English); Adjunct Assistant Professors Meintjes (music) and 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 Third World and contemporary industrial countries.

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 role of culture in cognition; the politics of representation and interpretation; popular culture, film, and advertising; the bases of ideological persuasion and resistance; gender ideology; language use in institutional contexts; class formation and political consciousness; and the creation and use of ethnic and national identities. The department also offers courses that introduce the various traditional subfields of cultural anthropology, and other, integrative courses on world areas. Students without prerequisites for a course may ask the instructor for admission.

**20S. Studies in Special Topics. (SS) 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.
495. **First-Year Seminar.** Topics vary each semester offered. Instructor: Staff. One course.

50. **Duke-Administered Study Abroad: Special Topics in Cultural Anthropology.** CCI Topics differ by section. Instructor: Staff. One course.

625. **Culture and Politics in Contemporary Chinese Cinema.** (CZ) (SS) CCI, CZ, SS An introduction to Chinese film, paying particular attention to its global reception in recent years. How film represents national, ethnic, and regional identities, as well as questions of sexuality and gender relations. Open only to students in the FOCUS Program. Instructor: Litzinger. One course.

94. **Introduction to Cultural Anthropology.** (CZ) (SS) CCI, CZ, IAA, 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: Comparative Area Studies

100. **Duke-Administered Study Abroad: Advanced Special Topics in Cultural Anthropology.** CCI Topics differ by section. Instructor: Staff. One course.

101. **Introduction to the Civilizations of Southern Asia.** (CZ) CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 160; also C-L: History 193, Religion 144, Comparative Area Studies

103A. **Alcohol and Culture.** (SS) CCI, 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; optional service learning in local community. Consent of instructor required. Instructor: Ewing. One course.

103BS. **Campus Culture and Drinking.** (SS) R, SS The cultural understandings that surround, motivate, and shape undergraduate drinking. Collection and analysis of interviews with students to reconstruct this culture and explore its motivational force. Design and conduct of collaborative research; discourse as a window into culture; cultural analysis of discourse as a general tool for investigating and analyzing social issues; implications for how to address campus alcohol abuse. Instructor: Quinn. One course.

104. **Anthropology and Film.** (SS) IAA, SS The study of feature films and documentaries on issues of colonialism, imperialism, war and peace, and cultural interaction. An introduction to critical film theory and film production in non-Western countries. Instructor: Allison or Litzinger. One course. C-L: Film/Video/Digital, Marxism and Society

104D. **Anthropology and Film.** (SS) IAA, SS Same as Cultural Anthropology 104 except instruction is provided in lecture and discussion group each week. Instructor: Litzinger. One course. C-L: Film/Video/Digital, Marxism and Society

105S. **Theme Seminar.** Topics vary. Instructor: Staff. One course.

106. **Identity and Everyday Life in America.** (CZ) (SS) 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.

107. **Introduction to Linguistics.** (SS) CCI, QID, SS One course. C-L: see Linguistics 101; also C-L: English 111, Comparative Area Studies

108. **Fantasy, Mass Media, and Popular Culture.** (SS) CCI, IAA, R, SS A cross-cultural study of how images and stories that are mass produced affect the world view, identities, and desires of their consumers. Independent ethnographic research on a phenomenon in mass culture required. Instructor: Allison. One course. C-L: Comparative Area Studies
110. Advertising and Society: Global Perspective. (SS) CCI, IAA, 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: English 120, Sociology 160, Undergraduate Canadian Studies Program, Comparative Area Studies, Film/Video/Digital, Linguistics, Markets and Management Studies, Women's Studies

110D. Advertising and Society: Global Perspective. (SS) CCI, IAA, 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, English 120D

111. Anthropology of Law. (SS) 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: Conley or O'Barr. One course.

112. Current Topics in Linguistics. (SS) SS Advanced study of an area of linguistics or grammar. Instructor: Staff. One course. C-L: Linguistics

113. Gender and Culture. (SS) CCI, IAA, 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: Marxism and Society, Study of Sexualities, Women's Studies

114. Languages of the World. (SS) CCI, QID, SS One course. C-L: see Linguistics 102; also C-L: English 114, Comparative Area Studies

115S. The Anthropology of Gender: Special Topics. (SS) SS Topics to be selected each semester from: gender myths; gender in mass media; science, gender, and culture; gender, work, and family; gender and the state; and others. Instructor: Allison, Quinn, Silverblatt, or Starn. One course. C-L: Women's Studies

116S. Advertising and Masculinity. (SS) CCI, IAA, 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. C-L: Film/Video/Digital, Markets and Management Studies, Women's Studies. Instructor: O'Barr. One course. C-L: Film/Video/Digital, Markets and Management Studies, Women's Studies

117. Global Culture. (SS) CCI, IAA, SS Globalization examined through some of its dominant cultural forms—themarketing of pop music, the dissemination to 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, Plot, or Starn. One course. C-L: Comparative Area Studies, Marxism and Society

118. Language, Ethnicity, and New Nations. (SS) SS Examination of the issues involved in language policy and planning, and their impact on national integration in the newly independent multilingual and multilingual nations of Asia and Africa. Instructor: Staff. One course.

121. Culture and Politics in China. (CZ) (SS) 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.
122. Culture and Politics in Africa. (CZ) CCI, CZ One course. C-L: African and African American Studies 122, Comparative Area Studies, Marxism and Society

123. Gender and Expressive Culture in India. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 139; also C-L: Religion 113, Comparative Area Studies, Women's Studies

124. American Indian Peoples. (CZ) CZ Past and contemporary conditions of American Indian life, with an emphasis on North America. Social and political organization, gender relations, changing economic patterns, cultural themes and variations, spirituality, the effects of anti-Indian wars, policies, and prejudice, and the emergence of movements for self-determination. Instructor: Staff. One course. C-L: Comparative Area Studies

125. Comparative Approaches to Global Issues. (CZ) (SS) CCI, CZ, SS One course. C-L: see Comparative Area Studies 125; also C-L: History 137, Political Science 125, Religion 183, Sociology 125, Marxism and Society

126. Muslim World: Transformations and Continuities. (SS) CCI, SS The diversity of social practices within the community of Islam. Particular emphasis on gender relations, religious movements, and social change. Instructor: Ewing. One course. C-L: Religion 119, Comparative Area Studies, Women's Studies

127. Culture and Politics in Japan. (CZ) CCI, CZ, W The intersection between Japanese economic and political institutions and the cultural conventions that establish and challenge Japanese identity today. Emphasis on issues of ethnic diversity within Japan, as well as Japan's place within global culture and the global economy. Weekly essays and research paper required. Instructor: Allison. One course. C-L: Comparative Area Studies, Marxism and Society

128. Culture and Politics in Latin America. (CZ) (SS) 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: Starn. One course. C-L: Comparative Area Studies, Marxism and Society

130. Modernity, Ethnicity, and Colonization. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Romance Studies 124; also C-L: African and African American Studies 123, Canadian Studies, Comparative Area Studies

131S. Documentary Film/Video Theory and Practice. (AL) AL, IAA One course. C-L: see Film/Video/Digital 104S; also C-L: English 101CS

134S. The Documentary Experience: A Video Approach. (AL) (SS) AL, IAA, R, SS One course. C-L: see Public Policy Studies 105S; also C-L: Film/Video/Digital 105S, History 150BS, Political Science 156S

135. American Culture: Myths and Values. (SS) CCI, R, SS Examination of three themes that capture the major American myths and values: American individualism and its limits; equal opportunity and the American dream; family values and the way we really are. Exploration of these themes in contexts such as race and gender relations, community and family life, parenting, and individual conduct. Course includes: reading; classroom ethnography that treats the class as a sample of contemporary Americans; and three individual research exercises that require collection and analysis of interviews with Americans and examples of American popular culture. Instructor: Quinn. One course.


137. Gender Inequality. (SS) CCI, SS Assessment of anthropological findings since the 1970s that critique the assumption of universal male dominance and point to a multivariate approach to gender differences, gender relations, and women's position
cross culturally. Instructor: Allison or Quinn. One course. C-L: Comparative Area Studies, Women's Studies

139. Marxism and Society. (SS) 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 Perspectives on Marxism and Society. Instructor: Staff. One course. C-L: Education 139, History 186, Literature 181, Sociology 139, Comparative Area Studies, Marxism and Society

140S. Cultural Diversity in the Andes. (CZ) (FL) CCI, CZ, FL, IAA One course. C-L: see Spanish 140CS; also C-L: Comparative Area Studies, Latin American Studies

141. Self and Society. (SS) CCI, SS The nature of human social identities, the contexts in which they are shaped, and the processes by which they change. Includes an optional service-learning component. Instructor: Ewing. One course. C-L: Psychology 113A, Women's Studies

142S. Immigration, Ethnicity, and Identity. (CZ) (SS) CCI, CZ, SS Explores political and personal identity among ethnic minorities and immigrants in Europe, focusing particularly on diaspora communities in Germany, the United Kingdom, and France. Issues include legal and social accommodation of cultural difference, the impact of citizenship and immigration policy on identity and community, and representations of minorities in the media. Instructor: Ewing. One course.

143A. Cyborgs. (SS) CCI, SS Philosophical, cross-cultural, historical, mass media, and political assumptions about what it means to be human that serve as the foundation for technological development. Instructors: Allison and Rudy. One course. C-L: Women's Studies 115

144. The Anthropology of Race. (SS) 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.

145A. Music of the World's Peoples. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Music 136; also C-L: Comparative Area Studies

145B. Music, Social Life, and Scenes. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Music 137

146. East Asian Cultural Studies. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 153; also C-L: Comparative Area Studies

147. Introduction to Islamic Civilization. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 146; also C-L: History 101G, Medieval and Renaissance Studies 146A, Comparative Area Studies

148. Introduction to Islamic Civilization. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 147; also C-L: History 102G, Medieval and Renaissance Studies 147A, Comparative Area Studies

149. Dance and Dance Theater of Asia. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Dance 149; also C-L: Theater Studies 149, Asian & African Languages and Literature Studies 149


151. Culture and Thought. (SS) R, SS The cultural basis of understanding, including feeling, motivation, and cognitive tasks such as reasoning and categorizing. Reconstruction of cultural assumptions from discourse. Evidence for cross-cultural variation and
cultural universals in human thought. Reading and three research exercises that require cultural analysis of interviews and other kinds of discourse. Instructor: Quinn. One course. C-L: Psychology 113C, Linguistics 151

154D. The History of Emotions. (CZ) CCI, CZ, IAA, R One course. C-L: see History 154CD

161. Anthropological Approaches to Religion. (SS) CCI, IAA, SS The social, cultural, and political forces that shape religious practices and individual religious experience in contemporary societies. Instructor: Ewing. One course. C-L: Religion 118

163. Foundations of Chinese Civilization. (CZ) CCI, CZ, EI The contemporary experience in China and its relation to ethnic, spiritual, social, aesthetic, moral, political, and economic themes in China's past. (Taught in China.) Not open to students who have taken History 163. Instructor: Staff. One course. C-L: Comparative Area Studies

165. Psychological Anthropology (C, D, P). (SS) SS The influence of society on human personality and cognition. Theoretical and ethnographic studies used to explore topics that may include gender, sexuality, emotions, parent-child interaction, the effect of language on thought, and the universality of the 'self.' Instructor: Ewing or Quinn. One course. C-L: Psychology 113B

166. Cross-Cultural Perspectives on Development: A View from Japan (C, D). (SS) CCI, SS One course. C-L: see Psychology 132B

174. Gender and Language. (SS) CCI, QID, R, SS One course. C-L: see Russian 174; also C-L: English 115, Women's Studies 174, Linguistics 174

175. African American Intellectual History, Twentieth Century. (CZ) 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

176D. Globalization and the Limits of Translation. (CZ) CCI, CZ, IAA, W One course. C-L: see History 176D; also C-L: Romance Studies 176D, Literature 143B, Dance 176

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. (CZ) (FL) CCI, CZ, FL One course. C-L: see Spanish 133; also C-L: Comparative Area Studies

184S. Canadian Issues. (SS) CCI, SS One course. C-L: see Canadian Studies 184S; also C-L: History 184S, Political Science 184S, Sociology 184S, Comparative Area Studies

185S. The Canadian Health Care System. (SS) EI, SS One course. C-L: see Canadian Studies 185S; also C-L: Political Science 185S, Public Policy Studies 187S, Sociology 185S, Comparative Area Studies

189S. Crossing Cultures. (SS) CCI, SS, W Exploration of students' cross-cultural experience during study abroad; readings in communication, culture, ethnic and personal identity, colonialism, postcolonialism and modernization, problems of translation, the possibility of transcendence of local cultures, and multiculturalism at home in America. Prerequisite: completion of a study abroad program. Instructor: Quinn or Litzinger. One course. C-L: Comparative Area Studies

190. Theoretical Foundations of Cultural Anthropology. (SS) CCI, IAA, SS Major schools and theories of cultural anthropology. Normally taken in sophomore or junior years. Instructor: Staff. One course. C-L: Comparative Area Studies
191. **South Asia: Institutions and Change. (CZ)**
Cultures and societies of India, Pakistan, Sri Lanka, Bangladesh, Nepal, and Bhutan with emphasis on social institutions, behavioral patterns, value systems, and sociocultural change. Instructor: Ewing. One course. C-L: Comparative Area Studies

191AS. **Feminist Ethnography. (SS)**
The development of and debates within feminist ethnography focusing on issues of objectivity, truth, authority, ethnomethodological representation, and responsibility. Questions of women's power, (re)presentation, invisibility, and erasure in a comparative perspective, noting the particular ways in which these experiences vary according to Western and Third World women's specific social locations. How women's experiences and identities are constituted and shaped and how women accordingly resist or deploy gender, race, class, and sexual representation. Focuses on works by and about Third World women and United States women of color. Instructor: Staff. One course. C-L: Comparative Area Studies, Women's Studies

191CS. **American Marriage: A Cultural Approach. (SS)**
Americans' cultural understandings of marriage and its central place in American life and relation to American ideas about fulfillment, commitment, autonomy, love, and gender roles. Interdisciplinary readings; individually designed research project involving conduct and analysis of interviews about marriage. Instructor: Quinn. One course.

191ES. **Global Environmentalism and the Politics of Nature. (CZ) (SS)**
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.

191FS. **The Inca Empire and Colonial Legacies. (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.

191H. **The African Diaspora. (CZ) (SS)**
One course. C-L: see African and African American Studies 192H

192S. **Latin American Culture(s). (SS)**
The changing and varied faces of culture and tradition in Latin America. Spanish, indigenous, African, and Asian influences that have defined, clashed, and mingled in the subcontinent; poetry and novels as well as work by anthropologists, historians, and other scholars. Some previous coursework or experience in Latin America desirable, but not required. Instructor: Starn. One course.

193A. **Independent Study.**
Individual inquiry 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 only to qualified seniors, with consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

193B. **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. Open only to qualified seniors, with consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

195S. Senior Seminar. Consent of director of undergraduate studies required. Instructor: Staff. One course.

196S. Senior Seminar. Consent of director of undergraduate studies required. Instructor: Staff. One course.

198S. Special Topics in Linguistics. (SS) CCI, QID, SS Same as Linguistics 199 except instruction is provided in a seminar format. Instructor: Staff. One course.

199AS. The Articulation of Culture in the Bolivian Andes. (FL) (SS) CCI, FL, SS One course. C-L: see Spanish 132A S; also C-L: Latin American Studies

199C. Bolivian Culture. (CZ) (FL) CCI, CZ History of the peoples of Bolivia, the most Indian of the Latin American republics. Special emphasis on the multiethnic and largely rural society. The Spanish colonial past and the predominance of Amerindian languages such as Quechua and Aymara and the occurrence of some pre-Incan languages. The complex amalgam of Western and non-Western cultures. (Taught in Bolivia.) Instructor: Staff. One course. C-L: Latin American Studies

199FS. Bolivian Culture and Society since 1978. (AL) (FL) AL, CCI, FL, IAA Expressions of Bolivian society and culture, such as feminism, syndicalism, ethnic groups, social history, cinema, literature, and political thought and history, from the restoration of democracy in 1978 to the present. Special attention given to how the various expressions have reacted and evolved during the transition from authoritarian regime to democracy. Includes guest lectures by contemporary Bolivian artists, essayists, political analysts, active members of feminist groups. (Taught in Bolivia.) Instructor: Staff. One course. C-L: Spanish 140BS, Latin American Studies

199H. Andean Anthropology. (SS) 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. (FL) (SS) CCI, FL, IAA, 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

201S. Marxism and Anthropology. (SS) SS The interaction of Marxist and anthropological theory over the last half century; particular attention to evolution, historical transformation, mode of production, labor processes, culture, ideology, and consciousness. Instructor: Staff. One course.

202. Semiotics of Culture. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Russian 202; also C-L: English 206

216S. Gender, Race, and Class. (SS) IAA, SS Gender, race, and class as theoretical constructs and lived experiences. Analytical frameworks include social history, discourse analysis, critical theory, cultural studies, and feminist theories. Consent of instructor required. Instructor: Staff. One course. C-L: African and African American Studies 216S, Study of Sexualities, Women's Studies

232S. Historical and Anthropological Approaches to Emotion. (CZ) CCI, CZ, IAA, R One course. C-L: see History 232AS

234S. Political Economy of Development: Theories of Change in the Third World. (SS) CCI, SS One course. C-L: see Political Science 234S; also C-L: Sociology 234S, Comparative Area Studies

249S. Anthropology and Psychology (C, P). (SS) CCI, SS The necessity of psychology to any adequate theory of cultural processes, and the application of psychological theory from cognitive studies, social psychology, psychoanalysis, and other fields to anthropological questions including culture acquisition, cultural universals, culturally
expressed psychic conflicts, gender, sexuality, and variability and stability in culturally shared thoughts, emotions, and motivations. Prerequisite: Cultural Anthropology 151 or consent of instructor. Instructor: Quinn. One course. C-L: Psychology 2495


251. Cognitive Anthropology. (SS) CCI, R, SS A cognitively-based theory of culture, its history, justification, substantiation through discourse analysis, application to everyday understanding, feeling and motivation, and implications for the acquisition of culture, cross-cultural variation, and cultural universals in human thought. Readings; individually designed research project involving the cultural analysis of discourse. Not open to students who have taken Cultural Anthropology 151. Instructor: Quinn. One course.

253S. Person-Centered Interviewing. (SS) R, SS Strategies for effective interviewing, including how to establish rapport, ask productive questions, recognize nonverbal communications, and interpret data using various theoretical models. Students are required to conduct several interviews during the semester. Consent of instructor required. Instructor: Ewing. One course.

254. East Asian Cultural Studies. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Asian & African Languages and Literature Studies 253; also C-L: Comparative Area Studies

255. Anthropology as Public Discourse. (SS) EI, SS The historic role of science in general and anthropology in particular in shaping United States public discourse on culture, immigration, race, and ethnicity. Anthropological texts within their historical and political contexts; how policy experts, pundits, legislators, and others appropriate anthropological ideas for specific agendas. Particular attention given to arguments about race and culture, and how science, as an epistemology, has been used in political and policy debates. Instructor: Baker. One course. C-L: African and African American Studies 255

260. Modern Japanese Literature and Culture. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Asian & African Languages and Literature Studies 262; also C-L: Comparative Area Studies

265S. Anthropological Approaches to Life History. (SS) SS Form and function of life history and its linkages to sociocultural systems; methodology for collecting life history in ethnographic fieldwork; textual, social-structural, and interpretive analyses of life history. Instructor: Staff. One course.

279S. Race, Racism, and Democracy. (SS) SS 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

280S. Seminar in Selected Topics. Special topics in methodology, theory, or area. Consent of instructor required. Instructor: Staff. One course.

2825. Canada. (SS) SS One course. C-L: see Canadian Studies 2825; also C-L: History 2825, Political Science 2825, Sociology 2825, Comparative Area Studies

283S. Seminar in North American Studies. Topics vary each semester. Instructor: Staff. One course.

2845. Transnationalism and Public Culture. (SS) 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. Consent of instructor required. Instructor: Plot or Silverblatt. One course.


299S. Special Topics in Linguistics. (SS) CCI, QID, SS Same as Linguistics 299 except instruction is provided in a seminar format. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

94S. Introduction to Cultural Anthropology
109. Contemporary Global Issues
119. Language, Culture, and Society
120. South Asia: Institutions and Change
132. Anthropology of Peace and War
133S. Critical Perspectives on Ethnography
138. Religious Movements
167S. Anthropology and Folklore
173. Revolutions in Latin America
1998. Bolivian Cultural Anthropology
206S. Anthropological Controversies
207S. Anthropology and History
208S. Postcolonial Anthropology
210S. Ideology and the Image in Ethnographic Film
211S. Ethnography of Communication
215S. The Anthropology of Gender: Theoretical Issues
219. Language and Social Theory
220S. Theoretical Bases of Social Interpretation
261. Religion: Tradition and Cultural Innovation
263. The Best-Seller: Cultural Populism in the 1990s' China
272S. Marxism and Feminism
270S. Non-Western Indigenous Anthropology
272S. Marxism and Feminism
281S. Seminar in Selected Topics

THE MAJOR

Major Requirements. A total of ten courses distributed in the following manner: Cultural Anthropology 94 and 190; seven courses at the 100 level or above, including at least two at the 191 level or above; one additional cultural anthropology course at any level. 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 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 and patterns of socialization of Mormon youth in Utah. 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. 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 Dickinson, Director of the Program; Associate Professor of the Practice Dorrance, Director of Undergraduate Studies; Professor of the Practice Taliaferro; Associate Professor of the Practice Childs; Assistant Professor of the Practice of Ballet Walters; Assistant Professor of the Practice Vinesett

A minor, but not a major, is available in this program.

The Dance Program offers its students the opportunity to study modern dance, ballet, dance history, choreography, repertory, African dance, and other non-Western dance forms in an environment that challenges the student's intellectual, expressive, and physical capabilities. A balanced integration between the creative/performance and the historical/theoretical aspects of dance is emphasized. Academic courses in dance provide a historical and theoretical foundation for the student's creative work. In turn, the student's participation in dance creation and performance, and the development of technical skill, deepen the student's scholarly appreciation of the medium. With this approach the aim of the program is to develop students who are sensitive physical communicators of the visual art of dance and who are articulate spokespeople for the art form.

Courses in technique and performance (partial credit courses) and theory courses (whole course credit) are offered. Dance theory courses fulfill seminar and the arts and literature area of knowledge requirements and all dance courses fulfill certain designations of the new Curriculum 2000. 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.

The minor is available to all students in the program who meet the following 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,
and five full-credit courses including 101 (Introduction to Dance); one course chosen from Dance 110 (West African Rootholds in Dance) or Dance 129S (Ballet as a Western Theater Art Before 1900) or Dance 131S (Iconoclasts and Visionaries: Modern Dance, 1890-1950) or Dance 132S (The Victory of the Iconoclasts: Postmodern Dance, 1950-2000) or Dance 133 (History of African-American Popular Dance forms of the 20th century) or Dance 188S (The Diaghilev Ballet: 1909-29); Dance 135S (Dance Composition); and two additional courses in dance at the 100 level or above. The student is expected to attain and/or maintain the high intermediate level of either 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 his/her dance faculty advisor and the director of undergraduate studies, a student may be allowed to substitute other dance courses for the above requirements.

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 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 requirements of the minor.

Courses in Technique and Performance

60. Modern Dance I. IAA A movement course exploring modern dance through technique, improvisation, and composition. No previous dance experience necessary. Instructor: Staff. Half course.

61. Modern Dance II. IAA Prerequisite: Dance 60 or equivalent. Instructor: Staff. Half course.

62. Modern Dance III. IAA Increased complexity of movement sequences and greater emphasis on clarity of expression and quality of performance. Prerequisite: Dance 61 or equivalent. Instructor: Staff. Half course.

63. Modern Dance IV. IAA Continuation of Dance 62. Prerequisite: Dance 62 or equivalent. Instructor: Staff. Half course.

64. Modern Dance V. IAA Prerequisite: Dance 63 or equivalent. Instructor: Staff. Half course.

67. Intermediate/Advanced Tap Dance. IAA Prerequisite: previous training at the intermediate level. Instructor: Medler. Half course.

68. Ballet I. IAA Fundamentals of classical ballet technique concentrating on correct placement and body alignment within the ballet vocabulary. No previous dance experience necessary. Instructor: Dorrance or Walters. Half course.


70. Ballet II. IAA 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: Dorrance. Half course.

71. Ballet III. IAA Greater complexity of barre and center sequences with increased emphasis on correctness of style and quality of performance. Prerequisite: Dance 70 or equivalent. Instructor: Dorrance or Walters. Half course.

72. Jazz Dance II. IAA Prerequisite: Dance 69 or equivalent. Instructor: Childs. Half course.

73. Ballet IV. IAA Progression of Dance 71 with increased emphasis on line, style, and performance-level quality and technique. Diverse batteir, pirouettes, and tours included in allegro combinations. Prerequisite: Dance 71 or equivalent. Instructor: Dorrance or Walters. Half course.
74. **Ballet V. IAA** Continuation of Dance 73. Daily training for the performing student at the advanced/professional level. Prerequisite: Dance 73 or equivalent. Instructor: Dorrance or Walters. Half course.

76. **Flamenco. IAA** Introduction to the complex footwork, rhythms and physical style of flamenco, a dance and music form of Southern Spain, a form forged by intercultural exchange among Arabic, Judaic and Iberian cultures during the Spanish Inquisition, and subsequently enriched by rhythms and influences from the East India gypsies and from Latin America. Learned in the context of this unique cultural mix. Instructor: Staff. Half course.

77. **Kathak: Classical Dance of North India. IAA** 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. IAA** 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. Half course.

79. **African Dance Technique II. IAA** 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. IAA** Instructor: Staff. Half course.

81. **Repertory: Modern. IAA** 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: Staff. Half course.

82. **Repertory: Ballet. IAA** 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: Dorrance or Walters. Half course.


85. **Capoeira: Brazilian Dance/Martial Art. IAA** 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: Filadelfo. Half course.

**Theory Courses**

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

75S. **The Theatrical Process. (AL) AL, IAA** One course. C-L: see Theater Studies 92A

101. **Introduction to Dance. (AL) AL, CCI, IAA** 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 illuminates 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 Staff. One course.

110A. West African Rootholds in Dance. (AL) AL, CCI, IAA A lecture and dance laboratory course that explores three West African traditional dance forms and their relationship to the religious and social life in Africa and the Diaspora. Dance examined through the historical and aesthetic frames, in terms of its affect on the continuity and transformation of physical texts as cultural heritage. Guest lecturers, videos, research project. Instructor: Vinesett. One course. C-L: African and African American Studies 110A

110B. West African Rootholds in Dance. (AL) AL, CCI, IAA Same lecture as Dance 110A but dance laboratory requires a prerequisite. Prerequisite: Dance 78 or equivalent. Instructor: Vinesett. One course. C-L: African and African American Studies 110B

111. Dance Science: An Evolutionary Approach to Functional Anatomy. (AL) (NS) AL, NS, QID, R One course. C-L: see Biological Anthropology and Anatomy 111

114. T'ai Chi and Chinese Thought. (CZ) CCI, CZ, IAA One course. C-L: see Religion 114

128. The Art and Cultural History of Flamenco. (AL) (CZ) AL, CCI, CZ, IAA 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: Sant ana. One course. C-L: Spanish 128

129S. A History of Ballet before 1900. (AL) AL, IAA A history of European ballet from the time of the Renaissance dancing master through ballet d'action, the Romantic Ballet, and Petipa and classical ballet in Russia. Prerequisite: Dance 101 or Dance 71 or Dance 73. Instructor: Dickinson. One course.

130. Ballet Masterworks of the Twentieth Century. (AL) AL, IAA 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. (AL) AL, CCI, IAA 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: Staff. One course.

132S. The Victory of the Iconoclasts: Postmodern Dance, 1950-2000. (AL) AL, IAA, W An examination of American modern dance since the 1950s, which restructured what kinds of movements were considered 'dance' and what kind of dance was considered art. Postmodern dance as iconoclastic and inclusive, embracing performance art and film, theater and hip hop, fostering the rebirth of modern dance in Europe between 1970-90, and now re-absorbing and recycling the new forms it helped to create. Videos of dancing, guests, workshops, performances. Instructor: Staff. One course.

133. History of African-American Social Dance Forms of the Twentieth Century. (AL) AL, CCI, IAA, W The evolution of African-American dance styles from the late 1890s
to the 1990s in such dances as the Cakewalk, Charleston, Lindy Hop/Jitterbug through Bebop, Rock’n’Roll, Breaking, Popping, and current Freestyle forms. The influence of these popular forms on stage dance from ballet to jazz, and on movement styles of the younger generation throughout the world. Instructor: Staff. One course. C-L: African and African American Studies 133

135S. Dance Composition. (AL) AL, IAA, 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: Childs or Dickinson. One course.

136T. Advanced Dance Composition. (AL) AL, IAA, R Continuation of the basic elements of movement, choreographic devices and forms explored in 135S. The use of props, sets, lighting and costuming; the relationship of music to dance. Choreographing and directing ensembles. Prerequisite: Dance 135S or consent of instructor. Instructor: Childs or Dickinson. One course.

144. Swing as a Way of Life. (AL) AL, CCI, IAA "Swing" dance (also known as Lindy Hop/Jitterbug) and swing music of the 1920s through the 1940s examined as a way of life and social code. Emerging from African American culture, Swing as a major dance form that encodes a political stance and social rebellion, serving as a model for a new egalitarian social order for youth. The recent reanimation of Swing’s global popularity and influence. Instructor: Staff. One course. C-L: African and African American Studies 144

146S. Dancing in the Movies. (AL) AL, IAA, W Dance styles as they have evolved in American cinema from the choreography of Charlie Chaplin to the geometric chorus lines of Busby Berkeley to the glorious partnership of Astaire and Rogers. The evolution of the musical extravaganzas of such dancers as Gene Kelly and Michael Kidd to the sleek jazz of Bob Fosse and Jerome Robbins, and the choreographed battles of Kung Fu flicks. Instructor: Staff. One course. C-L: Film/Video/Digital

149. Dance and Dance Theater of Asia. (AL) (CZ) AL, CCI, CZ, IAA Asian dance and dance theater performance genres and the cultural aesthetics that inform them. Cultural traditions of China, Korea, Japan, India, Indonesia, Thailand and Cambodia. Religious, ritual, folk and 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 149, Asian & African Languages and Literature Studies 149

150. Managing the Arts. (AL) (SS) AL, SS One course. C-L: see Institute of the Arts 150; also C-L: Markets and Management Studies

151. Functional Anatomy for Dancers. (AL) AL 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.

152. Indian Dance and Hindu Cosmology. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 151; also C-L: Religion 151

153S. The Art of Transformation: A Workshop in Movement and Theater. (AL) AL, IAA One course. C-L: see Theater Studies 170S

169S. Design for the Theater. (AL) AL, IAA One course. C-L: see Theater Studies 161S
176. Globalization and the Limits of Translation. (CZ) CCI, CZ, IAA, W One course. C-L: see History 176D; also C-L: Romance Studies 176D, Cultural Anthropology 176D, Literature 143B

181. Special Topics. IAA Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

181S. Special Topics. IAA Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

182T. Choreography. (AL) AL, IAA, 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: Childs, Dickinson, or Taliaferro. One course.

188S. The Diaghilev Ballet, 1909-1929. (AL) AL, IAA The Diaghilev Ballet as a focal point for modernist movements in the arts and a revitalizing force for ballet in the West. Key choreographers, composers, and artists and their contributions to Diaghilev’s productions and their importance as seminal figures in their own fields. Diaghilev’s Ballets Russes as a creative forum for choreographers Fokine, Nijinsky, Massine, Nijinska and Balanchine; composers Stravinsky, Ravel and Satie; artists Bakst, Benois, Picasso, Gontcharova and Roualt. Prerequisite: junior or senior standing or consent of instructor. Instructors: Dickinson and staff. One course.

189S. Dance Criticism: From Stage to Page. (AL) AL, IAA, W The theories and practicalities of how to look at and write about dance performance, ranging from ballet and modern dance to Step shows, clubs, and postmodern performance art. 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. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


200T. Senior Project. (AL) AL, IAA, R A research paper, project, or program (with appropriate written documentation) under dance faculty supervision. Open only to seniors earning a minor in dance. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

65. Beginning Improvisation

Distinguished Professor Courses (DPC)

Distinguished professor courses enable students, regardless of their majors, to study with some of the most outstanding teachers and scholars within the university. The courses often focus on topics of broad intellectual and academic interest beyond the scope of a single discipline. They may count toward the appropriate curriculum distributional requirements as indicated.

180S. Culture Heroes Across Cultures. (AL) AL, CCI, IAA Myths and folktales of the 'culture hero' from a cross-cultural perspective, including the ancient societies of the Near East and Mediterranean as well as early modern and contemporary cultures in Africa, the Caribbean, and North America. Instructor: Davis. One course. C-L: African and African American Studies 172S, Classical Studies 174S

183S. Science and Religion. (CZ) CCI, CZ, STS The history, methods, and theories of western science as a Greco-Roman-Judeo-Christian construct and its interaction with religion from its beginnings to the contemporary scene. The approach will be descriptive and historical with emphasis on class discussion. Instructor: Arnett. One course.
185S. Ethical Issues in Early Christianity. (CZ) CCI, CZ, EI, IAA 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. C-L: Religion 159S

190S. The Pagan World of the Divine Comedy. (AL) AL, CCI, IAA 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 (the Vita Nuova and 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: Classical Studies 116S, Medieval and Renaissance Studies 116S

191. Research Independent Study. R Individual research in a field of special interest (under the supervision of a faculty member who has taught a Distinguished Professor Course), 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 the Distinguished Professor Courses program required. Prerequisite: previous Distinguished Professor Course with same professor on similar subject. Instructor: Staff. One course.


195. Leadership and the Broadway Theater. (AL) (SS) AL, IAA, SS Examines contemporary dramatic literature produced on or off Broadway (on the West End) or under consideration for future production. Elucidates varied responses to theater and emphasizes leadership issues as they pertain to the director, producer, actor, and designer. Also taught as Drama and Public Policy Studies. Instructors: Azenberg and Riddell. One course.

196S. Human Population Growth and Global Change. (NS) (SS) NS, SS, STS The causes and consequences of human population growth and its impact on the earth. The role of the human in nature explored in the context of the teachings of religion, philosophy, and science, with an emphasis on the future for our species. Consent of instructor required. Instructor: Schlesinger. One course.

198S. The Discovery of the Old World: Utopias, Ancient and Modern. (AL) AL, CCI, EI An exploration of utopian literature as it has been generated by voyages of discovery, both ancient and modern. An examination of how such voyages have led to the rediscovery of the old world from the alien perspective of the new, beginning with the voyages of discovery of Columbus, Thomas More’s Utopia, Montaigne’s On Cannibals, Shakespeare’s Tempest, and John Lawson’s A New Voyage to Carolina (1708). Ance nt utopian literature, including the Odyssey, Aristophanes’ Birds, Plato’s Atlantis, Euhemerus’ Panchaia, Iamboulos’ Island of the Sun, and Lucian’s True History. Instructor: Clay. One course. C-L: Classical Studies 151S, Medieval and Renaissance Studies 198S

2005. Democracy and American Foreign Policy. (SS) EI, R, SS, W Focuses on an issue that has been widely debated by statesmen and scholars: Are democracies at an inherent disadvantage in the conduct of foreign relations? Case studies on important American foreign policy undertakings serve as a major source of reading and discussion. Open to juniors and seniors who have not taken Political Science 200D,S.11; also taught as Political Science 200D,S.11. Consent of instructor required. Instructor: Holsti. One course.
2025. Remembrance and Reconciliation: Geographies of Memory. (AL) AL, CCI, EI, IAA Exploration, drawing on a variety of texts, of the complex dynamics of remembering and forgetting as they bear on difficult pasts and the possibility for reconciliation. Particular attention given to racial reconciliation in South Africa and the United States. Consent of instructor required. Also taught as Christian Theology 270 and English 272S. Instructors: Holloway and Jones. One course.

207S. Topics in Psychobiology. (NS) (SS) NS, R, SS The biological substrates of human behavior in health and disease. Topics studied include psychoneuroimmunology, Alzheimer's disease, posttraumatic stress disorder, homophobia, prevention of AIDS, violence, and ecopsychology. Student presentations; patient interviews and video tapes utilized. Prerequisite: senior standing, Psychology 49S (Psychobiology), and consent of instructor. Instructor: Brodie. One course. C-L: Psychology 207S

COURSES CURRENTLY UNSCHEDULED

197S. The Family in Christian History

Documentary Studies

See the chapter "Special Study Centers, Programs, and Opportunities" for information on courses in documentary studies.

Ecology

For courses in ecology, see biology, environment (Nicholas School), and environmental sciences and policy program.

Earth and Ocean Sciences (EOS)

Professor Haff, Chair; Professor Corliss, Director of Undergraduate Studies; Professors Baker, Barber, Clark, Crowley, Karson, Kay, Livingstone, Malin, and Schlesinger; Associate Professors Boudreau, Klein, Lozier, and Rojstaczer; Assistant Professors Murray and Pratson; Associate Research Professor Hegerl; Professors Emeriti Heron, Perkins, and Pilkey

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, geophysics, 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 website (http://www.eos.duke.edu).

105. Analysis of Outcrops. (NS) NS, QID An introduction to the field interpretation of geologic features. Includes four field trips. Mapping, measurements and interpretation of features seen in the field using standard principles, structural interpretation and the laws of stratigraphy. Extrapolating from individual field studies, students then construct a geologic history of the Durham region in a written final report. Prerequisite: Earth and Ocean Sciences 41 (may be taken concurrently). Instructor: Boudreau or Karson. Half course.

20. Geohazards and the Environment. (NS) NS, QID, STS Effects of natural and human geologic hazards on the environment and society. Topics include the effects of earthquakes, volcanoes, climate change, flooding, and landslides on the atmosphere, oceans, and solid earth. Intended for non-science majors. Not open to students who have taken or will take Earth and Ocean Sciences 41. Instructor: Staff. One course.

41. The Dynamic Earth. (NS) NS, QID, STS Introduction to the dynamic processes that shape the Earth and the environment and their impact upon society. Volcanoes,
earthquakes, sea-floor 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. Instructor: Baker, Karson, Klein, or Murray. One course.


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


51S. Global Change. (NS) NS, STS Analysis of human impacts on the environment on a global scale. Topics include: human population growth, utilization of energy and material resources, utilization of soil and water resources, global climate change, sea level rise, biodiversity and biological productivity, deforestation and reforestation, agriculture and human health. Instructor: Baker. One course.

53. Introduction to Oceanography. (NS) NS, QID Fundamental aspects of the oceans and their impact on the planet. Research methodologies and major findings of physical, chemical, biological, and geological oceanography. Present understanding of oceanographic phenomena conveyed in the context of the scientific method. Formulation of hypotheses on the workings of the oceans through inductive reasoning based on critical analysis and interpretation of oceanographic observations. Students apply their classroom-derived knowledge in a structured series of small field studies conducted at the Marine Laboratory. Required fee for the trip to the Laboratory. Instructors: Corliss, Lozier, Pratson, and Searles. One course. C-L: Biology 53.

55. Climate Change. (NS) NS, QID, STS Interdisciplinary survey of the impact of greenhouse gas increase on climate (global warming). Type of greenhouse gases, nature and application of climate models, predictability of complex systems, impact of climate change, policy and technology alternatives. Instructor: Crowley. One course.

90S. Fossils and Climate Change. (NS) NS Study of the use of animal and plant fossils including geochemical analyses of fossils to understand past climates; review of invertebrate fossils in the laboratory. Climatic changes in both terrestrial and oceanic environments over time scales ranging from millions to hundreds of years. A three-day field trip to include fossil collecting on the North Carolina coastal plain and studying modern coastal environments and living invertebrates at the Duke University Marine Laboratory. Open only to students in the FOCUS Program. Instructor: Corliss. One course.


104S. Volcanology: Volcanoes and Their Impact on Society. (NS) NS, QID, R, W Geology of volcanic processes and the benefits and hazards they present to society. Lectures, discussion, and student presentation of independent research reports. Possible optional 10 day field trip to Hawaii after end of classes. Prerequisites: EOS 41. Instructor: Boudreau. One course.

105L. Earth Materials. (NS) NS, QID An introduction to minerals, rocks, and soils; their identification, classification, and genesis. Identification and determination of the composition of common rock forming minerals using physical properties measured in the lab, including optical properties as measured using a polarized light petrographic microscope. Introductory aspects of petrology, from which one can deduce the environment in which rocks form using features measured and observed in the rocks.
themselves. Prerequisite: Chemistry 12L or 22L (may be taken concurrently) or consent of instructor. Instructor: Boudreau or Klein. One course.

106L. Igneous and Metamorphic Rocks. (NS) NS, QID Petrology, theory of origin and classification of igneous and metamorphic rocks. Topics include geochemistry and isotope chemistry of igneous rocks (age dating), thermodynamic concepts of phase equilibria, mineral-mineral reactions and mineral stability as a function of pressure and temperature. Prerequisite: Earth and Ocean Sciences 105L. Instructor: Boudreau. One course.

110L. Sedimentation and Stratigraphy. (NS) NS, QID, R Introduction to sedimentary processes and the formation of stratigraphy. Sediment erosion, transport and deposition across the Earth's surface examined in a variety of environments, both on land and beneath the sea. Sediment dynamics explained through basic physics, elementary fluid mechanics, and simple laboratory demonstrations. Stratigraphic sequences interpreted using both physical and biological attributes preserved in the sediments. Practical exercises include measuring and describing outcrop and subsurface sequences, mapping techniques in stratigraphic analysis, seismic stratigraphy, and environmental reconstruction. Prerequisite: Earth and Ocean Sciences 41 or 53 and 105L. Instructor: Pratson. One course.

113. Modern and Ancient Oceanic Environments. (NS) NS, QID Description of oceanic environments and geological processes that create or modify them through time. Reconstruction of paleoenvironmental/paleoceanographic conditions in the world's oceans using sediments and fossils with emphasis on global climate change over a range of time scales. Inductive interpretations of geological data to construct paleoenvironmental models. Includes field trip. Consent of instructor required. Prerequisite: introductory geology or introductory biology. Instructors: Corliss, Klein, and staff. One course.

115. Waves, Beaches, and Coastline Dynamics. (NS) NS, QID, STS Oceanographic and geologic processes responsible for the evolution of nearshore features; fluid motions of many time scales in the nearshore environment, including waves and currents. Conceptual basis for models of how fluid motions interact with the shape of the beach and bed in the surf zone, giving rise to features such as beach cusps, bars, channels, and barrier islands. Various attempted engineering and coastal management solutions to the global retreat of shorelines. Instructor: Murray. One course.

120. Environmental Geology. (NS) NS, QID, 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. Instructor: Malin. One course.

121. Introduction to Geomorphology. (NS) NS, QID, W Effects of weathering, tectonics, glaciers, rivers, volcanoes, wind, climate and human activity on the state of the earth's surface. Weekly student essays reviewed and revised in the light of peer criticism and interaction. Prerequisites: Earth and Ocean Sciences 41. Instructor: Haff. One course.

122. The Earth and Planets Today. (NS) NS Modern developments in understanding of the earth and other planets. Topics include exploration of planetary surfaces, asteroid impacts, the Anthropic Principle, the emergence of humans as a geologic force, climate change, human transformation of the land, air, and water, artificial intelligence and
nanotechnology. Prerequisite: one Earth and Ocean Science course. Instructor: Haff. One course.

123S. Hydrology. (NS) EI, NS, QID, 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 12L or 22L or consent of instructor. Instructor: Staff. One course.

126S. Field Methods in Earth and Environmental Sciences. (NS) NS, QID, 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

130L. Structural Geology and Tectonics. (NS) NS, QID Description and interpretation of geological structures including deformation features generated by active and near-surface phenomena as well as deep earth processes. Lectures, laboratory, and field trips. Prerequisites: Earth and Ocean Sciences 106L and 110L or consent of the instructor. Instructor: Karson. One course.

145L. Fossils and Their Applications. (NS) NS, QID Paleoecology, functional morphology, and geochemistry of organisms applied to understanding paleoenvironmental, paleoceanographic, and paleoclimatic reconstructions and the history of biodiversity and mass extinctions. Laboratory survey of systematics and anatomy of animal and plant fossils, and their paleoenvironmental, geological, and evolutionary applications. Not open to students who have taken Earth and Ocean Sciences 90S. Instructors: Corliss, Wray, and staff. One course. C-L: Biology 145L

160. Ocean and Atmosphere Dynamics. (NS) NS, QID Introduction to the dynamics of ocean and atmospheric circulations, with particular emphasis on the global climate cycle. Prerequisite: Mathematics 31 and 32, Physics 53L, or consent of instructor. Instructor: Lozier. One course.

172L. Evolution of the Earth and Life. (NS) NS Evolution of the earth and biota through time. Weekend field trip to Appalachian Mountains. Prerequisite recommended: Earth and Ocean Sciences 41. Instructor: Corliss. One course.

173. Dinosaurs, Fossil Fish, and Yellowstone. (NS) NS Paleontology, geology, and ecology of Dinosaur National Monument, Fossil Butte National Monument, and Yellowstone National Park. One-week camping trip to study areas. Consent of instructor required. Prerequisite recommended: Earth and Ocean Sciences 90S or Earth and Ocean Sciences 172L. Instructor: Corliss. One course.

181S. The American Southwest. (NS) NS, QID 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. Prerequisite: Earth and Ocean Sciences 41 and consent of instructor. Instructor: Haff. One course.

183S. Natural History of Yellowstone Park. (NS) NS Includes field trip to park to examine natural history of region and associated environmental problems. Consent of instructor required. Prerequisite minimum of two classes in Earth and Ocean Sciences, Biology, or Environment. Instructor: Rojstaczer. One course.
185S. The Pacific Northwest. (NS) NS, STS Geology and geomorphology of the Pacific Northwest, including volcanism (especially the devastating Mt. St. Helens eruption), tsunamis, channeled scabland, Columbia River, Cascade Mountains, glaciers, and coastal features, including human-induced coastal erosion. Includes week-long field trip to Washington or Oregon. Prerequisite: Earth and Ocean Sciences 41 and consent of instructor. Instructor: Murray. One course.

186S. The San Andreas Fault and Geology of West-Central California. (NS) NS, QID, STS Field oriented course on the Cenozoic regional geology of west-central California along the San Andreas fault between San Francisco and Los Angeles. Emphasis on direct observation of the human impact of the active tectonics and its effects on engineering practice. Qualitative and quantitative descriptions of the effects and damages of past earthquakes, landslides, and ground water changes on the environment. Particular focus on the Parkfield section of the San Andreas, site of an international drilling effort. Includes required field trip over fall break. Prerequisite: Earth and Ocean Sciences 41. Instructor: Malin. One course.

187S. Marine Geology of South Florida. (NS) 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. Prerequisite: Earth and Ocean Sciences 41, or 53, or consent of instructor. Instructor: Dwyer. 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.

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.

193. Independent Study. Directed reading or individual projects. Open only to qualified juniors and seniors by consent of director of undergraduate studies and supervising instructor. Instructor: Staff. One course.

194. Independent Study. See Earth and Ocean Sciences 193. Open only to qualified juniors and seniors by consent of director of undergraduate studies and supervising instructor. Instructor: Staff. One course.

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 substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to qualified juniors and seniors upon approval of the departmental faculty. Instructor: Staff. One course.

For Advanced Undergraduates and Graduates

200. Beach and Coastal Processes. (NS) NS The study of sedimentary processes and geomorphology of nearshore environments with emphasis on both developed and undeveloped barrier island systems. Instructor: Staff. One course.

202. Beach and Island Geological Processes. (NS) NS Field seminar in the evolution of beaches and barrier islands with emphasis on the interaction of nearshore processes with the trappings of man. Consent of instructor required. Prerequisite: Earth and Ocean Sciences 115. (Given at coast on two weekends.) Instructor: Staff. C-L: Marine Sciences
203. Physical Oceanography. (NS) NS, QID Introduction to the dynamic principles of ocean circulation with an emphasis on large temporal and spatial scales of motion. Topics include wind-driven and density-driven flow, western boundary intensification, mid-ocean, shelf, and tropical circulations. Also taught as Environment 290 and Mechanical Engineering 290. Prerequisites: Mathematics 31 and 32 or consent of instructor. Instructor: Lozier. One course.

205. Geological Oceanography. (NS) NS One course. C-L: see Environment 291; also C-L: Marine Sciences

206S. Principles of Geological Oceanography. (NS) NS Geological aspects of the ocean basins including coastal to deep water sediment types and sedimentation processes, sea floor physiography, and environmental problems. Not open to students who have taken Earth and Ocean Sciences 205. Consent of instructor required. Instructor: Baker. One course.

209S. Climate Dynamics and the Paleoclimatic Record. (NS) NS Introductory readings and reviews of modern physical climatology followed by extensive readings covering the record of past climatic change, concentrating on latest Quaternary and Holocene time. Topics include the global energy balance, the hydrologic cycle, general circulation of the atmosphere and oceans, climate modeling, future climate change, and the known record of paleoclimate (from marine and lake sediments, corals, soils, ice cores, etc.). Some background in physical sciences recommended. Instructor: Baker. One course.

213. Modern and Ancient Oceanic Environments. (NS) NS, QID, R Description of oceanic environments and geological processes that create or modify them through time. Reconstruction of paleoenvironmental/paleoceanographic conditions in the world's oceans using sediments and fossils with emphasis on global climate change over a range of time scales. Inductive interpretations of geological data to construct paleoenvironmental models. Includes field trip. Research paper required. Instructors: Corliss, Klein, and staff. One course.


221. Hydrogeology. (NS) NS, QID Theory of groundwater flow and solute transport with application to geologic processes, water resources, and water quality. Prerequisites: Chemistry 12L or 22L, Mathematics 103, and Physics 42L or consent of instructor. Instructor: Staff. One course.

230S. Advanced Structural Geology. (NS) NS Stress and strain emphasizing geometric, kinematic, and dynamic analysis of micro structures and mesoscopic structures. Prerequisite: Earth and Ocean Sciences 130L or consent of instructor. Instructor: Karson. One course.

233S. Oceanic Crust and Ophiolites. (NS) NS, QID Structure, tectonics, petrology, and geochemistry of oceanic spreading environments and ophiolite complexes. Prerequisites: Earth and Ocean Sciences 106L and 130L or consent of instructor. Instructor: Karson. One course.

236S. Lithosphere Plate Boundaries. (NS) NS, QID Plate tectonics and the geological and geophysical expression of orogenic belts, spreading centers, transform faults, subduction zones. Prerequisite: Earth and Ocean Sciences 130L or consent of instructor. Instructor: Karson. One course.

239S. Advanced Topics in Structural Geology and Tectonics. (NS) NS, QID Selected topics related to deformation of rocks ranging from microstructure to plate tectonics. Involves mathematical modeling. Prerequisite: Earth and Ocean Sciences 130L or consent of instructor. Instructor: Karson. One course.

241S. Coastal Processes and Geomorphology. (NS) NS, QID Selected readings in nearshore processes and pattern formation, ranging from beach scales (for example, bars and channels) to shoreline scales (for example, barrier islands and capes), and ranging from coastal plain to rocky and arctic coasts. Optional field trip to study ocean island geomorphology in Hawaii after the semester. Consent of instructor required. Instructor: Murray. One course.

242S. New Perspectives and Methods in Surface Process Studies. (NS) NS, QID 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.


246S. Nearshore Hydrodynamics and Sediment Transport. (NS) NS, QID Phenomena resulting from waves, wave momentum (radiation stress), and wave interactions. Includes oscillatory flow, long period (infragravity) motions, and mean currents. Nearshore sediment transport and possible origins of beach and nearshore topographic features. Consent of instructor required. Instructor: Murray. One course.

247S. Natural History of the Great Basin. (NS) NS Integrated study of the geomorphology, hydrology, climate, biology, and anthropology of the internally drained areas of Nevada, California, Utah, and Oregon. Comparison of Ice Age and modern features including lakes, soils, vegetation, animals, and humans. Consent of instructor required. Instructor: Haff. One course.

250. Applied Mathematics for the Environmental and Earth Sciences. (QR) M, QID, R Mathematical methods used in modeling and data analysis of environmental and geologic problems. Data sets or quantitative problems from the students used as original problems, to be completed as a final quantitative research product at the end of the semester. Different mathematical modeling approaches compared and evaluated. Focus depends on the research areas of class members. Instructor: Staff. One course.

252. Introduction to Geophysics. (NS) NS, QID, R Critical and mathematical evaluation of the earth's seismology, gravity, magnetism, heat flow, and internal dynamics. Derivation and evaluation of the basic equations of geophysics and geodynamics. The physics and computer methods of the locations and mechanics of earthquakes, seismotectonics and crustal dynamics, the earth's internal layers, the gravitational attraction of mountains, the magnetic properties of rocks, the cooling of the earth, and the basics of continental drift. Original research project required. Prerequisite: upper division or first-year graduate standing in science or engineering. Instructor: Malin. One course.

255. Seismology I. (NS) NS, QID, R Quantitative review of global to local seismology, seismic waves, the earthquake source, and the relevant structure of the earth. Topics included are basic elasticity, derivation of elastodynamic relationships for seismic waves and basics of wave propagation in layered media. Can be taken after Earth and
Ocean Sciences 256. Prerequisite: one upper-division course in physics, mathematics, engineering or geology. Quantitative relations will be used in class and in homework. Instructor: Malin. One course.

256. Seismology II. (NS) NS, QID Quantitative review of global to local seismology, seismic waves, the earthquake source, and the relevant structure of the earth. Topics include ray theory, travel time analysis of local and teleseismic arrivals, earthquake location and source problems. Can be taken before Earth and Ocean Sciences 255. Prerequisite: one upper-division course in physics, mathematics, engineering, or geology. Instructor: Malin. One course.

259S. Fieldwork in Geophysics. (NS) NS Includes one-week field trip to observe or participate in major geophysical research project. Focus on drilling scientific boreholes into major faults and/or the crustal dynamics/ volcano monitoring arrays. Prerequisites: one upper-division course in geology, physics, engineering or mathematics. Instructor: Malin. One course.

269. Thermodynamics of Geological Systems. (NS) NS, QID Introductory thermodynamics applied to geologic problems through understanding of phase equilibrium. Prerequisites: Earth and Ocean Sciences 105L (may be concurrent) and Mathematics 32. Instructor: Boudreau. One course.

270. Sedimentary Geochemistry. (NS) NS Chemistry of aqueous solutions and authigenic minerals in sedimentary systems. Prerequisite: Chemistry 12L or 22L, and Mathematics 32. Instructor: Baker. One course.


272. Biogeochemistry. (NS) 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 12L or 22L or equivalent. Instructor: Schlesinger. One course. C-L: Biology 272

273S. Analytic Techniques. (NS) NS, QID 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. Instructors: Boudreau and Klein. One course.


285S. Layered Intrusions. (NS) NS, QID, R Survey of layered igneous intrusions and current theories on crystallization and other processes occurring in mafic magmas. Quantitative methods related to magma crystallization including crystal size distribution theory, quantitative analysis of rock texture and its interpretation, crystal aging and numerical models of compaction, infiltration and reaction processes occurring in magma chambers. Offered alternate years. Research paper and presentation required. Prerequisites: Earth and Ocean Sciences 105L and 106L or consent of instructor. Instructor: Boudreau. One course.

295S. Advanced Topics in Geology. (NS) NS Topics, instructors, and credits to be arranged each semester. Instructor: Staff.
COURSES CURRENTLY UNSCHEDULED
184S. The Andes of Bolivia: Geology, Geomorphology, and Modern Environments
201L. Physical Processes in Coastal Environments
208S. Paleoceanography
223. Computational Methods in the Hydrologic Sciences
237S. Structure and Evolution of the Appalachian Orogen

THE MAJOR
The Division of Earth and Ocean Sciences offers one A.B. option and two B.S. tracks for a major in the division.

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.

Major Requirements. Required courses include Earth and Ocean Sciences 41, or 45, or 53, plus any six earth and ocean sciences courses of which four 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, biological anthropology and anatomy, 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
Prerequisites. Earth and Ocean Sciences 41 and 53; Chemistry 11L and 12L, or Chemistry 21L and 22L; Mathematics 31 and 32; either Physics 51L and 52L, or Physics 53L and 54L, or Physics 51L and Biology 25L, or Physics 53L and Biology 25L.

The Division of Earth and Ocean Sciences offers two programs leading to a B.S. degree:

Earth and Ocean Sciences: Preparatory to Advanced Studies in Geology and Oceanography
The B.S. track in geology and oceanography 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.

Major requirements. Any eight Earth and Ocean Sciences courses, at least seven of which must be at the 100-level or above, plus one field-oriented course (Earth and Ocean Sciences 126S, 181S, 182S, 183S, 184S, 185S or field camp).

Earth and Ocean Sciences: Preparatory to Advanced Studies in Environmental Processes
The B.S. track in environmental processes provides a background for subsequent graduate work for those who wish to follow an academic or professional career track in environmental science.

Major requirements. Five courses chosen from Earth and Ocean Sciences 115, 120, 121S, 123S, 151S, 152, 160, 172, or from 200-level Earth and Ocean Sciences courses approved by the director of undergraduate studies, plus one field-oriented course (Earth and Ocean Sciences 126L, 181S, 182S, 183S, 184S, 185S or field camp), plus any three earth and ocean sciences courses, at least 2 of which must be at the 100-level or higher.
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 3.1 at the beginning of the project to qualify for nomination. The student will apply for consideration for Graduation with Distinction by the end of his or her junior academic year by writing a letter of intent to the director of undergraduate studies describing the project. The student must solicit a committee of three faculty members 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 an independent study course (Earth and Ocean Sciences 191, 192). 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. Graduation with Distinction may be awarded in three levels: distinction, high distinction, and highest distinction. The decision on level of distinction will be made by majority vote of the student's project committee.

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 41, 45, or 53, 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 McElroy, Chair; Associate Professor Nechyba, Director of Undergraduate Studies; Associate Professor of the Practice Leachman, Associate Director of Undergraduate Studies; Professors Bollerslev, Clotfelter, Cook, De Marchi, Goodwin, Grabowski, Kelley, Kimbrough, Kramer, Ladd, Sloan, Tauchen, Taylor, Tower, Vernon, and Weintraub; Associate Professors Conrad, Hamilton, Peretto, and Vettas; Assistant Professors Arcidiacono, Beresteau, Besharov, Connolly, Coppejans, Crawford, Eraker, Heathcote, Rossi, Vigdor, and Yildirim; Professors Emeriti Blackburn, Davies, Kreps, Treml, Wallace, and Yohe; Research Professors Burmeister, Darity, and Toniolo; Adjunct Professor Gallant; Visiting Assistant Professor Fullenkamp

A major or 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, 111, 131, and 139.

1. Introductory Macroeconomics. (SS) SS Credit for introductory macroeconomics by transfer of college-level work not directly corresponding to Economics 1D, 1S or 51D in content. Equivalent to Economics 1A, 1D, 1S or 51D as a prerequisite and to satisfy requirement of the Economics majors and minor. One course.

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.

1D. Economic Principles. (SS) QID, SS Basic economic concepts such as demand and supply, markets and prices, equilibrium, and market failure. Inflation, unemployment, trade, economic growth and development. Different macroeconomic perspectives on issues of monetary and fiscal policy. Emphasis on public policy issues and the logic behind the economic way of thinking. For freshmen; upperclassmen by consent of instructor. Instructor: Kelley. One course.

1S. Economic Principles. (SS) QID, SS Seminar version of Economics 1D. Open only to freshmen. Instructor: Kelley. One course.

2. Introductory Microeconomics. (SS) SS Credit for introductory microeconomics by transfer of college-level work. Acceptable as prerequisite for Economics 55D in lieu of Economics 1, 1A, 1D, 1S or 51D. Does not imply proficiency in Economics 1, 1A, 1D, 1S or 51D. Does not count toward requirements of the Economics majors or minor. 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.

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

50. Duke-Administered Study Abroad: Special Topics in Economics. CCI Topics differ by section. Instructor: Staff. One course.

51D. Economic Principles. (SS) QID, SS Basic economic concepts such as demand and supply, markets and prices, equilibrium, and market failure. Inflation, unemployment, trade, economic growth and development. Different macroeconomic 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: Kelley, Leachman and Rossi. One course.

55D. Intermediate Economics I. (SS) QID, 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. Prerequisite: Economics 1, 1A, 1D, 2, 2A or 51D. Instructor: Nechyba. One course.

60. Economics of a United Europe. (SS) CCI, SS Implications of a common monetary policy, common welfare standards, unemployment, and migration in the European
Union. (Taught only in the Duke-in-Berlin Program.) Instructor: Tolksdorf. One course.


83. Financial Accounting and Decision Making. (SS) QID, 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. Not open to students who have taken Management Sciences 53. Does not count for economics major or minor requirements. Instructor: Skender. One course.

99S. Socialism, Enterprise, and Stability. (SS) QID, SS, W Interactions between ideas and events in inter-war Europe, organized around five themes: reparations, hyperinflation, the gold standard system, deflation, and totalitarianism. Emphasis on contemporary economic thinking in larger, broadly political contexts. Open only to students in the FOCUS Program on Twentieth-Century Europe. Prerequisite: Economics 1A or 2A recommended. Instructor: De Marchi. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Economics. CCI Topics differ by section. Prerequisites: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 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. Prerequisites: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course.

101. Special Topics in Economics. (SS) SS Prerequisites: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course.

105. Intermediate Economics II. (SS) QID, 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. Intended to replace Economics 149 beginning in Spring 2003. Prerequisite: Economics 2D, 52D or 55D; and Mathematics 31 or 31L; and successful completion of EcoTeach Center Math Test or Mathematics 103. Instructor: Arcidiacono, Besharov, and Taylor. One course.

110. Intermediate Economics III. (SS) QID, SS, STS Intermediate level treatment of macroeconomic models, fiscal and monetary policy, inflation, unemployment, economic growth. Intended to replace Economics 154 beginning Fall 2003. Prerequisite: Economics 1, 1A, 1D or 51D; and Economics 105 or 149 may be taken as co-requisite. Instructor: Connolly. One course.

130S. Economics of Creative Goods. (SS) IAA, QID, R, SS Creative industries (especially the arts, entertainment) often distinguished by peculiarities of product (e.g., non-durable), by special nature of financing and contracting (e.g., option contracts), and by challenges they present to conventional analysis of pricing and consumption.
Research report required. (Taught only in Duke-in-Florence Program.) Prerequisites: Economics 2, 2A, 2D, or 52D, or instructor's waiver. Instructor: DeMarchi. One course.

132. Introduction to Economic History. (CZ) (SS) CCI, CZ, SS A survey of Western economic history: population, production, exchange, and institutions; from antiquity to the present. Prerequisite: Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course.

135S. Florence and Antwerp as Centers of Artistic Production. (AL) (SS) AL, CCI, QID, R, SS Historical and comparative approach to the question of what does it take for a city to become a self-sustaining center of artistic production. Role of guilds, other legal restrictions; public institutional/financial support; private financial arrangements; scale; wealth and structure of demand; complementarities among luxury products; migration; exports; market forces. (Taught only in Duke-in-Florence Program.) Prerequisites: Economics 2, 2A, 2D, or 52D, or consent of instructor. Instructor: De Marchi. One course.

136. The International Economy Since 1800. (CZ) (SS) CCI, CZ, SS "Modern economic growth" in international perspective. The history of the international economic institutions; the economic causes and effects of wars, international financial instability, growth and globalization. Prerequisite: Economics 1, 1A, 1D or 51D; Economics 110 or 154 recommended. Instructor: Toniolo. One course.

138. History of Globalization in the Twentieth Century. (CZ) (SS) CCI, CZ, QID, SS The two major globalization drives that frame the twentieth century and in between them: two war economies, the great depression, autarky, postwar efforts to revive the international economy. Prerequisite: Economics 1, 1A, 1D or 51D; Economics 110 or 154 recommended. Instructor: Toniolo. One course.

139D. Introduction to Econometrics. (QR) M, QID, R Data collection, estimation, and hypothesis testing. Use of econometric models for analysis and policy. Prerequisite: Economics 2, 2A, 2D, 52D or 55D; Statistics 103. Co-requisite: Mathematics 103. Instructor: Beresteanu or Coppejans. One course.

140. Comparative Economic Systems. (CZ) (SS) CCI, CZ, SS History, analysis, and comparison of basic economic systems; interconnection between culture, customs, and economic systems; models versus reality; performance criteria. Market versus centrally planned economics: decision making, allocative mechanisms, information, property rights, and incentives. Problems of transition. Countries studied include United States, United Kingdom, Germany, Russia, China, Japan, Sweden, central European countries. Prerequisite: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Treml. One course. C-L: Comparative Area Studies, Markets and Management Studies

141. Applied Econometrics. (QR) M, QID, R Covers 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. Prerequisite: Economics 139, Mathematics 104, and Statistics 103 or equivalent. Instructor: An. One course.

143. The Art Market. (AL) (SS) AL, IAA, R, SS An 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. Prerequisite: Economics 2, 2A, 2D, 52D or 55D; and Art History 70 or consent of instructor. Instructors: De Marchi and Van Miegroet. One course. C-L: Art History 157

146. Adam Smith and the System of Natural Liberty. (SS) SS, STS, W 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 1, 1A, 1D, or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: De Marchi. One course. C-L: Comparative Area Studies

147. Women in the Economy. (SS) CCI, R, SS The historical evolution of male/female roles, particularly in the United States: gender division of labor in the family; how time is allocated between the household and labor market. Comparisons of men’s and women’s positions in the labor market; examination of women’s lower economic status, and of the impact of their employment status on family structure and well-being of family members. Prerequisite: Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course.

148. History of Economic Thought. (SS) CCI, R, SS, W Approaches to economic problems from Aristotle to Keynes, emphasizing certain models and doctrines— their origins, relevance, and evolution. Readings from Mun, Quesnay, Adam Smith, Malthus, Ricardo, Marx, Walras, Veblen, and Keynes. Prerequisite: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Goodwin. One course. C-L: Comparative Area Studies

149. Microeconomics. (SS) QID, SS Cost and supply considerations in price theory; the demand for factors of production. The allocation of resources in the context of competitive and monopolistic market structures. Not offered after Fall 2002. Not open to students who have had Public Policy Studies 110. Prerequisite: Economics 2, 2A, 2D, 52D or 55; and Mathematics 26L, 31 or 31L. Co-requisite: Statistics 101 or 103. Instructor: Besharov, Graham, Taylor, Vernon, Yildirim, or Zhou. One course.

150. The Uses of Economics. (CZ) (SS) 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 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Goodwin. One course.

151. Basic Finance and Investments. (SS) QID, 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, 158, 181, and/or 200E. Only Economics 151 or Economics 181 (not both) may be taken for credit within the major. Prerequisite: Economics 105 or 149; and Statistics 101, 103, or Sociology 133. Instructor: Fullenkamp. One course. C-L: Markets and Management Studies

153. Money and Banking. (SS) QID, SS, STS The evolution and operations of commercial and central banking and nonbanking financial institutions in the United States, the 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. Prerequisite: Economics 110 or 154. Instructor: Leachman. One course.

154. Macroeconomics (SS) QID, SS, STS Concepts and measurement of national income and expenditures, technology, employment, interest rates, and price levels; the theoretical determination of these aggregates in the short-run and long run; applications of macroeconomic theory to business cycles. Determinants (private incentives, institutions, government policy, property rights, globalization) of technological progress and long-run economic growth within and across countries. Prerequisite:
Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D; and Mathematics 26L, 31 or 31L. Instructor: Connolly, Heathcote, Kimbrough, Leachman, Mendoza, Peretto, or Tower. One course.

155. Labor Economics: Analysis and Measurement. (SS) QID, R, SS Labor market equilibria; the demand for and supply of labor, including human fertility, human capital, hours of work, and labor force participation. Wage levels and differences, including discrimination. Union and government as labor market factors. Prerequisites: Economics 105 or 149; and Mathematics 26L, 31 or 31L; and Statistics 103. Instructor: Arcidiacono or McElroy. One course.

156. Health Economics. (SS) QID, SS Economic aspects of the production, distribution, and organization of health care services, such as measuring output, structure of markets, demand for services, pricing of services, cost of care, financing, mechanisms, and their impact on the relevant markets. Prerequisite: Economics 105 or 149. Instructor: Sloan. One course. C-L: Public Policy Studies 156, Health Policy.

157. Financial Markets and Investments. (QR) M, QID 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. Not open to students who have had Economics 158 before Fall 1998. Prerequisite: Economics 105 or 149; and Economics 110 or 154; and Economics 139. Instructor: Bollerslev or Eraker. One course.

158. Applied Financial Economics. (SS) QID, 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 IBM-compatible 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. Prerequisite: Economics 105 or 149; and Economics 110 or 154; and Economics 139. Instructor: Burmeister. One course.

161S. Economics of Slavery in the American South. (SS) SS Examines how modern economic analysis is helpful in understanding the nature and development of a slave economy, society, and culture. Combines the study of economic development and comparative economic systems. Prerequisite: Economics 105 or 149. Instructor: Staff. One course. C-L: African and African American Studies 161S

163. Economics of the Environment. (SS) QID, SS, STS Role of economic methods in evaluating the use and abuse of environmental resources. Focus on characteristics of resources that influence efficient allocation decisions. Current case studies used to develop relevant microeconomics such as natural resource damage assessment, auctions for pollution permits, trade, and the environment. Prerequisite: Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course.

164. Formulating Macroeconomic Concerns, 1936-86. (SS) QID, SS How social and political concerns, ideals of fairness, the availability of appropriate quantitative information, and modeling techniques shaped the way macroeconomic issues were perceived during this period, principally in the United States. Evolutionary case studies of selected issues including inflation/deflation, unemployment, the incentives-security complex, markets, and taxation, distribution, and growth to understand the changing contexts within which models have been conceived and considered applicable. Prerequisite (or corequisite) Economics 110 or 154. Instructor: De Marchi. One course.

165. American International Economic Policy. (SS) 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
167. Multinational Management. (SS) CCI, 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 105 or 149. Instructor: Staff. One course.

173. Economics of Organization and Management. (SS) QID, SS Coordination and motivation issues within a corporation along with the internal design and dynamics of organizations. Topics include the structure of employment contracts, performance incentives, and the pricing of financial assets. Prerequisite: Economics 105 or 149. Instructor: Staff. One course. C-L: Markets and Management Studies

175. Economics of Modern Latin America. (SS) CCI, SS The remarkable shift that has taken place in various countries of Latin America from a statist, import substitution model of development towards a more free-market economy. Emphasis on case studies of individual countries and specific policies including opening markets to foreign trade and investment, privatization, deregulation, creation of private pension systems, and building greater transparency in financial markets. The end of Latin American debt crises and prospects for hemispheric integration. Prerequisite: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies

180. Law and Economics. (SS) EI, QID, SS An introduction to the 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. Prerequisite: Economics 105 or 149. Instructor: Staff. One course.

181. Corporate Finance. (SS) QID, R, SS Major corporate decisions from the perspective of the firm with an emphasis on the interaction of the firm with financial markets; project evaluation for investment, choice between borrowing and issuing stock, dividend policy, organizational form (for example, mergers and acquisitions). Introduction to financial markets; issuing stocks, analyzing financial performance, and options. Only Economics 151 or Economics 181 (not both) can be taken for credit within the major. Prerequisites: Economics 1, 1A, 1D or 51D; and Economics 105 or 149; and Economics 139. Instructor: Fullenkamp. One course. C-L: Markets and Management Studies

183. Agency and Accounting. (SS) QID, SS The production and use of information in corporate decision making and financial markets. The theory of principals and agents. The relationship between the structure of information flows and incentives within the firm and the impact of that relationship on the firm's operations, organizational form, capital structure, and compensation scheme. How the dissemination of information in capital markets affects asset pricing, financial contracting, and corporate governance. Prerequisite: Economics 105 or 149. Instructor: Staff. One course. C-L: Markets and Management Studies

187. Public Finance. (SS) QID, 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 105 or 149. Instructor: Staff. One course.

188. Industrial Organization. (SS) QID, SS Economic theories of the behavior of firms within industries. Emphasis upon incentives and the role of information when firms are mutually interdependent. Topics include the agency problem, entry, research and development, collusion, and various pricing schemes. Analysis conducted within a number of regulatory environments. Prerequisite: Economics 105 or 149; and Statistics
103 or consent of instructor. Instructor: Peretto or Yildirim. One course. C-L: Markets and Management Studies

189. Business and Government. (SS) QID, 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 105 or 149; and Statistics 103 or consent of instructor. Instructor: Grabowski or Vernon. One course. C-L: Markets and Management Studies

190. The Development of Modern Economic Thought. (SS) 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 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. 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 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course.

192. Independent Study. Individual non-research, directed reading, or individual project in a field of special interest under the supervision of a faculty member. Consent of instructor and director of undergraduate studies required. Prerequisites: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course.

193. Research Independent Study. R Same as Economics 191, but for second-semester juniors and seniors. Consent of instructor and director of undergraduate studies required. Prerequisite: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course.

194. Independent Study. Same as Economics 192, but for second-semester juniors and seniors. Consent of instructor and director of undergraduate studies required. Prerequisite: Economics 1, 1A, 1D or 51D; and 2, 2A, 2D, 52D and 55D. Instructor: Staff. One course.

195. Selected Topics in Economics. Instructor: Staff. One course.

196. Selected Topics in Economics. Instructor: Staff. One course.

197S. Economic Science Studies. (SS) R, SS, STS, W Application of techniques 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, and by what processes of negotiation? Does accepting that knowledge in economics is a construct reduce the usefulness of that knowledge and affect the notion of progress in economic science? Why has mathematical economics enjoyed such success in recent decades? Close readings in texts across the sciences and in modern economics, and the history of mathematics, culminating in a research project. Prerequisites: Economics 105 or 149; and Economics 110 or 154; and consent of instructor. Instructor: Weintraub. One course. C-L: Sociology 187S

199. Distributive Justice and the Social Sciences. (SS) EI, QID, SS Welfarism: classical utilitarianism versus egalitarianism (Harsanyi versus Rawls). Democratic rights: voting rules and preference aggregation (Arrow's theorem). Liberalism: competitive equilibrium, destructive competition, and inefficient decentralization. Welfarism versus resourcism. Mechanism design and the microeconomic approach to justice. Prerequisite: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course. C-L: Political Science 175A
For Advanced Undergraduates and Graduates

205. Intermediate Economics II. (SS) Q1D, 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. Similar to Economics 105 but at a more advanced level. Not open to students who have taken Economics 105 or 149. Intended to replace Economics 149 beginning in Spring 2003. Prerequisites: Economics 2D, 52D or 55D; and Mathematics 31 or 31L; and successful completion of EcoTeach Center Math Test or Mathematics 103. Instructor: Arcidiacono and Taylor. One course.

207. Models of Conflict and Cooperation. (SS) Q1D, SS Cooperative and noncooperative game theory with applications to trading, imperfect competition, cost allocation, and voting. Prerequisite: Economics 105 or 149. Instructor: Besharov or Graham. One course.

207S. Models of Conflict and Cooperation. (SS) Q1D, SS Seminar version of 207. Prerequisite: Economics 105 or 149. Instructor: Besharov, Graham, or Zhou. One course.

208S. Economics of the Family. (SS) Q1D, R, SS 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 105 or 149; and Statistics 103. Instructor: McElroy. One course.

210. Intermediate Economics III. (SS) Q1D, SS, STS Intermediate level treatment of macroeconomic models, fiscal and monetary policy, inflation, unemployment, economic growth. Similar in content to Economics 110, but at a more advanced level. Not open to students who have taken Economics 110 or 154. Intended to replace Economics 254 beginning in Fall 2003. Prerequisite: Economics 1, 1A, 1D or 51D. Prerequisite or co-requisite: Economics 105 or 149. Instructor: Connolly. One course.

216S. Economics of Education. (SS) Q1D, SS Topics include investment in human capital, return to and demand for education, the production function for schooling, public expenditures on schools, effectiveness of private and public schools, the distribution of public educational expenditures, public financing of higher education, inflation in college costs, and labor markets for teachers and professors. Emphasis on students' research projects. Prerequisite: Economics 105 or 149 or Public Policy Studies 110, Statistics 101 or 103. Instructor: Clotfelter. One course. C-L: Public Policy Studies 216S

218. Macroeconomic Policy. (SS) Q1D, SS One course. C-L: see Public Policy Studies 218

219S. Economic Problems of Underdeveloped Areas. (SS) Q1D, R, SS, W Assessment of the economic determinants of development with consideration given to demographic, political, and public policy impacts. Emphasis on student-directed research that employs modern statistical methods to expose development issues, across countries and over time. Prerequisite: Economics 105 or 149; and Economics 110 or 154; and consent of instructor required. Instructor: Kelley. One course. C-L: Comparative Area Studies 219S

220S. Computer Modeling for Policy Analysis. (SS) Q1D, R, SS Introduction to the use of computer techniques in economic policy evaluation; policy applications to international economics, public finance and development economics; computer analysis of linearized and nonlinear models. Students required to complete a major modeling project. Prerequisite: Economics 105 or 149; and Economics 110 or 154. Instructor: Tower. One course.
236. The International Economy Since 1800. (CZ) (SS) CZ, R, SS  Same as Economics 136, but requires an additional paper; not open to students who have taken Economics 136. Prerequisite: Economics 1, 1A, 1D or 51D; recommended: Economics 110 or 154. Instructor: Toniolo. One course.

237S. Understanding and Managing Global Capital Markets Crises. (CZ) (SS) CCI, CZ, QID, SS  One course. C-L: see Political Science 237S

238. History of Globalization in the Twentieth Century. (CZ) (SS) CCI, CZ, QID, R, SS  Same as Economics 138, but requires an additional paper; not open to students who have taken Economics 138. Prerequisite: Economics 1, 1A, 1D or 51D; recommended Economics 110 or 154. Instructor: Toniolo. One course.

239. Introduction to Econometrics. (QR) M, QID, R  Data collection, estimation, and hypothesis testing. Use of econometric models for analysis and policy. (Same as Economics 139 but requires additional term paper; not open to students who have taken Economics 139.) Prerequisite: Economics 2, 2A, 2D, 52D or 55D; and Mathematics 103; and Statistics 103. Mathematics 103 may be taken as a co-requisite. Instructor: Beresteau or Coppejans. One course.

240. Comparative Economic Systems. (SS) CCI, SS  Analysis and comparison of basic economic systems; market versus centrally planned economies; decision making, information, property rights (income and control), and incentives. Western industrialized market economies compared with Soviet-type command economies. Analysis of change, reforms, and of economic problems of systems transformation. Not open to students who have taken Economics 140. Prerequisite: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D, or 55D. Instructor: Treml. One course. C-L: Comparative Area Studies

241. Applied Econometrics. (QR) M, QID, R  Covers 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. (Same as Economics 141, but requires additional paper; not open to students who have taken Economics 141.) Prerequisite: Economics 139, Mathematics 104, and Statistics 103 or equivalent. Instructor: An. One course.

243. The Art Market. (AL) (SS) AL, IAA, R, SS  Same as Economics 143, except additional paper required. Prerequisite: Economics 2, 2A, 2D, 52D or 55D; and Art History 70 or consent of instructor. Instructors: De Marchi and Van Miegroet. One course.

246. Adam Smith and the System of Natural Liberty. (SS) R, SS, STS  Same as Economics 146, but requires an additional paper; not open to students who have taken Economics 146 or 151. Instructor: De Marchi. One course.

248. History of Economic Thought. (SS) CCI, R, SS  Approaches to economic problems from Aristotle to Keynes, emphasizing certain models and doctrines—their origins, relevance, and evolution. Readings from Mun, Quesnay, Adam Smith, Mathus, Ricardo, Marx, Walras, Veblen, and Keynes. (Similar to Economics 148, but requires an additional assignment. Not open to students who have taken Economics 148.) Prerequisites: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55D. Instructor: Goodwin. One course. C-L: Comparative Area Studies

249. Microeconomics. (SS) QID, SS  Cost and supply considerations in price theory; the demand for factors of production. The allocation of resources in the context of competitive and monopolistic market structures. Similar to Economics 149 but at a more advanced level; not open to students who have taken Economics 149. Not offered after Fall 2002. Prerequisite: Economics 2, 2A, 2D, 52D, or 55; and Mathematics 26L, 31 or 31L; and co-requisite: Statistics 101 or 103. Instructor: Graham, Taylor, Vernon, Yildirim, or Zhou. One course.
251S. Regulation of Vice and Substance Abuse. (SS) R, SS, W One course. C-L: see Public Policy Studies 251S

252. Mercantile Culture and Art in the Netherlands. (AL) (CZ) AL, CCI, CZ, IAA, R Same as Economics 152, but requires additional assignments; not open to students who have taken Economics 152 or Art History 155. Instructors: De Marchi and Van Miegroet. One course.

254. Macroeconomics (SS) QID, SS, STS Concepts and measurement of national income expenditures, technology, employment, interest rates, and price levels; the theoretical determination of these aggregates in the short run and long run; applications of macroeconomic theory to business cycles. Determines (private incentives, institutions, government policy, property rights, globalization) of technological progress and long-run economic growth within and across countries. Similar to Economics 154 but at a more advanced level; not open to students who have taken Economics 154. Not offered after Spring 2003. Prerequisite: Economics 1, 1A, 1D or 51D; and Economics 2, 2A, 2D, 52D or 55; and Mathematics 26L, 31 or 31L. Instructor: Connolly, Heathcote, Kimbrough, Leachman, Mendoza, Peretto, or Tower.

255S. Labor Economics: Analysis and Measurement. (SS) QID, R, SS Labor market equilibria. The demand for labor. The supply of labor: human fertility, human capital, hours of work, and labor force participation. Wage levels and differences. Union and government as labor market factors. (Same as Economics 155S, but requires additional paper; not open to students who have taken Economics 155S.) Prerequisite: Economics 105 or 149, Mathematics 31, and Statistics 103 or equivalent. Instructor: McElroy. One course.

257. Financial Markets and Investments. (QR) M, QID, R Same as Economics 157, but requires an additional paper. Not open to students who have had Economics 158/258 before Fall 1998. Prerequisite: Economics 105 or 149; and Economics 110 or 154; and Economics 139. Instructor: Bollerslev, Eraker, or Tauchen. One course.

258. Applied Financial Economics. (SS) QID, R, SS Same as Economics 158, but requires additional work. Not open to students who have had Economics 158/258. Prerequisite: Economics 105 or 149; and Economics 110 or 154; and Economics 139. Instructor: Burmeister. One course.

259S. State and Local Public Finance. (SS) SS One course. C-L: see Public Policy Studies 259S

261. Evaluation of Public Expenditures. (SS) QID, SS One course. C-L: see Public Policy Studies 261; also C-L: Environment 272, Health Policy

262S. Seminar in Applied Project Evaluation. (SS) QID, R, SS One course. C-L: see Public Policy Studies 262S

263. Environmental Economics: Quantitative Methods and Applications. (SS) QID, SS, STS Uses envirometrics (mathematical programming, multivariate statistics, and simulation techniques) to address environmental problems; properties of economic instruments for externality problems developed with programming models; regression and maximum likelihood techniques used in nonmarket valuation; and simulation in applied benefit and cost analysis. Prerequisite: Economics 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course. C-L: Environment 263

264. Formulating Macroeconomic Concerns, 1936-86. (SS) QID, R, SS Same as Economics 164, but requires an additional paper; not open to students who have taken Economics 164. Prerequisite: (or corequisite) Economics 110 or 154. Instructor: De Marchi. One course.

265S. International Trade. (SS) QID, R, SS International trade, investment and migration, commercial policy, and the political economy of trade. Prerequisite: Economics 105 or 149; and Economics 110 or 154. Instructor: Kimbrough or Tower. One course. C-L: Undergraduate Canadian Studies Program
266S. International Monetary Economics. (SS) QID, R, SS Financial aspects of growth and income determination, and macroeconomic policy in open economies. Applications to exchange rate determination, capital markets, fluctuations in the trade balance and current account, monetary and fiscal policies in open economies, currency crises, and monetary reform. Significant research component required. Prerequisite: Economics 105 or 149; and Economics 110 or 154. Instructor: Heathcote or Kimbrough. One course.

268S. Current Issues in International and Development Economics. (SS) 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 105 or 149; and Economics 110 or 154. Instructor: Tower. One course. C-L: Undergraduate Canadian Studies Program

269. Microeconomic Analysis. (SS) QID, SS The basic tools for using microeconomic analysis to address practical economic problems. Topics include consumption, production, externalities, partial equilibrium, and general equilibrium. Applications drawn from labor markets, public goods, cost/benefit analysis, and optimal taxation. The level of the course is between intermediate microeconomics (Economics 149/249) and the core Ph.D. microeconomics sequence (Economics 301/302). Prerequisite: Economics 105 or 149. Instructor: Staff. One course.

270. Resource and Environmental Economics. (SS) SS One course. C-L: see Environment 270; also C-L: Public Policy Studies 272

272. Economic Analysis of Resource and Environmental Policies. (SS) SS One course. C-L: see Environment 271

275. Economics of Modern Latin America. (SS) CCI, SS The remarkable shift that has taken place in various countries of Latin America from a statist, import substitution model of development towards a more free-market economy. Emphasis on case studies of individual countries and specific policies including opening markets to foreign trade and investment, privatization, deregulation, creation of private pension systems, and building greater transparency in financial markets. The end of Latin American debt crises and prospects for hemispheric integration. (Same as Economics 175, but requires an additional paper; not open to students who have taken Economics 175.) Prerequisite: Economics 1, 1A, 1D or 51D; and 2, 2A, 2D, 52D or 55D. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies

281. Corporate Finance. (SS) QID, SS Same as Economics 181, but requires an additional paper; not open to students who have taken Economics 181. Instructor: Staff. One course.

284S. Financial Development and History. (SS) 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.

286S. Economic Growth and Development Policy. (SS) QID, SS, STS, W One course. C-L: see Public Policy Studies 286S; also C-L: Comparative Area Studies, Latin American Studies

287. Public Finance. (SS) QID, 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. Not open to students who have had Economics 187. (Taught concurrently with Economics 187 but requires additional graduate-level work.) Prerequisite: Economics 105 or 149. Instructor: Nechyba or Sieg. One course.

291. European Economic History. (SS) 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 105 or 149; and Economics 110 or 154. Instructor: Toniolo. One course.

293S. Russian Economic History. (SS) CCI, SS From 1917 through the present. Foundations of the command economy and promises of socialism–rejection of markets, establishment of central planning, industrialization, collectivization of agriculture; economic reforms. Gorbachev’s perestroika, collapse of the Soviet system, and emerging market economy in Russia. Prerequisite: Economics 105 or 149; and Economics 110 and 154. Instructor: Treml. One course. C-L: Comparative Area Studies

295. Selected Topics in Economics. (SS) SS Instructor: Staff. One course.

296. Selected Topics in Economics. (SS) SS

Senior Seminars

200. Senior Capstones. (SS) SS Special topics seminars open only to students with senior standing and completing a major in economics, except with special permission of instructor. Students should enroll by designated suffix letter. Consent of individual instructor may be required. One course each.

200AS. Economics and the Bloomsbury Group. (CZ) (SS) CZ, IAA, SS, W An exploration of the place of economics in the affairs of the Bloomsbury Group, a remarkable association of intellectuals and artists active during the first half of the twentieth century, the best known central figures of which were Virginia and Leonard Woolf, E. M. Forster, John Maynard Keynes, Duncan Grant, Vanessa Bell, and Roger Fry. How economics looks when embedded in the humanities and the arts as well as politics. Consent of instructor. Instructor: Goodwin.

200BS. Innovation and Entrepreneurial Activity. (SS) QID, R, SS, STS Economic competition and performance of start-up companies in the biotech, software, and other high-tech industries. Concepts learned in industrial organization, corporate finance, labor economics, and micro theory applied to issues such as the market for technology licenses, incentive contracts of scientist entrepreneurs, venture capital funds, and intellectual property rights. Research project required. Consent of instructor. Instructor: Grabowski.

200CS. Economy, Society, and Morality in Eighteenth-Century Thought. (SS) IAA, QID, SS, W 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 economics or political science. Not open to students who have had Economics 146, Economics 105 or 149; and Economics 110 or 154. Instructors: De Marchi and Grant. C-L: Political Science 214S

200ES. Financial Derivatives and Financial Engineering. (SS) QID, R, SS, W Financial derivatives including options on stocks and stock market indices, futures on stock indices and United States Treasury securities, interest rate swaps, and exotic options. The major techniques of derivatives pricing including the Black-Scholes formula for basic options, the Cox-Ingersoll-Ross model for fixed income analysis, and binomial simulation models for more complex derivatives. Research projects/papers and class presentations required. Prerequisite: Economics 158. Additional courses in computer science and mathematics helpful. Instructor: Tauchen.

200FS. Current Issues in Economics. (SS) EI, QID, SS Economic analysis of such issues as the health care system, crime and punishment, pollution and the environment,
famines, the performing arts, education, welfare, income distribution and the energy crisis. Consideration of various critiques of neoclassical economics. Prerequisite: Economics 105 or 149; and Statistics 103 or an equivalent. Instructor: Weintraub.

200G. Regulation and Industrial Economics. (SS) QID, R, SS, STS Industrial competition and performance in industries such as automobiles, telephones, cable TV, airlines, pharmaceuticals, tobacco, and health care services. The efficiency of regulation and other public policy programs. Research project required. Prerequisites: Economics 149 and statistics. Instructor: Grabowski. One course.

200X. Senior Capstone: Special Topics. (SS) R, SS Senior Capstone: Special Topics Prerequisites: Economics 105 or 149; and Economics 110 or 154. Instructor: Staff.

These courses are also open to juniors by consent of instructor.

209S. Global Issues in Population and Development. (SS) EI, R, SS, W Relationship of population growth to economic development and to natural resource and environmental pressures. Causes and impacts of population change, including economic models of fertility, mortality, marriage, and migration. Research project required. Prerequisite: Economics 105 or 149; and Economics 110 or 154. Instructor: Kelley. One course.

212S. Economic Science and Economic Policy. (SS) R, SS, STS, W An historical and contemporary examination of the impact of economics on public policy. Topics vary each semester and have included energy and anti-inflationary policy, productivity growth, the Third World, and the Council of Economic Advisers. Different sources of economic ideas and the impact of technological development in the policy process. Research papers required. Prerequisite: Economics 105 or 149; and Economics 110 or 154; or consent of instructor. Instructor: Goodwin. One course.

COURSES CURRENTLY UNSCHEDULED
25. Competition, Monopoly, and Welfare
65. Japanese Business Management
69. Australia and the Asia-Pacific Economies
142S. Chinese Economy in Transition
144. Education, Development, and Growth
145. Soviet System and the Emerging Russian Economy
152. Mercantile Culture and Art in the Netherlands
198S. Economics of Regulation
224S. Economics of the Law
225S. Games and Information
231S. Economic Development in Latin America
235. The Economics of Crime
241. Applied Econometrics
242S. Chinese Economy in Transition
244. Education, Development, and Growth
253. Econometric Methods
273. Economics of Organization and Management
283. Agency and Accounting
294S. Soviet Economy in Transition
299. Distributive Justice and the Social Sciences

THE ECONOMICS MAJOR AND MINOR

The Department of Economics publishes an on-line handbook (http://www.econ.duke.edu) to guide economics majors and minors. For both the major and the minor, substitution of similar courses in other departments at Duke for courses in the Economics Department is not permitted.
THE MAJORS
For the A.B. Degree

Prerequisites: Economics 1, 1A, 1D, 1S or 51D. Economics 55D (or 52D prior to Fall 2002). Mathematics 25L and 26L, or 31 or 31L, or advanced placement for Mathematics 31. Statistics 101 or 103. Statistics 103 is recommended for most Economics majors. For students entering Fall 2000 or later, Statistics 103 is a prerequisite for many 100-level economics courses and should therefore be taken early in the major. Mathematics 135 or 136 is an alternative way to satisfy the statistics requirement. With approval of the Director of Undergraduate Studies, students may take Public Policy 110 in place of Economics 55D.

Requirements: Economics 105 or 205 (or 149 or 249 prior to Spring 2002). Economics 110 or 210 (or 154 or 254 prior to Fall 2003). Any five additional economics courses at the 100 level or above. 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 132, 136, 138, 146, 148, 150, 164, 190, 197, 199, 212, 291, 299). Students entering in Fall 2000 or later should be aware that Economics 139 is a prerequisite for several 100-level economic courses. Taking Economics 139 by the junior year will ensure the broadest possible selection of courses. Up to two transfer and/or study abroad credits may be counted towards major requirements. (The only exception applies to study abroad credit from the London School of Economics.)

For the B.S. Degree

The Bachelor of Science degree in economics signifies achievement of proficiency in quantitative skills and experience in applying these to economics. It is recommended for students who plan to do graduate study in economics and graduate business programs, and for students interested in employment in business and government agencies where these skills would be valuable. Students who contemplate graduate study in economics are urged to develop skills in intermediate calculus (Mathematics 103), linear algebra (Mathematics 104), applied analysis (Mathematics 111), differential equations (Mathematics 131), and advanced calculus (Mathematics 139). Students interested in graduate work in business administration may wish to focus less on mathematics and more on computer science, statistics and quantitative economics.

Prerequisites: Economics 1, 1A, 1D, 1S or 51D. Economics 55D (or 52D prior to Fall 2002). Mathematics 31, 32 and/or 103, or advanced placement for Mathematics 103. Statistics 103. Statistics 103 is the required statistics course; however Mathematics 135 or 136 are acceptable alternatives. For students entering Fall 2000 or later, Statistics 103 is a requirement for many 100-level economics courses and therefore should be taken as early as possible. With approval of the Director of Undergraduate Studies, students may take Public Policy 110 in place of Economics 55D.

Requirements: Economics 105 or 205 (or 149 or 249 prior to Spring 2002). Economics 110 or 210 (or 154 or 254 prior to Fall 2003). Economics 139 or 239. (Undergraduates should view Economics 139 as a course to be completed no later than their junior year since many 100-level economics courses build on this course.) Any four additional economics courses at the 100-level or above, plus any two additional quantitative reasoning courses drawn from the following: computer science at any level; 100-level or above courses in mathematics (excluding Mathematics 103); 100-level or above courses in statistics (excluding Statistics 101 and 103); the following quantitatively oriented economics courses: 157 or 257S, 158 or 258, 181, 200ES, 207 or 207S, 220S, 225S, 241, 253 (excluding Economics 139). Students cannot use the same individual course to fulfill both the elective and the quantitative reasoning requirements of the major. Up to two transfer and/or study abroad credits may be counted towards major requirements. (The only exception applies to study abroad credit from the London School of Economics.)
**Departmental Graduation with Distinction**

For graduation with departmental distinction, a thesis is required. The proposed program of research must be approved in advance by the faculty supervisor and the director of the distinction program (Professor Craufurd Goodwin). Theses will be assessed by a faculty committee. Distinction will be awarded at two levels: high distinction (for work that is of exceptional quality) and distinction in economics. Eligibility for acceptance into the distinction program is a GPA of 3.5 in Economics and a 3.3 overall. A seminar at the 200-level has often proved a path to fruitful topics.

**THE MINOR**

**Requirements:** Economics 1, 1A, 1D, 1S or 51D. Economics 55D (or Economics 52D prior to Fall 2002). Students entering in Fall 2002 or later must take Economics 105 plus two additional 100-level or above economics courses. (Students entering prior to Fall 2002 may instead take either Economics 149 or 154 plus two additional 100-level economics courses.) With approval of the Director of Undergraduate Studies, students may take Public Policy 110 in place of Economics 55D but then need to take one additional economics course (excluding Economics 2, 2A, 83, 91 and 92). Students who place out of Economics 1D or 51D with AP credit (i.e. students who receive Economics 1A credit) must take one additional economics course (excluding Economics 2, 2A, 83, 91 and 92). Up to two transfer and/ or study abroad credits may be counted toward minor requirements.

**Education (EDUC)**

Associate Professor of the Practice Malone, Director of the Program and Director of Undergraduate Studies; Associate Professor Di Bona; Assistant Professor of the Practice Riggsbee; Adjunct Professor Trask; Adjunct Associate Professors Bryant and Wilson; Adjunct Assistant Professor Rodas; Adjunct Associate Professor of the Practice Bookman; Adjunct Assistant Professor of the Practice Lattimore; Adjunct Research Professor Pfeiffer; Visiting Associate Professor of the Practice Webb; Adjunct Lecturers Chafe and Wasiolek; Instructor Rumsey

Students who desire an understanding of the field of education as part of their liberal arts program should elect courses in accordance with their special interests. Most courses in education satisfy requirements in the social sciences area of knowledge. Students interested in licensure to teach secondary school should consult the secondary program coordinator. Students interested in licensure to teach elementary school should consult the elementary program coordinator.

**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.

**100. Social and Philosophical Foundations of Education. (SS) 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. Instructor: Di Bona or Rumsey. One course. C-L: Marxism and Society

**101. Duke-Administered Study Abroad: Advanced Special Topics in Education.** CCI Topics differ by section. Instructor: Staff. One course.

**104. Intelligence (C, D, P). (SS) QID, SS** One course. C-L: see Psychology 104

**108S. Teaching Practices in Elementary Language Arts and Content Areas. (SS) CCI, EI, SS** Elementary curriculum with emphasis on meeting the needs of students from diverse cultural groups in public school settings. Sequential, field-based experiences in
classrooms analyzed with a focus on comparing ethical teaching practices. Instructor: Riggsbee. One course.

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. Instructor: Riggsbee. One course.

110. Research/Reflective Practice Elementary Education. (SS) SS Reflection on the teaching internship, classroom action research focusing on elementary instruction, and a case study analyzing a student with special learning needs. Instructor: Riggsbee. One course.

113S. Educational Technology. (SS) IAA, R, SS, STS Exploration of the history and theories of education in general and of educational technology in specific; relationship between theories of learning and instructional activities in technology; aesthetics of instructional and screen design; human-computer dialogue; "meaningful input," response analysis, speech recognition, text presentation; regular online investigations; final exercises: individual hard-copy research "portfolios" of the semester's work and team-built online course web site, with emphasis on developing aesthetic understanding. Instructor: Borchardt. One course.

117S. Psychology of Personal and Social Adjustment. (SS) CCI, EI, SS The meaning of psychological well-being with a focus on ways teachers and counselors can foster healthy emotional development of school children. Examination of emotional and behavioral problems in childhood, including comparative analysis of the impact of cultural influences and differences on mental health. Involves a service learning experience in which students reflect on ethical issues encountered in counseling relationships with children. Instructor: Malone. One course.

118. Educational Psychology. (SS) 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. Instructor: Malone or staff. One course.

120. Elementary Education: Internship. EI Engagement, as part of a teaching internship in elementary schools, in active classroom research projects by designing, implementing, and evaluating units of instruction. Creation of a portfolio of products to demonstrate technology competencies for teaching certification. Students also reflect and write on ethical issues involved in their service experiences in public schools. Instructor: Riggsbee. Two courses.

121. Infancy, Early Childhood, and Educational Programs. (SS) 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: Webb. One course.

123. Motivation and At-Risk Students. (SS) CCI, SS Explores current motivational theories and how these theories can be applied to motivating at-risk students. Includes multicultural issues in teaching at-risk students. Instructor: Staff. One course.

133. Legal Issues in Education. (SS) SS 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
course), institutional liability and teacher’s rights at the elementary and secondary
levels and in the college setting. Instructor: Wasiolek. One course.

**139. Marxism and Society. (SS) SS** One course. C-L: see Cultural Anthropology 139;
also C-L: History 186, Literature 181, Sociology 139, Comparative Area Studies,
Marxism and Society

**140. The Psychology of Work. (SS) 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. C-L: Markets and Management Studies

**144S. Children's Self Expression: Literacy Through Photography. (SS) EI, IAA, SS**
Children's self-expression and child development through writing, photography, and
documentary work. Focus on the reading and critical interpretation of images. The
history, philosophy, and methodology of Literacy Through Photography. Includes
internship in elementary/ middle school classrooms. Instructor: Ewald and Hyde. One
course.

**145S. Gender and Race in the Classroom: Literacy Through Photography. (SS) CCI,
EI, IAA, SS** Examination of learning and socialization processes and how they are
shaped by race and gender dynamics, as well as by socio-political matters. Involves
internship in elementary/ middle school classrooms utilizing the Literacy through

**147. Urban Education. (SS) CCI, SS** One course. C-L: African and African American
Studies 147

**149S. Exceptional Children. (SS) CCI, EI, R, SS** Etiology and assessment of major types
of exceptionalities, including intellectual abilities, physical or emotional handicaps, and
sensorially impaired. Family relationships and treatment programs. Ethical issues
involved in the education of exceptional children in American schools. Compares
different prevalence rates within various cultures and how teachers can adapt their
instruction to meet the needs of all children. Instructor: Staff. 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.

**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: Di
Bona and 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.

**178S. The Psychology of Exceptional Ability (C, D). (SS) QID, SS** One course. C-L: see
Psychology 178S

**190. Trends, Techniques, and Innovative Technologies for the Twenty-first Century.**
(SS) EI, SS, STS Focus on the schools and classrooms of the twenty-first century as
molded by five issues: diversity of student population, curriculum design, alternative
assessment, technological innovation, and professionalization of educators.
Examination of the theoretical basis of these issues; concentration on the practical
implications for public and private schools. Includes structured weekly field-based
experience in the local schools in which students explore ethical issues in teaching.
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 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. Does not meet curriculum "Research" requirement. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

For Seniors and Graduates

209. Global Education. (SS) 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.

211. Education and the Mass Media. (SS) CCI, EI, SS Impact of mass media on behavior, particularly of children. Choices parents and children make in using the television, Internet, and satellite transmission, including cultural differences and ethical choices involving government, schools, and communities. The role of media in different cultures and the impact of mass media on cultures. Instructor: Di Bona. One course.

215S. Seminar in Secondary School Teaching. EI, R Principles, practices, and problems in secondary school instruction, including a focus on values and ethics in teaching. Instructor: Staff. One 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. Instructor: Staff. Two courses.

232. Learning and Living in Families. CCI, EI Investigation of the role and function of family. Issues explored include parenting, gender, race, and the role of education in family dynamics. Comparative analysis of the impact of cultural and socioeconomic differences on families. Students explore issues of values and ethics in relation to families. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

155S. Tests and Measurements
168S. Contemporary Education Criticism
173. Clinical Reading Practicum
205. Selected Topics
210S. Higher Education in Latin America
212S. Pedagogy and Political Economy: A World View
242S. Group Interactions
248. Practicum in Counseling

UNIVERSITY PROGRAM FOR PREPARATION FOR TEACHING

Duke University offers programs to prepare students to become licensed teachers in elementary and secondary schools. As students complete 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.

**Secondary School Teaching (A. B. or B. S. degree)**

Students who are majors in the departments of English or mathematics may become eligible to be licensed to teach in their fields. Majors in biological anthropology and anatomy, biology, chemistry, environmental studies, geology, or physics may become eligible to be licensed to teach high school science. Majors in cultural anthropology, economics, history, political science, psychology, public policy, religion, or sociology may become eligible to be licensed to teach social studies. Prospective teachers are advised to consult with their major academic advisors and the secondary program coordinator concerning their interest in teaching and in being accepted into the 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 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 upon completion of 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 (usually 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 Program includes academic coursework and an intensive senior fall 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 fall 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 teachers in an elementary school and are also supervised by a Duke professor.

Upon completion of the senior year fall 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.

EARLY CHILDHOOD EDUCATION STUDIES CERTIFICATE 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:

Education 121. Infancy, Early Childhood, and Educational Programs
Education 160S. Early Childhood Internship

II. Four (4) elective courses, two in each area:

A. Development of the Child:

Psychology 97. Developmental Psychology: Introduction and Survey
Psychology 119B. Child Clinical Psychology
Psychology 124. Human Development
Psychology 130. Psychosocial Aspects of Human Development
Psychology 131. Early Social Development
Psychology 136. Developmental Psychobiology
Psychology 138. Language Development
Psychology 183A, S. Research Methods in Developmental Psychology
Psychology 183B, S. Child Observation
Psychology 154S. Education, Children, and Poverty
Psychology 159S. Biological Psychology of Human Development
Psychology 205S. Children's Peer Relations
Psychology 206S. Pediatric Psychology
Psychology 214S. Development of Social Interaction
Education 118. Educational Psychology
Education 149S. Exceptional Children

B. Conditions of Childhood:

Cultural Anthropology 115S. The Anthropology of Gender (gender, work and family)
Cultural Anthropology 113. Language, Culture and Society
Cultural Anthropology 143. Education, Culture, and Identity
Cultural Anthropology 169S. Psychological Anthropology

*Of the four elective courses, only one may be a Program in Education course; additionally, a limit of three courses may be taken from any one of the remaining departments.
Public Policy Studies. (special topic courses on approval)
Sociology 111. Social Inequality: An International Perspective
Sociology 117. Childhood in Social Perspective
Sociology 118. Sex, Gender, and Society
Sociology 123. Social Aspects of Mental Illness
Sociology 150. The Changing American Family
Sociology 169. Psychosocial Aspects of Human Development
Sociology 215. Basic Demographic Methods and Materials. (pre-req. Sociology 207 or equivalent.)

**English (ENGLISH)**

Professor Quilligan, Chair; Associate Professor Baucom, Director of Undergraduate Studies; Professors Aers, Applewhite, Baker, Beckwith, Butters, Clum, Davidson, DeNeef, Gains, Holloway, Pope, Porter, Price, Smith, Strandberg, Torgovnick, and Williams; Associate Professors Aravamudan, Ferraro, Harris, Jones, Moses, Pfau, Tetel, Wald, and Willis; Assistant Professors Khanna, Schmitt, Shannon, Thorn, and Wallace; Professor of the Practice Cox; Associate Professor of the Practice Malouf; Assistant Professor of the Practice Hillard; Associate Research Professor Pierce-Baker; Adjunct Professors Eble, Ruderman, and Wolfram; Adjunct Professor of the Practice of Rhetoric Gopen; Adjunct Associate Professors Herman and Wittig; Adjunct Assistant Professors Kennedy, Thomas, and Weldon; Lecturer Askounis

A major or minor is available in this department.

**INTRODUCTION TO LITERATURE**

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. (AL) AL, IAA, W May be taken twice. Instructor: Staff. One course.

48BS. Focus Program Seminar on Literature. (AL) AL, IAA Topics vary each semester offered. Each semester course explores history and significant identity formations in American culture, also considering the ethical arguments which negotiate democracy and diversity. Instructor: Staff. One course.

49BS. First-Year Seminar on Literature. (AL) AL, IAA Topics vary each semester offered. Prior to the drop/ add period, restricted to first-year students who have not fulfilled their seminar requirement. Instructor: Staff. One course.

51. Representative American Writers. (AL) AL, IAA Selections and complete works. Poe, Emerson or Thoreau, Hawthorne, Melville, Whitman, Dickinson, and Twain; not open to students who have taken English 152 or 153. Not open to students who have taken English 153. Instructor: Staff. One course.

52. Representative American Writers. (AL) AL, IAA Continuation of English 51. Selections and complete works. James, Frost or Robinson, Crane or Dreiser, O'Neill, Faulkner, Hemingway, and others. Not open to students who have taken English 154. Instructor: Staff. One course.

53. Duke-Administered Study Abroad: Special Topics in English. CCI Topics differ by section. Instructor: Staff. One course.


91. Reading Critically: Chaucer, Shakespeare, Milton, Pope. (AL) AL, IAA, W An introduction to the skills of critical reading and the vocabulary of critical analysis by close examination of the works of Chaucer, Shakespeare (or occasionally Spenser), Milton, and Pope. Focus on the acquisition of critical skills through analyzing the works of authors closely linked with the making of the dominant traditions of English poetry. A handbook or comparable guide to critical terms will be assigned. Instructor: Gopen or Quilligan. One course.
92. British Literature 1350-1750. (AL) AL, IAA A study of representative writings from the High Middle Ages to the mid-eighteenth century, contextualized with the intellectual, cultural, and historical background of their times. Instructor: Staff. One course.

93. British Literature 1750-1950. (AL) AL, IAA, W A study of representative writings from the mid-eighteenth to the mid-twentieth century, contextualized with the intellectual, cultural, and historical background of their times. Instructor: Moses or Pfau. One course.

94. The Theater. (AL) AL, CCI, IAA One course. C-L: see Theater Studies 91

British Literature

121A. Medieval English Literature to 1500. (AL) AL, CCI, IAA, R The principal forms and examples of English prose, poetry, and drama of the Anglo-Saxon and Middle English periods (excluding Chaucer). In translation. Instructor: Aers, Beckwith, or Gopen. One course. C-L: Medieval and Renaissance Studies 121A

121B. Sixteenth-Century English Literature. (AL) AL, IAA Emphasis in poetry on Wyatt, Sidney, Spenser, Raleigh, and Shakespeare; in prose on Sidney and Sir Thomas More; in drama on Marlowe. Instructor: DeNeef, Quilligan, or Shannon. One course. C-L: Medieval and Renaissance Studies 121B

123A. English Literature: 1600 to 1660. (AL) AL, IAA Emphasis in poetry on Jonson and the cavaliers, Donne and the metaphysicals; in drama on Jonson, Tourneur, Webster, and Ford; in prose on character writers, Bacon, Burton, Donne, and Browne. Instructor: DeNeef or Quilligan. One course. C-L: Medieval and Renaissance Studies 123A

123B. English Literature: 1660 to 1800. (AL) AL, IAA Major genres and authors such as Dryden, Congreve, Addison, Swift, Pope, Gray, Johnson, Blake, and Defoe or Fielding. Instructor: Aravamudan or Thorn. One course.


126. English Literature: 1832 to 1900. (AL) AL, IAA Major writers and genres, with special emphasis on the Brontës, Dickens, Hardy, Tennyson, Carlyle, Browning, Arnold, and Ruskin. Instructor: Schmitt. One course.

127. British Literature: 1900 to 1945. (AL) AL, IAA Principal writers of fiction, drama, and poetry such as Yeats, Conrad, Shaw, Joyce, Lawrence, Woolf, Eliot, Auden, and others. Instructor: Baucom, Moses, Pope, or Torgovnick. One course.

128. Special Topics in British Literature since 1945. (AL) AL, IAA Instructor: Staff. One course.

129A S. The Comedies of Shakespeare. (AL) AL, IAA One course. C-L: see Theater Studies 111S; also C-L: Medieval and Renaissance Studies 108S

129B S. The Tragedies of Shakespeare. (AL) AL, IAA One course. C-L: see Theater Studies 112S; also C-L: Medieval and Renaissance Studies 108S


132B. Atmosphere and Belief in Modern English Fiction. (AL) AL, IAA One course. C-L: see Religion 187

132C S. Topics in Renaissance British Literature. (AL) AL, IAA (Taught in the Oxford Summer Program.) Instructor: Staff. Two courses. C-L: Medieval and Renaissance Studies 132A S

132E S. Topics in Nineteenth-Century British Literature. (AL) AL, IAA (Taught in the Oxford Summer Program.) Instructor: Staff. Two courses.

132G S. Topics in Twentieth-Century British Literature. (AL) AL, IAA (Taught in the Oxford Summer Program.) Instructor: Staff. Two courses.
133A. British and Irish Drama: 1890-1950. (AL) AL, IAA One course. C-L: see Theater Studies 113

133B. After the Fall of the Empire: British and Irish Drama 1945 to the Present. (AL) AL, IAA One course. C-L: see Theater Studies 114


137. Nineteenth-Century British Novel. (AL) AL, IAA Scott, Austen, Dickens, Thackeray, Trollope, the Brontës, George Eliot, Meredith, Butler, Hardy, and others. Not open to students who have taken English 132A. Instructor: Moses, Schmitt, or Torgovnick. One course.


139A-S. Special Topics in British Literature I. (AL) AL, IAA Can be counted as a pre-1800 British literature course for the English major requirements. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 139AS

139B-S. Special Topics in British Literature II. (AL) AL, IAA Can be counted as a pre-1900 British literature course for the English major requirements but not as a pre-1800 British literature course. Instructor: Staff. One course.

139C-S. Special Topics in British Literature III. (AL) AL, IAA Does not count toward the pre-1800 or pre-1900 British literature English major requirements. Instructor: Staff. One course.

Major Authors

140S. Chaucer. (AL) AL, CCI, IAA, R The first two-thirds of his career, especially Troilus and Criseyde. Instructor: Aers, Beckwith, DeNeef, or Gopen. One course. C-L: Medieval and Renaissance Studies 140BS


143. Shakespeare before 1600. (AL) AL, EI, IAA, R Twelve plays before 1600. Examination of these central Western cultural texts with respect to how they prove and have proved aesthetically, ethically, morally formative and transformative, and how they have served (and continue to serve) as keys to the relations between Western and other cultures. Not open to students who have taken Drama 115. Instructor: DeNeef, Gopen, Jones, Porter, or Shannon. One course. C-L: Theater Studies 109, Medieval and Renaissance Studies 182

144. Shakespeare after 1600. (AL) AL, EI, IAA, R Usually ten plays after 1600. Not open to students who have taken Drama 116. Instructor: DeNeef, Gopen, Jones, Porter, or Shannon. One course. C-L: Theater Studies 110, Medieval and Renaissance Studies 183


For Juniors, Seniors, and Graduates

212. Middle English Literature: 1100 to 1500. (AL) AL, CCI, IAA, R Selected topics. Instructor: Aers or Beckwith. One course. C-L: Medieval and Renaissance Studies 209

213S. Chaucer and His Contexts. (AL) AL, CCI, IAA, R The first two-thirds of his career, especially Troilus and Criseyde. Instructor: Aers or Beckwith. One course. C-L: Medieval and Renaissance Studies 213S

221. Renaissance Prose and Poetry: 1500 to 1660. (AL) AL, IAA, R Selected topics. Instructor: DeNeef, Quilligan, or Shannon. One course. C-L: Medieval and Renaissance Studies 221B
235. Restoration and Eighteenth-Century Literature: 1660 to 1800. (AL) AL, IAA
Selected topics. Instructor: Aravamudan or Thorn. One course.

241. Romantic Literature: 1790 to 1830. (AL) AL, IAA
Selected topics. Instructor: Applewhite or Pfau. One course.

245. Victorian Literature: 1830 to 1900. (AL) AL, IAA
Selected topics. Instructor: Schmitt. One course.

251. British Literature since 1900. (AL) AL, IAA
Selected topics. Instructor: Baucom, Moses, or Torgovnick. One course.

American Literature

151. American Literature to 1820. (AL) AL, CCI, IAA
Colonial authors such as Bradford, Taylor, Cotton Mather, Edwards, Byrd, and Franklin, and authors of the early Republic such as Tyler, Freneau, and C. B. Brown. Instructors: C. Davidson, Jones, or Moon. One course.

152. American Literature: 1820 to 1860. (AL) AL, IAA
Prose and poetry of American romanticism: Emerson, Thoreau, Hawthorne, Poe, Melville, and Whitman. Not open to students who have taken English 51. Instructor: C. Davidson, Jones, Strandberg, Wald, or Williams. One course.

153. American Literature: 1860 to 1915. (AL) AL, CCI, IAA, W
A study, through a focus on a range of naturalist and realist authors, of the social and political issues of their day through archival and literary research and readings. Authors include Cather, Chestnut, Chopin, Crane, Dickinson, DuBois, Freeman, Gilman, James, Jewett, Twain, Washington, Wharton. Not open to students who have taken English 52. Instructor: C. Davidson, Jones, Wald, Wallace, or Williams. One course.

Eliot, Fitzgerald, Hemingway, Faulkner, and others. Not open to students who have taken English 52. Instructor: Baker, Clum, Ferraro, Lentricchia, Moses, Pope, Strandberg, Wald, or Wallace. One course.

155. Contemporary American Writers. (AL) AL, IAA
Novelists and poets prominent since 1960. Instructor: Clum, C. Davidson, Ferraro, Moses, Strandberg, Torgovnick, or Wallace. One course.

159. Modern Southern Writers. (AL) AL, IAA

161. Studies in a Single American Author. (AL) AL, IAA
Instructor: Staff. One course.

162A. American Drama and Film: 1918-1945. (AL) AL, IAA
One course. C-L: see Theater Studies 101

162B. American Drama and Film: 1945-1960. (AL) AL, IAA
One course. C-L: see Theater Studies 102

162C. American Drama Since 1960. (AL) AL, IAA
One course. C-L: see Theater Studies 103

163. Twentieth-Century American Poetry. (AL) AL, IAA

164A. African-American Literature. (AL) AL, CCI, IAA, 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. Instructor: Baker, Holloway, or Wallace. One course. C-L: African and African American Studies 173


1685. Seminar in African-American Literary Studies. (AL) AL, CCI, IAA Topics may change each semester. Instructor: Holloway, Wallace, or Willis. One course.

1695. Special Topics in American Literature. (AL) AL, IAA Instructor: Staff. One course.

For Juniors, Seniors, and Graduates

262. American Literature to 1820. (AL) AL, IAA Selected topics. Instructor: Davidson, Jones, or Williams. One course.

263. American Literature 1820 to 1865. (AL) AL, IAA Selected topics. Instructor: Davidson or Jones. One course.


269. American Women Writers. (AL) AL, IAA Selected topics. Instructor: C. Davidson or Pope. One course. C-L: Women's Studies


WRITING AND LANGUAGE


29. Composition and Language. Credit for Advanced Placement on the basis of the College Board examination in composition and language. One course.

48A S. Focus Program Seminar on Writing or Language. Topics vary each semester offered. Instructor: Staff. One course.

49A S. First-Year Seminar on Writing or Language. IAA Topics vary each semester offered. Instructor: Staff. One course.

63S. Introduction to Creative Writing. (AL) AL, IAA, W Instructor: Staff. One course.

64S. Topics in Documentary Writing. (AL) AL, IAA Topics in documentary writing. Selected topics. Instructor: Staff. One course.

100A S. Writing: Fiction. (AL) AL, IAA, W Instruction in the writing and study of fiction. Recommended for students before they take English 103S, 104S, 110S, 202S, or 203S. Consent of instructor required. Instructor: Cox. One course.

100C S. Writing: Poetry. (AL) AL, IAA Instruction in the writing and study of poetry. Recommended for students before they take English 109S or 106S. Consent of instructor required. Instructor: Staff. One course.

102S. Screenwriting. (AL) AL, IAA, W One course. C-L: see Theater Studies 137S; also C-L: Film/Video/ Digital 107S

103S. Writing: Short Stories. (AL) AL, IAA, 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. Open to sophomores, juniors, and seniors; recommended for, but not limited to, students who have taken English 100A.
Consent of instructor required. Instructor: Applewhite, Cox, Malouf, Pope, Porter, or Price. One course.

104S. Writing: Short Stories. (AL) AL, IAA, W See English 103S. Open to sophomores, juniors, and seniors; recommended for, but not limited to, students who have taken English 100A. Consent of instructor required. Instructor: Applewhite, Cox, Malouf, Pope, Porter, or Price. One course.

105S. The Writing of Poetry. (AL) AL, IAA Meter, image, tone, and dramatic organization in traditional and modern poems as a basis for original composition. Open to sophomores, juniors, and seniors; recommended for, but not limited to, students who have taken English 100C. Consent of instructor required. Instructor: Applewhite or Pope. One course.

106S. The Writing of Poetry. (AL) AL, IAA See English 105S. Open to sophomores, juniors, and seniors; recommended for, but not limited to, students who have taken English 100C. Consent of instructor required. Instructor: Applewhite or Pope. One course.

107S. Dramatic Writing. (AL) AL, IAA, W One course. C-L: see Theater Studies 135S; also C-L: Film/Video/Digital

108AS. Advanced Dramatic Writing. (AL) AL, IAA, W One course. C-L: see Theater Studies 136S; also C-L: Film/Video/Digital

108BS. Transforming Fiction for Stage and Screen. (AL) AL, IAA, W One course. C-L: see Theater Studies 138S; also C-L: Film/Video/Digital

109S. Special Topics in Writing. (AL) AL, IAA, W Consent of instructor required. Instructor:Staff. One course.

111. Introduction to Linguistics. (SS) CCI, QID, SS One course. C-L: see Linguistics 101; also C-L: Cultural Anthropology 107, Comparative Area Studies

112. English Historical Linguistics. (SS) QID, 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 208. Instructor: Butters or Tetel. One course. C-L: Linguistics 112

114. Languages of the World. (SS) CCI, QID, SS One course. C-L: see Linguistics 102; also C-L: Cultural Anthropology 114, Comparative Area Studies

115. Gender and Language. (SS) CCI, QID, R, SS One course. C-L: see Russian 174; also C-L: Cultural Anthropology 174, Women’s Studies 174, Linguistics 174

116A. Scientific Writing. W Prerequisite: Writing 20. Instructor: Staff. One course.


117BS. Advanced Composition: Stylistic Imitation. W Prerequisite: Writing 20. Instructor: Staff. One course.

117CS. Advanced Composition: Writing for Publication. W Prerequisite: Writing 20. Instructor: Staff. One course.

119. Current Topics in Linguistics. (SS) SS Instructor: Staff. One course. C-L: Linguistics

119S. Special Topics in Linguistics. (SS) CCI, QID, SS Instructor: Staff. One course.

For Juniors, Seniors, and Graduates


203S. Advanced Narrative Writing. (AL) AL, IAA The writing of extended narrative prose—long stories, novellas, substantive memoirs. Students should be proficient in the
writing of short narratives. Consent of instructor required. Instructors: Porter or Price. One course.

204S. Psycholinguistics. (SS) CCI, QID, SS One course. C-L: see Psychology 220S

205. Semiotics and Linguistics. (AL) (SS) AL, CCI, QID, R, SS One course. C-L: see Russian 205

206. Semiotics of Culture. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Russian 202; also C-L: Cultural Anthropology 202

210S. The Cultural Analysis of Discourse. (SS) CCI, IAA, QID, R, SS One course. C-L: see Cultural Anthropology 250S; also C-L: Linguistics 250S


299S. Special Topics in Linguistics. (SS) CCI, QID, SS Instructor: Staff. One course.

GENRE, CRITICISM, AND WORLD LITERATURE

121S. Germanic Heroic Literature. (AL) AL, CCI One course. C-L: see German 167S; also C-L: Medieval and Renaissance Studies 168S

142. Duke-Administered Study Abroad: Advanced Special Topics in English. CCI Topics differ by section. Instructor: Staff. One course.

148. Classics of Western Civilization: The German Tradition, 1750-1930. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see German 182; also C-L: History 179A, Political Science 134, Literature 163B

170. Special Topics in Genre. (AL) AL, IAA Instructor: Staff. One course.


171BS. Popular Fictions. (AL) AL, IAA One course. C-L: see Literature 151BS

172. Literary Theory. (AL) AL, IAA, R Major works and theoretical issues in the history of literary criticism. Instructor: Ferraro, Khanna, or Moses. One course.

173. Special Topics in Language and Literature. (AL) AL, IAA Instructor: Staff. One course.

174A. Classical to Neoclassical. (AL) AL, CCI, IAA One course. C-L: see Theater Studies 118; also C-L: Literature 151A

174B. Toward and Beyond Realism. (AL) AL, CCI, IAA One course. C-L: see Theater Studies 121; also C-L: Literature 151B

176BS. Theater in London: Text. (AL) AL, IAA One course. C-L: see Theater Studies 116S

176CS. Theater in London: Performance. (AL) AL, IAA One course. C-L: see Theater Studies 151S

177. Postcolonial Fiction. (AL) AL, CCI, IAA Comparative study of representative contemporary fiction from Africa, India, the Middle East, Australia, New Zealand, Latin America, and the Caribbean, each within its appropriate cultural, historical, and political context. All readings in English. Instructor: Baucom, Khanna, Moses, Schmitt, Torgovnick, or Wallace. One course.
178. Literature and the Other Arts. (AL) AL, IAA Selected topics in the study of the interrelation of literature and other art forms, such as music and painting. Instructor: Gopen or Khanna. One course.

179S. Special Topics in a Literary Genre. (AL) AL, IAA Instructor: Staff. One course.


184. Literature and Sexualities. (AL) AL, IAA American and British representations of sexual identities and same-sex desire, ranging from the proliferation of homo/heterosexual discourses in the late nineteenth century to literature about AIDS in contemporary mass media. Whitman, Wilde, Stein, Hall, Forster, Lorde, Moraga, Watney, and others. Instructor: Clum. One course. C-L: Study of Sexualities

186A. Canadian Literature in English. (AL) AL, IAA Eighteenth century to the present. Emphasis on the twentieth century and on novels by Hugh MacLennan, Margaret Laurence, Mordecai Richler, Margaret Atwood, Rudy Wiebe, and others. Instructor: Staff. One course. C-L: Undergraduate Canadian Studies Program, Comparative Area Studies

For Juniors, Seniors, and Graduates

250S. Music in Literature and Philosophy: 1800-1945. (AL) AL, CCI, IAA, R One course. C-L: see German 250S

271S. Special Topics Seminar. (AL) AL, IAA Seminar version of 288. Subjects, area, or themes that cut across historical eras, several national literatures, or genres. Instructor: Staff. One course.

272S. Remembrance and Reconciliation: Geographies of Memory. (AL) AL, CCI, EI, IAA Exploration, drawing on a variety of texts, of the complex dynamics of remembering and forgetting as they bear on difficult pasts and the possibility for reconciliation. Particular attention given to racial reconciliation in South Africa and the United States. Consent of instructor required. Also taught as Christian Theology 270 and Distinguished Professor Course 202S. Instructors: Holloway and Jones. One course.

281. Studies in Genre. (AL) AL, IAA History, criticism, and theory of literary genres such as the novel, pastoral, epic, and drama. Instructor: Staff. One course.

288. Special Topics. (AL) AL, IAA Subjects, areas, or themes that cut across historical eras, several national literatures, or genres. Instructor: Staff. One course. C-L: Literature


Cultural Studies

285. Studies in Film and Video. (AL) AL, IAA, W May be taken twice. Instructor: Staff. One course. C-L: Film/Video/Digital

101A. Introduction to Film. (AL) AL, IAA One course. C-L: see Film/Video/Digital

101B. Introduction to Cultural Studies. (AL) AL, IAA One course. C-L: see Literature 100; also C-L: Theater Studies 171, Literature 110

101CS. Documentary Film/Video Theory and Practice. (AL) AL, IAA One course. C-L: see Film/Video/Digital, Marxism and Society

101S. Perspectives in Gay, Lesbian, and Bisexual Studies. (CZ) CZ One course. C-L: see Studies of Sexualities 115S

120. Advertising and Society: Global Perspective. (SS) CCI, IAA, SS One course. C-L: see Cultural Anthropology 110; also C-L: Sociology 160, Canadian Studies,
Comparative Area Studies, Film/Video/Digital, Linguistics, Markets and Management Studies, Women's Studies

120D. Advertising and Society: Global Perspective. (SS) CCI, IAA, SS One course. C-L: see Cultural Anthropology 110D; also C-L: Sociology 160D

122. Studies in Comparative World Cinema. (AL) AL, CCI, IAA, STS One course. C-L: see Literature 113; also C-L: German 113, Russian 113, Film/Video/Digital

124. Sexualities in Film and Video. (AL) AL, IAA One course. C-L: see Literature 115; also C-L: Film/Video/Digital, Study of Sexualities

156. History of Mass Culture in the United States. (AL) AL, IAA The formation of American popular culture in different historical periods. Cultural forms including music, movies, fashion, and leisure. Instructor: Gaines, Radway, Torgovnick, or Willis. One course. C-L: Literature 140, Film/Video/Digital

181AS. Making Media. (AL) AL, IAA, STS Book production as one of the most influential technologies in history. The Gutenberg Bible, the rise of vernaculars, the Protestant Reformation, the education of the middle class, publishing as a technology that has affected society artistically, economically, politically, and philosophically. Writing and printing from disk, internet publishing, e-commerce, mega chains, digital imagery. Guest lecturers and group excursions. Frequent short writing assignments. Instructor: Torgovnick. One course. C-L: Institute of the Arts 104S

181BS. The Arts in New York: A Thematic Approach. (AL) AL, IAA One course. C-L: see Institute of the Arts 101S

183S. Film and Video Theory and Practice. (AL) AL, IAA One course. C-L: see Film/Video/Digital 100S; also C-L: Theater Studies 173S

185. Studies in Film History. (AL) AL, IAA One course. C-L: Theater Studies 172, Literature 116, Film/Video/Digital

189S. Special Topics in Film. (AL) AL, IAA A major genre, period, or director. Not open to students who have taken the former Drama 197S. Prerequisite: Drama 173 or English 101A. Instructor: Clum, Gaines, or Moses. One course. C-L: Theater Studies 178S, Film/Video/Digital


For Juniors, Seniors, and Graduates

280. Twentieth-Century Reconceptions of Knowledge and Science. (AL) AL, IAA, STS One course. C-L: see Literature 260


INDEPENDENT STUDY

191. Independent Study. Independent projects in creative writing under the supervision of a faculty member. 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. 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.
193. Independent Study. See English 191. Open to juniors and seniors. Consent of both the instructor and the director of undergraduate studies required. Instructor: Staff. One course.

194. Research Independent Study. R See English 192. Open to juniors and seniors. Consent of both the instructor and the director of undergraduate studies required. Instructor: Staff. One course.

195T. Tutorial. 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.

DISTINCTION SEMINARS
197AS. Distinction Program Sequence. IAA, 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. IAA, R, W Open to those whose thesis will be in the field of creative writing. Consent of instructor required. Instructor: Staff. One course.

198AS. Distinction Program Sequence. Continuation of English 197A,S. 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.

198BS. Distinction Program Sequence. 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.

COURSES CURRENTLY UNSCHEDULED
100BS. Writing: Drama
110S. Writing: Longer Prose Narrative
135. British Poetry of the Twentieth Century
175. Literary Approaches to the Bible
182. American Film Genres
186B. Canadian Theater
207A. Introduction to Old English
207B. Old English Literature
208. History of the English Language
209. Present-Day English
220. Shakespeare: Selected Topics

THE MAJOR

Basic Requirement. One course from the following list of introductory courses: English 90S, 91, 92, or 93. Except by written permission of the director of undergraduate studies, the course must be taken in the first term after the major has been declared (unless it has been taken earlier). It may be taken concurrently with advanced courses.

Major Requirements. Nine or more courses at the 100- or 200-level from the department’s offerings which consist of courses (including independent studies and tutorials) in: writing and language; British literature; American literature; genre, criticism, and world literature; and cultural studies. These are to be organized into a coherent plan of study approved by the student’s advisor. The courses must include: (a) one of the following major author courses Chaucer (140S,141, 213, 214), Shakespeare (143,144, 220), or Milton (145, 222); (b) two additional courses in British literature before 1900 (including at least one before 1800); one 100-level seminar (which may be satisfied in [b]).

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 Graduation with Distinction
Aspiring graduate students should consult both their advisor and the chair of the department’s Committee on Pregraduate School Advising.

THE MINOR

Requirements. Five courses, four of which must be at or above the 100-level; or English 90S, 91, 92, or 93, 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 pass/fail courses 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 seminars—English 197S and 198S—taken in the fall and spring semesters of the senior year. Please note: These seminars may not be counted among the courses required for completion of the major.

The fall seminar provides a weekly forum for discussion of thesis topics, research and organization, and good writing. By the end of the term, students are expected to have the thesis well underway; permission to proceed to English 198S will depend on the student’s progress during the fall semester. In the spring, students will work independently, for the most part, to complete the thesis; there will be some seminar meetings, as well as regular conferences with the program director and individual faculty advisors.

The distinction thesis is expected to be an especially well-informed and well-written piece of literary criticism or other research (e.g. linguistics). The creative
writing option involves similar expectations: that is, not only good writing but a mature and well-read grasp of the field. The critical or research thesis is generally at least seventy-five pages. In creative writing, approximate guidelines are a full-length play, seventy pages of prose fiction, or thirty pages of poetry.

The thesis must be submitted to the program director in early April of the senior year. The program director and two other faculty members will evaluate the 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 interested in the distinction program must apply to the department’s honors committee by **February 15 of the junior year.** Application materials are available from and should be returned to 305 Allen Building. Applicants must have completed at least five 100-level courses in English and must have a minimum 3.5 average in their English courses. In addition, they must submit a writing sample and two recommendations from members of the faculty. Applicants will be interviewed by the program director.

**Environmental Sciences and Policy Program (ENVIRO**N)**

Associate Professor of the Practice Miranda, 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.

The majors are housed within and administered by the Nicholas School of the Environment and Earth Sciences. Courses for the majors are taught by more than sixty Duke professors in twenty 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 website, at www.env.duke.edu/en.

**Environmental Sciences and Policy (A.B. Degree)**

Associate Professor of the Practice Miranda, Director of Undergraduate Studies

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 specifically 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 and social science areas. An introductory core course focuses on local, regional, and global case studies taught by interdisciplinary teams of faculty. Upper-level 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 Development and Counseling Office, maintains a file of 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 over thirty approved field laboratories.

**Environmental Sciences (B.S. Degree)**

*Associate Professor Klein, Director of Undergraduate Studies*

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 science, industry or management that require a strong scientific background, or for students intending to pursue graduate degrees in an environmental science. 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 solid earth, the hydrosphere, the atmosphere, the biosphere, 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.

**ENVIRONMENTAL SCIENCES AND POLICY COURSES (ENVIRON)**

- **25. Introduction to Environmental Sciences and Policy. (NS) NS, QID, 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: Kasibhatla and Miranda. One course.

- **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.

- **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, 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.

- **105. Global Environmental Geography. (NS) NS, QID, STS**
  Global spatial patterns of natural phenomena and the human modification of those patterns. Introduction to earth/sun relations, climatology, biogeography, and geomorphology. Instructor: Staff. One course.

- **121. Climate Change: A Global Perspective. (NS) NS, R**
  Introduction to the scientific basis for prediction of global environmental change with emphasis on change in surface temperature, sea level, precipitation, and tropical cyclone activity. As an analytical
exercise, students input temperature data sets from the Bermuda weather service and do basic analysis of Bermuda temperature anomalies over time. (Given at Bermuda.) Prerequisite: one year of chemistry. Instructor: Staff (Bermuda). One course. C-L: Marine Sciences

122S. Climate-Related Hazards and Humanity. (NS) NS, QID The roles of science, politics, and business in quantifying and managing risks associated with climate-related hazards such as hurricanes. (Given at Bermuda.) Instructor: Staff (Bermuda). Half course. C-L: Marine Sciences

125. Remote Sensing and Long-term Environmental Monitoring. (NS) NS, QID, R Introduction to the theory and practice of environmental monitoring. Ocean biogeochemical cycles, tropical ecosystems, monitoring, and air and water pollution impact assessment and monitoring. Individual project required, the output of which is a grant proposal to do future monitoring work on a specific topic; project includes a review and reporting of the relevant literature, analysis of existing data sets on the topic, and the experimental plan for the project. (Given at Bermuda.) Instructor: Nelson. One course. C-L: Marine Sciences

126S. Field Methods in Earth and Environmental Sciences. (NS) NS, QID, R, W One course. C-L: Earth and Ocean Sciences

129. Environmental Science and Policy of the Tropics. (NS) (SS) 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: introductory biology. Instructor: Shelly. One course.

132S. Current Topics in Oceanography and Marine Biology. (NS) NS, QID Topics including the Iron Hypothesis, toxic algal blooms, and UV light considered through readings in the primary literature and student presentations. Emphasis on critical analysis of methodology, data analysis, and conclusions in primary peer-reviewed literature. (Given at Bermuda.) Prerequisite: introductory biology. Instructor: Staff (Bermuda). Half course. C-L: Marine Sciences

133S. Molecular Approaches to Questions of Physiology, Ecology, and Evolution in the Marine Environment. (NS) NS, QID Half course. C-L: see Biology 133S; also C-L: Marine Sciences

140. A Scientist's Perspective on Environmental Principles, Policy, and Legislation. (NS) (SS) NS, QID, SS, STS Bermuda's ecological, economic, sociopolitical systems, and environmental legislation as both a case study and as a comparative microcosm. Topics include: ecosystem conservation, natural resource management, pollution and waste management, and energy conservation and management. (Given at Bermuda.) Instructor: Bates (Bermuda). One course. C-L: Marine Sciences

149. United States Environmental Policy. (SS) 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: Miranda or Sasser. One course. C-L: Public Policy Studies

150. Environmental Chemistry and Toxicology. (NS) NS, QID, 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 11L and 12L, or 21L and 22L; Mathematics 31. Instructor: Freedman. One course.

181. Special Topics in Environmental Sciences and Policy. Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

182. Special Topics in Environmental Science and Policy. Content to be determined each semester. Consent of instructor required. Instructor: Staff. One course.

185. Senior Capstone Course. (NS) (SS) 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.

186. Special Topics in Environmental Science and Policy. Content to be determined each semester. Consent of instructor 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 to qualified juniors and seniors with consent of instructor and director of undergraduate studies. Instructor: Staff. One course.


192. Independent Study. Individual readings course or other non-research-based independent course under the supervision of a faculty member. Open to qualified juniors and seniors with consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

192A. Independent Study. See Environment 192. Open to qualified juniors and seniors with consent of instructor and director of undergraduate studies. Instructor: Staff. Half course.

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.

- Biology 25L. Principles of Biology
- Biology 26AL or 26BL. Diversity of Life, or 140. Plant Diversity, or 176. Marine Invertebrate Zoology
- Chemistry 21L and 22L. Advanced General Chemistry
- Economics 2D or 52D. Competition, Monopoly, and Welfare
- Earth and Ocean Sciences 41. The Dynamic Earth, or Earth and Ocean Sciences 53. Introductory Oceanography (C-L: Biology 53)
- Environment 25. Introduction to Environmental Sciences and Policy
- Mathematics 31 and 32. Introductory Calculus I and II

Major Requirements.

1. Intermediate Core Course: Environment 101

2. Environmental Policy. One course from an approved list of environmental policy courses. Approved courses include:
   - Public Policy Studies 107/Political Science 107. Comparative Environmental Policies
   - Environment 149/Political Science 149. United States Environmental Policy
   - Public Policy 147/Political Science 147. Environmental Politics and Policies in the Developing World
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Political Science 148/ Public Policy Studies 147. Environmental Policies Beyond Borders
Public Policy Studies 197/ 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:
   - Economics 139. Introduction to Econometrics
   - Environment 251. Statistics and Data Analysis in Biological Science
   - Environment 252L. Statistics and Data Analysis in Earth and Ocean Science
   - Political Science 138. Quantitative Political Analysis
   - Psychology 117/Sociology 133. Statistical Methods
   - Statistics 101. Data analysis and Statistical Inference.
   - Statistics 103. Probability and Statistical Inference.
   - Statistics 112. Introduction to Applied Statistics

4. **Focused Study.** Five upper-level courses proposed by students in consultation with their advisors to fit a particular theme or career objective. At least two of these courses must be selected from approved lists in each of the social sciences/humanities and sciences/engineering areas. These lists are available from the director of undergraduate studies of the program. One course must be either an upper-level seminar, a senior capstone course, or a 200-level course.

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.

**Graduation with Distinction.** The Environmental Sciences and Policy Program offers 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 and Policy major should apply by the beginning of their senior year. Participants write a 25-50 page paper describing their completed research; they are supervised by a faculty committee with a primary advisor and additional faculty members. Students must also deliver an oral presentation of their completed research, which is evaluated by the faculty committee. For additional information or application forms, contact the director of undergraduate studies.

**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 some upper-level courses in this major.

   - Biology 25L. Principles of Biology
   - Chemistry 21L and 22L. 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 31 and 32. Introductory Calculus I and II
   - Earth and Ocean Sciences 41. The Dynamic Earth, or Earth and Ocean Sciences 53.
   - Introductory Oceanography (C-L: Biology 53)

**Major Requirements**

1. Five Core Courses selected from the following six courses or course lists:
   - A. Atmosphere and Oceans (Earth and Ocean Sciences 160)
   - B. Environmental Chemistry and Toxicology (Environment 160)
   - C. History of the Earth (Earth and Ocean Sciences 172)
D. Hydrology (Earth and Ocean Sciences 123)

E. One course from an approved list of ecology courses. Approved course list includes:
- Biology 110. Ecology
- Biology 129. Marine Ecology
- Biology 114L. Biological Oceanography
- Biology 123. Analysis of Ocean Ecosystems
- Biology 128L. Estuarine Ecology

F. One course from an approved list of courses that focus on the interface between humans and the environment. Approved course list includes:
- Environmental Sciences and Policy 101. Introduction to Environmental Sciences and Policy
- Environmental Sciences and Policy 105. Global Environmental Geography
- Environmental Sciences and Policy 129. Environmental Science and Policy of the Tropics (Costa Rica)
- Environmental Sciences and Policy 122. Climate-related Hazards and Humanity (Bermuda)
- Environmental Sciences and Policy 149/ Public Policy Studies 149. United States Environmental Policy
- Environmental Sciences and Policy 140. Scientist’s Perspective on Environmental Principles, Policy, Legislation (Bermuda)
- Biology 109/ Environmental Sciences and Policy 209. Conservation Biology and Policy (Beaufort)
- Environmental Sciences and Policy 185. Senior Capstone Course
- Economics 163. Economics of the Environment.
- Philosophy 115. 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 students 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.

Note: Courses in the major (excluding co-requisites) may count toward only two areas of knowledge for the general studies requirement of the Bachelor of Arts or Bachelor of Science curriculum. 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 courses at or above the 200-level in the Nicholas School of the Environment.

Nicholas School of the Environment and Earth Sciences (ENVIRON)

The professional school courses listed below are described fully in the Bulletin of Duke University: Nicholas School of the Environment and Earth Sciences. They are open to undergraduates by consent of the instructor.

Students who are preparing for professional careers in natural resources and the environment should refer to the section on undergraduate-professional combination programs and the Environmental Sciences and Policy Program section immediately preceding this section in this bulletin.

201. Forest Resources Field Skills. Instructor: Richter.
203. Conservation Biology: Theory and Practice. Prerequisite: one ecology course or consent of instructor. Instructor: Staff.
206. Forest Vegetation Sampling. Instructor: Staff.
207L. Forest Pest Management. Instructor: Doggett.

212. Environmental Toxicology. Prerequisites: organic chemistry and vertebrate physiology or consent of instructor. Instructor: Di Giulio.


214. Landscape Ecology. Prerequisites: an intermediate-level ecology course, introductory applied statistics, and Environment 351, or consent of instructor. Instructor: Urban.


218L. Barrier Island Ecology. (NS) NS, QID, R (Given at Beaufort.) Prerequisite: Biology 25L or equivalent; suggested: course in botany or ecology. Instructors: Evans, Peterson, and Wells (visiting summer faculty). C-L: Biology 218L, Marine Sciences

221L. Soil Resources. Instructor: Richter.

224L. Coastal Ecosystem Processes. (NS) NS, QID (Given at Beaufort). Instructors: Ramus and staff. C-L: Biology 219L, Marine Sciences

225L. Coastal Ecotoxicology and Pollution. Principles of transport, fates, food-web dynamics and biological effects of pollutants in the marine environment. Laboratory to stress standard techniques for assessing pollutant levels and effects. (Given at Beaufort.) Prerequisites: introductory chemistry and biology. Instructor: Staff. C-L: Marine Sciences

230L. Weather and Climate. Includes laboratory. Instructor: Knoerr.

231. Ecological Theory and Data. (NS) NS, QID C-L: see Biology 268

231L. Ecological Theory and Data. (NS) NS, QID C-L: see Biology 268L


233. Soil Chemistry and Contamination. (NS) NS, QID Prerequisite: Environment 221 or 240 or 242 or consent of instructor. Instructor: Vasudevan.


237L. Field Botany of North Carolina's Wetlands. (NS) NS Prerequisite: one course in plant diversity or systematics, or consent of instructor. Instructors: Shaw and Wilbur. C-L: Biology 242L


240. Chemical Fate of Organic Compounds. Instructor: Dubay and Vasudevan. C-L: see Civil Engineering 240


246. Survey of Environmental Health and Safety. Open to undergraduates by consent. Instructor: Staff.
248. **Solid Waste Engineering.** C-L: see Civil Engineering 248

249L. **Environmental Molecular Biology.** Prerequisite: introductory biology. Instructor: Freedman.

250L. **Form, Function, and Adaptation of Plants.** Prerequisite: Biology 25L; suggested: either Biology 110L, 140L, 149, or 152. Instructor: Staff.

255. **Applied Regression Analysis.** (QR) M, QID Prerequisite: Statistics 210B or equivalent. Instructor: Staff. C-L: Statistics and Decision Sciences 242

256S. **Seminar in Ocean Sciences.** Consent of instructor required. (Given at Beaufort.) Instructor: Staff. C-L: Marine Sciences

264. **Applied Differential Equations in Environmental Sciences.** Prerequisite: Mathematics 31 or equivalent or consent of instructor. Instructor: Katul.

267S. **Conservation Biology of Marine Mammals.** Consent of instructor required. (Given at Beaufort.) Instructor: Read. C-L: Marine Sciences

269S. **Advanced Topics in Marine Ecology.** (NS) NS (Given at Beaufort.) Instructor: Crowder. C-L: Biology 264S, Marine Sciences


271. **Economic Analysis of Resource and Environmental Policies.** (SS) SS Prerequisite: Environment 270 or equivalent; Economics 149 recommended. Instructor: Staff. C-L: Economics 272

272. **Evaluation of Public Expenditures.** (SS) QID, SS Instructor: Conrad. C-L: see Public Policy Studies 261; also C-L: Economics 261

273. **Marine Fisheries Policy.** (Given at Beaufort.) Instructor: Orbach. C-L: Marine Sciences

274. **Resource and Environmental Policy.** (SS) SS Instructor: Staff. C-L: Public Policy Studies 274

275S. **Protected Areas, Tourism, and Local Development.** Instructor: Healy. C-L: Latin American Studies

276. **Marine Policy.** (SS) SS Consent of instructor required. (Given at Beaufort.) Instructor: Orbach. C-L: Public Policy Studies 197, Marine Sciences

279. **Atmospheric Chemistry: Principles and Processes.** Instructor: Kasibhatla. C-L: Civil Engineering 279

280. **Social Science Surveys for Environmental Management.** Prerequisite: introductory applied statistics or equivalent. Instructor: Kramer.

281. **Environmental Law.** Instructor: Heath.

284S. **Seminar in Land Use Policy.** Instructor: Healy.


290. **Physical Oceanography.** C-L: Mechanical Engineering and Materials Science 290

291. **Geological Oceanography.** (NS) NS Not open to students who have taken Earth and Ocean Sciences 206S. (Given at Beaufort.) Instructor: Staff. C-L: Earth and Ocean Sciences 205, Marine Sciences

296. **Environmental Conflict Resolution.** Instructor: Maguire.

298. **Special Topics.** Instructor: Staff.

**COURSES CURRENTLY UNSCHEDULED**

134L. **Biological Cycles in the Ocean**

202. **Microbial Ecology**
Film/Video/Digital (FILMVID)

Professor Gaines, Director

A certificate, but not a major, is available in this program. The Program in Film/Video/Digital is an interdisciplinary course of study which introduces students to the critical analysis of communications technologies: film, photography, and television. Practical production experience is also available through course work and internships. Courses in this area are offered through seventeen different academic departments and programs and taught by thirty-three faculty members. The program also sponsors speakers, video art screenings, and exhibits in cooperation with the Center for Documentary Studies, the Institute of the Arts, the Center for International Studies, the University Art Museum, the Literature Program, Asian and African Languages and Literature, and the Mary Lou Williams Center for Black Culture. Visiting independent filmmakers are brought to campus under the auspices of the Film/Video/Digital Program in conjunction with Screen/Society and Freewater exhibitions.

To qualify for the certificate, students must take at least six courses: two core courses and any four related courses from the approved list published in this bulletin or from the listings posted each semester. English 101A/Literature 110 (Introduction to Film) is a prerequisite for all Film/Video/Digital production 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 Film/Video/Digital Program.

DUKE IN LOS ANGELES PROGRAM IN MEDIA ARTS AND INDUSTRIES

This interdisciplinary program offers students interested in the film, media, entertainment law, contemporary arts and music industries an intensive one-semester program in Los Angeles, based at the University of Southern California (USC). In addition to taking one required Duke seminar on the United States Culture Industries (Literature 197S), students enroll in an internship for credit (Film/Video/Digital 112S) and take two courses at USC in either its School of Cinema-TV or its Division of General Studies.

Required courses:
Literature 197S: Special Topics in the United States Culture Industries
Film/Video/Digital 112S: Media Internship in Los Angeles
USC: two courses, one appropriate to the program and selected in consultation with the director, and one elective course.

This program is limited to juniors and seniors. Consult the program director for required prerequisites.
### CORE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Prerequisites</th>
<th>Instructor</th>
<th>Course Type</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>305</td>
<td>Special Topics in TV Theory/TV Production.</td>
<td>(AL) AL, IAA, STS A combination of television theory and video production exercises designed to think through politics and aesthetics of new technologies. Prerequisite: Drama 173, English 101A, or Literature 110. Instructor: Staff.</td>
<td>One course</td>
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<tr>
<td>50</td>
<td>Duke-Administered Study Abroad: Special Topics in Film and Video.</td>
<td>IAA Topics differ by section.</td>
<td>Instructor: Staff.</td>
<td>One course</td>
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<tr>
<td>100S</td>
<td>Film and Video Theory and Practice.</td>
<td>(AL) AL, IAA Film and video production in conjunction with comparative history and theory of these technologies.</td>
<td>Burns. One course.</td>
<td>C-L: Theater Studies 173S, English 183S</td>
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<tr>
<td>101S</td>
<td>Special Topics in Advanced Film or Video.</td>
<td>(AL) AL, IAA An in-depth investigation of a particular technology for students with demonstrated commitment and aptitude. Exploration of the theoretical assumptions behind the development of new technological arts of the twentieth century. Consent of instructor required. Also offered as Literature 111S. Prerequisite: Drama 173, English 101A, or Literature 110. Instructor: Staff.</td>
<td>One course</td>
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<tr>
<td>102S</td>
<td>Film Animation Production.</td>
<td>(AL) AL, IAA 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. Instructor: Burns.</td>
<td>One course</td>
<td>C-L: Visual Arts 165S</td>
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<tr>
<td>103S</td>
<td>Special Topics in Sound Technology.</td>
<td>(AL) AL, IAA 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. Consent of instructor required. Prerequisite: Drama 173, English 101A, or Literature 110. Instructor: Staff.</td>
<td>One course</td>
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<tr>
<td>104S</td>
<td>Documentary Film/Video Theory and Practice.</td>
<td>(AL) AL, IAA 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: Drama 173, English 101A, Literature 110, or Literature 111S. Instructor: Staff.</td>
<td>One course</td>
<td>C-L: Cultural Anthropology 131S, English 101CS</td>
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<tr>
<td>105S</td>
<td>The Documentary Experience: A Video Approach.</td>
<td>(AL) (SS) AL, IAA, R, SS One course. C-L: see Public Policy Studies 105S; also C-L: Cultural Anthropology 134S, History 150BS, Political Science 156S</td>
<td>One course</td>
<td></td>
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<tr>
<td>106</td>
<td>Duke-Administered Study Abroad: Advanced Special Topics in Film and Video.</td>
<td>IAA Topics differ by section.</td>
<td>Instructor: Staff.</td>
<td>One course</td>
<td></td>
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<tr>
<td>107S</td>
<td>Screenwriting.</td>
<td>(AL) AL, IAA, W One course. C-L: see Theater Studies 137S; also C-L: English 102S</td>
<td>One course</td>
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<tr>
<td>108S</td>
<td>Topics in New Technologies/Digital Media.</td>
<td>(AL) AL, IAA, STS An in-depth investigation of digital media exploring the theoretical assumptions behind development of new technological arts. Includes production component. Consent of instructor required. Prerequisite: Drama 173, English 101A, Film/Video/Digital 130, or Literature 110. Instructor: Staff.</td>
<td>One course</td>
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<tr>
<td>110S</td>
<td>Internship in Film and Video.</td>
<td>Students may arrange academic work in conjunction with approved internship in the entertainment industry. Academic work</td>
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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: Drama 173, English 101A, Film/Video/Digital 130, or Literature 110. Instructor: Staff. One course.

111T. Tutorial. (AL) AL Instructor: Staff. One course.

112S. 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.

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

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


CORE COURSES FROM OTHER PROGRAMS AND DEPARTMENTS
For descriptions of the courses below consult the listings under the specified departments in this bulletin.

English 101A. Introduction to Film.
English 101B Introduction to Cultural Studies
English 185. Studies in Film History.
English 190. Television, Technology and Culture
German 161. European Cinema in Conflict
Literature 113. Studies in Comparative World Cinema
Literature 112. Special Topics in National Cinema
Literature 114. Film Theory
Literature 115. Sexualities in Film and Video
Literature 117. Documentary Film History
Literature 118. Experimental Film and Video
Literature 120A. Special Topics in Television Genres
Literature 120B. Special Topics in Film
Literature 140. History of Mass Culture in the United States. C-L: English 156
Literature 197S. Special Topics in the United States’ Culture Industries. (Duke in Los Angeles)

RELATED COURSES OFFERED REGULARLY

African and African American Studies
101. Film and the African Diaspora

Art History
169. Documentary Photography and Social Activism in the Nuclear Age
199. History of Photography, 1839 to the Present

Asian & African Languages and Literature Studies
170. Indian Cinema
171. Japanese Cinema

Cultural Anthropology
104. Anthropology and Film
104D. Anthropology and Film
110. Advertising and Society: Global Perspective
116S. Advertising and Masculinity

**Dance**
146S. Dancing in the Movies

**English**
28S. Studies in Film and Video
101B. Introduction to Cultural Studies
107S. Dramatic Writing
108AS. Advanced Dramatic Writing
108BS. Transforming Fiction for Stage and Screen
120. Advertising and Society: Global Perspective
122. Studies in Comparative World Cinema
124. Sexualities in Film and Video
156. History of Mass Culture in the United States
185. Studies in Film History
189S. Special Topics in Film
190. Television, Technology, and Culture

**French**
164. French Cinema

**German**
113. Studies in Comparative World Cinema
141S. German Film
161. European Cinema

**History**
150A. Documentary Film History
150E. Russian Revolutionary Cinema

**Italian**
170S. Cinema and Literature in Italy
128. Historical Overview of Italian Cinema

**Literature**
100. Introduction to Cultural Studies
112. Special Topics in National Cinema
112A. Soviet Cinema
112B. European Cinema
113. Studies in Comparative World Cinema
114. Film Theory
115. Sexualities in Film and Video
116. Studies in Film History
117. Documentary Film History
119. Television, Technology, and Culture
120A. Special Topics in Television Genres
120B. Special Topics in Film
140. History of Mass Culture in the United States
197S. Special Topics in the United States Culture Industries

**Music**
169. Hollywood Film Music
169D. Hollywood Film Music

**Political Science**
180. Media in Comparative Perspective
196. Documentary Film History
209S. Issues in Politics and the Media in the United States
219S. Film and Politics
227S. Issues in International Communications

**Public Policy Studies**
120S. Newspaper Journalism
1545. Free Press and Public Policy
163S. Telecommunications Policy and Regulation
176S. American Communities: A Photographic Approach
177S. Advanced Documentary Photography

**Religion**
184. Religion and Film
Russian
113. Studies in Comparative World Cinema
130. Soviet Cinema
135. Contemporary Russian Media
135A. Contemporary Russian Media
150. Russian Revolutionary Cinema

Sociology
160. Advertising and Society: Global Perspective
160D. Advertising and Society: Global Perspective
170. Mass Media
182. Media in Comparative Perspective

Theater Studies
135S. Dramatic Writing
136S. Advanced Dramatic Writing
138S. Transforming Fiction for Stage and Screen
155S. Directing
172. Studies in Film History
178S. Special Topics in Film

Visual Arts
116. Photography
118S. American Communities: A Photographic Approach
119S. Advanced Documentary Photography

RELATED SPECIAL TOPICS COURSES

Art History
172. Topics in Asian Art: East Asian Cinema

Canadian Studies
282S. Canada: Media and Identity

Cultural Anthropology
180. Advertising and Masculinity

Drama
118. Transforming Fiction for Stage and Screen

French
141S, 142S. French Literature: World War II and French Film

German
123A. European Cinema in Conflict
123S. Undergraduate Seminars: German Film History to 1945

History
104. Latin America Through Film

Literature
293. Special Topics in Literature and History: The Rise of Consumer Culture in the United States, 1880-1930

Portuguese
200S. Seminar in Portuguese Literature: Literatura e Cinema Os Classicos Brasileiros

Public Policy Studies
195, 196. Selected Public Policy Topics
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, Democracy
264. Advanced Topics: Media and Democracy

Spanish
169. Topics in Nineteenth- and Twentieth-Century Spanish Literature: Spanish Cinema

FOCUS (FOCUS)

105. Special Topics in FOCUS. Designed to provide a forum for discussing and bridging the issues that arise in the individual seminars in the various FOCUS Programs. The subject matter and specific format of the course vary from program to program. Open only to participants in FOCUS. Pass/ fail grading only. Instructor: Staff. Half course.
French

For courses in French, see Romance Studies.

Genetics

See the listings for the University Program in Genetics in the Medicine section, and the information in the Biology section about the Biology Major and Minor with a concentration in Genetics.

Germanic Languages and Literature

Associate Professor of the Practice Walther, Acting Chair and Director of Language Program; Associate Professor Pfau, Director of Undergraduate Studies; Professors Borchardt and Rolleston; Associate Professors Morton and Rasmussen; Assistant Professors Denman and McIsaac; Professors Emeriti Alt and Phelps; Assistant Professor Emerita Bessent; Adjunct Assistant Professor Keul; Lecturers Johns and Zucker

A major or minor is available in this department.

GERMAN (GERMAN)

Language

1. First-Year German: Introduction to German Language and Culture. (FL) FL Four-skills (understanding, speaking, reading, writing) communicative approach to the language of everyday life in German-speaking countries, the language of their histories and societies, their arts and letters. Resources include audio, video, and computer-based materials. Instructor: Walther and staff. One course.

2. First-Year German Language and Culture II. (FL) FL Four-skills (understanding, speaking, reading, writing) communicative approach to the language of everyday life in German-speaking countries, the language of their histories and societies, their arts and letters. Resources include audio, video, and computer-based materials. Instructor: Walther and staff. One course.

14. Intensive First-Year German. (FL) FL Intensive introduction to German language and culture, combining in one semester the work of German 1-2. Instructor: Staff. Two courses.

15. German for Reading Knowledge. (FL) FL Foundations of German grammar and syntax; emphasis on vocabulary and translations. Not open for credit to students who have completed German 1-2, 14, or the equivalent. Students continuing German after German 15 should take the placement test. Instructor: Staff. One course.

German 66 and 69 are usually followed by 100S or 117S

65. Intermediate German Language and Culture I. (FL) 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. Instructors: Walther or staff. One course.

66. Intermediate German Language and Culture II. (FL) 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. Instructors: Walther or staff. One course.

69. Intensive Intermediate German. (FL) 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.

98. Advanced Proficiency in German. Credit for Advanced Placement in German. One course.

1005. Business German. (FL) CCI, FL 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.

117S. Advanced German Language and Culture. (CZ) (FL) CCI, CZ, FL Development of advanced proficiency in spoken and written German. Discussions, oral reports, and writing assignments based on authentic texts from a variety of media on issues of social and cultural significance in contemporary Germany. Instructor: Walther or staff. One course.

118S. Advanced German Grammar and Composition. (AL) (FL) AL, FL, IAA, 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 genre will provide the basis for practice in creative, descriptive, narrative, argumentative, and analytical writing. Prerequisite: German 117S or equivalent. Instructor: Walther or staff. One course.

204S. Advanced Business German. (FL) CCI, FL Examination of current German economic and business debates and events. Emphasis on vocabulary acquisition as well as intercultural conduct in business situations. Topics include state of Germany's industry and energy resources, monetary policies and banking systems, environmental issues, trade and import/export, taxes and the social safety net, with particular attention to Germany's self-understanding as a "soziale Marktwirtschaft," and its (non?) compatibility with current trends in globalization. Prerequisite: German 100S or consent of instructor. Instructor: Staff. One course.

Literature and Culture

121S. Introduction to German Literature. (AL) (FL) AL, CCI, FL, IAA Principal authors, genres, concepts, and works of German literature: Middle Ages to the Baroque. Instructor: Borchardt, Morton, or Rasmussen. One course.

122S. Introduction to German Literature. (AL) (FL) AL, CCI, FL, IAA Continuation of German 121S. Enlightenment to the present. Instructor: Denman, McIsaac, or Morton. One course.

123S. Undergraduate Seminars. (AL) (FL) AL, CCI, FL, IAA Focus on aspects of German-speaking literature and cultural studies. Taught in German. Topics vary. Instructor: Staff. One course.

124S. Undergraduate Seminars. (AL) (FL) AL, CCI, FL, IAA Topics vary. Instructor: Staff. One course.

126S. Rilke, Kafka, Mann. (AL) (FL) AL, FL, IAA The art of reading poetry; approaches to reading prose. Defining "world literature" and the shaping of "modern" Western thought by these major literary figures. Regular written exercises, readings, and discussion in German. Instructor: Borchardt, Morton, or Rolleston. One course. C-L: Comparative Area Studies

128S. Utopias and Nightmares: Science, Technology, and German Culture. (AL) (FL) AL, FL, IAA, STS Examines a selection of German films and texts that serve as vehicles for assessing the current state of the world and alternatives to it. Focus on the role of science and technology in shaping those alternatives. Special attention paid to German

1305. From Enlightenment to Classicism. (AL) (FL) AL, CCI, FL, IAA The major literary and cultural movements of the eighteenth century: Enlightenment, sentimentalism, Sturm und Drang, Weimar classicism. Investigates the construction of German culture and identity through analysis of representative works of Lessing, Klopstock, Herder, Goethe, Schiller, and Lenz. Instructor: Morton. One course. C-L: Comparative Area Studies

1315. Extraordinary Stories: Short German Prose of the 19th Century. (AL) (FL) AL, CCI, FL, IAA The unique German prose genre from Tieck, Kleist, Grillparzer, Keller, Droste-Hülshoff to Hauptmann, Kafka, and Grass. History and theories from romanticism to naturalism, exploring the constructions of German culture and identity within the larger European context. Instructor: McIsaac. One course. C-L: Comparative Area Studies


1335. Introduction to German Drama. (AL) (FL) AL, CCI, FL, IAA 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: Walther. One course. C-L: Theater Studies

1355. Romantic Dreams and Ironies. (AL) (FL) AL, FL, IAA The modern self emerging from the French Revolution into the intellectual ferment of the 1790s; new modes of knowledge (aesthetics, anthropology, linguistics); new literary forms (novel, fragment); the struggle to ground values in history. Major figures: Novalis, Tieck, F. Schlegel, Kleist, Hoffmann, with Heine and Eichendorff looking back from a perspective drenched in Romantic dreams and ironies. Instructor: Rolleston. One course.

1375. Introduction to Twentieth-Century German Women Writers. (AL) (FL) AL, CCI, FL, IAA This century’s preeminent German women writers placed in historical and cultural context. Elementary concepts of literary analysis; emphasis on speaking and writing German. Readings in Bachmann, Seghers, Wolf. Other authors may include: Aichinger, Fleisser, Frischmuth, Kaschnitz, Leutenegger, Morgner, H. Müller, Rinser, Struck. Instructor: Denman, McIsaac, or Rasmussen. One course. C-L: Comparative Area Studies, Women’s Studies

1385. German Unity, German Divisions. (CZ) (FL) CCI, CZ, FL, IAA Concepts of German nation and German identity explored in relation to the 1990 unifications: ideals of hierarchy and discipline versus desired role at Europe’s ethical and spiritual center. Literary and visual texts from key historical moments: Reformation, resistance to Napoleon, Bismarck’s and Hitler’s Empires, Cold War division. Instructors: McIsaac and Rolleston. One course.

1395. Germany and the Holocaust. (AL) (FL) AL, CCI, EI, FL Core issues of the Holocaust haunting subsequent politics: fanatical nationalism, racism, genocide, technological efficiency, extreme and arbitrary suffering, the quality of German resistance, contested postwar interpretations. To be studied through literature, memoirs, films, museums, memorials. Instructor: Denman, McIsaac, or Rolleston. One course. C-L: Judaic Studies
141S. German Film. (AL) (FL) AL, FL, IAA 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: Denman or McIsaac. One course. C-L: Film/Video/Digital

142S. Vienna at the Turn of the Century. (AL) (FL) AL, CCI, FL, IAA Historical and cultural contexts for understanding the culture of Vienna around 1900. While literary texts form the core, significant attention paid to architecture, fine arts, social sciences, museums, and music. Course offered in alternate years. Instructor: McIsaac. One course.

Courses Taught Overseas

63. Accelerated Intermediate German Language and Culture. (FL) FL Language proficiency and cultural knowledge through topic-oriented syllabus focusing on contemporary German culture and society. Comprehensive review of grammar, vocabulary building, practice in speaking, reading, writing. Extensive reading includes one longer prose text by a German, Swiss or Austrian writer. Taught only in the Duke-In-Erlangen program. Prerequisite: German 1, 2, 14 or equivalent. Instructor: Staff. One course.

67. Intensive Intermediate German. (FL) 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.

101. Duke-Administered Study Abroad: Advanced Special Topics in German. CCI, FL Topics differ by section. Instructor: Staff. One course.

119S. Advanced German Language and Culture. (CZ) (FL) CCI, CZ, FL Advanced grammar review with emphasis on phonetics and conversation, literature, films, museums, and theater performances. Focus on issues of German culture and identity. Taught only in the Berlin program. Fulfills requirements for German 117S and 118S. Prerequisite: German 65-66, or German 67 or 69. Instructor: Wohlfeil. Two courses.

150. Advanced Grammar, Composition, and Current Issues. (FL) CCI, FL Advanced grammar review with emphasis on German expository style. Discussion of contemporary social issues and current events from a German cultural perspective based on newspaper articles, videos, and television programs. Offered as a part of the summer program at the University of Erlangen. Instructor: Koeppel. One course.

151S. Advanced Intensive German. (FL) CCI, 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. (AL) (FL) AL, CCI, FL, IAA 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 1945-1989. 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: Comparative Area Studies

153. Aspects of Contemporary German Culture. (CZ) (FL) CCI, CZ, FL, IAA Topics of cultural, social, and aesthetic significance in contemporary Germany, with particular emphasis on issues of German national culture and identity. Site visits, lecture, and discussion. Offered as part of the summer program at the University of Erlangen. Instructor: Staff. One course. C-L: Comparative Area Studies
153A. Aspects of Contemporary German Culture. (CZ) CCI, CZ, IAA  Topics of cultural, social, and aesthetic significance in contemporary Germany with particular emphasis on issues of German national culture and identity, site visits, lecture, and discussion. Offered as part of the Duke-In-Erlangen summer program. Taught in English. Instructor: Staff. One course.

155. Advanced German Cultural Studies. (CZ) (FL) 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: Comparative Area Studies

Courses Taught in English

495. First-Year Seminar. IAA  Topics may vary each semester offered and are described in the First-Year Seminar's booklet. Instructor: Staff. One course.

113. Studies in Comparative World Cinema. (AL) AL, CCI, IAA,STS  One course. C-L: see Literature 113; also C-L: English 122, Russian 113, Film/Video/Digital

1145. Literary Imaginings of the Good Life. (AL) AL, EI, IAA, 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.

1155. Berlin in the Twentieth Century. (AL) (CZ) AL, CCI, EZ, EI, IAA  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: McIsaac. One course.

123A. Special Topics in German Literature and Cultural Studies. Investigates various aspects of German-speaking literature and culture. Taught in English by visiting faculty. Instructor: Staff. One course.

161. European Cinema. (AL) AL, CCI, IAA  History of European cinema via themes of the city, of war and memory, and of Europe's relations with the rest of the world. Films by Eisenstein, Lang, Godard, Herzog, and others. Instructor: Denman or McIsaac. One course. C-L: Literature 112B, Film/Video/Digital

1655. The Vikings and Their Literature. (AL) AL, CCI, EI, IAA  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 1655

1675. German Heroic Literature. (AL) AL, CCI  Ancient Germanic heroic literature, including Beowulf and other Old English heroic tales, the Hildebrandslied, Heliand, and Nibelungenlied in the ancient German tradition, and Egil's Saga, Saga of the Volsungs, and Grettir's Saga in the ancient Norse tradition. Norse mythology (prose Edda) a key point of reference, and Tacitus' Germania providing an historical background. The heroic ethic and the definition of manliness, codes of personal honor, leadership and fealty, family and feuding practices, and the tragic Germanic dilemma. Taught in English. Instructor: Keul. One course. C-L: English 121S, Medieval and Renaissance Studies 1685

1765. German Unity, German Divisions. (CZ) CCI, CZ, IAA  Concepts of German nation and German identity explored in relation to the 1990 unification: ideals of hierarchy and discipline versus desired role at Europe's ethical and spiritual center.
Literary and visual texts from key historical moments: Reformation, resistance to Napoleon, Bismarck's and Hitler's Empires, Cold War division. Readings and discussions in English. Instructor: McIsaac or Rolleston. One course.

182. Classics of Western Civilization: The German Tradition, 1750-1930. (AL) (CZ) AL, CCI, CZ, IAA 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: English 148, History 179A, Political Science 134, Literature 163B

Independent Study and Honors Seminar

191. Independent Study. Directed reading or individual projects. Open only to qualified juniors and seniors by consent of instructor and director of undergraduate studies. Instructor: Borchardt, Denman, McIsaac, Morton, Rasmussen, Rolleston, 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: Borchardt, Denman, McIsaac, Morton, Rasmussen, Rolleston, or Walther. One course.

193. Independent Study. See German 191. Open only to qualified juniors and seniors by consent of instructor and director of undergraduate studies. Instructor: Borchardt, Denman, McIsaac, Morton, Rasmussen, Rolleston, or Walther. One course.

194. Research Independent Study. R See German 192. Open only to qualified juniors and seniors by consent of instructor and director of undergraduate studies. Instructor: Borchardt, Denman, McIsaac, Morton, Rasmussen, Rolleston, or Walther. One course.

For Graduates and Advanced Undergraduates

201S. Introduction to Medieval German: The Language of the German Middle Ages and Its Literature. (AL) (FL) AL, FL, IAA, 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

203S. Sex, Gender, and Love in Medieval German Literature. (AL) (FL) AL, CCI, FL, IAA Historical contexts for emergence of courtly love and the role of desire and interpretation in Gottfried von Strassburg's Tristan und Isolde, courtly lyric, 'maere.' Instructor: Rasmussen. One course. C-L: Medieval and Renaissance Studies 203S

225S. Introduction to Goethe. (AL) (FL) AL, FL, IAA, 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. (AL) (FL) AL, EI, FL, IAA, 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: Borchardt or Morton. One course.

230S. German Romanticism. (AL) (FL) AL, CCI, FL, IAA The emergence in the 1790s of a new cultural language: categories of self, history, interpretation, irony, and revolution. Theory, fiction, and poetry by Novalis, the brothers Schlegel, Tieck, Brentano, Eichendorff, Hoffmann, and Heine. Readings and discussions in German. Instructor: Rolleston. One course.
235S. Nineteenth-Century German Literature. (AL) (FL) AL, FL, IAA, R Topics may include: poetry, prose, drama and culture; Kleist, Heine, Büchner, Keller, Meyer, Gotthelf, Grillparzer, Mörike, Stifter, Storm, Freytag, Hebbel, Fontane. Readings and discussions in German. Instructor: McIsaac. One course.

245S. The Twentieth Century. (AL) (FL) AL, CCI, EI, FL, IAA The major movements and writers from the expressionists, Thomas Mann, Kafka, Rilke, and Brecht, to Böll, Grass, Handke, and Christa Wolf. Emphasis on relations between text and history: World War I, Weimar, Third Reich, and the struggle to integrate past and present in post-Holocaust literature. Readings and discussions in German. Instructor: Rolleston. One course. C-L: Comparative Area Studies

247S. Postwar German Literature. (AL) (FL) AL, FL, IAA, R The development of German literature after 1945. Topics vary: German literature between 1945 and the founding of the two states; the GDR novel and the question of realism; GDR drama after Brecht; West German literature. Readings and discussions in German. Instructor: Denman. One course. C-L: Comparative Area Studies


256S. Inventing the Museum: Collecting and Cultural Discourses of the Nineteenth Century. (CZ) (FL) CZ, FL, IAA, R One course. C-L: Art History

258S. Special Topics in German Literature and Cultural Studies. (AL) (FL) AL, FL, IAA Instructor: Staff. One course.

Linguistics

260. History of the German Language. QID Phonology, morphology, and syntax of German from the beginnings to the present. Instructor: Keul or Rasmussen. One course. C-L: Medieval and Renaissance Studies

261S. Second Language Acquisition Theory and Practice. CCI, R Overview of current research in the fields of second language acquisition and foreign language pedagogy, and its implications for the teaching of the German language, literature, and culture at all levels. Readings and discussions on competing theories of language acquisition and learning, issues of cultural identity and difference, learner styles, and the teaching of language as culture; training in contemporary teaching techniques and approaches. Instructor: Walther. One course. C-L: Linguistics

Courses Taught in English

265S. Science and Technology in Nineteenth-Century German Culture. (AL) (CZ) AL, CCI, CZ, IAA, STS Literature and science writing by literary figures (such as Goethe, Novalis, Kleist, Stifter, Musil), the social history of technology, the history of science (especially physics, anthropology, and biology), and philosophy (such as Kant, Marx, Nietzsche, Weber). The German historical context as seen from contemporary American and German understandings. Taught in English, with an optional German section for those reading in the original. Instructor: McIsaac. One course.

270. Consciousness and Modern Society. (CZ) CCI, CZ, EI, IAA 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: Comparative Area Studies, Marxism and Society

276S. Nietzsche’s Political Philosophy. (CZ) (SS) CZ, EI, SS One course. C-L: Political Science

290 Courses and Academic Programs
298S. Special Topics. (AL) (CZ) AL, CZ, IAA Special Topics in German literature and cultural studies. Taught in English. Instructor: Staff. One course.

299S. Seminar in German Studies. (CZ) CC1, CZ, IAA, 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: Rolleston and staff. One course.

COURSES CURRENTLY UNSCHEDULED

164S. Medieval German Literature
180. Faust and the Faust Tradition
200S. Proseminar: Introduction to Literary Criticism
210S. Renaissance and Reformation
215S. German Baroque Literature
220S. Reason and Imagination: The German Eighteenth Century
227S. Goethe Seminar
232S. Poetry and Modernism
244S. International Modernism
249S. German Cinema: Weimar to Present
254S. Literature by Women
271S. Contemporary Theory and the German Tradition

YIDDISH (YIDDISH)

1. Elementary Yiddish. (FL) FL A thorough study of elementary Yiddish grammar with reading, composition, and oral practice. No previous knowledge of German or Hebrew required. Instructor: Zucker. One course. C-L: Judaic Studies
2. Elementary Yiddish. (FL) FL Continuation of Yiddish 1. Prerequisite: Yiddish 1. Instructor: Zucker. One course. C-L: Judaic Studies
63. Intermediate Yiddish. (FL) FL Study of more advanced grammar, vocabulary, conversation, and texts using Yiddish literature and newspapers. Designed to build students' language proficiency and improve their writing skills as well as reading comprehension so that Yiddish may be employed as a research tool. Prerequisites: Yiddish 1 and 2 or consent of instructor. Instructor: Zucker. One course.

COURSES CURRENTLY UNSCHEDULED

171. Yiddish Fiction in Translation
191. Independent Study
192. Independent Study

THE MAJOR

Students majoring in German develop language skills in their cultural and literary context. The international and humanistic emphasis makes the German major an appropriate companion to technical and career-oriented concentrations. Numerous opportunities are available, including programs of study abroad, interdisciplinary programs, and Fulbright and German Academic Exchange Service (DAAD) scholarships.

The German major offers two tracks: (1) German and (2) German Studies

German

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 German languages and culture courses, German 117S and 118S (or the equivalent taught in Berlin; German 119S, two courses) and either German 121S or 122S. Of departmental courses taught in English, only one may count toward the major.
German Studies

Requirements. Ten courses at the 100 level or above. Courses taken in the department must normally include German 117S and 118S (or the equivalents taught in Berlin; German 119S, two courses), and at least two courses at the 200 level. Two of the ten courses may be taken in other departments with the approval of the director of undergraduate studies in German, provided such courses evince a clear focus on German culture, society, and history.

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 or the departmental honors representative.

THE MINOR

German

Requirements. Five courses at the 100 level or above, only one of which may be taught in English.

German Studies

Requirements. Five courses at the 100 level or above, at least three of which must be taught in German. Two of the five courses may be taken in other departments with the approval of the director of undergraduate studies in German, provided such courses evince a clear focus on German culture, society, and history.

Greek

For courses in Greek, see classical studies.

Health, Physical Education, and Recreation (PHYSEDU)

Professor Buehler, Chair; Associate Professor LeBar, Director of Undergraduate Studies; Associate Professor Harvey; Associate Professor of the Practice Dale; Assistant Professors of the Practice Ogilvie, Stewart, and Yakola; Instructors Alphin, Beguinet, Bowen, Brame, Burk, Daffron, Daley, Falcone, Forbes, Graham, Hackett, Howser, Jermyn, Jindra, Kubinski, Orr, Rollins, Spector, M. Taylor, S. Taylor, Wasielewski, and Welsh

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 but will not receive credit for the repeated courses.

15B. **Weight Training.** Continuation of Physical Education 15A. Instructor: Staff. 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.


22. **Lifeguard Training.** American Red Cross course which prepares an individual to qualify as a non-surf lifeguard. Preventative lifeguarding, emergencies, health and sanitation, water rescue and special situations, search and recovery operations, weather and environmental conditions. Corequisites: must have CPR and Red Cross Standard First Aid certification by the end of the course in order to receive Lifeguard Training certification. Instructor: Forbes. Half course.

23. **Water Aerobics.** Aerobic and anaerobic exercise performed in water, designed to promote physical conditioning. Instructor: J. Ogilvie. Half course.


27. **Kayaking.** Basic skills for kayaking in whitewater. Open to juniors and seniors only. Instructor: Taylor. Half course.

30. **Beginning Golf.** Instructor: Kubinski or S. Taylor. 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.** Instructor: Staff. Half course.


42. **Advanced Tennis.** Stroke development with emphasis on strategy. Instructor: LeBar. Half course.

50. **Mixed Competitive Tennis.** Instructor: LeBar. Half course.

52. **Fencing.** Foils, épée, and saber. Instructor: Beguiniet. Half course.


56. **Intermediate Karate.** Continued practice of basic technique. Introduction to round kick, back kick, free sparring, four Pinan Katas of the Wadoryu System. Prerequisite: Physical Education 55. Instructor: Bowen. Half course.

60. **Volleyball.** Instructor: Wasielewski. Half course.

61. **Beginning Judo.** A means of defense and offense, and turning an opponent's strength against himself. Instructor: Bowen. Half course.

63. **Cardio-Kickboxing.** A noncontact activity designed to teach self-defense techniques while building the muscular and cardiovascular systems. 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 Hatha Yoga.** Continuation of hatha yoga postures and awareness of breathing to develop more flexibility and calmness. Yoga philosophy. Prerequisite: previous experience with yoga. Instructor: Spector. Half course.

72. **Social Dancing.** Waltz, foxtrot, tango, cha-cha, rumba, jitterbug, rock, disco, and others. Instructor: Daffron. Half course.


74. **Advanced Social Dance.** Continued instruction in dances from Physical Education 73. Introduction to West Coast swing. Development of both competitive style dances and social dance technique. Partners recommended. Prerequisite: Physical Education 73 or equivalent. Instructor: Daffron. Half course.

75. **Latin Dance.** Salsa, cha-cha, rumba, merengue, samba, mambo, and others. Instructor: Daffron. Half course.

79. **Beginning Equitation.** Introduction to horseback riding: basic horsemanship; walk, trot, and canter. Instructor: Rollins. Half course.


96. **Basketball.** Development of individual and team skills. Instructor: Welsh. Half course.

**THEORY COURSES**

495. **First-Year Seminar.** Topics vary each semester offered. Instructor: Buehler. 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.

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.


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.


COURSES CURRENTLY UNSCHEDULED
13. Weight Control
24. Basic Rescue and Emergency Water Safety
28. Canoeing
29. Water Polo
35. Beginning Racquetball
36. Intermediate Racquetball
37. Advanced Racquetball
48. Men’s Competitive Tennis
53. Intermediate Fencing
62. Intermediate Aikido
70. Folk Dancing
71. Country/Western Dancing
91. Emergency Medical Technician Course
93. Orienteering
94. Care and Prevention of Athletic Injuries
95. Wilderness Skills
98. Frisbee
112. Sexuality, Stress, and Substance Abuse: Choices, Risks, and Consequences

Health Policy

Assistant Research Professor Conover, Director

A certificate, but not a major, is available in this program.

The Center for Health Policy, Law and Management, a part of the Terry Sanford Institute of Public Policy, offers an interdisciplinary certificate in health policy. The program speaks to the needs of students preparing for careers in health care policy, management, and the associated professions as the American health care industry enters into a period of rapid and profound change.

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 which have conditioned American health policy, past and present; (2) to familiarize students with the institutional and economic complexity of the American 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 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.

PROGRAM REQUIREMENTS

The Health Policy Certificate Program is open to all undergraduates. Successful candidates must complete the prescribed combination of six courses: any one methods course; two courses drawn from the core set of health policy course offerings; any two additional elective courses; and the capstone course. For students matriculating at Duke in fall 1998 and thereafter, no more than three of the six courses taken to satisfy the requirements of the certificate may originate in a single department or program. Appropriate courses may come from the list given below or may include other courses (new courses, special topics courses, independent study, and, under special circumstances, courses offered through the UNC School of Public Health*) as approved by the director.

For further details, contact the director at the Center for Health Policy, Law and Management, Room 125 Old Chemistry Building, or consult the program website at http://www.hpolicy.duke.edu/certificate.

Capstone Course (required)


Methods Courses (any one course):

Economics
2D. Competition, Monopoly, and Welfare
261. Evaluation of Public Expenditures

Public Policy Studies
55D. Introduction to Policy Analysis
261. Evaluation of Public Expenditures

Sociology
171. Comparative Health Care Systems

Core Courses (any two courses):

Regularly Scheduled Courses
Economics
156. Health Economics

Law
347. Health Care Law and Policy. Open to limited undergraduate enrollment with consent of instructor. (Special Note: The Law School semesters and daily schedules differ from those of Arts and Sciences; interested students should check with the Law School to find exact course times.)

Political Science
249. The Politics of Health Care

*Subject to regulations governing interinstitutional course registration. Note that the UNC School of Public Health semesters and daily schedules differ from those of Arts and Sciences at Duke.
Public Policy Studies
156. Health Economics
157. Health Policy
263S. Public Health Issues: Prevention and Management

Sociology
171. Comparative Health Care Systems

Special Topics Courses, Offered Periodically (counting as Core Courses)

Public Policy Studies
264S. Research Seminar: Topics in Public Policy
264S.07. Getting Value for Money in Health Care: Rationing in Theory and Practice
264S.70. Social Policy Implementation
264S.72. Managed Care

Sociology
227S. Proseminar in Medical Sociology. Organization and Financing of Health Care. (May not be counted toward certificate if Sociology 227D is counted.) One course.

Elective Courses (any 2 courses)

Regularly Scheduled Courses
Cultural Anthropology 185S. The Canadian Health Care System
Economics 163. Economics of the Environment. Prerequisite: Economics 52.
Economics 251S. Regulation of Vice and Substance Abuse
Environment 270. Resource and Environmental Economics
History 105S.05 History of Medical Ethics
History 189B. History of Public Health in America
History 279, 280. Health, Healing, and History
History 294S. Women and Medicine in the U.S.
Philosophy 118. Philosophical Issues in Medical Ethics. Prerequisite: one course in philosophy and consent of instructor. One course.
Political Science 107. Environmental Politics and Policies in the Industrial World
Political Science 147. Environmental Politics and Policies in the Developing World
Political Science 149D. Environmental Politics Beyond Borders
Political Science 176A, B. Perspectives on Food and Hunger
Psychology 109A. Health Psychology. Not open to students who have taken Psychology 98.
Public Policy Studies 149. United States Environmental Policy. Consent of instructor required.
Public Policy Studies 251S. Regulation of Vice and Substance Abuse
Public Policy Studies 266. Comparative Social Policy
Public Policy Studies 274. Resource and Environmental Policy. Prerequisite: Environment 270L, Public Policy Studies 272, or consent of instructor.
Sociology 112. American Demographics
Sociology 123. Social Aspects of Mental Illness
Sociology 162. Health and Illness in Society
Sociology 163. Aging and Health
Sociology 227S, B. Proseminar in Medical Sociology. Social Behavior and Health
Sociology 227S, D. Proseminar in Medical Sociology. Special Topics in Medical Sociology (for example, social epidemiology, stress and coping, health and aging)

Hebrew
For courses in Hebrew, see Asian and African Languages and Literature.

Hindi
For courses in Hindu see Asian and African Languages and Literature.

History (HISTORY)
Professor Thompson, Chair; Professor Herrup, Associate Chair; Associate Professor Nathans, Director of Undergraduate Studies; Professors Chafe, Dirlik, English, Gaspar, Gavins, Goodwyn, Herrup, Koonz, Kuniholm, Mauskopf, M. Miller, Payne, Petroski, Reddy, Richards, Roland, Schatzmiller, Witt, and Wood; Associate Professors Edwards, Ewald, French, Green, Hacohen, Humphreys, Mazumdar, Neuschel, Robisheaux,
Silverblatt, Thorne and Wigen; Assistant Professors Balleisen, Biddle, Grandin, Kornbluh, Partner, and Peyroux; Professors Emeriti Cahow, Colton, Davis, Durden, Franklin, Holley, Lerner, Parker, Preston, Scott, TePaske, and Young; Adjunct Professor Roberts; Adjunct Associate Professors Pelech and Wilson; Visiting Assistant Professors Kaiwar and Y. Miller

A major or a minor is available in this department. History courses offer students from all disciplines within the university an opportunity to investigate the past, gain perspective on the present, and improve their critical faculties. History provides an integrating principle for the entire learning process, and students of history gain a sense of human development, an understanding of fundamental and lasting social processes, and a feeling for human interrelatedness. History courses train the mind by improving skills in communicating thought and imagination.

COURSES GROUPED BY GEOGRAPHIC AREA

Africa, Middle East, and Asia (AMEA)

101G. Introduction to Islamic Civilization. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 146; also C-L: Cultural Anthropology 147, Medieval and Renaissance Studies 146A, Comparative Area Studies

102G. Introduction to Islamic Civilization. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 146; also C-L: Cultural Anthropology 147, Medieval and Renaissance Studies 146A, Comparative Area Studies

101K. Topics in Chinese Civilization. (CZ) CCI, CZ Instructor: Dirlik. One course. C-L: Comparative Area Studies

114AS. Islam in West Africa. (CZ) CCI, CZ, IAA One course. C-L: African and African American Studies 114S, Comparative Area Studies

115A. History of Africa: From Antiquity to Early Modern Times. (CZ) CCI, CZ, IAA Civilizations known from archaeological records to the early modern era. Topics include African ecologies and ecological adaptations; Egyptian civilization; dynamics of agrarian and pastoral communities; state formation; long distance trade; Islam; contacts with Europeans. Methodologies and sources for reconstructing Africa's past. Instructor: Ewald. One course. C-L: African and African American Studies 115A, Comparative Area Studies, Women's Studies

115B. History of Africa: From Early Modern Times to Independence. (CZ) CCI, CZ, IAA Beginning with the dynamics of African societies before the onset of European engagement in the continent and covering the impact of the Atlantic economy; expansion of long distance maritime and overland trade; Islam and Islamic reform; state formation; responses to colonialism; independence movements; the postcolonial state. African novels, autobiographies, and films, as well as scholarship by Africans. Not open to students who have taken the former History 115. Instructor: Ewald. One course. C-L: African and African American Studies 115B, Comparative Area Studies, Women's Studies


122A. The Economic History of Japan, 1850 to the Present. (CZ) CCI, CZ, IAA The economic achievements and problems of Japan in their historical and comparative context. The prewar and wartime economy; postwar and current issues. How economic development has transformed ordinary people's lives. Instructor: Partner. One course. C-L: Markets and Management Studies

139B. Modern South Asia. (CZ) CZ, EI, IAA, 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: Comparative Area Studies

142A. China: Roots of Revolution. (CZ) CCI, CZ A survey of modern Chinese history in comparative perspective, with special emphasis on the nineteenth and twentieth centuries. Instructor: Dirlik or Mazumdar. One course. C-L: Comparative Area Studies, Marxism and Society

142C. Chinese Food in History. (CZ) CCI, CZ, IAA Food and food crops in historical perspective. Using literary sources and art, the course reconstructs the culture of food and its diffusion across peoples, cultures and nations. Instructor: Mazumdar. One course. C-L: Comparative Area Studies

143A. Ancient and Early Modern Japan. (CZ) CCI, CZ, IAA 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: Wigen. One course. C-L: Comparative Area Studies

143B. The Emergence of Modern Japan. (CZ) CCI, CZ, IAA 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. Instructor: Wigen. One course. C-L: Comparative Area Studies, Markets and Management Studies

152. The Modern Middle East. (CZ) CCI, CZ, IAA 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: Comparative Area Studies, Judaic Studies

172B. China and the West. (CZ) 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.

172C. China from Antiquity to 1400. (CZ) CCI, CZ, IAA 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.

193. Introduction to the Civilizations of Southern Asia. (CZ) CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 160; also C-L: Cultural Anthropology 101, Religion 144, Comparative Area Studies


295S. Slavery and Freedom in Africa, to 1960. (CZ) CCI, CZ, EI, R How Africans created variations on the global themes of servility, slavery, and freedom. Includes various forms of slavery in Africa; gender and slavery; slave trades; the impact of the Atlantic economy on slavery in Africa; colonial policies of "emancipation," labor control, and labor coercion; African intellectual responses to the problem of slavery and African expressions of freedom, including freedom from colonial rule. Instructor: Ewald. One course. C-L: African and African American Studies 292S, Comparative Area Studies
Europe - Western and Eastern

21D. Europe to the Eighteenth Century. (CZ) CCI, CZ, IAA, 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. (CZ) CCI, CZ, IAA Development and world impact of European civilization, critical evaluation of historical interpretations, and investigation of history from primary sources. Instructor: Staff. One course.

53. Greek History. (CZ) CCI, CZ, IAA One course. C-L: see Classical Studies 53

54. Roman History. (CZ) CCI, CZ, IAA, W One course. C-L: see Classical Studies 54

101E. Nationalism and Exile. (CZ) CCI, CZ, IAA, 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.

107A. Tudor/Stuart Britain. (CZ) CZ, IAA, R Instructor: Herrup. One course. C-L: Medieval and Renaissance Studies 107A, Comparative Area Studies

107B. Modern Britain. (CZ) CCI, CZ, IAA, 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: Comparative Area Studies

110. History of Eastern Europe in Modern Times. (CZ) CCI, CZ The development of the nations and nationalities of Eastern Europe since the early eighteenth century. Instructor: Lerner. One course. C-L: Comparative Area Studies

113B. Europe's Colonial Encounter, 1492-1992. (CZ) CCI, CZ, EI, IAA 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

116. Aspects of Medieval Culture. (AL) (CZ) AL, CZ One course. C-L: Art History 139, Classical Studies 139, Medieval and Renaissance Studies 114

117. Early Modern Europe. (CZ) CCI, CZ, IAA, R The economic, social, and political history of early modern Europe and its contact with Islamic world. Instructor: Neuschel. One course. C-L: Medieval and Renaissance Studies 118, Comparative Area Studies, Women's Studies

120. History of Socialism and Communism. (CZ) CCI, CZ, IAA The origins and development of socialist and communist movements from pre-Marxian times to the present across cultures and nationalities. Instructor: Lerner. One course. C-L: Comparative Area Studies

123S. Madness and Society in Historical Perspective. (SS) CCI, IAA, 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: Comparative Area Studies

130A. Modern Ireland. (CZ) CCI, CZ, IAA, W A comparison of Irish history with British imperial history. Survey of Irish history from the Elizabethan conquest to the present. Instructor: Staff. One course.

133A. Poverty and Sanctity in Medieval Society. (CZ) CCI, CZ, EI, IAA Are the poor holy? Medieval Europeans' anxieties about the moral relationship between poverty and wealth has bequeathed a complex legacy to the modern West. This course examines medieval contexts of poverty and profitmaking as well as ideas about heretics, saints, lepers, and moneylenders in order to explore the concern with poverty that generated
powerful reform movements in the high Middle Ages. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 133A

133C. British Isles in the Middle Ages. (CZ) CCI, CZ, EI, IAA 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. (CZ) 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

135A. Europe in the Twentieth Century. (CZ) 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.

135B. Weimar and Nazi Germany. (CZ) 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: Comparative Area Studies

135C. Germany and the Cold War. (CZ) CZ, R Accounts from Holocaust survivors; the politics and the culture of the Cold War in East and West Germany, especially the contrast in public memory of the Nazi past, protest movements, economic developments, and popular culture. The collapse of Communism and the rise of neo-Nazi protest, even as Germany prepares for full integration within Europe. Instructor: Koonz. One course. C-L: Comparative Area Studies

138. Reformation Europe. (CZ) CCI, CZ, IAA 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. Instructor: Robischeaux. One course. C-L: Medieval and Renaissance Studies 138, Comparative Area Studies

144A. The Crusades to the Holy Land. (CZ) 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

146S. Introduction to Russian Civilization. (CZ) CCI, CZ One course. C-L: see Russian 190S; also C-L: Comparative Area Studies

148A. Aspects of Renaissance Culture. (AL) (CZ) AL, CZ One course. C-L: see Medieval and Renaissance Studies 115; also C-L: Art History 149, Italian 125

148B. History of Medieval and Renaissance Italy. (AL) (CZ) AL, CZ, IAA The history and literature of the first early modern European culture and society. Instructor: Witt. One course. C-L: Medieval and Renaissance Studies 148B

150E. Russian Revolutionary Cinema. (CZ) CCI, CZ, IAA 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, Film Video/ Digital

151A. The Italian Renaissance and the Birth of the Modern Mind. (CZ) CZ, IAA Not open to students who have taken History 104. Instructor: Witt. One course. C-L: Medieval and Renaissance Studies 151A, Comparative Area Studies


154A. Soviet Propaganda. (AL) (CZ) AL, CCI, CZ One course. C-L: see Russian 154A


156A. The Reformation of the Sixteenth Century. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 158; also C-L: Medieval and Renaissance Studies 156A

156B. History of the Christian Church. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 120

157A. Rise of Modern Science: Early Science through Newton. (CZ) CZ, IAA, STS, W The development of science and medicine with attention to cultural and social influences upon science. Instructor: Mauskopf. One course.

161. History of Modern Russia. (CZ) CCI, CZ, IAA 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: Comparative Area Studies

164A. Love in the Western World. (CZ) CCI, CZ, IAA The history of love, sex, and marriage in Western Europe from the Greeks to the late sixteenth century. Instructor: Witt. One course. C-L: Medieval and Renaissance Studies 164D

171A. Women in the Middle Ages and Renaissance. (CZ) CCI, CZ, IAA, R One course. C-L: Medieval and Renaissance Studies 172, Comparative Area Studies, Women’s Studies

178A. Science and Technology in the Ancient World. (CZ) CCI, CZ, IAA, STS One course. C-L: see Classical Studies 101

179A. Classics of Western Civilization: The German Tradition, 1750-1930. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see German 182; also C-L: English 148, Political Science 134, Literature 163B

180. The Soviet Experience. (CZ) CCI, CZ, IAA A survey of the history of Russia and the Soviet Union from the eve of the Revolution to the present day with particular emphasis on political, social, and cultural change and continuity. Not open to students who have had History 262. Instructor: Lerner. One course. C-L: Comparative Area Studies

182C. History of Greek and Roman Civil Law. (CZ) CCI, CZ, EI, IAA One course. C-L: see Classical Studies 102
185A. Socialist Realism: Soviet Literature of the 1930s and 1940s. (AL) AL, CCI, IAA
One course. C-L: see Russian 182; also C-L: Comparative Area Studies, Marxism and Society

186. Marxism and Society, (SS) SS One course. C-L: see Cultural Anthropology 139; also C-L: Education 139, Literature 181, Sociology 139, Comparative Area Studies, Marxism and Society

201S. The Russian Intelligentsia and the Origins of the Revolution. (CZ) CZ, IAA, R
Origin and dynamics of the Russian revolutionary movement, the intelligentsia, and the emergence of the labor movement. Instructor: M. Miller. One course. C-L: Comparative Area Studies

202S. The Russian Revolution. (CZ) CZ, IAA, R
An analysis of the Bolshevik seizure of power in 1917 and the establishment of a revolutionary society and state during the 1920s. Instructor: M. Miller. One course. C-L: Comparative Area Studies

209S. Race, Class, and Gender in Modern British History. (CZ) CCI, CZ, EI, IAA
The intersection among gender, race, and class identities in British history since the eighteenth century, a period of tremendous economic, social, and political change resulting from industrialization and imperial expansion. Issues include the impact of industrialization on gender and class consciousness, the role of women, the middle classes and the working classes in the campaign against slavery, British workers' reactions to colonization, British women in the empire, and sexuality and the evolution of racist discourse. Instructor: Thorne. One course. C-L: African and African American Studies 209S, Study of Sexualities

The current state of the ongoing controversies over the origins and character of the first modern social revolution. Instructor: Reddy. One course. C-L: Comparative Area Studies

218. Problems in British Imperialism. (CZ) CCI, CZ, W
Selected readings on significant aspects of the history of the British Empire-Commonwealth: for example, Ireland, South Africa, and India. Instructor: Staff. One course.

221AS. The Society and Economy of Europe, 1400 - 1700. (CZ) 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 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 220A5

221BS. Religion and Society in the Age of the Reformation. (CZ) 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. The Humanist as Reformer: Petrarch, Machiavelli, and Erasmus. (CZ) CZ, EI, IAA
Humanism as a movement dedicated to moral, political, and ecclesiastical reform. Prerequisite: History 151A and reading knowledge of German, French, or Italian. Instructor: Witt. One course. C-L: Medieval and Renaissance Studies 222A

222B. Florence: Renaissance City. (CZ) CZ, IAA
Instructor: Witt. One course. C-L: Medieval and Renaissance Studies 222B

236A. Topics in the History of Monasticism. (CZ) CCI, CZ, EI, IAA  The development of western medieval monasticism from its third-century origins in the Egyptian desert through the twelfth-century explosion of devotional communities. Varied topics include monastic anxiety and optimism about the nature of the human will; the origins, meaning, and practical experience of vows to poverty, chastity, stability, and obedience; and the growth of a monastic culture. Designed to guide advanced students through the professional study of monastic institutions and monastic historiography. French, German, or Latin necessary. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 235

236B. Special Topics in Early Medieval History. (CZ) CZ  Topics may vary by semester. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 236B

238S. Europe in the High Middle Ages. (CZ) CCI, CZ, R  Western Europe; the agricultural revolution, the re-emergence of city civilization, and the strengthening of central governments and bureaucracies across people and cultures. Instructor: Shatzmiller. One course. C-L: Medieval and Renaissance Studies 238S

239. History of Socialism and Communism. (CZ) CCI, CZ  The origins and development of socialist and communist movements from pre-Marxian times to the present. Not open to students who have taken History 120. Instructor: Lerner. One course. C-L: Comparative Area Studies

240A. Multinationalism and Multiculturalism: Eastern Europe Example. (CZ) CCI, CZ, R  Instructor: Lerner. One course.

242B. The Soviet 1920s: The Road to a New Synthesis. (AL) AL, CCI, FL, IAA  One course. C-L: see Russian 281


256. Modern Literature and History. (AL) (CZ) AL, CCI, CZ, FL, IAA  One course. C-L: see French 256; also C-L: Comparative Area Studies

260. Fifth- and Fourth-Century Greece. (CZ) CCI, CZ, IAA, R  One course. C-L: see Classical Studies 222

261. The Hellenistic World. (CZ) CCI, CZ, IAA, R  One course. C-L: see Classical Studies 223

262. The Soviet Experience. (CZ) CCI, CZ, R  A survey of the history of Russia and the Soviet Union and its people and cultures, from the eve of the Revolution to the present day with particular emphasis on political, social, and cultural change and continuity. Not open to students who have taken History 180. Instructor: Lerner. One course. C-L: Comparative Area Studies

263. The Roman Republic. (CZ) CCI, CZ, IAA, R  One course. C-L: see Classical Studies 224

264. The Roman Empire. (CZ) CCI, CZ, IAA, R  One course. C-L: see Classical Studies 225

266. Late Antiquity. (CZ) CCI, CZ, IAA, R  One course. C-L: see Classical Studies 226


293. French Liberalism: An Intellectual History, 1815-1981. (CZ) CZ, EI, IAA  Historical study of the moral and political works of major French liberal thinkers in their political,
social, and intellectual contexts. Readings in De Stal, Constant, Guizot, Tocqueville, Durkheim, Halevy, and Aron and historiography. Major themes: revolution, restoration, and the origins of liberalism; liberals, the July Monarchy, and 1848; Durkheim, the Third Republic, and the new liberalism; World War I, totalitarianism, and contemporary French liberalism. Instructor: Hacohen. One course.

**Latin America and Caribbean (LAC)**

127A. The Caribbean, 1492-1700. (CZ) CCI, CZ, IAA The Caribbean region from the arrival of Columbus (1492) to the emergence of sugar and slavery as powerful shapers of society and culture, by 1700. Instructor: Gaspar. One course. C-L: African and African American Studies 127A, Comparative Area Studies, Latin American Studies


136A. Introduction to Contemporary Latin America. (CZ) CCI, CZ, IAA A broad introduction to the key themes and historical developments that have shaped the contours of contemporary Latin America. Instructor: Grandin. One course. C-L: Comparative Area Studies, Latin American Studies

136B. Biography and Politics in Latin America. (CZ) CCI, CZ, EI Individuals who have shaped Latin American society and politics from the time of Hernan Cortes to Fidel Castro. Moral and ethical dilemmas underlying war, revolution, and repression across nations, cultures, and epochs. Instructor: French. One course. C-L: Comparative Area Studies, Latin American Studies

136C. Nineteenth-Century Latin America: Building Postcolonial Nations. (CZ) (SS) CCI, CZ, IAA, SS The period from the Wars of Independence to the First World War. Explores how nations and national identities were constructed in Latin America; focus on the importance of race, gender, and ethnicity. Conflicts between church and state, struggles over freedom and citizenship, and economic dependency and development. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies

155. Mexico and Central America since Colonial Times. (CZ) CCI, CZ A survey of colonial Mesoamerica, the nineteenth-century transition to independence, the emergence of nationalism, and the history of popular insurgencies in the twentieth century including the Mexican and Nicaraguan Revolutions. Instructor: Grandin. One course. C-L: Latin American Studies

162A. The Latino Experience in North America, Seventeenth to Twentieth Centuries. (CZ) CCI, CZ Spanish colonialism in North America, nineteenth-century United States expansion westward, the secession of Texas from Mexico, the Mexican-American War, and the 1898 Spanish-American War. Social, political, and cultural processes that contribute to the diverse and growing Latino population in the United States, with special attention to agricultural and union movements. Instructor: Grandin. One course.

170C. Afro-Brazilian Culture and History. (CZ) CCI, CZ, IAA, 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, Latin American Studies

174A. Latin America: Colonialism and Its Consequences. (CZ) CCI, CZ, IAA 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: Grandin. One course. C-L: Comparative Area Studies, Latin American Studies
174B. Modern Latin America. (CZ) CCI, CZ, IAA A survey of nineteenth- and twentieth-century economic, social, and cultural change. Not open to students who have taken History 177. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies

United States and Canada (USC)

91D. The Development of American Democracy to 1865. (CZ) CZ, IAA Trends vital to an understanding of the United States today. Focus on the development of American democracy. Problems of foreign policy, the growth of capitalism, political practices, social reform, and conflicting ideals considered in relation to this main theme. Instructor: Staff. One course.

92D. America from 1877 to the Present. (CZ) CZ, EI, IAA 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. Instructor: Staff. One course.

98. Introduction to Canada. (SS) SS One course. C-L: see Canadian Studies 98; also C-L: Political Science 98, Sociology 98, Comparative Area Studies

108D. Across the Great Divides: United States and Canadian Wests in the Nineteenth and Twentieth Centuries. (CZ) CCI, CZ, R An examination of the United States and Canadian westward movements, considering in comparative contexts: the dispossession of Native Peoples; federal government expansionist policies; the ranching, farming, and resource-extracting frontiers; immigration and ethnic diversity; women’s experiences of the West; the transition of territories to states and provinces; political insurgencies. Instructor: Thompson. One course. C-L: Undergraduate Canadian Studies Program, Comparative Area Studies

108F. Introduction to North America. (CZ) (SS) CCI, CZ, SS One course. C-L: see North American Studies 110; also C-L: Political Science 119, Public Policy Studies 115, Sociology 109, Latin American Studies

111B. Era of the American Revolution, 1760-1815. (CZ) CCI, CZ, IAA Origins, evolution, and consequences. Attention to economic, social, and geographical questions, as well as military, political, and moral issues. Instructor: Wood. One course.

111C. The Emergence of Modern America: The United States from the 1890s to the Cold War. (SS) IAA, SS American economic, social, and political history from the final decades of the nineteenth century to the onset of the Cold War. Emphasis on the evolution of the political economy of the United States, for example, the development of the state, of durable economic and political institutions, the locus of power. Topics include: the late nineteenth-century transformation of the economy, the role of technology and science, industrial depressions, World War I and World War II, the New Deal and the emergence of a welfare state, and the rise of an American empire. Instructor: Keyssar. One course. C-L: Marxism and Society


119A. Native American History. (CZ) CCI, CZ, EI, IAA A survey of conditions and events among Native American peoples from precolonial times to the present with attention to moral and political controversies of conquest and its legacy. Instructor: Wood. One course. C-L: Undergraduate Canadian Studies Program, Comparative Area Studies

129A. Experiment in Republicanism: The United States, 1787-1860. (CZ) CZ, IAA, W United States history from 1787 to the 1850's. The new nation as a "republic" ruled by gifted gentlemen-leaders; expansion creating a revolutionary market economy; "self-made men," and a new racism undermining the republican society. Class and regional tensions; politically suppressed women, African Americans, and reformers. Political breakdown as agrarian republicanism gave way to capitalist democracy. Instructor: Nathans. One course.

129B. From Victorian to Corporate America, 1820-1900. (CZ) CZ, IAA, W How moral and cultural rules of the Victorian era took root in the United States before 1860; how those values adapted or faltered in response to massive industrialization, class conflicts, and protest movements that exploded after 1865; what social groups and economic struggles gave shape to "modern" America by 1900. Instructor: Nathans. One course.

145A. African-American History. (CZ) CCI, CZ, IAA First part of a two-course sequence examining the black experience in America from slavery to the present. Instructor: Gavins. One course. C-L: African and African American Studies 145A, Comparative Area Studies


150A. Documentary Film History. (AL) (CZ) AL, CZ, IAA The development of the nonfiction film from a historical perspective. Beginning in the silent period with the ethnographic films of Robert Flaherty; in the sound period, the work of John Grierson. Various schools such as cinema verite and direct cinema in the 1950s up to the present revival and rehabilitation of documentary. Technological changes and the use of documentary as a political organizing tool. Instructor: Gaines, Paletz, or Wood. One course. C-L: Literature 117, Political Science 198, Film/Video/Digital, Marxism and Society

150BS. The Documentary Experience: A Video Approach. (AL) (SS) AL, IAA, R, SS One course. C-L: see Public Policy Studies 105S; also C-L: Cultural Anthropology 1345, Film/Video/Digital 105S, Political Science 1565

153S. The Insurgent South. (CZ) CZ Instructor: Goodwyn. One course. C-L: Marxism and Society


160. The United States from the New Deal to the Present. (CZ) CZ, IAA Instructor: Chafe. One course. C-L: Women's Studies

163A. Sectional Conflict, Civil War, and Reconstruction: The United States, 1840-1880. (CZ) CCI, CZ, IAA, R The Civil War's origins, course, and aftermath. Focus on the politics of sectional strife, the social experience of modern war, explanations for the conflict's eventual outcome, economic and political consequences in both North and South, and the degree of change wrought by emancipation. Instructor: Balleisen. One course.

163C. The American Civil War. (CZ) CZ Instructor: Goodwyn. One course. C-L: Marxism and Society

165. **History of the Working Class in the United States.** (CZ) CCI, CZ, IAA
A social history of the working class, as well as a political history of labor, from the early nineteenth century to the present. Not open to students who have taken History 106.
Instructor: Staff. One course. C-L: African and African American Studies

167A. **United States Foreign Policy I: From World War I to Vietnam War.** (CZ) (SS) CCI, CZ, EI, IAA, SS
One course. C-L: see Public Policy Studies 169A

167B. **United States Foreign Policy II: From Vietnam War to the Present.** (CZ) (SS) CCI, CZ, SS
One course. C-L: see Public Policy Studies 169B

169A. **American Women, 1600-1877.** (CZ) CCI, CZ, IAA
Instructor: Staff. One course. C-L: Study of Sexualities, Women's Studies

169B. **American Women, 1877 to the Present.** (CZ) CCI, CZ, IAA
Instructor: Staff. One course. C-L: Study of Sexualities, Women's Studies

170A. **American Cultural History, 1750-1860.** (CZ) CCI, CZ, IAA, W
Implicit habits of mind, explicit intellectual debates, and contested values in the United States from the late colonial period up to the outbreak of the Civil War. Focus on the relationship between America's experiment with democratic governance and broader cultural currents, including concepts of familial, religious, and legal authority, understandings about economic justice and social class, aspirations for social reform, and beliefs about the appropriate place of women and racial minorities in the American social order.
Instructor: Balleisen. One course.

175S. **The Southern Plantation as Historical Laboratory: Odyssey in Black and White, 1770-1970.** (CZ) CCI, CZ, IAA, W
Readings and discussion on the plantation as a microcosm of Southern social history since 1770, emphasizing the parallel evolution of black and white communities, families, economies, cultures, perceptions, and power struggles.
Instructor: Nathans. One course. C-L: African and African American Studies

176B. **African American Intellectual History, Twentieth Century.** (CZ) CCI, CZ, W
One course.

177A. **American Constitutional Development I.** (SS) IAA, SS
One course. C-L: see Political Science

177D. **American Constitutional Development II.** (SS) IAA, SS
One course. C-L: see Political Science

183S. **Canada from the French Settlement.** (CZ) CCI, CZ, R
An exploration of Canada's "limited identities" of ethnicity, race, and language.
Instructor: Thompson. One course. C-L: Undergraduate Canadian Studies Program, Comparative Area Studies

184S. **Canadian Issues.** (SS) CCI, SS
One course. C-L: see Canadian Studies 184S; also C-L: Cultural Anthropology 184S, Political Science 184S, Sociology 184S, Comparative Area Studies

189A. **Medicine in the West.** (CZ) CZ, EL, IAA
Concepts of disease, the social context of the delivery of medical care, and the standing of physicians in society. The relation between medical theory and medical practice. Not open to students who have taken History 189.
Instructor: Green. One course.

189B. **History of Public Health in America.** (CZ) CZ, IAA, 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.

211S. **History of Poverty in the United States.** (CZ) (SS) CCI, CZ, SS
A history of poverty and poverty policy in the United States from the colonial era to the present. The changing experience of poverty, efforts to analyze and measure poverty, and attempts
to alleviate or eliminate it. Attention paid to the reasons for the durability of poverty in a wealthy nation and to the forces shaping the contours of anti-poverty policy. Instructor: Staff. One course. C-L: Public Policy Studies 2705

226. Topics in the Labor History of the United States. (SS) SS Instructor: Staff. One course.


255A. Courts, Wars, Legacies of Wars. (SS) IAA, R, SS One course. C-L: see Political Science 238S

255B. War and the National State. (SS) R, SS, STS One course. C-L: see Political Science 288

255C. The Culture of American Capitalism, 1750-1860. (CZ) CZ, IAA Cultural responses to the economic transformations that reshaped American society in the century after 1750. Precapitalist ethics of exchange; the emergence of market values; attitudes toward consumption and speculation; controversies surrounding wage labor and slavery; debates over banking, corporation, and the credit system; and cultural models of "success" and "failure." Instructor: Balleisen. One course.

276A. Labor, Immigration, and the Asian American Experience. (CZ) CCI, CZ, R History of Asian Americans in the United States to World War II, focusing on immigration, conditions in the homeland which fostered immigration, and the legislative barriers such as the exclusion acts which prevented the immigration of Asians. The United States in the context of a global political economy; the impact of colonialism and imperialism in the shaping of Asian-American experience. Instructor: Mazumdar. One course. C-L: Comparative Area Studies

282S. Canada. (SS) SS One course. C-L: see Canadian Studies 282S; also C-L: Cultural Anthropology 282S, Political Science 282S, Sociology 282S, Comparative Area Studies

283S. Seminar in North American Studies. Topics vary each semester. Instructor: Staff. One course.

287BS. American History and Social Theory. (CZ) CZ, EI Contemporary theories of social order, social change, and revolution. Instructor: Goodwyn. One course.

294S. Women and Medicine in the United States. (CZ) CCI, CZ, IAA, R The history of women as patients and practitioners from the colonial era to the present. The concept of "practitioner" broadly defined, to include domestic medicine, midwives, nurses, physicians, and other alternative medical women. Themes include birth control, women's control of their own bodies, sources of authority for medical practice, race and health, and the underlying general history of medicine in the United States. Instructor: Humphreys. One course.

GLOBAL AND COMPARATIVE COURSES

25. Introduction to World History: To 1700. (CZ) CCI, CZ, IAA, W The beginning and evolution of civilization; major traditions of Eurasia (Greek, Christian European, Indian, Chinese, Islamic); Africans and American Indians; the European invasion of America; foundations of the European world economy; Europe's preparation for world hegemony. Instructor: Staff. One course. C-L: Comparative Area Studies

26. Introduction to World History: Since 1700. (CZ) CCI, CZ, IAA Establishment of European political, economic, and cultural hegemony; non-Western responses; the decline of Western hegemony. Instructor: Staff. One course. C-L: Comparative Area Studies

29. Comparative Revolutions: France, 1789Russia, 1917. (CZ) CCI, CZ, IAA An introductory investigation into the general significance of political revolutions in the
modern Western world. Focuses on two classic case studies: the French and Russian revolutions. Compares origins, development, and consequences of these influential historical transformations. Secondary comparisons with the American Revolution. Instructor: M. Miller. One course.

**75. Topics on the Third World and the West. (CZ) CCI, CZ, IAA** 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: Comparative Area Studies, Latin American Studies, Marxism and Society

**76. Topics on the Third World and the West. (CZ) CCI, CZ, IAA** Continuation of History 75. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies, Marxism and Society

**101C. Terrorism, 1848-1968. (CZ) CCI, CZ, IAA** A comparative analysis of the origins and development of modern terrorism in the West (Europe, Russia, and the United States). Instructor: M. Miller. One course. C-L: Comparative Area Studies

**112A. The World in the Twentieth Century. (CZ) CCI, CZ, IAA, W** Imperialism and decolonization, war, revolution, international capitalism and depression, science and technology across cultures and nations. 112A: 1900 to 1945; 112B: 1945 to the present. Instructor: Staff. One course. C-L: Comparative Area Studies

**112B. The World in the Twentieth Century. (CZ) CZ** Continuation of History 112A. 1945 to the present. Instructor: Staff. One course. C-L: Comparative Area Studies


**118B. Warfare in the Twentieth Century. (CZ) 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: Biddle. One course.

**118C. History of the World Wars. (CZ) CZ, EI, R, STS** An examination of the origins, course, and consequences of the world wars of this century. Close attention is paid to impact of warfare on society and the ensuing moral and political controversies. Instructor: Biddle. One course.

**121A. Globalizing Protest. (CZ) CCI, CZ** The economics and politics of contemporary globalization with a focus on the social and democratic deficit in the existing international trade and investment regime. Explores the concrete policy proposals and alternative visions articulated by transnational social movements from Seattle 1999 to today. Instructor: French. One course. C-L: Public Policy Studies 133, Political Science 160A

**132. Modern World Environmental History, 1500 to the Present. (CZ) CCI, CZ, EI, IAA** Environmental effect of global economic growth across cultures and nations. Impacts of agriculture, forestry, mining, and industry on the biosphere. Use of freshwater resources. Effects of modern transportation and urbanization. The world environmental movement. Not open to students who have taken History 325. Instructor: Richards. One course. C-L: Comparative Area Studies

**137. Comparative Approaches to Global Issues. (CZ) (SS) CCI, CZ, SS** One course. C-L: see Comparative Area Studies 125; also C-L: Cultural Anthropology 125, Political Science 125, Religion 183, Sociology 125, Marxism and Society

**147. Magic, Religion, and Science since 1400. (CZ) CCI, CZ, IAA, 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

149. World Military History. (CZ) CZ, IAA, 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.

154CD. The History of Emotions. (CZ) CCI, CZ, IAA, R 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


168A. The Emergence of the Atlantic Basin to 1713. (CZ) CCI, CZ, IAA, 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


176D. Globalization and the Limits of Translation. (CZ) CCI, CZ, IAA, W The character of translation, not just between languages, but also among (1) modes of performances: music, dance, written and oral discourse; (2) disciplines of knowledge, and (3) local practices. The cross-cultural communication demanded by the expansion of global interconnections. Instructors: Mignolo and Reddy. One course. C-L: Romance Studies 176D, Cultural Anthropology 176D, Literature 143B, Dance 176

188A. Genocide in the Twentieth Century. (CZ) 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.

190. The History of Women in Science and Medicine. (CZ) CCI, CZ, STS The history of scientific and medical theories about women and an analysis of women as participants in the evolution of science and medicine. Instructor: Green. One course. C-L: Women’s Studies

203S. Topics in Modern World Environmental History. (CZ) CCI, CZ, IAA, STS Human effects upon the natural environment across regions, cultures, and nations; analytical case studies and a synthetic global perspective. Instructor: Richards. One course.

204S. Technology, Economic Development, and Social Change, 1750 to the Present. (CZ) CZ, STS The role of technology in initiating both economic development and social
change, and the dynamic relationship between these phenomena. Theories of technology development; technology in theories of social change; and technology in theories of economic development. Comparative cases from the United States, Europe, Japan, and other areas. Instructor: Partner. One course.

207A.S. Geographic Perspectives in History I: Atlantic Worlds. (SS) CCI, IAA, SS A variety of geographical perspectives in history, drawing on studies of western Europe, North America, and the north Atlantic basin. Analysis of maps and atlases, as both tools and objects of historical inquiry. Major themes include: maps and power; contact, conquest, and the "creative destruction" of landscapes; the spatial logics of capital; geographies of identity; the production of regions; and historical-geographic perspectives on modernity. Instructor: Wigen. One course. C-L: Comparative Area Studies

207B.S. Geographic Perspectives in History II: Asian and Pacific Worlds. (SS) CCI, IAA, SS A broad range of spatial, regional, environmental, and landscape approaches to Asian history. Major themes include: orientalism and the search for "Asia"; Asian history as world history; the formation of local, regional, and national identities; indigenous cartographies; state-making and boundary-making; and the conceptual shift from "Asia" to "Pacific." Instructor: Wigen. One course. C-L: Comparative Area Studies

208A.S. Decentering the Cultural Map: Boundary Zones as Counter-Cores. (CZ) CCI, CZ, IAA, R, SS The boundary zones between major world regions and the extent to which so-called "natural barriers" of oceans, deserts, steppes, and mountain ranges have historically fostered communication, creating interstitial spaces for experimentation, exchange, and cultural resistance. Instructor: Lewis and Wigen. One course. C-L: Comparative Area Studies

208S. Anthropology and History. (SS) SS One course. C-L: see Cultural Anthropology

223S. The World Wars. (CZ) CZ, EI The causes, course, and consequences of World Wars I and II, from military, political, technological, and economic perspectives; the legacy of World War II; special emphasis on understanding the experience of total war, not only for the individual soldier but for wholesocieties. Instructor: Biddle. One course.

224S. The World Wars. (CZ) CZ, EI Continuation of History 223S. Instructor: Biddle. One course.

232A.S. Historical and Anthropological Approaches to Emotion. (CZ) CCI, CZ, IAA, R Examines emotion as a collective and historical phenomenon prompted by dissatisfaction with rigid notions of culture and current concern about the social construction of the self and identity. Instructor: Reddy. One course. C-L: Cultural Anthropology 232S


235ES. Topics in Cold War History. (CZ) CZ, R A study of key Cold War issues from the atomic bomb to the collapse of the Soviet Union. Particular attention to post-World War II technological development and the moral and ethical dilemmas they pose. Instructor: Biddle. One course.


279. Health, Healing, and History. (CZ) CZ, EI, IAA, STS The first part of a two-course sequence studying the development of medicine within the broader cultural context from prehistory to the twentieth century. Instructor: English. One course.


287A. Popular Religion. (CZ) CCI, CZ, IAA One course. C-L: see Religion 287

COURSES TAUGHT IN DUKE STUDY ABROAD PROGRAMS


100. A-R, U-V. Duke-Administered Study Abroad: Advanced Special Topics in History. CCI, IAA Register for course by designated suffix indicating the specific country. Courses numbered 100 with a letter suffix (100A, 100B...100V) 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. Instructor: Staff. One course.

100A. Duke in Madrid: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100B. Duke in Spain: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100C. Duke in Britain: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100E. Duke in China: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100F. Duke in France: Special Topics on History. (CZ) (FL) CCI, CZ, IAA Instructor: Staff. One course.

100H. Duke in Andes: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100I. Duke in Italy: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100J. Duke in Russia: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100K. Duke in Australia: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100L. Duke in Germany: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100M. Duke in Oxford: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100N. Duke in Japan: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100O. Duke in Vienna: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100Q. Duke in India: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.


100U. Duke in Rome: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.

100V. Duke in Greece: Special Topics on History. (CZ) CCI, CZ, IAA Instructor: Staff. One course.
100S. Study Abroad: Seminar on Historical Topics. (CZ) CCI, CZ, IAA Register for country by the section designated in the Official Schedule of Courses. Instructor: Staff. One course.

COURSES ON SPECIAL TOPICS
20S. Studies in Special Topics. (CZ) CZ Opportunities for freshmen to engage with a specific historical issue, 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.

Intermediate-Level Seminars
103. Lectures in Special Topics. (CZ) CZ Individual courses in this series may be taught more than once or on a one-time basis only. Instructor: Staff. One course.

105S. Special Topics in FOCUS. (CZ) CZ Open only to first-year students. Current list of courses available in FOCUS Program Brochure; website at http://pmac-www.aas.duke.edu/ focus. Instructor: Staff. One course.

106S. Seminar in Selected Topics. (CZ) CZ Instructor: Staff. One course.

Upper-Level Small Group Learning Experience
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.


195S. Junior-Senior Seminars in Special Topics. (CZ) 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; some seminars are offered for year-long study and carry two course credits. If students wish to enroll in only one semester of a year-long seminar, they must obtain permission from the instructor. Both history majors and nonmajors may enroll in the seminars during their junior or senior years. Students are urged to enroll in their junior year if they expect to apply for the Senior Honors Seminar (History 197S-198S) or to practice-teach in their senior year. Instructor: Staff. One course.

196S. Junior-Senior Seminars in Special Topics. (CZ) CZ, R See History 195S. Instructor: Staff. One course.

197S. Senior Thesis Seminar. (CZ) 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 1955-1965 seminar, two courses at the 200 level, or 191-192 independent study, supervised by an instructor. Instructor: Staff. One course.

198S. Senior Thesis Seminar. (CZ) CZ, R, W Continuation of History 197S. Instructor: Staff. One course.

299. Lectures in Special Topics. (CZ) CZ Lectures in advanced topics, designed for seniors and graduate students. In some semesters open to seniors and graduate students; in other semesters limited to graduate students only. Instructor: Staff. One course.
299S. Special Topics. (CZ) 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.

COURSES CURRENTLY UNSCHEDULED
101M. Asian-Pacific Region in Historical Perspective
109. Contemporary Global Issues
111A. Early America to 1760
114B. Immigration, Migration, and Mobility of Labor: United States and the World
128. Comparative Social Movements
139A. Radical Movements in Modern Asia
142B. China since 1949: The People’s Republic
151C. European Intellectual History, 1789-1848
151F. European Intellectual History, 1918-1968
154D. The French Revolution at 200 Years
157B. Rise of Modern Science: Eighteenth to the Twentieth Century
171B. History of Women in Modern Europe
181. Alexander the Great
182C. History of Greek and Roman Civil Law
201T. Russian Intelligentsia
213S. Early Modern France
219S. History of Science and Technology
220S. History of Science and Technology
225S. Problems in Comparative Labor History
228. Recent United States History: Major Political and Social Movements
230S. Populism in Latin America
231S. Readings in Latin American Colonial History
241A. The Origins of Totalitarianism, 1924-1954
245. Social and Intellectual History of China
246. Social and Intellectual History of China
250. Social and Intellectual History of the United States
252A. Construction of China in European and American Literature
254S. European Diplomatic History, 1871-1945
257. Comparative Latin American Labor
259. Archaic Greece
270S. British History, Seventeenth Century to the Present
272S. Fin-de-siècle and Interwar Vienna: Politics, Society, and Culture
275S. Asian and Asian-American Women in Comparative Perspective
285S. Oral History
286S. Oral History
288S. Germany and Japan in World War II
289S. War, Revolution, and Society in the Caribbean, 1700-1815
290S. Theoretical Bases of Social Interpretation
296. United States Policy in the Middle East

THE MAJOR

The history major has two basic objectives. First, it seeks to offer 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 seeks to allow study in depth of the history of a particular time and place, or a particular type of history. The goal of breadth is addressed in the distribution requirements for coursework across four geographic areas and in premodern as well as modern history. Depth is achieved through the requirement that students identify a primary field of study.
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. The ten courses are to be distributed as follows:

1. **Introductions to History**: At least ONE introductory course. Majors are also encouraged, but not required, to take a seminar especially designed for new majors in history. The new-major seminars explore how historians recreate the past; new majors develop analytical, research, and writing skills useful in further history courses and in each student's life-journey.

2. **Areas of History**: One course each in ANY THREE of the four geographic OR thematic areas listed below; two upper-level courses in the premodern era (see pre-1800 course list below).

3. **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 introductory course may be counted toward the student's primary field; primary-field courses may count toward meeting the area and pre-modern distribution requirements.

4. **Research Requirements**: Each major must take at least two research seminars (History 195S, History 196S, or 200-level courses). Substitution of other seminars must be approved by the director of undergraduate studies and the course instructor. One research course must be an upper level research seminar in the student's primary field.

**Introductory classes** include: History 21D, 22D, 25, 26, 53, 54, 75, 76, 91D, 92D, 93S, 115C, 136A.

**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 21D would count as both an introductory 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**: The history department will count ONE Advanced Placement credit (score of 4 or 5) in any field of History toward the requirement of ten courses for the history major.

**Transfer Credit**: At least eight of the ten courses required for the history major must be taken at Duke.

**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 take the 195S-196S or 197S-198S seminars or 200-level courses 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. The minor requirements are a minimum of five history courses, at least three of which must be at the 100 level or above. Courses taken pass/fail or 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 faculty member in Trinity College of Arts and Sciences, reviewed by the department of that faculty member, and approved by the Committee on Courses of Instruction 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 04 Allen Building.

79. House Course. Special topics course. Information about specific offerings each term available prior to the start of classes at the following website: http://www.aas.duke.edu/trinity/housecs/hc.html. Pass/fail grading only. Instructor: Staff. Half course.

**Human Development (HUMANDEV)**

Professor Gold, Director; Assistant Professor Gustafson; Instructor Maxson

A certificate, but not a major, is available in this program.

The goal of this interdisciplinary program is to broaden and enhance the perspectives of students interested in human development. The program seeks to foster an understanding and appreciation of how biological, psychosocial and cultural factors act together in development throughout the life course. It also highlights the ways in which different disciplines conceptualize and study development, demonstrates the complementarity of disciplinary perspectives, and facilitates dialogue among faculty and students.

Achievement of the program's goal is facilitated by an integrated curriculum of required and elective courses including a research apprenticeship, a senior seminar, and other special events. An active advisory procedure assists students in planning learning opportunities. A certificate is available for students who complete program requirements. Participation in selected parts of the program and in the advisory system, however, is available to all undergraduates whether or not they seek the certificate.

For the program certificate, the curriculum includes two elective courses and four required courses. The required courses, which are described below, are Human Development 124 (Human Development); either Human Development 180 (Psychosocial Aspects of Development) or Psychology 159S (Biological Psychology of Human Development); Human Development 190 (Research Apprenticeship in
Human Development) or an independent study, pre-approved by the director, in an academic department; and Human Development 191S (Senior Seminar in Human Development).

Two elective courses are to be chosen from an illustrative list of biological, psychological, and social science courses affiliated with the program published in the program brochure. This list of elective courses includes Human Development 192S (Special Topics in Human Development).

The research apprenticeship arranged through the program and the related senior seminar are ordinarily available only to students seeking the program certificate. Other components of the program are available to all undergraduates.

HUMAN DEVELOPMENT COURSES

50. Duke-Administered Study Abroad: Special Topics in Human Development. Topics differ by section. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Human Development. Topics differ by section. Instructor: Staff. One course.

124. Human Development. (SS) 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

180. Psychosocial Aspects of Human Development. (SS) 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

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. Instructor: Gold. One course.

191S. Senior Seminar in Human Development. (SS) 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. Instructor: Gustafson or staff. One course.

192S. Special Topics in Human Development. (SS) SS Selected theoretical, methodological, and applied topics with emphasis on social change, psychological development, and policy issues in aging societies. Instructor: Staff. One course.

OTHER COURSES

Psychology

159S. Biological Psychology of Human Development
Immunology

For courses in Immunology, see Medicine (School)- Graduate (School) Basic Science Courses Open to Undergraduates.

Italian

For courses in Italian, see romance studies.

Japanese

For courses in Japanese, see Asian and African Languages and Literature.

Judaic Studies

Professor Bland (religion), Director, and Director of Undergraduate Studies; Professors Golding (philosophy), Lerner (history), C. Meyers (religion), E. Meyers (religion), Sanders (religion), and Shatzmiller (history); Associate Professor Hacohen (history); Assistant Professor Zakim (Asian and African languages and literature); Adjunct Assistant Professor Miller (history); Lecturer Zucker (Germanic languages and literature)

A certificate, but not a major, is available in this program.

This program is sponsored by the interdisciplinary Duke Center for Judaic Studies. Participating departments and programs include Asian and African languages and literature, 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 as well as Yiddish. Also, relevant course in Judaic 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. Six courses are required, four of which must be at or above the 100-level. They include Religion 40 (Judaism) and at least one additional relevant course in Religion; two courses in either history or Asian and African languages and literature; two additional courses drawn from the list below or approved by the director of undergraduate studies. Not more than three courses in religion (including courses cross-listed with religion) may count toward a certificate.

German

139S. Germany and the Holocaust

Hebrew

1. Elementary Modern Hebrew
2. Elementary Modern Hebrew
63. Intermediate Modern Hebrew
64. Intermediate Modern Hebrew
125S. Advanced Modern Hebrew
191. Research Independent Study

History

134A. History of Jews in the Early Middle Ages
152. The Modern Middle East

Medieval and Renaissance Studies

134A. History of Jews in the Early Middle Ages
134C. Jewish Mysticism
135. Jewish Religious Thought

Religion

1. Biblical Hebrew I
2. Biblical Hebrew II
40. Judaism
100. The Old Testament/Hebrew Bible
101A. Selected Studies in the Bible: Pentateuch
101B. Selected Studies in the Bible: Prophets
133. Classical Judaism, Sectarianism, and Early Christianity
134. Jewish Mysticism
135. Jewish Religious Thought
136. Contemporary Jewish Thought
207. Hebrew Prose Narrative
208. Classical Hebrew Poetry: An Introduction
220. Rabbinic Hebrew
221. Readings in Hebrew Biblical Commentaries
243. Archaeology of Palestine in Biblical Times
244. Archaeology of Palestine in Hellenistic-Roman Times

Yiddish
1. Elementary Yiddish
2. Elementary Yiddish

SPECIAL TOPICS COURSES

History
195S. The Palestine Problem

Opportunities for independent study are also offered in various related departments. Procedures for registration and applications are available in 118 Gray Building.

For further information, contact the director of the center for Judaic Studies, Box 90964, Durham, NC 27708-0964.

Korean

For courses in Korean, see Asian and African languages and literature.

Latin

For courses in Latin, see classical studies.

Latin American Studies (LATAMER)

Associate Professor French, Director, Center for Latin American and Caribbean Studies

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 an interdisciplinary and in-depth study of the realities of Latin American societies and cultures. Courses in this area are sponsored by the program, offered through several academic departments and programs, and taught by many faculty members. In addition to offering courses and a certificate on completion of the requirements, the Center for Latin American and Caribbean Studies also sponsors lectures, conferences, and film festivals. Moreover, the Center and the Institute of Latin American Studies at Chapel Hill sponsor the Consortium in Latin American Studies, 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 other special initiatives.

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 offers its own program in Bolivia during the academic year, based at the Universidad Mayor de San Andrés and the Universidad Católica Boliviana. In addition, students may participate in the Duke in Costa Rica, Duke in Mexico, or Duke in Cuba programs. 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 at 2114 Campus Drive.
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 the interdisciplinary capstone course (Latin American Studies 198), fulfill the indicated language requirement, and take four additional area courses, three 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). Aymara and Quechua language courses are offered as part of the Duke in the Andes Program in Bolivia. A Summer Intensive Yucatec Maya Language Program is also offered through the Consortium in Latin American Studies, on the UNC campus.

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. Comparative Area 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.

LATIN AMERICAN AND CARIBBEAN STUDIES PROGRAM COURSES
(LATAMER)

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.

198. Special Topics in Latin American Studies. (AL) (CZ) AL, CCI, CZ A problem-oriented course integrating approaches from two disciplines; team-taught. 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. C-L: Spanish 124, Comparative Area Studies

200S. Seminar in Latin American 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 seniors and graduate students. Instructor: Staff. One course.

202S. Research Methods and Bibliographic Instruction in Latin American Studies. CCI Students develop and refine research skills in Latin American Studies, increasing familiarity with print and electronic resources and evaluating relevant resources in all formats. Students may develop bibliographic projects in support of other course work and research. Instructor: Calvo. One course.
LATIN AMERICAN AREA COURSES

Regularly Scheduled Courses

African and African American Studies
127A. The Caribbean, 1492-1700
127B. The Caribbean in the Eighteenth Century
138S. Francophone Literature
168S. The Atlantic Slave Trade
170. Afro-Brazilian Culture and History

Art History
133. Colonial Art of the Andean Region

Asian & African Languages and Literature Studies
168S. Francophone Literature

Biology
134L. Fundamentals of Tropical Biology
135L. Research Methods in Tropical Biology
215. Tropical Ecology

Cultural Anthropology
140S. Cultural Diversity in the Andes
199A S. The Articulation of Culture in the Bolivian Andes
199C. Bolivian Culture
199FS. Bolivian Culture and Society since 1978
208S. Postcolonial Anthropology

Economics
175. Economics of Modern Latin America
275. Economics of Modern Latin America
286S. Economic Growth and Development Policy

Environment
217. Tropical Ecology
275S. Protected Areas, Tourism, and Local Development

French
168S. Francophone Literature

History
75. Topics on the Third World and the West
76. Topics on the Third World and the West
108F. Introduction to North America
127A. The Caribbean, 1492-1700
127B. The Caribbean in the Eighteenth Century
136A. Introduction to Contemporary Latin America
136B. Biography and Politics in Latin America
136C. Nineteenth-Century Latin America: Building Postcolonial Nations
155. Mexico and Central America since Colonial Times
169A. 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
174B. Modern Latin America

Medieval and Renaissance Studies
136. Colonial Art of the Andean Region

North American Studies
97. Introduction to Mexico
110. Introduction to North America

Political Science
119. Introduction to North America
151A. Dictators and Democrats in Modern Latin America
151B. Presidents, Parties, and Legislatures: The Institutions of Modern Latin American Democracies
253S. Comparative Government and the Study of Latin America
284S. Public Policy Process in Developing Countries

Portuguese
111S. Research Seminar in Contemporary Lusophone Issues
Public Policy Studies
115. Introduction to North America
284S. Public Policy Process in Developing Countries
286S. Economic Growth and Development Policy

Sociology
109. Introduction to North America
126. Third World Development

Spanish
115. Introduction to Spanish-American Literature
116. Introduction to Spanish-American Literature
121. Latin-American Literature in Translation
132AS. The Articulation of Culture in the Bolivian Andes
140A S. Bolivian Contemporary Short Fiction
140BS. Bolivian Culture and Society since 1978
140CS. Cultural Diversity in the Andes
140E. Film and Political Culture in Contemporary Bolivia
143S. Literature of the Discovery and Conquest of America
144S. Duke in Andes: Special Topics
145S. Literature of the Hispanic Minorities of the United States
146. The Spanish-American Novel
147S. Latin-American Women Writers
148. Colonial and Postcolonial Studies in Latin America and the Caribbean
175S. Hispanic Literature and Popular Culture

Special Topics Courses, Offered Periodically

Cultural Anthropology
280S. Culture, Power and History
280S. Ethnohistorical Methods: Colonial Encounters

History
195S. Seminar in Latin American History

Literature
151. Caribbean Poetry

North American Studies
283S. Seminar in North American Studies

Political Science
299B. Political Economy of Development in Latin America and Asia

Portuguese
200S. Seminar in Luso-Brazilian Literature
202S. Topics in Portuguese and Brazilian Literature and Culture

Romance Studies
124. Modernity, Ethnicity and Colonization

Sociology
110D. Comparative Sociology: Latin America

Spanish
122S. Topics in Latin American Literatures and Cultures
124. Special Topics in Latin American Studies
131. Topics of Hispanic Civilization
244. Topics in Twentieth-Century Latin American Fiction
248. Studies in Spanish-American Literature

Linguistics (LINGUIST)
Core faculty: Professor Butters (English), Chair; Associate Professor Tetel (English), Director of Undergraduate Studies; Professors Andrews (Slavic languages and literature), Holloway (English), O'Barr (cultural anthropology), Quinn (cultural anthropology), Thomas (romance studies); Associate Professors Day (psychology), Mazuka (psychology), Rasmussen (German); Assistant Professor Walther (German); Associate Research Professor Pierce-Baker (women's studies); Adjunct Assistant Professor Keul (German); Affiliated faculty: Professors Biermann (computer science), Cooke (Asian and African languages and literature), Flanagan (philosophy), Goméz (romance studies), and Rubin (psychology); Adjunct Professor Conley (cultural anthropology);
Assistant Professor Swaab (cognitive neurosciences); Associate Professor of the Practice Tufts (romance studies); Assistant Professor of the Practice Kim (Asian and African languages and literature); Instructors Paredes (romance studies) and Kaplan

A major or minor are 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 database; the theory courses expose the student to the perspectives offered by historical and comparative linguistics, structural linguistics, generative linguistics, sociolinguistics, semiotics, discourse analysis, philosophy, cognitive linguistics and psycholinguistics. The major maintains the traditional and mainstream body of linguistic inquiry and, at the same time, encourages exploration of the most recent developments in language study that issue from cultural and literary theory and the biological sciences.

LINGUISTICS PROGRAM COURSES (LINGUIST)

48S. Focus Program Seminar on Linguistics. (SS) QID, SS Focus Program on Linguistics. Topics vary each semester offered. 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. (SS) CCI, QID, 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, English 111, Comparative Area Studies

102. Languages of the World. (SS) CCI, QID, SS The major languages of the world viewed in the context of the communicative and significative functions of language as parameters that shape and define society. The role of language in defining and structuring culturally-based relationships from a semiotic point of view. The structure, writing systems, phonology, morphology, and lexicon of languages from the following groups: Indo-European, Semitic, Turkic, Finno-Ugric, Caucasian, Afroasiatic, Sino-Tibetan, Niger-Kordofanian, Dravidian, and Native American languages. Instructor: Andrews or Tetel. One course. C-L: Cultural Anthropology 114, English 114, Comparative Area Studies

103. Symbolic Logic. (CZ) CZ, QID One course. C-L: see Philosophy 103

108. Philosophy of Mind. (CZ) CZ, R One course. C-L: see Philosophy 112

109. Philosophy of Language. (CZ) CZ One course. C-L: see Philosophy 109

110. Psychology of Language. (SS) QID, R, SS One course. C-L: see Psychology 134

112. English Historical Linguistics. (SS) QID, SS One course. C-L: see English 112
121. Advanced Translation and Stylistics. (FL) CCI, FL One course. C-L: see French 108
122S. Fundamentals of Spanish Linguistics. (FL) (SS) FL, QID, SS One course. C-L: see Spanish 109S
125. Bilingualism. (SS) CCI, QID, SS One course. C-L: see Asian & African Languages and Literature Studies 125
151. Culture and Thought. (SS) R, SS One course. C-L: see Cultural Anthropology 151; also C-L: Psychology 113C
153S. Issues in Language Development (C, D). (SS) CCI, QID, SS One course. C-L: see Psychology 153S
174. Gender and Language. (SS) CCI, QID, R, SS One course. C-L: see Russian 174; also C-L: Cultural Anthropology 174, English 115, Women's Studies 174
182S. Research Method in Psycholinguistics. (SS) QID, R, SS One course. C-L: see Psychology 182ES
185S. Introduction to Slavic Linguistics. (FL) CCI, FL, QID One course. C-L: see Russian 185S
186S. History of the Russian Language. (AL) (FL) AL, CCI, FL, QID One course. C-L: see Russian 186S
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. Consent of instructor and director of undergraduate studies required. Instructor: Staff. Half course.
190B. Independent Study. See Linguistics 190A. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.
199. Special Topics. (SS) CCI, QID, 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. (SS) CCI, QID, SS Same as Linguistics 199 except instruction is provided in a seminar format. Instructor: Staff. One course.
202S. Topics in Comparative Slavic Linguistics. (SS) CCI, QID, R, SS One course. C-L: see Russian 201S
207S. Semantics. (SS) IAA, QID, R, SS One course. C-L: see Russian 207S
210S. History of the Spanish Language. (FL) FL One course. C-L: see Spanish 210S; also C-L: Medieval and Renaissance Studies 210A
212S. Topics in Spanish Linguistics. (FL) (SS) FL, QID, R, SS One course. C-L: see Spanish 212S
215S. Senior Seminar in Linguistics. (SS) CCI, QID, R, SS Theory and methods of comparative linguistics. 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 included. Topics include theories of reconstruction,
languages in contact, abductive processes, and questions of linguistic typology. Major research paper required. Instructor: Andrews, Butters, or Tetel. One course.

2205. Psycholinguistics. (SS) CCI, QID, SS Also taught as Psychology 2205. Consent of instructor required. Instructor: Day or Mazuka. One course.

221. Structure of French. (FL) FL, IAA, QID One course. C-L: see French 212

228S. Recent and Contemporary Philosophy. (CZ) CZ One course. C-L: see Philosophy 228S

250S. The Cultural Analysis of Discourse. (SS) CCI, IAA, QID, R, SS One course. C-L: see Cultural Anthropology 250S; also C-L: English 210S

260. History of the German Language. QID One course. C-L: see German 260; also C-L: Medieval and Renaissance Studies 260B

261S. Second Language Acquisition Theory and Practice. CCI, R One course. C-L: see German 261S

274S. Computational Linguistics Seminar. (QR) M, QID, R One course. C-L: see Computer Science 274S

299. Special Topics. (SS) CCI, QID, SS Advanced study of linguistic theory. Analysis requires comparative study of at least two languages other than modern standard English. Topics to be announced. Instructor: Staff. One course.

299S. Special Topics in Linguistics. CCI, QID Same as Linguistics 299 except instruction is provided in a seminar format. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

201. Cognitive Linguistics

THE MAJOR

The major is composed of ten courses, eight of which must be at the 100 level or above. The courses 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 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 lists:
   A. Regularly Scheduled Linguistics Courses:
      103. Symbolic Logic
      109. Philosophy of Language
      110. Psychology of Language (cross-listed)
      119. Language, Culture, and Society
      125. Bilingualism
      151. Culture and Thought
      174. Gender and Language
B. 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."

Cultural Anthropology
English
French
German
Philosophy
Psychology
Slavic Studies
Spanish

IV. Senior Seminar in Linguistics. (Linguistics 215S). The capstone course for the major, usually taken in the 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, Swahili.

Departmental Graduation with Distinction

The Linguistics Program offers work leading to Graduation with Distinction. See the section on honors in this bulletin and the program chair.

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 Jameson, Chair; Associate Professor Willis, Director of Undergraduate Studies; Professors Gaines, Kaplan, Lahusen, Lentricchia, Mignolo, Moi, Moreiras, Mudimbe,
Radway, Rolleston, B. H. Smith, Stewart, Surin, and Thomas; Associate Professors Hardt, R. Khanna, Lubiano, and Wiegman; Assistant Professors Farred, Fischer, and Viego; Research Professor Dorfman. **Affiliated faculty:** Professors Burian (classical studies), Clum (English), Cooke (Asian and African languages and literature), Davis (classical studies), Moses (English), Orr (romance studies), Powell (art history), Torgovnick (English), and Wharton (art history); Associate Professors Gheith (Slavic languages and literatures) and Stiles (art history); Associate Professor of the Practice S. Khanna (Asian and African languages and literature)

A major or minor is available in this program.

**INTRODUCTORY**

205. **Special Topics: Introduction to Literature.** *(AL)* AL, IAA 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.

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

505. **Special Topics in the FOCUS Program.** *(AL)* AL Designed especially for first-year students interested in world literature, culture, and critical theory. Topics vary each semester offered. Instructor: Staff. One course.

605. **Special Topics: Introduction to Interpretation and Writing.** *(AL)* AL 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.

**FUNDAMENTALS**

90. **Perspectives on Literary and Cultural Study.** *(AL)* AL, CCI, IAA An introduction to four areas of investigation vital to the Literature Program: film and video, cultural studies, literary studies, and theory. Team-taught by members of the program with expertise in these areas. Organized each term around a centralizing theme, such as the family, the trial, or celebrity, and aimed at familiarizing students with cross-cultural issues and values. Required for majors; open to nonmajors. Instructor: Staff. One course.

95. **Special Topics in Language.** *(SS)* SS Topics will vary and may include history of linguistics, classical and twentieth-century rhetoric or poetics, semiotics, the philosophy of language, structuralist and poststructuralist linguistics, postmodern language theory, and/or developments in fields such as cognitive science, artificial intelligence, and animal communication. Contributions of major figures, such as Saussure, Wittgenstein, Bakhtin, J. L. Austin, Foucault, and Derrida. Instructor: Staff. One course.

96. **Contemporary Literary and Cultural Theory: An Introduction.** *(AL)* AL, CCI, IAA The major concepts and principles of contemporary literary theory. *Poststructural* approaches to language and textuality, the invention of *postmodernism,* and theories of history and literature. Vocabulary and tools necessary for reading and understanding contemporary critical and theoretical texts. Instructor: Staff. One course.

98. **Introduction to the Study of Literature and Society.** *(AL)* AL, CCI, IAA Literature in relation to history, social situation, and culture. Development of modes of interpretation that juxtapose textual features and broader contextual concern. Readings from Western and non-Western sources representative of a number of periods and genres. Instructor: Lentricchia or Willis. One course. C-L: Comparative Area Studies, Marxism and Society

99. **Great Books in the Western Tradition.** *(AL)* AL, IAA A group of texts central to Western cultural identity from antiquity to the modern age, examined from a variety of
critical and theoretical perspectives. Texts and topics vary according to the specializations of participating faculty, but in every case attention is given to such fundamental issues as the representation of 'human nature', the relations of individual and society, human and divine, male and female, the transmission and interrogation of ideas and values in literature, and the function of narrative itself in Western culture. Instructor: Burian, Janan, or Morton. One course.

**FILM/VIDEO/DIGITAL STUDIES**

110. Introduction to Film. (AL) AL, IAA One course. C-L: see Film/ Video/ Digital 130; also C-L: Theater Studies 171, English 101A


112A. Soviet Cinema. (AL) AL, CCI, IAA One course. C-L: see Russian 130; also C-L: Comparative Area Studies, Film/ Video/ Digital, Marxism and Society

112B. European Cinema. (AL) AL, CCI, IAA One course. C-L: see German 161; also C-L: Film/ Video/ Digital

113. Studies in Comparative World Cinema. (AL) AL, CCI, IAA, 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: Staff. One course. C-L: English 122, German 113, Russian 113, Film/ Video/ Digital


115. Sexualities in Film and Video. (AL) AL, IAA The variety of ways sexualities are represented in current mainstream and avant-garde film and video art. Topics include voyeuristic, narcissistic, and other perverse pleasures; modes of representing bodies, genders, and desires (especially gay and lesbian ones) in relation to national and subcultural identities. Readings in film theory and the history and theory of film technology, as well as related literary and critical texts. Instructor: Clum or Gaines. One course. C-L: English 124, Film/ Video/ Digital, Study of Sexualities

116. Studies in Film History. (AL) AL, IAA One course. C-L: Theater Studies 172, English 185, Film/ Video/ Digital

117. Documentary Film History. (AL) (CZ) AL, CZ, IAA One course. C-L: see History 150A; also C-L: Political Science 198, Film/ Video/ Digital, Marxism and Society

119. Television, Technology, and Culture. (AL) AL, IAA One course. C-L: see English 190; also C-L: Film/ Video/ Digital

120A. Special Topics in Television Genres. (AL) AL Close study of one or more mainstream television genres, such as the sitcom, soap opera serial, cop show, game show, network news show, or the "made for TV" movie. Instructor: Staff. One course. C-L: Film/ Video/ Digital

120B. Special Topics in Film. (AL) AL, IAA Close study of a major genre, period, or director. Instructor: Staff. One course. C-L: Film/ Video/ Digital

*See separate listing for the "Film/ Video/ Digital" program for production course offerings.
GENDER STUDIES

121. Special Topics in Women in Literature. (AL) AL Literary and/or theoretical approaches to questions concerning the representation of women and/or femininity in literature. Instructor: Staff. One course. C-L: Women's Studies

123. Special Topics in Women Writers. (AL) AL 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

123S. Twentieth-Century Women Playwrights. (AL) AL, CCI, IAA One course. C-L: see Theater Studies 130S; also C-L: Russian 114S, Women's Studies

125. Special Topics in Gender and Sexuality. (AL) AL Different literary and/or theoretical approaches to questions of sex, gender, and sexuality. Instructor: Staff. One course. C-L: Women's Studies

STUDIES IN CULTURE

100. Introduction to Cultural Studies. (AL) AL, IAA 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, Film/Video/Digital, Marxism and Society

131. Special Topics in Culture and the Arts. (AL) AL 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. (AL) AL 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.

133A. Feminism in Art. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 186; also C-L: Women's Studies 175

133Z. Special Topics in Culture and the Arts. (AL) AL 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.

140. History of Mass Culture in the United States. (AL) AL, IAA One course. C-L: see English 156; also C-L: Film/Video/Digital

143B. Globalization and the Limits of Translation. (CZ) CCI, CZ, IAA, W One course. C-L: see History 176D; also C-L: Romance Studies 176D, Cultural Anthropology 176D, Dance 176

144S. Special Topics in Literature and Revolution. (AL) AL The relation of literature to revolutionary movements and situations, such as the October Revolution in Russia, the May Fourth period in China, or the May 1968 uprisings in France. Focus also on the role of intellectuals and artists in political and social struggles. Contents vary with instructors. Instructor: Staff. One course.

LITERARY STUDIES

101. Introduction to the Art of Reading. (AL) AL, IAA An introduction to the reading and interpretation of literary texts, along with an introduction to the major approaches in literary theory. Instructor: Lentricchia. One course.
150. Special Topics in Literary Movements. (AL) AL Historical, theoretical, and/or formal approaches to literary movements in different periods and cultures. Instructor: Staff. One course.

151. Special Topics in Literary Genres. (AL) AL 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.

151A. Classical to Neoclassical. (AL) AL, CCI, IAA One course. C-L: see Theater Studies 118; also C-L: English 174A

151B. Toward and Beyond Realism. (AL) AL, CCI, IAA One course. C-L: see Theater Studies 121; also C-L: English 174B

151BS. Popular Fictions. (AL) AL, IAA 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

151C. Contemporary Fiction. (AL) AL, IAA One course. C-L: see English 171A

154. Special Topics in Individual Authors. (AL) AL Biographic, historical, and/or stylistic approaches to one or two individual authors, as well as critical debates concerning their work. Instructor: Staff. One course.

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: Comparative Area Studies

162AS. Social Facts and Narrative Representations. (AL) AL, IAA 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

162Z. Special Topics in Literature and National Cultures, Ethnicity, Race. (AL) AL, 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: Comparative Area Studies, Marxism and Society

163A. Black Intellectual History. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: African and African American Studies 136

163B. Classics of Western Civilization: The German Tradition, 1750-1930. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see German 182; also C-L: English 148, History 179A, Political Science 134

163E. Jewish Culture in the Mediterranean. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 158; also C-L: Religion 155

164A. Post-Stalinist and Contemporary Soviet Literature. (AL) AL, CCI, IAA One course. C-L: see Russian 183; also C-L: Comparative Area Studies

165A. Chinese Literature and Culture in Translation. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 1725

165B. Representing the Holocaust. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 156
165C. Introduction to Asian and African Literature. (AL) AL, CCI, IAA One course. C-L: see Asian & African Languages and Literature Studies 121; also C-L: African and African American Studies 121

165E. Korean Literature in Translation. (AL) AL, CCI, IAA One course. C-L: see Asian & African Languages and Literature Studies 163

ADVANCED UNDERGRADUATE STUDIES

181. Marxism and Society. (SS) SS One course. C-L: see Cultural Anthropology 139; also C-L: Education 139, History 186, Sociology 139, Comparative Area Studies, Marxism and Society

182. Special Topics in Theory. (AL) AL An advanced investigation of major concepts and principles in literary and/or cultural theory. Contents and methods vary with instructors. Instructor: Staff. One course.

191S. Honors Seminar I. (AL) AL, R, W First semester of a two-semester sequence, in which Literature majors begin the year-long honors program. No credit given for Literature 191S without completion of Literature 192S. Does not count towards the ten Literature courses required for the major. One course.

192S. Honors Seminar II. (AL) AL, R, W Continuation of Literature 191S in which Literature majors finish the year-long honors program. Does not count towards the ten Literature courses required for the major. Prerequisite: Literature 191S. One course.

STUDY AWAY FROM DUKE

52. Duke-Administered Study Abroad: Special Topics in Literature. Topics differ by section. Instructor: Staff. One course.

195. Special Topics in World Media. (AL) AL, 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. (AL) AL, 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. (AL) AL Critical and historical readings in the culture of art and entertainment in the United States, consideration of the popular and the elite. Overview of high art institutions—museums and theaters—as well as the music, television, and film industries. Consideration of audiences, aesthetics, taste cultures. Readings in entertainment law, corporate history, and regional culture. Open only to students in the Duke in Los Angeles Program. Instructor: Staff. One course. C-L: Film/Video/Digital

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.


211. Theory and Practice of Literary Translation. (AL) AL, CCI, IAA Linguistic foundations and historical role of translation. Practical exercises and translation assignments. Prerequisite: working knowledge of a foreign language and consent of instructor. Instructor: Burian. One course.

251. History of Criticism. (AL) (CZ) AL, CZ, IAA A historical survey of critical and philosophical concepts affecting the definition and evaluation of literature from Plato
through the nineteenth century. Instructor: Hardt, Jameson, Lentricchia, Moreiras, or Stewart. One course.

252. Criticism and Literary Theory in the Twentieth Century. (AL) AL, IAA
Introduction to critical movements, philosophies, and strategies forming contemporary theories of literature: deconstruction, feminism, formalism, Marxism, New Criticism, phenomenology, psychoanalysis, structuralism. May be repeated for credit according to change of content or instructor. Instructor: Jameson or Rolleston, with guest lecturers. One course.

260. Twentieth-Century Reconceptions of Knowledge and Science. (AL) AL, IAA, 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

280. Semiotics for Literature. (AL) AL, CCI, FL, IAA One course. C-L: see French 223

281. Paradigms of Modern Thought. (AL) (CZ) AL, CZ, IAA 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.

284. The Intellectual as Writer. (AL) (CZ) AL, CZ, IAA 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.

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.

289. Topics in Feminist Theory. Instructor: Moi or Radway. One course.

292. Topics in Non-Western Literature and Culture. (AL) (CZ) AL, CCI, CZ Instructor: Mudimbe. One course.

293. Special Topics in Literature and History. (AL) (CZ) AL, 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, Kaplan, or Orr. One course.

294. Theories of the Image. (AL) AL, IAA, R 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 or Jameson. One course.

295. Representation in a Global Perspective. (AL) AL, CCI, IAA 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, archetypical, and anthropological texts as well as literary and visual forms of representation. Instructor: Dorfman, Jameson, or Mignolo. One course.
297. **Topics in Cultural Studies.** (AL) AL Instructors: Gaines, Radway, Surin, and staff. One course.

298. **Topics in Philosophy and Literature.** (AL) (CZ) AL, CZ Exploration of problems common to literary theory and philosophy. Examples of topics include: problems of identity, consciousness, foundationalism, interpretation, or ethics, or schools of thought such as pragmatism, phenomenology, and existentialism. Instructors: Flanagan, Jameson, Mudimbe, and Surin. One course. C-L: English 288

299. **Universalism in Twentieth-Century Thought.** (AL) (CZ) AL, CZ, IAA The Enlightenment tradition and its critical reception in the twentieth century. Readings range from classic Enlightenment texts to contemporary texts. Instructor: Staff. One course.

**COURSES CURRENTLY UNSCHEDULED**

118. Experimental Film and Video
141. International Popular Culture
143. Problems in Global Culture
145. Special Topics in Science and Culture
162. Special Topics in Literature and National Cultures, Ethnicity, Race
163C. The Canadian Image: Cultural Production in French and English Canada
190S. Senior Seminar
212. Studies in Narrative
214. Gender, Nationalities, and Russian Literary Traditions
254. Introduction to Feminism
279. The Best-Seller: Cultural Populism in the 1990s' China
285. Literature and Ideology
291. Topics in Popular Culture and the Media

**THE MAJOR**

The literature major offers a unique interdisciplinary approach to the study of literature, film, and cultural forms. It enables students to engage in cross-cultural analysis both in a global (colonial and postcolonial) context and within one national space. It also aims to train students to develop a sophisticated appreciation of the ways questions of race, class, gender, and sexuality arise in different historical and social contexts.

The major is comprised of ten courses, nine of which must be at the 100 level or higher. All students must take Literature 90, a general introduction to the methods and concepts that define the interdisciplinary nature of the major; and three core courses in each of the three major areas that constitute the major: Literature 100, Introduction to Cultural Studies, Literature 101, Introduction to the Art of Reading, and Literature 110, Introduction to Film.

The remaining courses may be chosen to develop a focus on one of the core areas (literature, cultural studies, or film) or to develop a comparativist sampling that draws on all three areas. Students who choose film as a focus may wish to consider the Certificate Program in Film/Video/Digital.

Additionally, all students must take at least one film or literature course with a world or national focus; and at least one course devoted to the study of race, class, gender, or sexuality.

Of the remaining four elective courses, all must be Literature courses, i.e., excluding courses in film or video production.

**THE MINOR**

The Minor in Literature aims to be a humanities-based interdisciplinary meeting place for Duke undergraduates. It offers students majoring in other disciplines a systematic exposure to the Literature Program’s unique approach to literature, film, and cultural forms. This minor is particularly suitable for majors in the social or
natural sciences who wish to concentrate on film or be conversant with contemporary
cultural and intellectual debates. It also enables majors in other languages and
literatures to explore theoretical and interdisciplinary issues of broad relevance to the
humanities in general. Students taking the Literature minor can choose to explore
both broad cross-cultural analysis and critical investigation of questions relating to
race, class, gender, and sexuality; or they may choose to focus on a particular area
such as film studies or image studies.

**Requirements.** The minor is comprised of five courses, four of which must be at the
100 level or higher. All students must take Literature 90 and one of the core courses
(Literature 100, or Literature 101, or Literature 110). The remaining three elective
courses must all be courses in the Literature Program (i.e., excluding courses in film
production or video production).

**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, Environment (Nicholas School), and the
University Program in Marine Sciences.

**University Program in Marine Sciences**

Professor of the Practice of Marine Affairs and Policy Orbach (environment), Director;
Associate Professor Rittschof (environment and biology), Assistant Director; Professor
Forward (environment and biology), Director of Undergraduate Studies; Professors Barber
(environment, biology, and earth and ocean sciences), C. Bonaventura (environment and
cell biology), J. Bonaventura (environment and cell biology), Crowder (environment and
biology), Ramus (environment and biology); Assistant Professor Read (environment);
Professor Emeritus Bookhout (biology); Associate Professor of the Practice Kirby-Smith
(environment); Research Scientist McClellan-Green (environment)

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 the 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, a specialized
library, and the surrounding marine environment.

Participation in either the fall or spring semester (Beaufort to Bermuda or
Beaufort entire term) is possible for all majors with appropriate preparation. Before
attending a semester program, students should check the prerequisites. Students
wishing to apply to the fall or the spring semester must submit a completed
application to the Admissions Office, Duke University Marine Laboratory, 135 Duke
Marine Lab Road, Beaufort, North Carolina 28516-9721. Applications can be found in
the back of the Marine Lab bulletin, or online: www.env.duke.edu/marinelab/
mlforms.html. Most applications are received prior to Duke’s registration period for

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the desired semester. Students will be notified of the action of the Admissions Committee shortly after receipt of their application.

The summer curriculum, taught in two terms, includes a rich assortment of courses in the natural and social sciences. Attention is also directed to the courses designed for students not majoring in a natural science. Applications for summer courses must be sent to the address indicated above. Most applications are submitted one month before each of the summer terms; however, those students applying for a summer tuition scholarship should submit their application by April 1.

A number of summer tuition scholarships are available on a competitive basis. Consult the *Bulletin of the Duke University Marine Laboratory*, the web, or the Marine Laboratory’s admissions office for specific requirements.

**THE BEAUFORT TO BERMUDA SPRING SEMESTER**

The Marine Laboratory (Beaufort, North Carolina) in cooperation with the Bermuda Biological Station for Research (Ferry Reach, Bermuda) offers a one-semester international study at two distinctive marine locations: Beaufort on the North Carolina coastal plain with its marshlands, estuaries, continental shelf, and the Gulf Stream; Bermuda with its coral reefs and subtropical mid-ocean environment in the Sargasso Sea. Emphasis is placed on the rigorous application of the natural and social sciences to the contrasting marine ecosystems and to basic processes and human interventions in the different oceanic systems. The program draws from two marine laboratory traditions in experiential learning for undergraduates and from the expertise of two resident faculties.

The program is designed for undergraduates with adequate preparation in the natural and social sciences. Students reside at each campus for one-half semester. During the compressed seven-week session, they take two intensive courses at each campus. One group begins the program in Beaufort, the other in Bermuda. At mid-semester, the groups trade campuses. Students may opt to stay in Beaufort the entire semester. Early application is recommended. Further information may be obtained by visiting the web or contacting the admissions office at Beaufort (ph: 252-504-7502, email: ML_admissions@env.duke.edu).

**FALL SPRING, OR SUMMER COURSES AT BEAUFORT**

The courses below are described in the bulletin listings of the specified departments. See also the *Bulletin of the Duke University Marine Laboratory* and the *Duke University Official Schedule of Courses* for the current schedule of courses. For information on courses fulfilling requirements of the biology, environmental studies and policy, or earth and ocean sciences major consult the director of undergraduate studies for the major.

**Biology**

10L Marine Biology
109 Conservation Biology and Policy
114L Biological Oceanography
123 Analysis of Ocean Ecosystems
125L Biology and Conservation of Sea Turtles
126 Marine Mammals
126L Marine Mammals
127L Marine Microbial Ecology
129L Marine Ecology
132S Marine Biodiversity
133S Molecular Approaches to Questions of Physiology, Ecology, and Evolution in the Marine Environment
150L Physiology of Marine Animals
155L Biochemistry of Marine Animals
156L Sensory Physiology and Behavior of Marine Animals
176LA Marine Invertebrate Zoology
218L Barrier Island Ecology
219L Coastal Ecosystem Processes
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. Internship advising is also provided. Students are invited to make use of the Markets and Management resource room (256 Sociology-Psychology Building) for meetings with faculty and other students in the program, and to consult relevant journals, magazines, and newspapers. 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.

MARKETS AND MANAGEMENT STUDIES COURSES (MMS)

Core Courses
190. Markets and Management Capstone. (SS) 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: Brown, Gereffi, Jones, Simpson, or Spenner. One course.


Electives
85. Managerial Finance. (SS) Q1D, SS, STS 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. Does not count for Markets and Management Studies Certificate requirements. Instructor: Veraldi. One course.
120. Managerial Effectiveness. (SS) 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, globaliza-
tion, 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.

161. Marketing Management. (SS) 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, manufactur-
ing 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.

180. Entrepreneurial Opportunities and Finance. (SS) QID, 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.
One course.

182. Strategic Financial Management. (SS) QID, 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.

191. Topics in Organizational Design: Expectations, Behavior, Product. (SS) SS  First
part of a two-semester, one-credit sequence, open to students in the Markets and
Management Studies Program (and to others on space-available basis) who are
planning to pursue an internship in a business-related setting. 191, typically taken in the
spring, involves conceptualization of an intellectual problem that will be investigated
in the internship. 192, typically taken in the fall, involves production of a paper based
on the internship experience and containing substantive research and analysis. To
receive course credit for 191 students must successfully complete 192. 191-192 counts as
an approved elective toward the certificate. Consent of director of Markets and
Management Studies Program required. Instructor: Staff. Half course.

Prerequisite: Markets and Management Studies 191. Consent of director of Markets and
Management Studies Program required. Instructor: Staff. Half course.

Independent Studies and Special Topics

50. Duke-Administered Study Abroad: Special Topics in Markets and Management
Studies. Topics differ by section. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Markets and
Management Studies. CCI  Topics differ by section. Instructor: Staff. One course.

193. Independent Study. Directed reading or individual field projects. Open only to
qualified juniors and seniors with consent of instructor and director of Markets and
Management Studies Program. Instructor: Staff. One course.
194. 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. Open only to qualified juniors and seniors with consent of instructor and director of Markets and Management Studies Program. 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 (D)

Public Policy Studies
146. Leadership, Development, and Organizations

Sociology
142. 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
Cultural Anthropology
110. Advertising and Society: Global Perspective
116S. Advertising and Masculinity

Dance
150. Managing the Arts

Economics
140. Comparative Economic Systems
142S. Chinese Economy in Transition
151. Basic Finance and Investments
165. American International Economic Policy
173. Economics of Organization and Management
181. Corporate Finance
183. Agency and Accounting
188. Industrial Organization
189. Business and Government

Education
140. The Psychology of Work

English
120. Advertising and Society: Global Perspective

History
122A. The Economic History of Japan, 1850 to the Present
143B. The Emergence of Modern Japan
158AD. American Business History

Institute of the Arts
150. Managing the Arts

Political Science
113A. Issues of International Political Economy I: International Trade (D)
113B. Issues of International Political Economy II: International Money and Finance (D)
158. Transnational Relations and International Public Policy (D)
158D. Transnational Relations and International Public Policy (D)
161. Business, Politics, and Economic Growth (B)
164. Political Organizations (A)
167. International Law and International Institutions (D)
167D. International Law and International Institutions (D)

Public Policy Studies
138S. Public-Private Leadership
139D. Business Leadership, Social Responsibility, and Public Policy
142S. Chinese Economy in Transition
165. American International Economic Policy

Science, Technology and Human Values
108S. Ethics in Professions: Scientific, Personal, and Organizational Frameworks
112S. Special Topics in Science, Technology, and Human Values
113S. Special Topics in Science, Technology, and Human Values
140S. Ethics in Management
141. Consuming Passions
146. Organizational and Occupational Deviance
147. Business in Literature
148. Demography for Business and Policy
156. Global Contexts of Science and Technology
160. Advertising and Society: Global Perspective
165. Occupations, Professions, and Careers

Sociology
110. A-E. Comparative Sociology: Selected Areas
112. American Demographics
114. Cybernetworks and the Global Village
126. The Challenges of Development
129. Gender, Work, and Organizations
140S. Ethics in Management
141. Consuming Passions
146. Organizational and Occupational Deviance
147. Business in Literature
148. Demography for Business and Policy
156. Global Contexts of Science and Technology
160. Advertising and Society: Global Perspective
165. Occupations, Professions, and Careers

Theater Studies
168S. Entrepreneurship and International Arts Management

Mathematics (MATH)
Professor Hain, Chair; Professor Reed, Associate Chair; Professor Venakides, Director of Undergraduate Studies; Lecturer Dong, Associate Director of Undergraduate Studies, Assistant Professor of the Practice Blake, Supervisor of First-year Instruction; Professors Agarwal, Allard, Beale, Bertozzi, Bryant, Edelsbrunner, Harer, Lawler, Layton, Morrison, Pardon, Rose, Schaeffer, Schoen, Stern, Trangenstein, and Zhou; Associate Professors Aspinwall, R. Hodel, Kitchen, Kraines, Moore, Petters, Saper, and Smith; Assistant Professors Huber, Plesser and Witelski; Professors Emeriti Scoville, Warner, and Weisfeld; Associate Professor of the Practice Bookman; Research Assistant Professors Degeratu, Hasse, Ju, Patashnick, and Zharkov; Adjunct Professors Reed, Shearer, and Wahl; Lecturers M. Hodel, Holden, and Tomberg

A major or minor is available in this department.

19. Precalculus Mathematics. (QR) QID
For students with CB Achievement Test scores between 460 and 540 or SAT scores between 500 and 600. Selected topics in algebra, trigonometry, and analytic geometry; projects and writing assignments. Designed to increase the mathematical skills and knowledge of students planning to enroll in Mathematics 31. Not open to students who have credit for Mathematics 25L or 26L. Instructor: Staff. One course.

25L. Laboratory Calculus and Functions I. (QR) M, QID
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. (QR) M, QID
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. (QR) M, QID Functions, limits, continuity, trigonometric functions, techniques and applications of differentiation, indefinite and definite integrals, the fundamental theorem. Instructor: Staff. One course.

31L. Laboratory Calculus I. (QR) M, QID 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. (QR) M, QID 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. (QR) M, QID 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. (QR) M, QID 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.

41. One Variable Calculus. (QR) M, QID Meets five times a week, quickly reviews differential calculus and then covers integral calculus and infinite series. Designed for first-year students who have had a year of calculus in high school and have Mathematics SAT scores of 650 or above, but who have not received advanced placement credit for Mathematics 31. Not open to students who have had Mathematics 32 or 32L. Instructor: Staff. One course.

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

50. Duke-Administered Study Abroad: Special Topics in Mathematics. QID Topics differ by section. 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. QID, STS Introduction to basic ideas of modern cryptography with emphasis on implementation, applications in daily life, and
implications for the individual and society. Topics include: the history of cryptography and cryptanalysis, public and private key cryptography, digital signatures, limitations of modern cryptography, applications to electronic communications and electronic commerce, privacy, computer security, and law enforcement. Related ethical questions considered including the debate over personal privacy versus public security. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Mathematics. QID Topics differ by section. Instructor: Staff. One course.

103. Intermediate Calculus. (QR) M, QID Partial differentiation, multiple integrals, and topics in differential and integral vector calculus, including Green's theorem, the divergence theorem, and Stokes's theorem. Prerequisite: Mathematics 32, 32L, or 41. Instructor: Staff. One course.

103L. Laboratory Calculus III. (QR) M, QID Intermediate calculus with a computer laboratory. Emphasis on projects, group work, and written reports. Curves in space, partial differentiation, multiple integrals, two-dimensional vector calculus. Prerequisite: Mathematics 32, 32L, or 41, or consent of instructor. Instructor: Staff. One course.

103X. Honors Intermediate Calculus and Linear Algebra. (QR) M, QID 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. (QR) M, QID 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. Prerequisite: Mathematics 32, 32L, or 41. Instructor: Staff. One course.

104C. Linear Algebra with Scientific Computation. (QR) M, QID Introductory linear algebra developed from the perspective of computational algorithms. Similar to Mathematics 104, but emphasizes matrix factorizations and includes the programming of basic algorithms and the use of software packages. Prerequisite: Mathematics 32, 32L, or 41. Instructor: Staff. One course.

104X. Honors Intermediate Calculus and Linear Algebra. (QR) M, QID Similar to Mathematics 104, but more theoretical. Instructor: Staff. One course.

111. Applied Mathematical Analysis I. (QR) M, QID First and second order differential equations with applications; matrices, eigenvalues, and eigenvectors; linear systems of differential equations; Fourier series and applications to partial differential equations. Intended primarily for engineering and science students with emphasis on problem solving. Students taking Mathematics 104, especially mathematics majors, are urged to take Mathematics 131 instead. Mathematics 111 is not open to students who have had Mathematics 131. Prerequisite: Mathematics 103. Instructor: Staff. One course.

114. Applied Mathematical Analysis II. (QR) M, QID Boundary value problems, complex variables, Cauchy's theorem, residues, Fourier transform, applications to partial differential equations. Not open to students who have had Mathematics 133, 181, or 211. Prerequisite: Mathematics 111 or 131, or 103 and consent of instructor. Instructor: Staff. One course. C-L: Applied Science

120S. Introduction to Theoretical Mathematics. (QR) M, QID Topics from set theory, number theory, algebra, and analysis. Recommended for prospective mathematics majors who feel the need to improve skills in logical reasoning and theorem-proving before taking Mathematics 121 and 139. Not open to students who have had Mathematics 121, Mathematics 139, or equivalents. Prerequisite: Mathematics 103; corequisite: Mathematics 104. Instructor: Staff. Half course.

121. Introduction to Abstract Algebra. (QR) M, QID 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 or 111. Instructor: Staff. One course.

123S. Geometry. (QR) M, QID, R Euclidean geometry, inverse and projective geometries, topology (Moebius 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. (QR) M, QID 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.

126. Introduction to Linear Programming and Game Theory. (QR) M, QID Fundamental properties of linear programs, linear inequalities and convex sets; primal simplex method, duality; integer programming; two-person and matrix games. Prerequisite: Mathematics 104. Instructor: Staff. One course.

128. Number Theory. (QR) M, QID 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. Instructor: Staff. One course.

128S. Number Theory. (QR) M, QID, R Same as Mathematics 128, but offered as a seminar. Individual research paper required. Instructor: Staff. One course.

131. Elementary Differential Equations. (QR) M, QID 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 111. Prerequisite: Mathematics 103; corequisite: Mathematics 104. Instructor: Staff. One course.

132S. Nonlinear Ordinary Differential Equations. (QR) M, QID, 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 111 or 131 or consent of instructor. Instructor: Staff. One course. C-L: Applied Science

133. Introduction to Partial Differential Equations. (QR) M, QID 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. Not open to students who have had Mathematics 114 or 211. Prerequisite: Mathematics 111 or 131 or consent of instructor. Instructor: Staff. One course. C-L: Applied Science


136. Statistics. (QR) M, QID One course. C-L: see Statistics and Decision Sciences 114; also C-L: Applied Science

139. Advanced Calculus I. (QR) M, QID, 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 103. Instructor: Staff. One course.

149S. Problem Solving Seminar. (QR) M, QID 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. (QR) M, QID Content of
course determined by instructor. Prerequisite: Mathematics 139 or 203 or consent of
instructor. Instructor: Staff. One course.

150S. Topics in Mathematics from a Historical Perspective. (QR) M, QID, R Same as
Mathematics 150, but offered as a seminar. Each student will pursue a research project
and write a substantial paper. Instructor: Staff. One course.

160. Mathematical Numerical Analysis. (QR) M, QID Development of numerical
techniques for accurate, efficient solution of problems in science, engineering, and
mathematics through the use of computers. Linear systems, nonlinear equations,
opimization, numerical integration, differential equations, simulation of dynamical
systems, error analysis. 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: Applied Science

181. Complex Analysis. (QR) M, QID Complex numbers, analytic functions, complex
integration, Taylor and Laurent series, theory of residues, argument and maximum
principles, conformal mapping. Not open to students who have had Mathematics 114
or 212. Prerequisite: Mathematics 139 or 203. Instructor: Staff. One course.

187. Introduction to Mathematical Logic. (QR) M, QID 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. (QR) M, QID 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. (QR) M, QID, R. Introduction to techniques used in the construction, analysis, and evaluation of mathematical models. Individual modeling projects in biology, chemistry, economics, engineering, medicine, or physics. Prerequisite: Mathematics 111 or 131 or consent of instructor. Instructor: Staff. One course. C-L: Applied Science

197S. Seminar in Mathematics. (QR) M, QID, 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. (QR) M, QID, R. Topics vary. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

For Seniors and Graduates

200. Introduction to Algebraic Structures I. (QR) M, QID. 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. (QR) M, QID. 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. (QR) M, QID, 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. (QR) M, QID. Differential and integral calculus in $\mathbb{R}^n$. Inverse and implicit function theorems. Further topics in multivariable analysis. Prerequisite: Mathematics 104; Mathematics 203, or 139 and consent of instructor. Instructor: Staff. One course.


206. Differential Geometry. (QR) M, QID. Geometry of curves and surfaces, the Serret-Frenet frame of a space curve, the Gauss curvature, Cadazzi-Mainardi equations, the Gauss-Bonnet formula. Prerequisite: Mathematics 104. Instructor: Staff. One course.

207. Topics in Mathematical Physics. (QR) M, QID. Topics selected from general relativity, gravitational lensing, classical mechanics, quantum mechanics, string theory, critical phenomena and statistical mechanics, or other areas of mathematical physics. Consult on-line Course Synopsis description each semester. Instructor: Staff. One course.

211. Mathematical Methods in Physics and Engineering I. (QR) M, QID. Heat and wave equations, initial and boundary value problems, Fourier series, Fourier transforms, potential theory. Not open to students who have had Mathematics 133 or 230. Prerequisite: Mathematics 114 or equivalent. Instructor: Staff. One course.

215. Mathematical Finance. (QR) M, QID. 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, Itô’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. One course.

217. **Linear Models. (QR) M, QID** One course. C-L: see Statistics and Decision Sciences 244

218. **Introduction to Multivariate Statistics. (QR) M, QID** One course. C-L: see Statistics and Decision Sciences 245

221. **Numerical Analysis. (QR) M, QID, R** One course. C-L: see Computer Science 250; also C-L: Statistics and Decision Sciences 273

223. **Numerical Linear Algebra. (QR) M, QID** One course. C-L: see Computer Science 254


228. **Mathematical Fluid Dynamics. (QR) M, QID** 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: Applied Science
229. **Mathematical Modeling. (QR)** M, QID 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.

231. **Ordinary Differential Equations. (QR)** M, QID Existence and uniqueness theorems for nonlinear systems, well-posedness, two-point boundary value problems, phase plane diagrams, stability, dynamical systems, and strange attractors. Not open to students who have taken the former Mathematics 296. Prerequisite: Mathematics 104, 111 or 131, and 203 or 139. Instructor: Staff. One course.


241. **Real Analysis I. (QR)** M, QID Measures; Lebesgue integral; $L^p$ spaces; Daniell integral, differentiation theory, product measures. Not open to students who have taken the former Mathematics 281. Prerequisite: Mathematics 204 or equivalent. Instructor: Staff. One course.

242. **Real Analysis II. (QR)** M, QID Metric spaces, fixed point theorems, Baire category theorem, Banach spaces, fundamental theorems of functional analysis, Fourier transform. Not open to students who have taken the former Mathematics 282. Prerequisite: Mathematics 241 or equivalent. Instructor: Staff. One course.

245. **Complex Analysis. (QR)** M, QID Complex calculus, conformal mapping, Riemann mapping theorem, Riemann surfaces. Not open to students who have taken Mathematics 285. Prerequisite: Mathematics 204 or equivalent. Instructor: Staff. One course.

250. **Computation in Algebra and Geometry. (QR)** M, QID 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.

251. **Groups, Rings, and Fields. (QR)** M, QID 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. Not open to students who have taken Mathematics 260. Prerequisite: Mathematics 201 or equivalent. Instructor: Staff. One course.

252. **Commutative Algebra. (QR)** M, QID Extension and contraction of ideals, modules of fractions, primary decomposition, integral dependence, chain conditions, affine algebraic varieties, Dedekind domains, completions. Not open to students who have taken the former Mathematics 261. Prerequisite: Mathematics 251 or equivalent. Instructor: Staff. One course.

254. Topics in Algebra. (QR) M, QID Algebraic number theory, algebraic $K$-theory, homological algebra, or other topics. Prerequisite: Mathematics 251. Instructor: Staff. One course.

261. Algebraic Topology I. (QR) M, QID Fundamental group and covering spaces, singular and cellular homology, Eilenberg-Steenrod axioms of homology, Euler characteristic, classification of surfaces, singular and cellular cohomology. Not open to students who have taken Mathematics 271. Prerequisite: Mathematics 200 and 205 or consent of instructor. Instructor: Staff. One course.

262. Algebraic Topology II. (QR) M, QID 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.


267. Differential Geometry. (QR) M, QID Differentiable manifolds, fiber bundles, connections, curvature, characteristic classes, Riemannian geometry including submanifolds and variations of length integral, complex manifolds, homogeneous spaces. Not open to students who have taken Mathematics 275. Prerequisite: Mathematics 204 or equivalent. Instructor: Staff. One course.

268. Topics in Differential Geometry. (QR) M, QID 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. (QR) M, QID Compact Riemann Surfaces, maps to projective space, Riemann-Roch Theorem, Serre duality, Hurwitz formula, Hodge theory in dimension one, Jacobians, the Abel-Jacobi map, sheaves, Cech cohomology. Prerequisite: Mathematics 245 and Mathematics 261 or consent of instructor. Instructor: Staff. One course.

273. Algebraic Geometry. (QR) M, QID Affine varieties, projective varieties, Riemann surfaces, algebraic curves, algebraic groups, sheaf cohomology, singularities, Hodge theory, or computational algebraic geometry. Prerequisite: Mathematics 251 or equivalent and consent of instructor. Instructor: Staff. One course.

274. Number Theory. (QR) M, QID Binary quadratic forms; Orders, Integral closure; Dedekind domains; Fractional ideals; Spectra of rings; Minkowski theory; Fundamental finiteness theorems; Valuations; Ramification; Zeta functions; Density of primes in arithmetic progressions. Prerequisites: Mathematics 201 or 251 or consent of instructor. Instructor: Staff. One course.

277. Topics in Algebraic Geometry. (QR) M, QID 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. (QR) M, QID Geometric function theory, function algebras, several complex variables, uniformization, or analytic number theory. Prerequisite: Mathematics 245 or equivalent. Instructor: Staff. One course.

279. Topics in Mathematical Physics. (QR) M, QID Topics selected from: critical phenomena and statistical mechanics, mathematical aspects of quantum field theory,

Instructor: Staff. One course.
string and superstring theories, or other areas of mathematical physics. Instructor: Staff. One course.

**281. Partial Differential Equations II. (QR) M, QID** Linear wave motion, dispersion, stationary phase, foundations of continuum mechanics, characteristics, linear hyperbolic systems, and nonlinear conservation laws. Not open to students who have taken the former Mathematics 298. Prerequisite: Mathematics 232 or equivalent. Instructor: Staff. One course.


**284. Topics in Partial Differential Equations. (QR) M, QID** Continuation of Mathematics 283. Prerequisite: Mathematics 281 or equivalent. Instructor: Staff. One course.

**287. Probability. (QR) M, QID** Random variables, independence, expectations, laws of large numbers, central limit theorem, martingales, Brownian motion. Not open to students who have taken Mathematics 290. Prerequisite: Mathematics 241 or equivalent. Instructor: Staff. One course. C-L: Statistics and Decision Sciences 207

**295. Special Topics. (QR) M, QID** Instructor: Staff. One course.

**297. Special Readings. (QR) M, QID** Instructor: Staff. One course.

**298. Special Readings. (QR) M** Instructor: Staff. One course.

**COURSES CURRENTLY UN SCHEDULED**

160S. Mathematical Numerical Analysis

171S. Elementary Topology

212. Mathematical Methods in Physics and Engineering II

222. Numerical Methods for Partial Differential Equations

248. Topics in Analysis

249. Topics in Functional Analysis

257. Mathematical Logic

288. Topics in Probability Theory

**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 104. The A.B. degree requires at least six and one-half courses in mathematics numbered above Mathematics 104. The specific requirements for each degree are listed below.

Mathematics 120S is a half-course recommended for prospective mathematics majors who feel the need to improve skills in logical reasoning and theorem-proving before taking Mathematics 121 and 139. Ideally, Mathematics 120S should be taken before the junior year and concurrently with Mathematics 103 or Mathematics 104. Students working toward the A.B. degree who do not take Mathematics 120S will usually fulfill their major requirements by taking at least seven full courses in mathematics numbered above Mathematics 104.

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. Six and one-half courses in mathematics numbered above 104 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 104 including: Mathematics 121 or 200; Mathematics 139 or 203; and one of Mathematics 136, 181, 201, 204, 205, 206. Also, Physics 41L, 42L or Physics 51L, 52L or Physics 53L, 54L.

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 equivalent.

Requirements. Five courses as follows: either Mathematics 104 or 111, but not both; four additional courses in mathematics numbered above 111, to include at least one course (or its equivalent) from the following: Mathematics 121, 132S, 135, 139, 160, 181, 187, or any 200-level course.

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

Qualified students in arts and sciences may select courses from the following offered by the graduate departments associated with the School of Medicine. A major is not offered to undergraduates in any of the departments listed below. For permission to register for these courses and for further information, see Professors Oas (biochemistry), Endow (cell biology), Speer (University Program In Genetics), Dawson (immunology), Wharton (microbiology), York (molecular biophysics), W. C. Hall (neurobiology), Abraham (pathology), and Schwartz-Bloom (pharmacology and cancer biology). Course descriptions and prerequisite requirements for the 200-level courses below are described in the Bulletin of Duke University: Graduate School.

BIOCHEMISTRY (BIOCHEM)

210. Independent Study. One course.


228. Introductory Biochemistry II. One course.

258. Structural Biochemistry I. Half course. C-L: Cell and Molecular Biology 258, Cell Biology 258, University Program in Genetics 258, Immunology 258, Microbiology 258, Molecular Biophysics 258

259. Structural Biochemistry II. Half course. C-L: Cell Biology 259, Immunology 259, Microbiology 259, Molecular Biophysics 259, University Program in Genetics 259

265S. Seminar

CELL BIOLOGY (CELLBIO)

All courses require the consent of the director of undergraduate studies.

203. Introduction to Physiology. Half course.
206. Physiology and Medicine of Extreme Environments. One course.
210. Independent Study. One course.
212. Topics in Reproductive Biology. One course.
244L. Molecular and Cellular Processes in Marine Organisms. One course. C-L: Environment 244L, Marine Sciences
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, Microbiology 258, Molecular Biophysics 258
259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Immunology 259, Microbiology 259, Molecular Biophysics 259, University Program in Genetics 259

Courses Currently Unscheduled
204. Cell and Molecular Physiology
205. Design and Analysis of Biological Experiments
213. Oxygen and Physiological Function
215. Seminar in the Physiology of Disease
217. Selected Membrane Transport
219. Molecular and Cellular Bases of Differentiation
223. Cellular and Integrative Cardiovascular Physiology and Biophysics
232. Extracellular Matrix and Cell Adhesion
269. Advanced Cell Biology

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, Microbiology 258, Molecular Biophysics 258
259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Immunology 259, Microbiology 259, Molecular Biophysics 259

UNIVERSITY PROGRAM IN GENETICS (UPGEN)

191. Independent Study. One course.
192. Independent Study. 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, Microbiology 258, Molecular Biophysics 258
259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Cell Biology 259, Immunology 259, Microbiology 259, Molecular Biophysics 259

IMMUNOLOGY (IMMUNOL)

209. Independent Study.
210. Independent Study.
244. Principles of Immunology. (NS) NS, R One course. C-L: Biology 244
252. General Virology and Viral Oncology. One course. C-L: Microbiology 252
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, Microbiology 258, Molecular Biophysics 258
259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Cell Biology 259, Microbiology 259, Molecular Biophysics 259, University Program in Genetics 259

Courses Currently Unscheduled
219. Molecular and Cellular Bases of Differentiation
269. Advanced Cell Biology

MICROBIOLOGY (MICROBIO)

209. Independent Study.
210. Independent Study.
221. Medical Microbiology. One course.
252. General Virology and Viral Oncology. One course. C-L: Immunology 252
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, Immunology 258, Molecular Biophysics 258
259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Cell Biology 259, Immunology 259, Molecular Biophysics 259, University Program in Genetics 259
282. Microbial Pathogenesis. One course.

MOLECULAR BIOPHYSICS (MOLBPHY)

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, Immunology 258, Microbiology 258.

259. Structural Biochemistry II. Half course. C-L: see Biochemistry 259; also C-L: Cell Biology 259, Immunology 259, Microbiology 259, University Program in Genetics 259.

NEUROBIOLOGY (NEUROBIO)

93S. The Neurobiology of Mind. (NS) NS, QID One course.
154. Fundamentals of Neuroscience. (NS) NS, QID One course. C-L: see Psychology 135; also C-L: Biology 154, Neurosciences Program.
168S. Fundamental Issues in the Study of the Brain. (NS) NS, QID One course. C-L: see Psychology 168S.
181LS. Molecular Electrophysiology and Imaging of the Nervous System. (NS) NS, QID, R One course. C-L: see Psychology 181ES.
195S. Special Topics in Neurobiology. One course.
196S. Special Topics in Neurobiology. One course.
210. Individual Study. One course.

PATHOLOGY (PATHOL)

209. Independent Study. One course.
210. Independent Study. One course.

PHARMACOLOGY AND CANCER BIOLOGY (PHARM)

160. Drugs, Brain, and Behavior. (NS) NS, QID One course. C-L: Psychology 127.
191. Independent Study. One course.
192. Independent Study. One course.
233. Essentials of Pharmacology and Toxicology. One course.
254. Mammalian Toxicology. One course.
297. Research Independent Study. One course.
298. Research Independent Study. One course.

Medieval and Renaissance Studies (MEDREN)

Professor Aers, Director; Associate Professor Neuschel, Director of Undergraduate Studies; Professors Beckwith, Bland, Borchardt, Bruzelius, Clark, Clay, DeNeef, Garcia-Gomez, Greer, Herrup, Hillerbrand, Mahoney, Mignolo, Porter, Price, Quiggian, Rigsby, Shatzmiller, Silbiger, Steinmetz, Wharton, and Witt; Associate Professors Bartlett, Brothers, Finucci, Keefe, Longino, Rasmussen, Rice, Robisheaux, Silverblatt, Solterer, and Van Miegroet; Assistant Professors Higgins, Parker, Shachter, Shannon, and Woods; Professors Emeriti Caserta, Newton, and Randall; Adjunct Assistant Professor Keul.

A major or 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.

MEDIEVAL AND RENAISSANCE CORE COURSES

FOCUS Program in Medieval and Renaissance Studies. Two courses taken in the FOCUS Program in Medieval and Renaissance Studies. Open only to first-year students. Information on course offerings and descriptions available from the FOCUS Program.

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

114. Aspects of Medieval Culture. (AL) (CZ) AL, CZ A study of historical, literary, philosophical, and art historical materials introducing medieval culture and the methods developed for its study. Instructor: Rasmussen, Solterer, or Witt. One course. C-L: Art History 139, Classical Studies 139, History 116


195. 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. 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.


OTHER MEDIEVAL AND RENAISSANCE COURSES

For 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.

107A. Tudor/Stuart Britain. (CZ) CZ, IAA, R One course. C-L: see History 107A; also C-L: Comparative Area Studies

108S. The Comedies of Shakespeare. (AL) AL, IAA One course. C-L: see Theater Studies 111S; also C-L: English 129AS

109S. The Tragedies of Shakespeare. (AL) AL, IAA One course. C-L: see Theater Studies 112S; also C-L: English 129BS


111A. Introduction to Italian Literature I. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see Italian 111

111B. Introduction to Spanish Literature I. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see Spanish 111

111C. Introduction to French Literature I. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see French 111

112A. Gothic Cathedrals. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 110

112B. Medieval Architecture. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 111

113. The Art of Medieval Southern Italy. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 112

116S. The Pagan World of the Divine Comedy. (AL) AL, CCI, IAA One course. C-L: see Distinguished Professor Course 190S; also see C-L: Classical Studies 116S
117A. Ancient Myth in Literature. (AL) AL, CCI, IAA One course. C-L: see Classical Studies 117

118. Early Modern Europe. (CZ) CCI, CZ, IAA, R One course. C-L: see History 117; also C-L: Comparative Area Studies, Women's Studies

119. Medieval Philosophy. (CZ) CCI, CZ, EI One course. C-L: see Philosophy 119

120. Late Medieval and Renaissance Philosophy. (CZ) CCI, CZ One course. C-L: see Philosophy 120

121A. Medieval English Literature to 1500. (AL) AL, CCI, IAA, R One course. C-L: see English 121A

121B. Sixteenth-Century English Literature. (AL) AL, IAA One course. C-L: see English 121B

123A. English Literature: 1600 to 1660. (AL) AL, IAA One course. C-L: see English 123A

130. Late Antique Christian Art. (AL) CCI, CZ, IAA, W One course. C-L: see Art History 130; also C-L: Classical Studies 130, Religion 130

131B. Art of the Late Middle Ages. (AL) CCI, CZ, IAA, R One course. C-L: see Art History 132

131C. Topics in Medieval Art and Architecture. (AL) CCI, CZ, IAA One course. C-L: see Art History 134

132A. Topics in Renaissance British Literature. (AL) AL, IAA Two courses. C-L: see English 132C

133A. Poverty and Sanctity in Medieval Society. (CZ) CCI, CZ, EI, IAA One course. C-L: see History 133A

133B. British Isles in the Middle Ages. (CZ) CCI, CZ, EI, IAA One course. C-L: see History 133C

134. History of Jews in the Early Middle Ages. (CZ) CCI, CZ, R One course. C-L: see History 134A; also C-L: Judaic Studies

134B. History of Jews in the Late Middle Ages. (CZ) CCI, CZ, R One course. C-L: see History 134B

134C. Jewish Mysticism. (CZ) CZ, EI, IAA One course. C-L: see Religion 134; also C-L: Comparative Area Studies, Judaic Studies

135. Jewish Religious Thought. (CZ) CZ, EI, IAA One course. C-L: see Religion 135; also C-L: Comparative Area Studies, Judaic Studies

136. Colonial Art of the Andean Region. (AL) FL AL, CCI, FL, IAA One course. C-L: see Art History 133; also C-L: Latin American Studies

138. Reformation Europe. (CZ) CCI, CZ, IAA One course. C-L: see History 138; also C-L: Comparative Area Studies

139A. Special Topics in British Literature I. (AL) AL, IAA One course. C-L: see English 139AS

140A. France in the Making: Language, Nation, and Literary Culture in Premodern Europe. (CZ) FL CCI, CZ, IAA One course. C-L: see French 140; also C-L: Comparative Area Studies

140BS. Chaucer. (AL) AL, CCI, IAA, R One course. C-L: see English 140S

140C. Topics in Renaissance Art. (AL) CCI, CZ, IAA One course. C-L: see Art History 140

141. Fifteenth-Century Italian Art. (AL) CCI, CZ, IAA, R One course. C-L: see Art History 141

141B. Chaucer. (AL) AL, IAA, R One course. C-L: see English 141

142. Sixteenth-Century Italian Art. (AL) CCI, CZ, IAA, R One course. C-L: see Art History 142
143. The Art of the Counter Reformation. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 143

144A. Medieval Fictions. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see French 144

144C. The Crusades to the Holy Land. (CZ) CCI, CZ, R One course. C-L: see History 144A

145A. Milton. (AL) AL, IAA, R One course. C-L: see English 145

146A. Introduction to Islamic Civilization. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 146; also C-L: Cultural Anthropology 147, History 101G, Comparative Area Studies

147A. Introduction to Islamic Civilization. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 147; also C-L: Cultural Anthropology 148, History 102G, Comparative Area Studies

147B. Magic, Religion, and Science since 1400. (CZ) CCI, CZ, IAA, STS One course. C-L: see History 147

148A. Art of the Netherlands in the Fifteenth Century. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 148

148B. History of Medieval and Renaissance Italy. (AL) (CZ) AL, CZ, IAA One course. C-L: see History 148B

150. Italian Baroque Architecture. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 150

151A. The Italian Renaissance and the Birth of the Modern Mind. (CZ) CZ, IAA One course. C-L: see History 151A; also C-L: Comparative Area Studies

151B. Spanish Literature of the Renaissance and the Baroque. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see Spanish 151

151C. Art of Italy in the Seventeenth Century. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 151; also C-L: Comparative Area Studies

152B. Netherlandish Art and Visual Culture in the Seventeenth and Eighteenth Centuries. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 153; also C-L: Comparative Area Studies

153A. Islamic Mysticism: Arabic (Western) Tradition. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 152A; also C-L: African and African American Studies 151, Comparative Area Studies

153B. Golden Age Literature: Cervantes. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see Spanish 153

155S. Music History I: To 1650. (AL) (CZ) AL, CCI, CZ, IAA, W One course. C-L: see Music 155S

156A. The Reformation of the Sixteenth Century. (CZ) CCI, CZ, EI, IAA One course. C-L: see Religion 156A

157. French Art and Visual Culture in the Early Modern Period. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 156

158. History of Netherlandish Art and Visual Culture in a European Context. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 158; also C-L: Comparative Area Studies

159. History of Netherlandish Art and Visual Culture in a European Context. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 159; also C-L: Comparative Area Studies

160S. Topics in Renaissance Literature and Culture. (AL) (FL) AL, CCI, IAA One course. C-L: see French 145S; also C-L: Comparative Area Studies

161S. Topics in Early Modern Literature and Culture. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see Italian 145S
1625. Montaigne and Friends. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see French 146S
1640. Love in the Western World. (CZ) CCI, CZ, IAA One course. C-L: see History 164AD
1655. The Vikings and Their Literature. (AL) AL, CCI, EI, IAA One course. C-L: see German 165S
166. Dante in Translation I. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Italian 129A
167. Dante in Translation II. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Italian 129B
1685. Germanic Heroic Literature. (AL) AL, CCI One course. C-L: see German 167S; also C-L: English 121S
172. Women in the Middle Ages and Renaissance. (CZ) CCI, CZ, IAA, R One course. C-L: History 171A
182. Shakespeare before 1600. (AL) AL, EI, IAA, R One course. C-L: see English 143; also C-L: Theater Studies 109
183. Shakespeare after 1600. (AL) AL, EI, IAA, R One course. C-L: see English 144; also C-L: Theater Studies 110
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.
202A. Christian Thought in the Middle Ages. (CZ) 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) 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) 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. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see German 203S
204. Origen. (CZ) CZ, EI, IAA One course. C-L: see Religion 204
205. The English Reformation. (CZ) 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.
206. The Christian Mystical Tradition in the Medieval Centuries. (CZ) 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 Church History 206 and Religion 206. Open to juniors and seniors only. Instructor: Keefe. One course.

207. Readings in Historical Theology. (CZ) 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.

209. Middle English Literature: 1100 to 1500. (AL) AL, CCI, IAA, R One course. C-L: see English 212

210A. History of the Spanish Language. (FL) FL One course. C-L: see Spanish 210S; also C-L: Linguistics 210S, Comparative Area Studies

211. Notation. (AL) AL, IAA, R One course. C-L: see Music 211

212. History. (AL) AL, IAA, R One course. C-L: see Music 212

213S. Chaucer and His Contexts. (AL) AL, CCI, IAA, R One course. C-L: see English 213S

216. Augustine. (CZ) CZ, EI, IAA One course. C-L: see Religion 219

218S. Medieval Philosophy. (CZ) CCI, CZ, R One course. C-L: see Philosophy 218S

219S. Late Medieval and Renaissance Philosophy. (CZ) CCI, CZ, R One course. C-L: see Philosophy 219S

220A. The Society and Economy of Europe, 1400 - 1700. (CZ) CCI, CZ, R One course. C-L: see History 220A

220B. Religion and Society in the Age of the Reformation. (CZ) CZ, R One course. C-L: see History 220B

221A. Renaissance Prose and Poetry: 1500 to 1660. (AL) AL, IAA, R One course. C-L: see English 221

221C. Medieval Latin. (AL) FL AL, CCI, FL, IAA One course. C-L: see Latin 221

222A. The Humanist as Reformer: Petrarch, Machiavelli, and Erasmus. (CZ) CZ, EI, IAA One course. C-L: see History 222A

222B. Florence: Renaissance City. (CZ) CCI, IAA One course. C-L: see History 222B

222C. Petrarch. (CZ) CZ, EI, IAA One course. C-L: see History 222C

223A. Music in the Middle Ages. (AL) AL, IAA, R One course. C-L: see Music 223A

223B. Music in the Renaissance. (AL) AL, IAA, R One course. C-L: see Music 223B

244. Music in the Baroque Era. (AL) AL, IAA, R One course. C-L: see Music 224

234A. Early Christian Asceticism. (CZ) CZ, EI, IAA One course. C-L: see Religion 234A; also C-L: Women's Studies

234B. Heresy: Theological and Social Dimensions of Early Christian Dissent. (CZ) CCI, CZ, IAA One course. C-L: see Religion 235

235. Topics in the History of Monasticism. (CZ) CCI, CZ, EI, IAA One course. C-L: see History 235A

236A. Luther and the Reformation in Germany. (CZ) 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.

236B. Special Topics in Early Medieval History. (CZ) CZ One course. C-L: see History 236B
237S. Topics in Romanesque and Gothic Art and Architecture. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 236S

238S. Europe in the High Middle Ages. (CZ) CCI, CZ, R One course. C-L: see History 238S

240. Medieval Narrative. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see French 240

241. History of Netherlandish Art and Visual Culture in a European Context. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 241; also C-L: Comparative Area Studies

242. History of Netherlandish Art and Visual Culture in a European Context. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 242; also C-L: Comparative Area Studies

243S. Topics in Netherlandish and German Art. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 243S; also C-L: Comparative Area Studies

244. Classical Islamic Theology and Ethics. (CZ) CZ, EI, IAA One course. C-L: see Religion 241; also C-L: African and African American Studies 241

245. Problems in Reformation Theology. (CZ) CZ Consent of instructor required. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Steinmetz. One course.

246. Problems in Historical Theology. (CZ) 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. (CZ) CCI, CZ, IAA 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. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 247S

250. Women in the Medieval Church. (CZ) CZ The history of the Medieval Church told from its women figures. Attention to the life and writings of saints, heretics, abbesses, queens, mystics, recluses, virgins, bishops' wives, and reformers. Topic varies. Also offered as a Divinity School course. Open to juniors and seniors only. Instructor: Keefe. One course.

251B. Topics in Intellectual History of Europe, 1450-1650. (CZ) CZ One course. C-L: see History 251B; also C-L: Comparative Area Studies

254. Justice, Law, and Commerce in Islam. (CZ) CZ, EI, IAA One course. C-L: see Religion 254; also C-L: African and African American Studies 254, Comparative Area Studies

260A. The Byzantine Empire. (CZ) CCI, CZ, IAA, R One course. C-L: see Classical Studies 260

260B. History of the German Language. QID One course. C-L: see German 260; also C-L: Linguistics 260

261S. Topics in Italian Baroque Art. (AL) (CZ) AL, CCI, CZ, IAA, R One course. C-L: see Art History 260S

267S. Britain in the Sixteenth Century. (CZ) (SS) CCI, CZ, IAA, R, SS One course. C-L: see History 267S

268S. England in the Seventeenth Century. (CZ) CCI, CZ, IAA, R One course. C-L: see History 268S; also C-L: Comparative Area Studies

272. The Early Medieval Church. (CZ) 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) 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) 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.

285. Dante. (AL) (FL) AL, FL, IAA One course. C-L: see Italian 285

COURSES CURRENTLY UNSCHEDULED
129. The History of Prints and Printmaking
144B. Renaissance and Baroque Art History
145B. Renaissance Art in Florence
146. Italian Renaissance Architecture
147C. Seventeenth-Century Fictions of Women
152A. Art of the Netherlands in the Sixteenth Century
154A. German Art in the Fifteenth and Sixteenth Centuries
155B. Mercantile Culture and Art in the Netherlands
164S. Medieval German Literature
171. Topics in Seventeenth-Century French Theater
208. History of the English Language
210B. History of the French Language
215S. German Baroque Literature
220. Shakespeare: Selected Topics
233S. Topics in Early Christian and Byzantine Art
261S. Topics in Italian Baroque Art

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, 115, 195, 196, 200, 205.

**Military Science–Army ROTC (MILITSCI)**

Visiting Professor Sherrill, Lieutenant Colonel, U.S. Army, Chair and Supervisor of Senior Instruction; Visiting Assistant Professor Gauffreau, Major, U.S. Army Reserve, Director of Undergraduate Studies and Supervisor of Sophomore Instruction; Visiting Assistant Professor Scott, Lieutenant Colonel, Army National Guard, Supervisor of Junior Instruction and Commandant of Cadets; Visiting Assistant Professor Rodford, Captain, U.S. Army Reserve, Supervisor of Freshman Instruction and Recruiting Operations Officer

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 (time, personnel, and materiel), ethics and the military profession, the role and responsibility of the military in a democratic society, the philosophy and practice of military law, strategy, and tactics.

The Army ROTC program is made up of a two-year basic course of study (freshman and sophomore level) which is taken without obligation by nonscholarship students, 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. 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. To be eligible for participation in the advanced course, students must successfully complete the basic course (unless direct entry is permitted), 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.

A laboratory is mandatory each semester for scholarship and nonscholarship cadets. Some specific laboratories are required for non-ROTC students taking Military Science 11, 12, 51, and 52. Students 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.

1L. Leadership Laboratory. (Fall semester only.) Drill and ceremonies, marksmanship training, land navigation exercises, first aid, small unit tactics, and confidence training. Must be repeated with each fall semester course. Instructor: Staff.

2L. Leadership Laboratory. (Spring semester only.) Drill and ceremonies, communications, and tactical exercises. Must be repeated with each spring semester course. Instructor: Staff.

11S. Officership as a Profession. Fundamental components of service as an officer in the United States Army. Values, fitness, leadership, and officership. "Life skills" including discipline, communications theory and practice (written and oral), and dealing with interpersonal relationships. Consent of instructor required. Instructor: Staff. Half course.

12S. Principles of Military Leadership. Introduction to the concept of the military as a profession. Questions of ethics and values in the military; the issue of war and morality. Laboratory required for ROTC cadets. Instructor: Staff. Half course.

52. **Tactics and Officership.** Introduction to planning, organizing, and conducting small unit offensive and defensive operations. Consideration of the principles of war. Laboratory required for Army ROTC cadets. Instructor: Staff. Half course.

113. **Advanced Military Operations.** Fundamentals of the conduct of military operations including advanced military topography; unit movements; route planning; nuclear, biological, and chemical defense; and military communications. Laboratory required for Army ROTC cadets. Prerequisite: Military Science 51 and 52 or ROTC Leader's Training Course. Instructor: Scott. One course.

114. **Advanced Tactical Applications.** Study of threat forces to include doctrine, organization, equipment, and training. Conduct of platoon offensive, defensive, and patrolling operations for Army infantry units. Laboratory required for Army ROTC cadets. Prerequisite: Military Science 113. Instructor: Scott. One course.

151S. **Authority, Character, and Principled Leadership.** Introduction to the Uniform Code of Military Justice, selected topics in military law, the law of land warfare, and war and morality. Evaluation and development of junior leaders. Stewardship and maintenance of materiel and resources. An analysis of the application of leadership to these topics. Laboratory required for Army ROTC cadets. Instructor: Sherrill. 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.

Music (MUSIC)

Professor Todd, Chair; Associate Professor of the Practice Bagg, Director of Undergraduate Studies; Professor of the Practice Parkins, Director of Performance; Professors Jaffe, Gilliam, and Silbiger; Associate Professors Bartlet, Brothers, and Lindroth; Assistant Professors Kelley, Mientjes, Moreno, and Paley; Professors Emeriti Bryan, Douglass, Hanks, and P. Williams; Associate Professor Emeritus Saville; Assistant Professor Emeritus Henry; Professors of the Practice Dunn and Jeffrey; Associate Professors of the Practice Davidson, Hawkins, Ku, Love, Pritchard, Raimi, Troxler, and Wynkoop; Adjunct Associate Professor Druesedow; Adjunct Associate Professor of the Practice Jensen; Staff Associates Brown, Crawford, Eagle, Gilmore, Greenberg, Halverson, Hanks, Kris, Lail, Laurance, Lile, Liu, Pederson, Reed, Schultz, Simmon, Tektonidhs, Vial, and Warburg.

A major or a minor is available in this department.

Music has long been viewed as a crucial part of education, compulsory in some cultures, optional in many others. It is customarily regarded as an art, but as a university subject it has its own logic and grammar, in the understanding of which the mind is stretched and tested. Music as taught at Duke treats history, theory, composition, and performance as areas of comparable worth both in themselves and as a means of understanding the many facets of musicianship. Almost every student has some personal involvement with music, and the courses aim to further that involvement, whether it is a simple hobby or a compelling interest.

Courses include many kinds of instruction: applied lessons, history, theory and ethnomusicology lectures and seminars, composition classes, ensemble participation, practical laboratory work (such as ear-training), coaching sessions for conductors and chamber musicians, and jazz improvisation. Students' musical activity can vary widely across the spectrum, from composing their own music to endeavoring to understand the technical, historical, and sociological context of the music of others.
Musical studies can have a particular value in Program II. So many areas of interest in literature, the arts, art history, anthropology, sociology, politics, philosophy, religion, psychology, and physics are illustrated, paralleled, or elucidated by aspects of music, just as music itself is by those other disciplines.

**THEORY AND COMPOSITION**

The department's theory courses are designed to give the student a deeper understanding of musical materials: harmony, counterpoint, voice leading, and musicianship. This is accomplished through analysis of repertoire, composition, aural work, and keyboard playing (score reading, figured bass, and improvisation).


55. Introduction to Music Theory. (AL) AL, QID Fundamentals of notation, melodic and harmonic practice, analysis, and score reading, as a basis for independent work. Prerequisite: some ability to read music. Instructor: Love, Troxler, or staff. One course.

56. The Songwriter's Vocabulary. (AL) AL, IAA 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. (AL) AL, IAA, QID 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: Lindroth, Moreno, Paley, or Parkins. One course.

75. Jazz Improvisation I. (AL) AL, IAA The theory of jazz improvisation and its practical application to the different styles of jazz. Consent of instructor required. Instructor: Crawford or Jeffrey. Half course.

76. Jazz Improvisation II. (AL) AL, IAA, QID See Jazz Improvisation I. Prerequisite: Music 75 or consent of instructor. Instructor: Crawford or Jeffrey. Half course.

114. Theory and Practice of Tonal Music II. (AL) AL, IAA, QID Chromaticism, modulation, musical forms, and counterpoint. Writing of short pieces (minuets, variations, songs.) Laboratory. Prerequisite: Music 65. Instructor: Lindroth, Moreno, or Paley. One course.

115. Theory and Practice of Tonal Music III. (AL) AL, IAA, QID Extended chromatic techniques of the nineteenth century, extended tonality, and larger forms. Writing of larger pieces (character pieces, rondo, sonata.) Laboratory. Prerequisite: Music 114. Instructor: Jaffe, Lindroth, Moreno, or Paley. One course.

116S. Counterpoint. IAA, QID, R Polyphonic practice of the late baroque: writing of two- and three-part compositions in a variety of genres (baroque dances, inventions, preludes, fugues.) Corequisite: Music 123. Prerequisite: Music 115 or consent of instructor. Instructor: Jaffe or Moreno. One course.

117S. Theory and Practice of Post-Tonal Music. (AL) AL, IAA, QID Analytical studies and compositions in various forms, techniques, and styles, with an emphasis on twentieth-century music. Corequisite: Music 124. Prerequisite: Music 115 or consent of instructor. Instructor: Jaffe. One course.


124. Musicianship II. IAA, QID Taught in conjunction with Music 117S. Advanced musicianship skills relating to twentieth-century practice: post-tonal ear training and
sight singing, open score-reading. Corequisite: Music 117S. Prerequisite: Music 115 or consent of instructor. Instructor: Staff. Half course.

151S. Composition I. (AL) AL, IAA, QID, 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 or Lindroth. One course.

152S. Composition II. (AL) AL, IAA, QID, R See Music 151S. Prerequisites: Music 65 and 114 or consent of instructor. Instructor: Jaffe or Lindroth. One course.


161. Advanced Composition. (AL) AL, IAA, QID, R Individual weekly sessions for advanced students. May be repeated for credit. Prerequisites: Music 151S and 152S or consent of instructor. Instructor: Jaffe or Lindroth. One course.

HISTORY, LITERATURE, AND ETHNOMUSICOLOGY

The study of music history and literature contributes to a broader knowledge of culture and society. Courses offer students the opportunity to examine compositions in their historic and/or social context. In addition to surveying significant forms, genres, and styles, and their development, the courses include consideration of the place of music and musicians in society, aspects of performance practice, and aesthetic value. Although the normal prerequisite for Music 155S-157 (Music History, I-III) is Music 65, interested students in other disciplines with some background in music are encouraged to ask individual instructors for permission to enroll.

205. Special Topics in Music. Opportunities to engage with a specific issue in music, with emphasis on student writing. Instructor: Staff. One course.

48S. FOCUS Seminar. (AL) AL, IAA Topics vary each semester. Open only to students in the FOCUS Program. Instructor: Staff. One course.

49S. First-Year Seminar. IAA Topics vary each semester offered. Instructor: 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. (AL) (CZ) AL, CCI, CZ, IAA Study of the components of music (e.g. melody, rhythm) through comparative listening to styles from different times and places, 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: Kelley, Meintjes or Moreno. One course.

74. Introduction to Jazz. (AL) AL, CCI, IAA A survey examining musical, aesthetic, sociological, and historical aspects. Course fee required. Instructor: Jeffrey or staff. One course. C-L: African and African American Studies 74

119S. The Humanities and Music. (AL) (CZ) AL, CCI, CZ, IAA, W Study of music's relationship to the humanities (literature, art, philosophy, cultural and social history) through selected topics. Readings from primary sources, listening to representative pieces of music. Instructor: Bartlet or staff. One course. C-L: Comparative Area Studies
121S. Writing About Music. (AL) AL, IAA, W The challenges of writing about a nonverbal, nonrepresentational art form. A range of musical genres and styles engaged through listening, score study, and concert attendance. Topics include analytical and critical prose, reviews, program notes, abstracts, music itself as criticism, use of musical examples, bibliography. Prerequisite: Music 55 or basic knowledge of music vocabulary. Instructor: Paley. One course.

125. Listening to Music: The European-American Tradition. (AL) AL, CCI, IAA 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 Williams. One course.

125D. Listening to Music: The European-American Tradition. (AL) AL, CCI, IAA Same as Music 125 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Davidson, Gilliam, or Williams. One course.

134. Music in East Asia. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 184

135. Music in South Asia. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 185

136. Music of the World's Peoples. (AL) (CZ) AL, CCI, CZ, IAA 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. One course. C-L: Cultural Anthropology 145A, Comparative Area Studies


138S. Special Topics in Ethnomusicology. (AL) (CZ) AL, CZ, IAA Topics to be announced addressing a range of musical traditions from around the world. Instructor: Meintjes or staff. One course.

139. Music and Modernism. (AL) AL, IAA, W A survey of Debussy, Stravinsky, Bartok, Varese, 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, Todd, Lindroth, or Kelley. One course.

140. Jazz Saxophone Innovators. (AL) AL, CCI, IAA Major figures in the development of jazz improvisation, including Charlie Parker, Stan Getz, John Coltrane, and Sonny Rollins. Prerequisite: Music 74 or consent of instructor. Instructor: Jeffrey. One course. C-L: African and African American Studies 140

141S. Special Topics in Jazz. (AL) AL, IAA Topics vary. Also taught as African and African-American Studies 141S. Prerequisite: Music 74 or consent of instructor. Instructor: Brothers or Jeffrey. One course.


143. Beethoven and His Time. (AL) AL, CCI, IAA The music of Beethoven and its relation to contemporary political and cultural developments. Instructor: Bartlet, Gilliam, Silbiger, or Todd. One course. C-L: Comparative Area Studies
144. Bach and His Time. (AL) AL, CCI, IAA 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: Silbiger. One course. C-L: Comparative Area Studies

145. Mozart and His Time. (AL) AL, CCI, IAA, W The music of Wolfgang Amadeus Mozart and its relation to contemporary political and cultural developments. Instructor: Silbiger. One course. C-L: Comparative Area Studies


155S. Music History I: To 1650. (AL) (CZ) AL, CCI, CZ, IAA, W 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. One course. C-L: Medieval and Renaissance Studies

156S. Music History II: From 1650 to 1850. (AL) (CZ) AL, CCI, CZ, IAA, R The history of music in Europe in its cultural and social context. Not open to students who have taken Music 159S. Prerequisite: Music 65 or consent of instructor. Instructor: Bartlet or Silbiger. One course. C-L: Comparative Area Studies

157. Music History III: After 1850. (AL) (CZ) AL, CCI, CZ, IAA, R The history of music in Europe and the United States in its cultural and social context. Not open to students who have taken Music 158S. Prerequisite: Music 65 or consent of instructor. Instructor: Gilliam or Todd. One course. C-L: Comparative Area Studies


163. Opera at the Metropolitan. (AL) AL, IAA 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. (AL) AL, IAA One course. C-L: see Theater Studies

165. Opera in Vienna. (AL) AL, CCI, IAA Focus on the composers, music, historical context, and texts of the operas being performed at the Staatsoper and Volksoper. Analysis of critical reviews. Attendance at one opera per week required. Offered as part of the Duke in Vienna Program. Instructor: Moore. One course.

166. Opera. (AL) AL, CCI, IAA History of opera from the late sixteenth century to the present. Relationship of music and text; opera as social commentary; changing forms and styles. Selected composers, especially Mozart, Verdi, Puccini, and Wagner. Instructor: Bartlet. One course.

168. Piano Music. (AL) AL, IAA 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. (AL) AL, IAA Film scores from the 1930s to the present. Technical, structural, and aesthetic issues, as well as the problem of musical style. Instructor: Gilliam. One course. C-L: Film/ Video/ Digital

170S. Special Topics in Music History. (AL) AL, IAA Topics vary. Instructor: Staff. One course.

187S. Seminar on Interpretation and Performance. (AL) AL, IAA Interpretative analysis of instrumental (piano, strings, winds) and vocal repertoire from baroque to
modern composers. Participants expected to perform. Consent of instructor required. Instructor: Dunn, Love, Troxler, or staff. One course.

190S. Seminar in Music History. (AL) AL, IAA, R Primarily for junior and senior music majors. Topics to be announced. Prerequisites: Music 155S, 158S, and 159S. Instructor: Staff. One course.

For Advanced Undergraduates and Graduates

201. Introduction to Musicology. (AL) AL, IAA, 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: Bartlet or Druesedow. One course.

203. Proseminar in Performance Practice. (AL) AL, IAA, R Critical methods in the study of historical performance practice, including the evaluation of evidence provided by musical and theoretical sources, archival and iconographic materials, instruments, and sound recordings. Current issues regarding the performance practice for music from the Middle Ages to the twentieth century. Instructor: Silbiger. One course.

211. Notation. (AL) AL, IAA, R First part of a two-course sequence examining the development and changing function of musical notation from c. 900 to c. 1900, including plainchant notations, black notations, white notations, the invention of printing (particularly movable type and engraving), keyboard and lute tablatures, scores. Instructor: Brothers or Silbiger. One course. C-L: Medieval and Renaissance Studies 211

213. Theories and Notation of Contemporary Music. (AL) AL, IAA, 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.

215. Music Analysis. (AL) AL, IAA, QID, R Historical, philosophical, and ideological issues raised by music analysis. Intensive study of harmony and voice leading in the works of major tonal composers, with emphasis on the analytic approach of Heinrich Schenker. Instructor: Paley or Moreno. One course.

217. Selected Topics in Analysis. (AL) AL, IAA, 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: Paley or Moreno. One course.

222. Music in the Middle Ages. (AL) AL, IAA, R Selected topics. Instructor: Brothers. One course. C-L: Medieval and Renaissance Studies 223A


295S. Composition Seminar. (AL) AL, IAA, R Selected topics in composition. Instructor: Jaffe, Lindroth, or Kelley. One course.

296S. Analysis of Contemporary Music. (AL) AL, IAA, R Structures, expressive intentions, and functions since 1914. Contemporary orchestral music, American music,
European music, popular media, musical tradition, and contemporary composers. Analysis of works performed in the department's Encounters Series with occasional guest composers present. Instructor: Jaffe, Lindroth, or Kelley. One course.

297. Composition. (AL) AL Weekly independent study sessions at an advanced level with a member of the graduate faculty in composition. Instructor: Jaffe, Lindroth, or Kelley. One course.

298. Composition. (AL) AL Continuation of Music 297. Weekly independent study sessions at an advanced level with a member of the graduate faculty in composition. Instructor: Jaffe, Lindroth, or Kelley. One course.

299. Composition. (AL) AL Continuation of Music 298. Weekly independent study sessions at an advanced level with a member of the graduate faculty in composition. Instructor: Jaffe, Lindroth, or Kelley. 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

The study of performance is an active way of understanding music literature, facing questions of style, and honing one's technical and expressive skills. 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. (Skills courses not applicable to area of knowledge requirements.) 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 music majors. There is a fee for additional instruction for music majors and all instruction for nonmajors. For specific information on those fees (for one-hour and half-hour private lessons and half-hour 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.

575. 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: Lail. Half course.

**Instruction: half hour**
79A. **Class Piano. IAA** Instructor: Greenberg. Quarter course.
79B. **Class Voice. IAA** Instructor: Lail. Quarter course.
79C. **Class Guitar. IAA** Instructor: Reed. Quarter course.
80. **Piano. IAA** Instructor: Crawford, Hawkins, Liu, Love, or staff. Quarter course.
81. **Strings. IAA** Instructor: Bagg, Ku, Pritchard, or Raimi. Quarter course.
82. **Woodwinds. IAA** Instructor: Gilmore, Jeffrey, Pederson, Schultz, or Troxler. Quarter course.
83. **Brass. IAA** Instructor: Dimsdale, Eagle, or Kris. Quarter course.
84. **Percussion. IAA** Instructor: Hanks. Quarter course.
85. **Voice. IAA** Instructor: Dunn, Jensen, Lail, or Tektonidis. Quarter course.
86. **Organ. IAA** Instructor: Parkins. Quarter course.
87. **Harpischord. IAA** Instructor: Parkins. Quarter course.
88A. **Classical Guitar. IAA** Instructor: Reed. Quarter course.
88B. **Jazz Guitar. IAA** Instructor: Lile. Quarter course.

**Instruction: 1 hour**
90. **Piano. IAA** Instructor: Crawford, Hawkins, or Love. Half course.
91. **Strings. IAA** Instructor: Bagg, Ku, Pritchard, or Raimi. Half course.
92. **Woodwinds. IAA** Instructor: Gilmore, Jeffrey, Pederson, Schultz, or Troxler. Half course.
93. **Brass. IAA** Instructor: Dimsdale, Eagle, or Kris. Half course.
95. **Voice. IAA** Instructor: Dunn, Jensen, Lail, or Tektonidis. Half course.
98A. **Classical Guitar. IAA** Instructor: Reed. Half course.
98B. **Jazz Guitar. IAA** Instructor: Lile. Half course.

**Ensemble Classes: pass/fail**
100. **Symphony Orchestra.** Instructor: Davidson. Quarter course.
101. **Wind Symphony.** Instructor: Staff. Quarter course.
102. **Marching Band.** Instructor: Boumpani. Quarter course.
103. **Jazz Ensemble.** Instructor: Jeffrey. Quarter course.
105. **Collegium Musicum.** Instructor: Vial or staff. Quarter course.
106. **Chamber Music.** Instructor: Hawkins. Quarter course.
107A. **Djembe Class.** Instructor: Simmons. Quarter course.
107B. **Djembe Ensemble.** Instructor: Simmons. Quarter course.
111. **Opera Workshop.** Instructor: Dunn. Quarter course.
112. **Chapel Choir.** Instructor: Wynkoop. Quarter course.
113. **Chorale.** Instructor: Wynkoop. Quarter course.

128. **Instrumental Conducting. (AL) AL, IAA** 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 or consent of instructor. Instructor: Davidson or staff. One course.
129. **Choral Conducting.** (AL) IAA  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.

177. **Advanced Study in Conducting.** IAA  Advanced work in reading scores, analysis, principles of interpretation, and practical conducting experience. May be repeated for credit. Prerequisite: Music 128 or 129 or consent of instructor. Instructor: Davidson or Wynkoop. One course.

179. **Advanced Study in Musical Performance.** IAA  Open only to sophomores, juniors, and seniors possessing an exceptional technical and interpretative command of a musical medium. Requires either a half-length recital at the end of each semester of study or a full-length recital at the end of the second semester. In the latter case, a brief performance before a jury of music department faculty is required at the end of the first semester. May be repeated for credit. Prerequisites: previous registration in private instruction in applied music at Duke, audition, and consent of instructor. Instructor: Staff. One course.

**COURSES CURRENTLY UNSCHEDULED**

104. Small Jazz Ensemble
118S. Special Topics in Music Theory
120S. Women in Music
167. Symphonic Literature
169D. Hollywood Film Music
188S. Seminar on Interpretation and Performance
189S. Seminar in Music History
218. Advanced Counterpoint
236. Nineteenth-Century Piano Music

**THE MAJOR**

A major or second major in music is a means of preparing students for further professional training in the branches of the art, for graduate study as historians, composers, and performers, and for a more intimate understanding of one of life's most important experiences. The music major can also be an attractive pursuit for the well-rounded undergraduate planning a career in another field, such as business, law or medicine. The aim of the required courses is to give a balanced selection of history, theory, composition, and performance, reinforced by constant attention to the art of listening. With the required courses as their foundation, students choose electives to further their interest in, or gifts for, a particular music activity, so that a performer will have a good theoretical background, a historian considerable experience as a player, a composer various kinds of understanding of music of the past, and so on.

Ten full course credits are required for the major, at least eight of which must be at the 100 level or above.

**Prerequisites.** Music 65 and two semesters of applied music study in an instrument or voice; two semesters of participation in a departmental ensemble (excluding Music 102.)

**Major requirements.** Music 114, 115, either 116S taken concurrently with 123 or 117S taken with 124, 155S, 156S (formerly 158S), 190S or a 200-level course approved by the director of undergraduate studies, and one additional elective approved by the director of undergraduate studies. Those who plan graduate study in music are strongly advised to prepare themselves in two foreign languages.

**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 a major composition with a shorter paper or half-length recital. The final project must be approved by a faculty committee.

THE MINOR

Six full course units (including the prerequisite) are required for the minor, of which at least three full course units must be taken at the 100-level or above.

Prerequisite: Music 65.

Requirements. Five full course credits, as follows. Two full course credits, one of which must be in music history, from among: Music 75, 76, 114, 155S, 156S (formerly 159S), 157 (formerly 158S); one full course credit in performance from among: Music 79-88, 90-98, 100-101, 103-107, 111-113, 179-184; two additional full course credits in music, one of which must be above 113.

Naval Science– Navy ROTC (NAVALSCI)

Professor Haines, Captain, U.S. Navy, Chair; Visiting Assistant Professor Haller, Lieutenant, U.S. Navy, Director of Undergraduate Studies; Visiting Associate Professor Thompson, Lieutenant Colonel, U.S. Marine Corps; Visiting Assistant Professors Eberlein, Lieutenant, U.S. Navy, Wagner, Lieutenant, U.S. Navy, and Boothby, Major, U.S. Marine Corps

Courses in naval science are open to all students. The program in naval science offers students an opportunity to gain a broad-based knowledge in naval studies leading to a challenging career as a Navy or Marine Corps officer. Since a major is not available in this program, scholarship program participants are encouraged to pursue majors in technical fields, although a major in any field of study leading to a baccalaureate degree meets the basic requirement. The academic program for an approved degree and commission must include all naval science courses and laboratories. Navy option scholarship students must complete one year of calculus by the end of the sophomore year, one year of calculus-based physics by the end of the junior year, one semester of American military history or national security policy, one year of English, and one semester of computer science.

Nonscholarship Navy option student requirements are one year of calculus by the end of sophomore year, one year of calculus-based physics by the end of junior year, one semester of American military history or national security policy, one year of English, and one semester of computer science. Marine Corps option students are required to take one semester of American military history or national security policy.


11L. Naval Orientation Laboratory. Practical application of the elements and material presented in Naval Science 11. Instructor: Haller.


12L. Naval Ships Systems Laboratory. Practical application of the theories and principles of naval ships systems. Instructor: Eberlein.

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

52. Seapower and Maritime Affairs. STS The role of seapower in national and foreign policy, and as an instrument of political and military strategy. Includes comparative study of United States and other nations’ maritime strategies. Instructor: Haller. One

126. Concepts and Analyses of Naval Tactical Systems. QID 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: Eberlein. One course.

126L. Naval Tactical Systems Laboratory. Practical application of the theories and principles of naval tactical systems. Instructor: Eberlein.


131L. Navigation Laboratory. Practical application of the theories and principles of navigation as presented in the lecture series. Instructor: Wagner.


137L. Marine Tactics Laboratory. Concepts and applications of tactical employment of Marine amphibious forces. Ground weapons systems, land navigation, and small unit tactics. Instructor: Boothby.

138L. Marine Tactics Laboratory. Continuation of Naval Science 137L. Instructor: Boothby.

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: Boothby. One course.

145. Naval Leadership and Management I. Study of organizational behavior and management in the context of naval and Marine Corps organization. Topics include leadership, management functions, planning, controlling, and directing. Instructor: Haines.

145L. Naval Leadership and Management I Laboratory. Practical application of the theories discussed in Naval Science 145. Instructor: Haines.

146. Naval Leadership and Management II. The study of officer responsibilities in naval administration. Discussions of counseling methods, ethics, military justice, human resources management, leadership, and supply systems. Instructor: Haines.

146L. Naval Leadership and Management II Laboratory. The practical application of theories discussed in Naval Science 146. Instructor: Haines.

147L. Marine Leadership Laboratory. Marine Corps career management, naval correspondence, force structure, leadership techniques, and training. Instructor: Boothby.

148L. Marine Leadership Laboratory. Continuation of Naval Science 147L. Instructor: Boothby.

151S. Amphibious Warfare. Development of amphibious doctrine, with attention to its current applications. Instructor: Boothby. One course.

191. Independent Study. Directed reading or individual projects. Open only to
Neurobiology

For courses in neurobiology, see Medicine (School)–Graduate (School) Basic Science Courses Open to Undergraduates

Neurosciences

For courses in neurosciences, see biology, psychology, and the Neurosciences Program.

Neurosciences Program

Associate Professor Meck and Associate Professor Nowicki, Co-directors

The study of the nervous system has developed into one of the most exciting areas of modern science with rapidly expanding knowledge in both basic and medically applied areas. The Neurosciences Program offers the student guidance in planning a liberal arts education in the context of a structured emphasis on study in the neural sciences. The program especially encourages and facilitates undergraduate research participation, through independent study courses, in neuroscience laboratories across the university, including the Medicine (School)–Graduate (School) Basic Sciences Department of Neurobiology. The program also sponsors special lectures, workshops, and research mini-symposia throughout the academic year designed to foster undergraduate interest in neurobiology.

B.S. majors in departments other than biology and psychology may complete a sequence of required courses for a Neuroscience Program certificate by taking the two introductory course requirements (e.g., Psychology 91 and Biology 154/ Psychology 135–prerequisites: Biology 25L and Chemistry 12L or 22L) and four electives. Independent study (Psychology 191-194, Neurobiology 210, and Biology 191-194) is highly recommended for all participants in the program and may be counted toward completion of the elective requirements. In order to ensure interdisciplinarity no more than one-half the total courses taken to satisfy the specific requirements of the certificate may originate in a single department.

For more information, students should call the Departments of Psychology or Biology, contact either of the program co-directors, Professor Warren Meck (psychology: experimental), e-mail: meck@psych.duke.edu or Professor Stephen Nowicki, e-mail: snowicki@duke.edu, consult the neuroscience programs world-wide-web homepage at http://www.duke.edu/neurosci/, or obtain materials at the program office, Rm. 245 Sociology/ Psychology.

Core Courses

Biology

154. Fundamentals of Neuroscience (B)

Neurobiology

154. Fundamentals of Neuroscience (B)

Psychology

91. Biological Bases of Behavior: Introduction and Survey (B)

135. Fundamentals of Neuroscience (B)

Elective Courses

The following is a partial listing of representative elective courses. For descriptions, consult the listings under specified departments in the undergraduate and graduate bulletins.

Developmental and Comparative Anatomy of Vertebrates. (Biology 108L)

* A neuroscience concentration is available for B.S. majors in biology and psychology. See the bulletin entries for the Biology Program and the Psychology Department.
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) (QR) M, NS
Survey lectures by Duke experts active in CNCS research; regular attendance in the CNCS seminar series; and a weekly meeting to discuss the lectures and seminars. May be repeated once. Prerequisite: Physics 213. Instructor: Behringer, Greenside, or Gauthier. Half course. C-L: Physics 201

North American Studies (NORTAMER)

Professor Healy (Nicholas School of the Environment), Director; Professor Thompson (history), Associate Director; Professors Gereffi (sociology), Goodwin (economics), Kornberg (political science), Mayer (public policy studies and political science), Mignolo (romance studies), Morgenstern (political science), Smith (sociology), and Vidmar (law); Associate Professors Byers (law) and French (history); Assistant Professor Shanahan (sociology); Research Associate Professor Keineg (romance studies)

Students may concentrate in North American Studies as part of the Comparative Area Studies major; the concentration provides an opportunity to learn about the economics, societies, environments, cultures, and political systems of Mexico, Canada, and the United States in historical, comparative and regional perspective. North American Studies faculty are drawn from economics, English, history, law, political science, public policy, and sociology, and many courses listed in these departments count toward concentration requirements. For information on North American Studies as a primary or secondary area within the Comparative Area Studies see the bulletin entry for Comparative Area Studies.


97. Introduction to Mexico. (CZ) (SS) CCI, CZ, SS The history, politics, and culture of Mexico from pre-Columbian times to the present. Contemporary issues such as migration, drug smuggling, political opening, and economic transition placed in broad context. Instructor: Staff. One course. C-L: Latin American Studies


110. Introduction to North America. (CZ) (SS) CCI, CZ, SS The geography, history,
politics, economics, and cultural productions of Canada, the United States, and Mexico, with some reference to the Caribbean. Instructor: Thompson. One course. C-L: History 108F, Political Science 119, Public Policy Studies 115, Sociology 109, Latin American Studies

150. Special Topics in North American Issues. Topics vary each semester. Instructor: Staff. One course.

283S. Seminar in North American Studies. Topics vary each semester. Instructor: Staff. One course.

Pathology
For courses in pathology, see Medicine (School)–Graduate (School) Basic Science Courses Open to Undergraduates.

Pharmacology
For courses in pharmacology, see Medicine (School)–Graduate (School) Basic Science Courses Open to Undergraduates.

Persian
For courses in Persian, see Asian and African Languages and Literature.

Perspectives on Marxism and Society
Professor Jameson, Chair
A certificate, but not a major, is available in this program.

The Perspectives on Marxism and Society Program is devoted to the study of Marxist theories of society. The focus is on Marxism, not primarily as a political or ideological system, but as a scholarly methodology incorporating a variety of analytical techniques across a wide range of disciplines. Emphasized is a critical appraisal of Marxist methods of analysis and their social implications, considered in the light of theoretical alternatives and changing historical circumstances. Topics covered include sexual and racial inequality, alienation, development and underdevelopment in the world system, labor processes, protest movements, and ideologies.

The program requires six courses, including an analytical core course, Marxism and Society (cross-listed as Cultural Anthropology 139, Education 139, History 186, Literature 181, and Sociology 139). Five additional approved courses satisfy the requirements of the Program. No more than three courses originating in a single department or program may satisfy the program of study. Of the five approved courses, at least three must be at the 100-level or above. Further information may be obtained by writing the Director, Professor Fredric Jameson, Literature Program, Box 90670, jameson@acpub.duke.edu.

REGULARLY SCHEDULED COURSES

African and African American Studies
122. Culture and Politics in Africa
165. History of the Working Class in the United States

Art History
188. Art since 1945: Modernism and Postmodernism
189. Modern and Postmodern Architecture

Comparative Area Studies
125. Comparative Approaches to Global Issues

Cultural Anthropology
104. Anthropology and Film
104D. Anthropology and Film
113. Gender and Culture
117. Global Culture
122. Culture and Politics in Africa
125. Comparative Approaches to Global Issues
127. Culture and Politics in Japan
128. Culture and Politics in Latin America
139. Marxism and Society

Education
100. Social and Philosophical Foundations of Education
139. Marxism and Society

English
101B. Introduction to Cultural Studies

German
270. Consciousness and Modern Society

History
75. Topics on the Third World and the West
76. Topics on the Third World and the West
111C. The Emergence of Modern America: The United States from the 1890s to the Cold War
137. Comparative Approaches to Global Issues
142A. China: Roots of Revolution
150A. Documentary Film History (B)
152S. The Insurgent South
163C. The American Civil War
165. History of the Working Class in the United States
185A. Socialist Realism: Soviet Literature of the 1930s and 1940s
186. Marxism and Society

Literature
98. Introduction to the Study of Literature and Society
100. Introduction to Cultural Studies
112A. Soviet Cinema
117. Documentary Film History (B)
162. Special Topics in Literature and National Cultures, Ethnicity, Race
162Z. Special Topics in Literature and National Cultures, Ethnicity, Race
181. Marxism and Society

Political Science
125. Comparative Approaches to Global Issues
196. Documentary Film History (B)

Religion
183. Comparative Approaches to Global Issues

Russian
130. Soviet Cinema
149S. Russian Culture in the Era of Terror: A Reexamination
181. The Soviet 1920s: The Road to a New Synthesis
182. Socialist Realism: Soviet Literature of the 1930s and 1940s

Sociology
125. Comparative Approaches to Global Issues
139. Marxism and Society

Spanish
148. Colonial and Postcolonial Studies in Latin America and the Caribbean
171. Literature of Contemporary Spain
251S. Spanish Film

SPECIAL TOPICS COURSES OFFERED PERIODICALLY

Art History
187. Surrealism
188. Twentieth-Century Modernist and Postmodernist Criticism

Asian and African Languages and Literature
155. Introduction to Israeli Culture

Cultural Anthropology
121. Culture and Politics in China

History
Philosophy (PHIL)

Professor Brandon, Chair; Professor Sanford, Director of Undergraduate Studies; Professors Flanagan, Gillespie (political science), Golding, Mahoney, Rosenberg, Smith, Stone (law), and Wong; Associate Professors Ferejohn, Schmaltz, and Sugarman (medicine); Assistant Professors Güzeldere and Sterrett; Professors Emeriti Peach and Welsh; Associate Professor of the Practice Kiss (Kenan Ethics Program); Adjunct Associate Professor Ward; Senior Research Scholar Dretske

A major or 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) CZ, W Examination of problems in philosophy; emphasis on metaphysics and theory of knowledge. Instructor: Staff. One course.

42. Introduction to Philosophy. (CZ) CZ, EI, W Examination of problems in philosophy; emphasis on ethics and value theory. Instructor: Staff. One course.

43S. Introduction to Philosophy. (CZ) CZ, W Philosophy 41 conducted as a seminar. Instructor: Staff. One course.

44S. Introduction to Philosophy. (CZ) CZ, EI, W Philosophy 42 conducted as a seminar. Instructor: Staff. One course.

48. Logic. (CZ) CZ, QID The conditions of effective thinking and clear communication. Examination of the basic principles of deductive reasoning. Instructor: Brandon, Güzeldere, Sanford, or staff. One course.

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

50. Duke-Administered Study Abroad: Special Topics in Philosophy. CCI Topics
differ by section. Instructor: Staff. One course.

565. FOCUS Program Seminar in Philosophy. (CZ) CZ Topics vary each semester offered. Instructor: Staff. One course.

100. History of Ancient Philosophy. (CZ) 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 Mahoney. One course. C-L: Classical Studies 100


102. Aesthetics: The Philosophy of Art. (CZ) CZ, IAA 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.

103. Symbolic Logic. (CZ) CZ, QID Detailed analysis of deduction and of deductive systems. Open to sophomores by consent of instructor. Instructor: Brandon, Güzeldere, or Rosenberg. One course. C-L: Linguistics 103

104. Philosophy of Science. (CZ) CZ, QID, STS The principal philosophical and methodological problems in contemporary science. Instructor: Brandon, Güzeldere, Rosenberg, or Sterrett. One course.

105. Philosophy of Law. (CZ) CZ, EI Natural law theory, legal positivism, legal realism, the relation of law and morality. Instructor: Golding. One course.

106. Political and Social Philosophy. (CZ) 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: Mahoney or Wong. One course.

107. Philosophy of Language. (CZ) 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: Sterrett. One course. C-L: Linguistics 109

108. Knowledge and Certainty. (CZ) 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: Ferejohn or Sanford. One course.


110. Philosophy of Mind. (CZ) CZ, R Such topics as mind and body, the nature of thought, perception, consciousness, personal identity, and other minds. The relevance of cognitive psychology, neuroscience, and computer science to the philosophy of mind. Instructor: Flanagan, Güzeldere, or Sanford. One course. C-L: Linguistics 108

111. Philosophy of Mathematics. (CZ) CZ, QID 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: Sterrett. One course.

112. Philosophy of Biology. (CZ) CZ, 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:
115. Applied and Environmental Ethics. (CZ) 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.


117. Ancient and Modern Ethical Theories. (CZ) CCI, CZ, EI The development of ethical thought in the West; the interaction between culture and ethical theory, with special reference to the Greek city-state, Roman law, the Renaissance, the Reformation, and the rise of modern science. Readings in the great ethical philosophers. Open only to undergraduates. Instructor: Flanagan, Golding, or Wong. One course.

118. Philosophical Issues in Medical Ethics. (CZ) 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: Golding or Sugarman. One course.


120. Late Medieval and Renaissance Philosophy. (CZ) 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: Mahoney. One course. C-L: Medieval and Renaissance Studies

122. Philosophical Issues in Feminism. (CZ) 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

123. Aristotle. (CZ) 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


126. Philosophy of Sport. (CZ) CZ Play, sport, and game in western culture. Sport and

127. Duke Administered Study Abroad: Advanced Special Topics in Philosophy. CCI Topics differ by section. Instructor: Staff. One course.

130. Philosophy of Religion. (CZ) 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: Schmalz. One course.


132. Nineteenth-Century Philosophy. (CZ) CCI, CZ Emphasis on Hegel, Marx, and Nietzsche. Open to undergraduates only. Instructor: Mahoney. One course.


138. Analytic Philosophy in the Twentieth Century. (CZ) 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: Sanford or Sterrett. One course.

139. Twentieth-Century Continental Philosophy. (CZ) CCI, CZ, EI A critical and historical examination of movements in European philosophy such as existentialism, structuralism, poststructuralism, hermeneutics, and critical theory. Husserl, Heidegger, Sartre, Gadamer, Habermas, and Derrida: their views of language, history, and the problems of modern society. Open to undergraduates only. Instructor: Staff. One course.


150. Logic and Its Applications. (QR) M, QID One course. C-L: see Mathematics 188; also C-L: Computer Science 148

156. Philosophy of Computing. (CZ) CZ, QID, STS The conceptual foundations of computing with respect to conceptual, explanatory, an empirical criteria. Focus on: formal symbol manipulation, recursive function theory, effective computability, computational complexity, digitality, and information processing. Non-standard approaches such as connectionism, dynamics, and artificial life. Not open to students who have taken Philosophy 256. Prerequisite: Either 3 course in computer science and 1 in philosophy, or 3 course in philosophy and 1 in computer science, or consent of instructor. Instructor: Smith. One course.


162. Human Rights in Theory and Practice. (CZ) (SS) CCI, CZ, EI, SS One course. C-L: see Political Science 162; also C-L: Public Policy Studies 162

162D. Human Rights in Theory and Practice. (CZ) (SS) CCI, CZ, EI, SS One course. C-L: see Political Science 162D; also C-L: Public Policy Studies 162D

163. Chinese Philosophy. (CZ) 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.

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. 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) CZ Instructor: Staff. One course.

197S. Seminars in Philosophy. (CZ) CZ Instructor: Staff. One course.

For Seniors and Graduates

203S. Contemporary Ethical Theories. (CZ) (SS) 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) 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) 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) CZ Selected dialogues. Instructor: Ferejohn. One course. C-L: Classical Studies 211S


218S. Medieval Philosophy. (CZ) 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: Mahoney. One course. C-L: Medieval and Renaissance Studies 218S

219S. Late Medieval and Renaissance Philosophy. (CZ) CCI, CZ, R Readings in Scotus, Ockham, and others. Discussions regarding the critical turn in fourteenth-century philosophy, rival theories of knowledge, the 'Great Chain of Being.' Instructor: Mahoney. One course. C-L: Medieval and Renaissance Studies 219S

220. The Presocratic Philosophers. (CZ) (FL) CCI, CZ, EI, FL One course. C-L: see Greek 220

225S. British Empiricism. (CZ) 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) 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) CZ A critical study of some
contemporary movements, with special emphasis on analytic philosophers. Instructor: Sterrett. One course. C-L: Linguistics 228S

231S. Kant's Critique of Pure Reason. (CZ) CZ Instructor: Staff. One course.

232S. Recent Continental Philosophy. CCI, IAA Selected topics. Instructor: Staff. One course.

233S. Methodology of the Empirical Sciences. (CZ) CZ, Q1D, 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) NS, STS Selected topics, with emphasis on evolutionary biology: the structure of evolutionary theory, adaptation, teleological or teleonomic explanations in biology, reductionism and organismism, the units of selection, and sociobiology. Consent of instructor required. Instructor: Brandon or Rosenberg. One course. C-L: Biology 234S

237S. Nietzsche's Political Philosophy. (CZ) (SS) CZ, EI, SS One course. C-L: Political Science 226S, German 276S

240S. Philosophical Psychology. (CZ) CZ A study of recent work on the nature of the self and the nature and function of consciousness. Work from philosophy, psychology, cognitive neuroscience, and evolutionary biology will be discussed. Instructor: Flanagan or Guzeldere. One course.

251S. Epistemology. (CZ) CZ, R Selected topics in the theory of knowledge; for example, conditions of knowledge, skepticism and certainty, perception, memory, knowledge of other minds, and knowledge of necessary truths. Instructor: Dretske or Sanford. One course.

252S. Metaphysics. (CZ) CZ, R Selected topics: substance, qualities and universals, identity, space, time, causation, and determinism. Instructor: Dretske or Sanford. One course.

253S. Philosophy of Mind. (CZ) CZ Analysis of concepts such as thought and belief; issues such as mind-body relations, thought and action, the nature of persons and personal identity. Instructor: Flanagan, Guzeldere, or Sanford. One course.

255S. Topics in Philosophy of Mind. (CZ) CZ, STS 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: Guzeldere. One course.

256. Philosophy of Computing. (CZ) CZ, Q1D, STS One course. C-L: see Computer Science 248

273S. Heidegger. (CZ) (SS) CZ, EI, IAA, SS One course. C-L: see Political Science 273S

289S. Environmental Ethics. (CZ) CZ, EI, STS One course. C-L: see Environment 282S

291S. Special Fields of Philosophy. (CZ) CZ Instructor: Staff. One course.

292S. Special Fields of Philosophy. (CZ) CZ Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

105. Philosophy of History
108. Social Ideals and Utopias
114D. Hellenistic Philosophy
121. Philosophy and Film
135. Philosophy in Literature
202S. Aesthetics: The Philosophy of Art
204S. Philosophy of Law
205S. Philosophy of History
210. Logic for Computer Science
236S. Hegel's Political Philosophy
250S. Topics in Formal Philosophy
254S. Topics in Philosophy of Religion

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); and at least one seminar at the 200 level. In addition, a course in logic (Philosophy 48) is highly recommended.

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 Behringer, Chair; Associate Professor Gauthier, Director of Undergraduate Studies; Professors Baranger, Bertozzi, Edwards, Goshaw, Greenside, Han, Howell, Johnson, Morrison, Müller, Oh, Palmer, Thomas, Tornow, Walter, and Weller; Associate Professors Aspinwall, Litvinenko, Matveev, Plesser, Socolar, Springer, and Teitsworth; Assistant Professors Bass, Chandrasekharan, Finkelstein, Kotwal, Kruse, Lin, Mehen, and Wu; Professors Emeriti Bilpuch, Evans, Fairbank, Lewis, Meyer, Roberson, Robinson, and Walker; Research Associate Professor Phillips; Adjunct Professors Ciftan, Everitt, Guenther, Kolena, Rogosa, Stroscio, Lawson, Skatrud, and West; Adjunct Assistant Professor Feder; Visiting Assistant Professor Brown; Lecturers Creason and McNairy; Lecturing Fellows Picozzi and Pierce

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.

21. Introductory Physics. Credit for Advanced Placement on the basis of the College Board Examinations 'Physics-C' with a score of 4 or 5. Available only to Trinity College students. One course.

22. Introductory Physics. Credit for Advanced Placement on the basis of the College Board Examinations 'Physics-C' with a score of 4 or 5. Available only to Trinity College students. One course.


36. Acoustics and Music. (NS) NS, QID, R, W The physical principles underlying musical instruments, room acoustics, and the human ear. Analysis, reproduction, and synthesis of musical sounds. No previous knowledge of physics assumed. Instructor:
Lawson. One course. C-L: Music 36


41L. Fundamentals of Physics. (NS) NS, QID First semester of a two-semester course. For students interested in majoring in physics; taken in the freshman year. Basic principles of physics, mainly classical, at a level similar to Physics 51L, 52L, but with emphasis on laying a foundation for further study. Topics include: vectors, units, motion in one dimension, motion in two dimensions, Newton’s Laws, work and energy, systems of particles, conservation of momentum, rotation, static equilibrium, gravity, elastic properties of solids, mechanics of fluids, Ideal Gas Law, First Law of Thermodynamics, Second Law of Thermodynamics, oscillations, waves on a string, and sound. Closed to students having credit for Physics 51L, 52L. Prerequisites: Mathematics 31 and 32; Mathematics 32 may be taken concurrently. Instructor: Brown. One course.

42L. Fundamentals of Physics. (NS) NS, QID Second semester of a two-semester course. For students interested in majoring in physics; taken in the freshman year. Basic principles of physics, mainly classical, at a level similar to Physics 51L, 52L, but with emphasis on laying a foundation for further study. Topics include: charge, conductors, electrostatic fields, Gauss’s Law, electric field, potential, capacitance, current, resistance, dc circuits, magnetic fields, magnetic forces and torques, Ampere’s Law, magnetic induction, electric fields induced by magnetic fields, Faraday’s Law, ac circuits, Maxwell’s Equations, electromagnetic waves, relativity, and optics. Closed to students having credit for Physics 51L, 52L. Prerequisites: Mathematics 31 and 32. Instructor: Brown. One course.

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


51L. Introductory Technical Physics. (NS) NS, QID The first part of a two-semester course sequence providing a survey of the principles of classical physics, intended principally for students in the physical sciences and engineering. See list of topics given for 41L, 42L. A knowledge of calculus is assumed. Students planning a major in physics should enroll instead in Physics 41L, 42L in their freshman year. Physics 51L is closed to students having credit for Physics 41L or Physics 53L. Prerequisites: Mathematics 31, 32 or equivalent; Mathematics 32 may be taken concurrently. Instructor: Staff. One course.

52L. Introductory Technical Physics. (NS) NS, QID Continuation of Physics 51L. Physics 52L is closed to students having credit for Physics 42L, 53L or Physics 54L. Prerequisites: Mathematics 31, 32 or equivalent; Physics 51L or 41L. Instructor: Staff. One course.

53L. General Physics. (NS) NS, QID The first part of a two-semester course sequence providing a survey of the principles of physics, intended mainly for students planning study in medicine or the life sciences. The level and coverage are similar to that of Physics 51L, 52L, but there are differences in emphasis. A knowledge of calculus is assumed. Students planning a major in physics should enroll in Physics 41L, 42L in their freshman year. Physics 53L is closed to students having credit for Physics 41L or Physics 51L. Prerequisites: Mathematics 31, 32 or 25L, 26L, or equivalent; Mathematics 32 may be taken concurrently with Physics 53L. Instructor: Staff. One course.

54L. General Physics. (NS) NS, QID Continuation of Physics 53L. Physics 54L is closed
to students having credit for Physics 42L or Physics 52L. Prerequisites: Mathematics 31, 32 or 25L, 26L, or equivalent; Physics 41L, 51L or 53L. Instructor: Staff. One course.

55. Introduction to Astronomy. (NS) NS, QID 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.

100. Introduction to Modern Physics. (NS) NS, QID 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, 52L, or 54L and Mathematics 103 (may be taken concurrently). Instructor: Han. One course.


105. Introduction to Astrophysics. (NS) NS, QID Basic principles of astronomy treated quantitatively. Cosmological models, galaxies, stars, interstellar matter, the solar system, and experimental techniques and results. Prerequisite: Mathematics 31 and Physics 42L, 52L or 54L or consent of instructor. Instructor: Kolena. One course.

143L. Optics and Modern Physics. (NS) NS, QID Intended as a continuation of Physics 41L, 42L. Classical wave and ray optics. Introduction to quantum physics. Prerequisite: Physics 42L, 52L, or 54L and Mathematics 103 (may be taken concurrently). Instructor: Edwards and Kruse. One course.

171L. Electronics. (NS) NS, QID Elements of electronics including circuits, transfer functions, solid-state devices, transistor circuits, operational amplifier applications, digital circuits, and computer interfaces. Lectures and laboratory. Instructor: Staff. One course. C-L: Applied Science

176. Thermal Physics. (NS) NS, QID 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 51L, 52L or equivalent. Instructor: Edwards. One course.

181. Intermediate Mechanics. (NS) NS, QID Newtonian mechanics at the intermediate level, Lagrangian mechanics, linear oscillations, chaos, dynamics of continuous media, motion in noninertial reference frames. Prerequisite: Mathematics 111 or equivalent (may be taken concurrently). Instructor: Bass. One course. C-L: Applied Science

182. Electricity and Magnetism. (NS) NS, QID Electrostatic fields and potentials, boundary value problems, magnetic induction, energy in electromagnetic fields, Maxwell's equations, introduction to electromagnetic radiation. Prerequisite: Mathematics 111 or equivalent. Instructor: Matveev. One course. C-L: Applied Science

184. Topics in Applied Science. STS Three one-month technology briefs taught by industrial lecturers or Duke faculty. A brief is a self-contained set of thirteen lectures on important technological topics; three briefs must be completed. Topics include Virtual Instrumentation: developing programming skills in data acquisition; closed loop control of systems; instrument control. Science and Research Management: a brief introducing both issues and practical insights in the areas of: the role of research in academia and industry; management of technical projects; leadership; managing careers; management of change; business law. Lectures presented by both Duke faculty and leadership experts from industry. Instructor: Guenther. One course. C-L: Applied Science
185. Modern Optics I. (NS) NS, QID 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. Instructor: Guenther. One course. C-L: Electrical and Computer Engineering 122, Applied Science

193. Capstone Design of Applied Science. (NS) NS, R, STS A team activity based on design problems obtained from industry involving the formulation and written presentation of a solution to the design problem for faculty review; the execution and evaluation of the approved design; and a written and oral presentation of the performance of the design solution for faculty review. The Capstone Design project exposes students to basic scientific concepts and to the processes by which scientific and technological advances are made and incorporated into society. Instructor: Guenther. One course. C-L: Applied Science

For Seniors and Graduates

201. Survey of Nonlinear and Complex Systems. (NS) (QR) M, NS Half course. C-L: see Nonlinear and Complex Systems 201

203. Introduction to Statistical Mechanics. (NS) NS, QID Fundamentals of kinetic theory, thermodynamics and statistical mechanics with applications to physics and chemistry. Undergraduate enrollment requires consent of director of undergraduate studies. Prerequisite: Physics 211. Instructor: Staff. One course.

205. Introduction to Nuclear Physics. (NS) NS, QID Phenomenological aspects of nuclear physics, interaction of gamma radiation and charged particles with matter, nuclear detectors, particle accelerators, radioactivity, basic properties of nuclei, nuclear systematics, direct and resonance reactions, photonuclear reactions, description of the strong N-N force, nuclear models, the Standard Model, symmetries. Instructor: Weller. One course.

211. Quantum Mechanics. (NS) NS, QID Experimental foundation, wave-particle duality, the Schroedinger equation and the meaning of the wavefunction, 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 111 and Physics 143L. C-L: Applied Science. Instructor: Chandrasekharan. One course. C-L: Applied Science

212. Applications of Quantum Mechanics. (NS) NS, QID 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: Chandrasekharan. One course.

213. Nonlinear Dynamics. (QR) M, QID, 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 111, and Physics 51L, 52L. Instructor: Behringer. One course. C-L: Computer Science 264

217S. Advanced Physics Laboratory and Seminar. (NS) NS, QID, R, W Experiments involving the fields of electricity, magnetism, heat, optics, and modern physics. Written and oral presentations of results. Instructor: Oh. One course.

222S. General Relativity. (NS) NS, QID 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 111 or equivalents. Instructor: Staff. One course.

225. Independent Study: Advanced Topic. Readings 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. Consent of instructor required. Instructor: Staff.

226. Research Independent Study. R Original research conducted under the supervision of a faculty member. Consent of instructor and director of undergraduate studies required. Instructor: Staff.

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.


240. Econophysics. (NS) NS, QID The application of methods of physics to the analysis of financial markets and economic phenomena. In reference to financial markets main topics are: stochastic processes represented by market prices; optimal portfolios (maximizing returns while minimizing risks); option pricing (standard and nonstandard views). Economic systems: positive vs. negative feedbacks affecting economic trends; distribution of wealth in different economies: universality? Undergraduate enrollment requires consent of Director of Undergraduate Studies. Prerequisites: Calculus and essentials of Fourier analysis. Instructor: Picozzi. One course.

271. Quantum Optics. (NS) NS, QID The linear and nonlinear interaction of electromagnetic radiation and matter. Topics include simple theory of lasers, second-harmonic generation, photon echoes, bistability, Raman scattering, Brillouin scattering, phase conjugation, two photon lasers, and cooling and trapping of atoms. Prerequisite: Physics 212 and 230. Instructor: Gauthier. One course.

273. Fundamentals of Nonlinear Fiber Optics. (NS) NS, QID Conceptual and technical foundations of the subject, including the origin of nonlinearities in optical materials. Numerical techniques for studying propagation of pulses of light along optical fibers including nonlinear effects. Topics include origin of nonlinear optical effects, optical pulse propagation in fibers, group velocity dispersion, self-phase modulation, optical solitons, polarization effects, cross-phase modulation, stimulated Raman scattering, stimulated Brillouin scattering, parametric processes. Prerequisite: Physics 182. Instructor: Staff. One course.

274. Applications of Nonlinear Fiber Optics. (NS) NS, QID Applications of nonlinear fiber optics and its use in optical communication systems. Topics include: fiber gratings, fiber couplers, fiber interferometers, fiber amplifiers, fiber lasers, pulse compression, fiber-optic communication, Soliton systems. Prerequisite: Physics 273. Instructor: Staff. One course.

281. Classical Mechanics. (NS) NS, QID 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: Kotwal. One course.

**291S. Physics at the Cutting Edge. (NS) NS, QID, R, W** Introduction, for graduates and advanced undergraduates, to several research topics at the core of recent advances in physics. Reading and analysis of primary literature and instruction in writing research papers. Prerequisite: Physics 181, 182, and 211, or equivalents. Instructor: Baranger. One course.

**292. General Relativity. (NS) 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: Staff. One course. C-L: Mathematics 236

**293. Representation Theory. (QR) M, QID** One course. C-L: see Mathematics 253

**COURSES CURRENTLY UNSCHEDULED**

102. Applications of Modern Physics in Medicine
186. Modern Optics II
261. Laser Physics

**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 51L and 52L 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, 193, 217S, and 226 (involving experimental research), and one other course in physics above 100 except for 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 51L and 52L or 53L and 54L, or equivalents; Mathematics 31, 32, 103, 111, or equivalents, and one additional course at the 100 or 200 level (or Physics 230).

**Major Requirements.** Physics 143L, 176, 181, 182, 211, 212, two among the laboratory courses 171L, 193, 217S, and 226 (involving experimental research), plus one other course in physics above 100 except for Physics 230. (For the major, Physics 230 is considered to be a mathematics course.) Students planning graduate study in physics are urged to take one additional elective in physics and one 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 51L and 52L, or 53L and 54L, or equivalents; Physics 143L; plus two additional physics courses numbered above 100.
Polish

For courses in Polish, see Slavic Languages and Literatures.

Political Science (POLSCI)

Professor Munger, Chair; Associate Professor Eldridge, Director of Undergraduate Studies; Professors Aldrich, Fish, Gillespie, Grant, Grieco, Horowitz, Hough, Jentleson, N. Keohane, R. Keohane, Kornberg, Lange, McClain, Michiewicz, Paletz, Price, Remmer, and Spragens; Associate Professors Coles, Feaver, Hamilton, Mayer, McKean, Niou, and Shi; Assistant Professors Charney, De Marchi, Gelpi, Goemans, Morgenstern, Pickus, Transue, and Wilkinson; Professors Emeriti Barber, Cleaveland, Hall, Holsti, Johns, and MacIntyre; Associate Professor of the Practice Kiss; Assistant Professor of the Practice Curtis; Adjunct Professor Kessler

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 freshmen (49S) and to freshmen and sophomores (60S). In addition, independent study under faculty supervision enables students to explore topics of special interest. Following the course descriptions, you will find the listing of courses by fields, information on internships, and requirements for the major, minor, and honors.

INTRODUCTORY COURSES

The following courses introduce the study of political science. Courses numbered 49S, 60S, 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.

20S. Seminar: Problems in Political Science. (SS) SS Special topics courses open only to freshmen.

A. American Politics
B. Comparative Politics
C. Political Theory
D. International Relations

Instructor: Staff. One course.

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

60S. Introductory Seminars in Political Science. (SS) SS Special topics courses open only to freshmen and sophomores.

A. American Government and Politics
B. Comparative Government and Politics
C. Political Theory
D. International Relations

Instructor: Staff. One course.
90A. American Government and Politics (A). 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 (B). 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 (A). (SS) CCI, SS Analysis of the "creation myths" and realities of the American Founding, including the origins and implications of government institutions. Consideration of some alternative models for the United States Constitution, including the Article of Confederation, the Iroquois Confederacy, and the institutions of revolutionary France. Historical evolution of these institutions, and their implications for modern democratic life, including participation in civic culture. Introduction to theories of party identification and ethnic identity, with an analysis of the implications of identity for participation in voting, practical politics, and dissent. Instructor: Kornberg. One course.

91D. The American Political System (A). (SS) CCI, SS Same as Political Science 91 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Munger and Paletz. One course.

92. States, Markets, and Democratization: Introduction to Comparative Politics (B). (SS) CCI, EI, SS Why are some countries rich and others poor? Why have some countries become stable democracies while others remain conflict-ridden and undemocratic? This course introduces students to these questions as well as to other key issues in comparative politics, such as the growth of nationalism and ethnic conflict, through the study of countries such as France, Russia, China, Nigeria, India, and Mexico. Instructor: Wilkinson. One course. C-L: Comparative Area Studies

92D. States, Markets, and Democratization: Introduction to Comparative Politics (B). (SS) CCI, EI, SS Same as Political Science 92 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Wilkinson. One course.

93. Elements of International Relations (D). (SS) 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). (SS) 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.

98. Introduction to Canada (B). (SS) SS One course. C-L: see Canadian Studies 98; also C-L: History 98, Sociology 98, Comparative Area Studies

Courses Taught In Duke Study Abroad Courses


100. A-Z. Duke University Overseas Program. (SS) CCI, SS This number represents course credit for political science courses taken in Duke University Summer Session Study Abroad Programs or in Duke University semester or academic year programs with overseas universities. Register for program by designated suffix A through Z. Instructor: Staff. One course. C-L: Comparative Area Studies

100A. Duke Fall Semester Program: Berlin (B). (SS) CCI Environmental Policy in Europe. Instructor: Staff. One course. C-L: Comparative Area Studies
100B. Duke Semester/Academic Year Program (B). (FL) (SS) CCI, FL Germany of Today: An Ordinary Country? Taught in German. Instructor: Staff. One course. C-L: Comparative Area Studies

100J. Duke Wind Symphony Semester Program: Vienna. (SS) CCI
   .01 Government and Politics of Austria in Europe (B). Instructor: Staff. One course. C-L: Comparative Area Studies

100LS. Duke Summer Program: Oxford. (SS) CCI
   .01 Political System of Modern Britain (B). Two courses.
   .02 Law and Liability: Personal Injury in Britain and the United States (B). Two courses.
   Instructor: Staff. C-L: Comparative Area Studies

100Z. Duke-Administered Study Abroad: Advanced Special Topics in Political Science. CCI Topics differ by section. Instructor: Staff. One course.

Other Undergraduate Courses
101AS. Issues in Twentieth-Century American Politics (A). (SS) 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 Twentieth-Century America (FOCUS) Program. Instructor: Staff. One course.

101CS. Issues in Twentieth-Century American Political Theory (C-N). (SS) 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 Twentieth-Century America FOCUS Program. Instructor: Staff. One course.

101E. Freedom and Responsibility: The Ethical Dimensions of Liberty (C-N). (CZ) (SS) CZ, EI, IAA, 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 Visions of Freedom FOCUS Program. Instructor: Gillespie. One course. C-L: Philosophy

101F. Hierarchy and Spontaneous Order: The Nature of Freedom in Political and Economic Organizations (C-N). (SS) EI, IAA, SS 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 Visions of Freedom FOCUS Program. Instructor: Munger. One course.

101GS. Ancient and Modern Liberty (C-N). (SS) CCI, EI, SS Introduction to various conceptions of liberty in Greek and Roman political and philosophical writing. Consideration of such questions as: what is distinctive about the modern conceptions of political and civil liberty?; whether there is any necessary ethical connection between liberty and virtue, or whether there is liberty and active citizenship, or liberty and privacy; whether ancient conceptions of liberty can still serve as a model in contemporary politics and should be considered exemplary or inferior to modern
conceptions of freedom. Readings drawn from Greek, Roman, and modern European writers. Open only to students in the FOCUS Program. Instructor: Grant. One course.

101H. Human Rights at Home and Abroad (C-N). (SS) CCI, EI, SS Introduction to human rights theory, followed by an examination of four major contemporary disputes over human rights, each affecting both global and domestic politics. Exploration of issues by examining a variety of sources—philosophical texts, political manifestos, legal documents, journalistic writings, and fictional works—and by reflection on experience in the service-learning component of the FOCUS Program. The topics of the four disputes are: 1) human rights versus right of citizens; 2) civil and political versus economic and social rights; 3) cruel and unusual punishment; 4) religion and culture, gender and sexuality. Open only to students in the FOCUS Program. Instructor: Kiss. One course.

101JS. Design for a Small Planet (B). (SS) EI, SS, STS Causes and remedies for mal-distributed 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.

102S. The Political Governances of Technological Innovations (B). (SS) SS, STS Economic forces, social institutions, and public policies that promote technological innovation. Emphasis on different pathways among postindustrial democracies and their consequences for economic performance and social acceptance. Regulatory mechanisms that are put in place to channel the development and diffusion of technologies, raising critical questions of risk analysis and risk management. Instructor: Kitschelt. One course.

103AS. Introduction to Urban Politics (A). (SS) EI, SS The theory and practice of American city politics with a particular emphasis on the relationships between governmental structures and the distribution of power among various constituencies within the city. Examination of various political issues and controversies within the city, many of which contain ethical arguments and beliefs. Instructor: Staff. One course. C-L: African and African American Studies 148AS

103B. Urban Poverty and the Urban Underclass (A). (SS) CCI, QID, SS The nature and extent of poverty in America’s big cities. The causes and consequences of urban poverty and efforts by the national and subnational governments to address them. Particular attention paid to problems and prospects of the working poor and the so-called urban underclass. Heavy focus on survey, ethnographic, and hypotheses advanced to explain the current situation of the urban poor. Instructor: Staff. One course. C-L: African and African American Studies 148B

104. Politics and Literature (C-N). (SS) CCI, EI, IAA, SS The enduring questions of ethical and political issues and controversies as expressed in political philosophy and politics and as illustrated in Western literature. Comparative historical, literary, and philosophical analysis. Instructor: Gillespie or Grant. One course.

105. The Politics of Democratization in Eastern Europe (B). (SS) CCI, SS Overview of political regimes in selected East European countries, comparative analysis of modes of transition to democracy: constitutionalism, party systems and voting, private property rights and economic regulation under socialism and capitalism. Instructor: Kitschelt. One course. C-L: Comparative Area Studies

106. International Security (D). (SS) 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.

107. Environmental Politics and Policies in the Industrial World (B). (SS) CCI, EI, SS, STS A comparative analysis of environmental problems, protest, preferred approaches, and policy, with an examination of the impact of major scientific, technical, and industrial developments on environmental politics. Ethical and political issues and controversies associated with environmental politics in politically diverse industrialized nations including the United States, Russia, Japan, and those in Europe. Instructor: McKean. One course. C-L: Public Policy Studies 107, Comparative Area Studies

107D. Environmental Politics and Policies in the Industrial World (B). (SS) CCI, EI, SS, STS Same as Political Science 107 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: McKean. One course. C-L: Public Policy Studies 107D, Comparative Area Studies

108. The American Presidency (A). (SS) 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.

108S. The American Presidency (A). (SS) EI, SS Same as Political Science 108 except in seminar format. Instructor: Staff. One course.

109. Left, Right, and Center: Competing Political Ideals (C-N). (SS) 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.

109D. Left, Right, and Center: Competing Political Ideals (C-N). (SS) 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.

110. American Political Parties (A). (SS) 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: Kornberg. One course.

111. Contemporary Japanese Politics (B). (SS) CCI, SS Introduction to political change in postwar Japan with an intensive examination of the foundations of the modern Japanese industrial state including an analysis of the role of Japanese culture and identity on Japan's electoral politics, its bureaucracy, and its domestic and foreign policies. Instructor: McKean. One course. C-L: Comparative Area Studies

112S. Critiques of the Contemporary American Political System (C-N). (SS) 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.

113A. Issues of International Political Economy I: International Trade (D). (SS) CCI, SS A comparative, cross-cultural examination of international trade policy issues affecting relations among advanced industrial countries, between developed and developing countries, and between industrial and former socialist transitional economies, including the benefits of trade and the sources of trade protection, strategic
trade policy, and new problems in trade diplomacy such as environmental and worker standards. Not open to students who have taken Political Science 113. Instructor: Grieco. One course. C-L: Markets and Management Studies

113B. Issues of International Political Economy II: International Money and Finance (D). (SS) CCI, SS A comparative, cross-cultural examination of international monetary and financial policies of both advanced industrial states and developing countries, including the bases for international currency and capital markets, alternative international monetary systems, macroeconomic policy coordination, and the dynamics of debt and exchange rate crises. Prerequisite: Economics 1D or 51D. Instructor: Grieco. One course. C-L: Markets and Management Studies


114S. Public Opinion (A). (SS) EI, QID, SS Same as 114 except to be taught as a seminar. Instructor: Staff. One course.

115. Politics and Society in Germany (B). (SS) CCI, SS Intensive examination of German culture, identity and nationality as expressed in its industrialization, democratization, and fascism; examines the development and function of German social structure, political institutions, and political culture in the context of various political issues and controversies in different periods of German history. Domestic and foreign policies of Germany. Instructor: Kitschelt. One course. C-L: Comparative Area Studies

116S. Post-World War II Europe and East Asia: A Comparative Perspective (D). (SS) 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: Comparative Area Studies

117. Comparative Government and Politics: Selected Countries (B). (SS) 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. Ethnicity and American Foreign Policy (D). (SS) CCI, EI, SS Ethnicity and its relation to foreign policy from the 1760s to the present. Focuses on the impact of the four great waves of immigration, and especially the impact of this immigration on American culture, national identity, and politics after WWII. The impact of foreign policy on individual and group identity, political loyalties, and the ensuing ethical and political issues and controversies that "hyphenated-Americans" confront. Instructor: Hough. One course.


120. International Conflict and Violence (D). (SS) 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.

1205. International Conflict and Violence (D). (SS) CCI, R, SS, STS Same as Political Science 120 except in seminar format. Instructor: Staff. One course.

122. Foundations of Modern International Politics (D). (SS) 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: Goemans. One course.

123. Introduction to Political Philosophy (C-N). (SS) EI, IAA, SS, W An intensive comparative examination of the nature and enduring problems of political philosophy through the confrontation, interpretation, and normative assessment of classic texts from the Greek polis to the present. Selected theorists and their arguments and beliefs within the Western political tradition concerning justice, the good life, freedom, community, power, authority, and others. Careful attention to the ways argument and rhetoric operate in texts of political philosophy, as well as diverse modes of interpretation. Instructor: Staff. One course.

124S. National Economic Statecraft (D). (SS) SS Identification and analysis of major sources of foreign policy, range of state political-economic goals in the international system, and policy instruments available to state pursuit of such goals. Instructor: Grieco. One course.

125. Comparative Approaches to Global Issues (B, D). (CZ) (SS) CCI, CZ, SS One course. C-L: see Comparative Area Studies 125; also C-L: Cultural Anthropology 125, History 137, Religion 183, Sociology 125, Marxism and Society

126. Theories of Liberal Democracy (C-N). (SS) EI, IAA, 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.

127. Law and Politics (A). (SS) IAA, 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: Fish. One course.

128. Multiculturalism and Political Theory (C-N). (SS) CCI, EI, IAA, 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: Coles. One course.

129S. The Internet and Politics (A). (SS) QID, SS, STS Examines the impact of emerging communication and electronic technologies on politics in the United States; who use the Internet for political information; how the Internet will impact American political participation; use of Internet in campaigns and elections. Instructor: Staff. One course.
130. Women and the Political Process (C-N). (SS) R, SS One course. C-L: see Women’s Studies
131. Introduction to American Political Thought (A, C-N). (SS) EI, SS Basic elements of the American political tradition examined through a critical analysis of ethical and political issues and controversies that developed from its historical English roots to the present day. Instructor: Grant or Spragens. One course.
132. Immigration, Rights, and Citizenship (C-N). (SS) EI, SS One course. C-L: see Public Policy Studies 124S
133. Japan in World Politics (B, D). (SS) CCI, SS Impact of Japan’s anomalous position as a constitutionally pacifist but well-armed economic superpower on relationships with its only ally (the United States), its major trading partners and competitors, and its approach to multilateral concerns, such as alliance politics, trade rules, development assistance, environmental issues, and the United Nations. How the end of the cold war has altered Japan’s priorities and the challenges it faces. Instructor: McKean. One course. C-L: Comparative Area Studies
134. Classics of Western Civilization: The German Tradition, 1750-1930 (B). (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see German 182; also C-L: English 148, History 179A, Literature 1638
135. Political Development of Western Europe (B). (SS) 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 or Lange. One course. C-L: Comparative Area Studies
136. Comparative Government and Politics: Western Europe (B). (SS) 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 or Lange. One course. C-L: Comparative Area Studies
136D. Comparative Government and Politics: Western Europe (B). (SS) CCI, SS Same as Political Science 136 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Kitschelt or Lange. One course. C-L: Comparative Area Studies
137. Campaigns and Elections (A). (SS) QID, 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 or Kornberg. One course.
137D. Campaigns and Elections (A). (SS) QID, SS Same as Political Science 137 except instruction provided in two lectures and one small discussion meeting each week. Instructor: Aldrich or Kornberg. One course.
138. Quantitative Political Analysis I (C-E). (QR) QID, 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.
138D. Quantitative Political Analysis I (C-E). (QR) M, QID, R Same as Political Science 138 except instruction provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course.
139. Conflict, Collusion, and Cooperation (C-E). (SS) QID, SS Applications of modern decision theory to the study of political science. Topics include: individual decision
theory and rational choice; gametheory and human interaction; and social choicetheory 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.

Instructor: Niou. One course.

140. Feminist Theory (C-N). (SS) CCI, IAA, SS Exploration of contemporary American feminist thought challenging traditional forms of power and the relationship between public and private reason and unreason. Included are works by liberal, radical, lesbian, and socialist feminists as well as works which address issues of concern specific to women of color. Instructor: Curtis. One course. C-L: Women's Studies


141D. Introduction to Racial and Ethnic Minorities in American Politics (A). (SS) CCI, SS Same as Political Science 141 except 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). (SS) CCI, QID, 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). (SS) CCI, QID, R, SS Same as Political Science 142 except in seminar format. Instructor: Gelpi. One course.

143. Ethnicity, Religion, and American Parties (A). (SS) CCI, EI, SS How various ethical, political, and public controversies in American political history are influenced by social class, ethnicity, and religion. The impact of these factors on American political parties from the eighteenth century to the present. Attention to the relationship of economic and social issues in American campaigns. Instructor: Hough. One course.

144. Force and Statecraft (D). (SS) 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.

145. Political Analysis for Public Policy-Making (A). (SS) QID, SS One course. C-L: see Public Policy Studies 114

146. Development of Congress as an Institution (A). (SS) 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.

146D. Development of Congress as an Institution (A). (SS) CCI, SS Same as Political Science 146 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Staff. One course.

147. Environmental Politics and Policies in the Developing World (B). (SS) 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. Instructor: McKean or Miranda. One course. C-L: Public Policy Studies 147, Comparative Area Studies

148D. Environmental Politics Beyond Borders (D). (SS) CCI, EI, SS, STS International environmental problems and politics, from transboundary pollution (for example, acid rain, international rivers) to degradation of global commons (global warming, biodiversity, ozone, overfishing, and pollution of the high seas). Includes issues of trade, investment, debt, and transnational corporations. Instructor: McKean. One course. C-L: Public Policy Studies 143D, Comparative Area Studies

149D. Globalization and Public Policy. (SS) SS One course. C-L: see Public Policy Studies 185D; also C-L: Comparative Area Studies


151. Dictators and Democrats in Modern Latin America (B). (SS) CCI, EI, R, SS The political trajectories of Mexico and several South American countries. Topics include: democratization efforts, military governments, democratic transitions, the consolidation of democracy, and United States-Latin American relations, populism, corporatism, and the issues of legitimacy of a regime, taking into account the political situation and the method by which the regime gained power. Research paper required. Instructor: Morgenstern. One course. C-L: Comparative Area Studies

151A. Dictators and Democrats in Modern Latin America (B). (FL) SS CCI, FL, R, SS Same as Political Science 151 except taught in Spanish. Prerequisite: Spanish 76. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies

151B. Presidents, Parties, and Legislatures: The Institutions of Modern Latin American Democracies (B). (SS) CCI, R, SS This class, which follows Political Science 151, examines in depth how the current democracies work in Mexico and South America, comparing presidential powers, party organizations, and legislative politics in an attempt to characterize and explain current day politics in a number of diverse cases. Focus on the design of the sets of rules—namely constitutions and electoral laws—that determine the balance of power among branches of government and within party organizations. Instructor: Morgenstern. One course. C-L: Comparative Area Studies, Latin American Studies

153. International Business Government Relations (D). (SS) CCI, SS Overview of the organizational and strategic challenges of United States multinational enterprises in a globalized world economy and the social, cultural, and political reactions of host countries to United States firms. Instructor: Grieco. One course. C-L: Markets and Management Studies

154. Politics of East Asia (B). (SS) 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.

155. The Politics and Economics of Developing Areas (B). (SS) CCI, SS Process and politics of transition of rural and agrarian societies to urban and industrial societies: Soviet Union, United States, India, Africa, and Asia. Instructor: Staff. One course. C-L: Comparative Area Studies

156S. The Documentary Experience: A Video Approach (A). (AL) SS AL, IAA, R, SS One course. C-L: see Public Policy Studies 105S; also C-L: Cultural Anthropology 134S, Film/Video/Digital 105S, History 150BS
157D. Foreign Policy of the United States (D). (SS) 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.

158. Transnational Relations and International Public Policy (D). (SS) R, SS, STS The transformation of the world political economy since World War II as a result of the increased number, site, and scope of non-state actors (such as global firms and transnational social movements); the unprecedented expansion of trade and integration of capital markets; the impact of technological change on the political, economic, and ecological aspects of global society. Instructor: R. Keohane. One course. C-L: Markets and Management Studies

158D. Transnational Relations and International Public Policy (D). (SS) R, SS, STS Same as Political Science 158 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: R. Keohane. One course. C-L: Markets and Management Studies

159. Ambition and Politics (C-N). (SS) EI, IAA, SS, W A theoretical examination of the role of ambition in politics, including works by or on Homer, Plato, Plutarch, Machiavel-li, Shakespeare, Tocqueville, Nietzsche, and Hitler. Instructor: Gillespie. One course.

160A D. Globalizing Protest (D). (CZ) CCI, CZ One course. C-L: see History 121A; also C-L: Public Policy Studies 133

161. Business, Politics, and Economic Growth (B). (SS) 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). (CZ) (SS) 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: Kiss. One course. C-L: Public Policy Studies 162, Philosophy 162

162D. Human Rights in Theory and Practice (C-N). (CZ) (SS) CCI, CZ, EI, SS Same as Political Science 162 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Kiss. One course. C-L: Public Policy Studies 162D, Philosophy 162D

163. Democracy in North America (B). (SS) CCI, EI, R, SS A systematic comparative study of Canada, Mexico, and the United States. Nature and distribution of political power in and among the three states; institutional and procedural conditions affecting its exercise; philosophy and ethics of its use and allocation; constitutional arrangements that influence the ways in which the political system generally, and the legislative branches in particular, perform; the origins and development of federalism and the countries' varied party systems; extent to which these factors affect not only the aggregation and articulation of citizen demands and expectations, but also the various problems of maintaining the integrity of their respective countries as nations and states. Instructor: Morgenstern. One course.

164. Political Organizations (A). (SS) QID, SS Classical organization theory and models in analyzing decision-making behavior of the members of various political
organizations (such as political parties, labor unions, businesses, and public bureaucracies). Deductive and statistical models of organizational behavior, including problems of the provision of collective goods, coordination, and supervision. Instructor: Staff. One course. C-L: Markets and Management Studies

165. Politics and Foreign Policy of Russia (B). (SS) CCI, SS The communist experience in different historical periods of its evolution and its impact on the Russian nation, its democratization, economic reform, and foreign policy. Instructor: Hough. One course. C-L: Comparative Area Studies

166. Congress and the President (A). (SS) 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). (SS) CCI, IAA, 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. Instructor: R. Keohane. One course. C-L: Markets and Management Studies

167D. International Law and International Institutions (D). (SS) CCI, IAA, R, SS Same as Political Science 167 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: R. Keohane. One course. C-L: Markets and Management Studies

168. Analysis of Political Decision Making (C-E). (SS) QID, 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). (SS) 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: Comparative Area Studies

171. From Apartheid to Democracy in South Africa (B). (SS) 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, Comparative Area Studies

172. Introduction to the Politics of the Communist System (B). (SS) 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 Marxism-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). (SS) CCI, SS An examination of ethnic conflict and discrimination in the United States, Africa, Europe, and Asia. Theories of ethnic identify 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: Wilkinson. One course.

173A. Identity Politics (B). (SS) CCI, SS Examines political controversies throughout the world over the extent to which identity groups - groups defined by such diverse identities as language, religion, mental or physical disability, sexual orientation and region - ought to be recognized and accommodated by the state and/or private institutions. Issues covered will include the freedom of religion, language rights, gender issues, and various ways to protect groups from discrimination, including political representation for minorities and affirmative action. Instructor: Staff. One course.


175A. Distributive Justice and the Social Sciences (C-N). (SS) EI, QID, SS One course. C-L: see Economics 199

175B. Distributive Justice (C-N). (SS) 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

176. Perspectives on Food and Hunger (B). CCI, EI Analysis of hunger problems in United States and Third World countries. Focus on role of governments, nongovernmental organizations, and international agencies. Weekly lectures, discussion meetings, and community internship project. Instructor: Johns. One course. C-L: Comparative Area Studies

177. American Constitutional Development I (A). (SS) IAA, 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

177D. American Constitutional Development I (A). (SS) IAA, SS Same as Political Science 177 except taught as two lectures and one small discussion group. Instructor: Fish. One course. C-L: History 177D

178. American Constitutional Development II (A). (SS) EI, IAA, SS Study of the development of the United States Constitution through an examination of the various ethical and political issues and controversies involving the authority of the state, individual liberty and equality as manifested in modern Supreme Court decisions interpreting the text of the Bill of Rights and the Fourteenth Amendment. The constitutional scope accorded by the Supreme Court to freedom of thought, belief, and speech (including symbolic speech); association and practice relating to national security, the moral order; fair trials, media, public (including public schools) and private forums, free exercise of religion, the establishment of religion, and racial equality. Instructor: Fish. One course.

179. Ecological Crisis and Political Theory (C-N). (SS) EI, SS, STS Interconnections between various dimensions of the ecological crisis including: conceptions of self, nature, ecological ethics, technology, and environmental justice as related to politics, economics, and new social movements. Instructor: Coles. One course.
180. Media in Comparative Perspective (B). (SS) CCI, R, SS, W One course. C-L: see Sociology 182; also C-L: Undergraduate Canadian Studies Program, Comparative Area Studies, Film/Video/Digital

1835. Democracy and Social Choice (B). (SS) QID, SS The impact of political institutions in democratic states. Topics include electoral systems, representative districting, the timing of elections, executive responsibility in presidential and parliamentary systems, the structure of the legislature, party formation, coalition building, and term limits. Focus on the development and critical evaluation of different theories and models of social choice: empirical comparisons of politics in countries with different democratic institutions. Instructor: Nioiu. One course.

1845. Canadian Issues (B). (SS) CCI, SS One course. C-L: see Canadian Studies 1845; also C-L: Cultural Anthropology 1845, History 1845, Sociology 1845, Comparative Area Studies

1855. The Canadian Health Care System (B). (SS) EI, SS One course. C-L: see Canadian Studies 1855; also C-L: Cultural Anthropology 1855, Public Policy Studies 1875, Sociology 1855, Comparative Area Studies

1875. Politics and the Libido (A). (SS) CCI, EI, IAA, SS The construction of gender and sexuality across nations and cultural groups. Effects of the libido on elite and mass political activities in the United States: Ethical and political issues and policy controversies at various times when the government has regulated or sought to regulate sex-inspired behavior. Instructor: Paletz. One course. C-L: Women's Studies

189. Internship (A). Open to students engaging in practical or governmental work experience during the summer or a regular semester. A faculty member in the department will supervise a program of study related to the work experience, including a substantive paper on a politics-related topic, containing significant analysis and interpretation. Consent of director of undergraduate studies required. Instructor: Staff. One course.


192. Junior Individual Research (A, B, C, D). R Individual research under the supervision of a faculty member, the central goal of which is a substantive research paper or report containing significant analysis and interpretation of a previously approved topic. Consent of director of undergraduate studies and supervising instructor required. Instructor: Staff. One course.

193. Senior Independent Study (A, B, C, D). Independent study with directed reading or individual projects. Consent of director of undergraduate studies and supervising instructor. Instructor: Staff. One course.

194. Senior Individual Research (A, B, C, D). R Individual research under the supervision of a faculty member, the central goal of which is a substantive research paper or report containing significant analysis and interpretation of a previously approved topic. Consent of director of undergraduate studies and supervising instructor required. Instructor: Staff. One course.

196. American University Washington Semester (A, D). This number represents transfer credit for American Government and Politics or International Relations topics courses taken at American University in the fall or spring Washington Semester Program: Seminar I (one course), Seminar II (one course), Research Project (one course), Internship (one course). Prior approval for admission into this program must be obtained from the director of undergraduate studies in political science. Four transfer
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credits. A. Programs in American Government and Politics; D. Programs in International Relations.

197S. Dealing with the Past in Democratic Transitions (B). (SS) CCI, EI, SS How do newly democratic societies confront their authoritarian pasts, often marked by civil strife, in many cases ethnically, racially, and class based? Comparison of postwar Western European countries and Japan with recent transitions in Africa, Eastern Europe, and Latin America. Instructor: Johns. One course.

198. Documentary Film History (B). (AL) (CZ) AL, CZ, IAA One course. C-L: see History 150A; also C-L: Literature 117, Film/Video/Digital, Marxism and Society

199. Special Topics in Government and Politics. (SS) 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.

For Seniors Only


200S. Senior Seminars. (SS) 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.

For Seniors And Graduates

The following courses may be taken by juniors who have earned a 3.0 average and obtained the consent of the instructor.

201S. Problems in International Security (D). (SS) QID, 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.


204S. Ethics in Political Life (C-N). (SS) EI, SS Ethical issues arising in the conduct of political vocations and activities. Instructor: Spragens. One course.


206S. Political Participation: Comparative Perspectives (B). (SS) 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: Comparative Area Studies

207S. American Constitutional Interpretation (A). (SS) IAA, SS Critical analysis of U.S. Supreme Court interpretations of selected provisions of the Constitution relating to
national powers, federalism, individual liberty and equality. Attention to constitutional theory and judicial reasoning. Research component involves writing "Supreme Court opinions" on hypothetical facts that raise constitutional questions. Prerequisite: Political Science 127 or 177 or 178 and consent of instructor. Instructor: Fish. One course.

2105. Politics and Markets in Modern Capitalism (D). (SS) IAA, SS Exploration, through a critical interpretation of classic works and contemporary analyses, of the relationship between representative democracy and markets in modern capitalist society, with special attention to the impact of the world political economy on democracy and capitalism. Instructor: R. Keohane. One course.

2115. Current Problems and Issues in Japanese Politics (B). (SS) SS Sources of strength and weakness in the Japanese economy, the rise of new issues and strains in postindustrial society, changes in the party system and decision-making process, the possible transfer of power, the challenge of Japan's new world role. Instructor: R. Keohane. One course.

2125. Politics and Markets (D). (SS) R, SS Seminar on classics of political economy, exploiting 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: R. Keohane. One course.

2135. Theories of International Political Economy (D). (SS) CCI, SS Basic theoretical and empirical skills needed to analyze complex socio-economic phenomena. Various political, social, and economic problems in various industrial and developing areas of the world. Particular attention placed on Latin America, which has experimented with a variety of approaches to development. Instructor: Grieco. One course.

2145. Economy, Society, and Morality in Eighteenth-Century Thought (C-N). (SS) IAA, QID, SS, W C-L: see Economics 200C5

2155. Democratic Institutions (B). (SS) 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.

218. Political Thought in the United States (C-N). (SS) EI, IAA, 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.

2195. Film and Politics (A). (SS) EI, IAA, 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: Film/Video/Digital

2205. Problems in International Politics (D). (SS) CCI, R, SS The development and critical analysis of various models in international 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.
222. Introduction to Statistical Analysis (C-E). (QR) M, QID 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.

223. Ancient Political Philosophy (C-N). (SS) CCI, EI, IAA, SS Intensive analysis of the political philosophy of Plato, Aristotle, and other ancient theorists. Research paper required. Instructor: Gillespie or Grant. One course. C-L: Classical Studies 203

224S. Modern Political Theory (C-N). (SS) CCI, EI, IAA, 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.

225. Topics in Comparative Government and Politics: Western Europe (B). (SS) CCI, SS The development of mass democracy and the welfare state and its impact on various groups within particular nations; political and electoral participation and mobilization; social movements and political change; center-periphery conflicts; government and bureaucratic institutions and their relationships to society; the modern welfare state and political economy. Instructor: Kitschelt or Lange. One course. C-L: Comparative Area Studies

226S. Nietzsche's Political Philosophy (C-N). (CZ) (SS) CZ, EI, SS One course. C-L: German 276S, Philosophy 237S

227S. Issues in International Communications (B). (SS) EI, R, SS, STS Research seminar analyzing selected political issues in international communications. Examines the impact of international communication technologies on United States and foreign governments and politics. The resulting ethical implications of globalization and semi-monopolization. Instructor: Paletz. One course. C-L: Film/Video/Digital

228S. Nineteenth- and Twentieth-Century Political Philosophy (C-N). (SS) EI, IAA, SS The relationships among freedom, morality, aesthetics, and politics as interpreted by various major figures in modern political philosophy, including, Kant, Hegel, Marx, Nietzsche, Fichte, Heidegger, Foucault, and Derrida. Focus on normative arguments and presuppositions, as well as various approaches to interpretation of philosophical texts. Instructor: Coles or Gillespie. One course.

229S. Contemporary Theory of Liberal Democracy (C-N). (SS) EI, IAA, SS Instructor: Spragens. One course.

230S. Introduction to Positive Political Theory (C-E). (SS) QID, 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. Instructor: Aldrich or Niou. One course.

231S. Crisis, Choice, and Change in Advanced Democratic States (B). (SS) 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: Comparative Area Studies


233. Intermediate Statistical Methods (C-E). (QR) QID Applications of regression models of politics emphasizing the effect of assumptions behind Generalized Least
234S. Political Economy of Development: Theories of Change in the Third World (B). (SS) CCI, SS Alternative approaches to political economy and social change in the Third World. Instructor: Staff. One course. C-L: Cultural Anthropology 234S, Sociology 234S, Comparative Area Studies

237S. Understanding and Managing Global Capital Markets Crises (D). (CZ) (SS) CCI, CZ, QID, SS Theories and models from both economics and political science exploring global capital market crises, their causes, and dynamics. Positive (descriptive/analytical) as well as normative (prescriptive) elements; exploration of alternative hypothesis aiming to explain why these crises occur. Instructor: Grieco or Mendoza. One course. C-L: Economics 237S

238S. Courts, Wars, Legacies of Wars (A). (SS) IAA, 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

241S. The European Union and World Peace (B, D). (SS) CCI, SS Analysis of the European Union as a model for international reconciliation among former enemies. Investigations of ways in which European former enemies— in particular, France and Germany— ended their rivalries and moved toward a positive peace; whether Western European reconciliation experience can be applied to other high-conflict regions and relationships. Instructor: Grieco. One course.

243S. Political Applications of Game Theory (C-E). (SS) QID, R, SS The techniques of game theory in studying politics. Applications of common game theoretic models in political science with mathematically rigorous arguments. Topics include voting, legislative politics, bureaucracy, interest groups, international relations, and leadership. Research project and presentation required. Instructor: De Marchi or Niou. One course.

247. Politics and Philosophy of Self and Other (C-N). (SS) EI, IAA, SS Epistemological, ontological, ethical, and political dimensions of relations between self and other. Theorists may include Husserl, Merleau-Ponty, Levinas, Derrida, Adorno, Gadamer, Sartre, Foucault, and Bakhtin. Instructor: Coles. One course.

248. International Politics and International Law (D). (SS) CCI, R, SS Relationship between international law and politics, with attention to how politics affects law and how law channels and structures politics. Emphasis on changes in sovereignty as a result of globalization and shifts in norms. Instructors: Byers and Keohane. One course.

249. The Politics of Health Care (A). (SS) EI, SS One course. C-L: see Public Policy Studies 253


256S. Theory and Practice of National Security (D). (SS) 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. Instructor: Feaver. One course.

266. Topics in Early Modern Political Thought (C-N). (SS) CCI, SS Selected readings from political thinkers ranging from Machiavelli to Mills. Instructor: Grant or Spragens. One course.

267S. Policy-Making in International Organizations (D). (SS) CCI, R, SS One course. C-L: see Public Policy Studies 267S


271S. International Environmental Regimes (B, D). (SS) 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, Comparative Area Studies

272. China and the World (B, D). (SS) 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: Comparative Area Studies

273S. Heidegger (C-N). (CZ) (SS) CZ, EI, IAA, 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

274S. Seminar in Urban Politics and Urban Public Policy (A). (SS) EI, SS A probing of topical issues in both their theoretical antecedents and their contemporary manifestations. The intellectual debates and scholarly treatments surrounding issues of power in the city, urban redevelopment policy, urban poverty, and race in the city. Instructor: Staff. One course. C-L: Public Policy Studies 275S

275. The American Party System (A). (SS) QID, R, SS The 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 the maintenance of a democratic society. Students will encounter an extensive array of evidence, including statistical estimation and formal modeling, for use in the development of their own original research or in critical evaluation of research findings. Instructor: Staff. One course.

276S. Media in Post-Communist Societies (B). (SS) CCI, R, SS, STS One course. C-L: see Public Policy Studies 243S; also C-L: Comparative Area Studies

277. Comparative Party Politics (B). (SS) 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: Undergraduate Canadian Studies Program, Comparative Area Studies


282S. Canada (B). (SS) SS One course. C-L: see Canadian Studies 282S; also C-L: Cultural Anthropology 282S, History 282S, Sociology 282S, Comparative Area Studies

284S. Public Policy Process in Developing Countries (B). (SS) CCI, R, SS One course. C-L: see Public Policy Studies 284S; also C-L: Comparative Area Studies, Latin American Studies


286. Theory and Practice of International Security (D). (SS) QID, 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: Goemans. One course.


289S. Contemporary Ethical Theories (C-N). (CZ) (SS) CZ, EI, SS One course. C-L: see Philosophy 203S; also C-L: Women's Studies


299. Advanced Topics in Government and Politics. (SS) 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.

COURSES CURRENTLY UNSCHEDULED
100ES. Duke Summer Program: London
100K. Duke Summer Program: London/Cambridge/Edinburgh
100M. Duke Summer Program: Spain
100Q. Duke Semester/Academic Year Program: France
160. Contemporary Global Issues (D)
217. Comparative and Historical Methods (B)
236S. Hegel's Political Philosophy (C-N)
244S. The Politics of the European Community (D)
250S. International Security after the Cold War (D)
257S. Making American Defense Policy (D)
265S. The Process of International Negotiation (D)
281. American Political Thought Since the Gilded Age (C-N)
287. Revolution, Reform, and Democratization (B)

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 interpretation 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/C-E, or D).


THE MAJOR

Major Requirements. Ten courses in political science, at least eight of which must be at or above the 100 level. Among the ten courses taken at least one course must be in each of the four fields and at least one course taken at Duke at the 200-299 level. The department also requires that each major select one area of concentration in consultation with their advisor.

An area of concentration is defined as five courses, at least one of which must be at the 200 level. The four areas of concentration are the same as the four fields of political science: American government and politics (A), comparative government and politics (B), political theory: normative (C-N) and empirical and methodology (C-E), international relations, law, and politics (D). The courses that qualify for each concentration 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 courses in which the content varies from year to year. The following types of courses are not included in these lists:

- PS 49S First-year seminars
- PS 60S Introductory Seminars in Political Science
- PS 189 -190 Internship credit
- PS 191-194 Independent Study
- 200A-D Senior Seminars

Majors taking such courses should consult with the director of undergraduate studies to determine in which field/concentration it will be assigned.

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 *if subject matter is appropriate to the field*
be reduced to seven courses if the student: (1) is taking 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; or (3) completed one semester at an approved study abroad program and one semester in the Washington Semester Program at American University.

**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, and sociology are desirable.

**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 (Political Science 200H.02 and 200H.03). 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. Upon request, the program director may recommend admission to the honors seminar of a student who lacks one or both requisite grade point averages. The program director 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 director 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 of the project by means of seminar meetings and individual conferences occurs in Political Science 200H.03. Completion of the thesis, its evaluation, and its defense before a three-member committee composed of the director 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 and performance in Political Science 200H.02 and 200H.03. 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 director 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 instructional staff, but one course may be a transfer course. Courses taken Pass/Fair and Advanced Placement courses DO NOT satisfy course requirements for the minor.
Primatology (PRIMATOL)
Professor Glander, Director

A certificate, but not a major, is available in this program.

Interest in human evolution has surged in recent years because of some startling fossil discoveries and the rapid development of a strong theoretical base for the study of primate behavior and ecology. The anatomy of living and fossil primates can be interpreted only on the basis of the behavior and ecology of living primates. The Department of Biological Anthropology and Anatomy and the Duke University Primate Center contain collections of specimens of both extant and fossil nonhuman primates. The Primate Center provides a further and unique opportunity to study fossil specimens and living primates simultaneously.

The goal of the program is to understand the behavior and biology of primates, including humans. Program objectives include an understanding of the origin and evolution of humans as well as their morphological and behavioral relationships to other primates. The study of primate evolution involves such diverse areas of investigation as morphology, social behavior, ecology, and physiology. A cross-disciplinary approach employing the faculty of the Duke Primate Center and the Departments of Biological Anthropology and Anatomy, Philosophy, Psychology, Zoology, and the Nicholas School of the Environment provides the opportunity for linking of these parts of the university in order to concentrate on a topic which has become too large for one perspective or one discipline.

The curriculum includes six courses, all of which must be completed to receive the program certificate:

Three required courses: Biological Anthropology and Anatomy 93D (Introduction to Physical Anthropology), Primatology 186S (Research Internship), and Primatology 187S (Senior Seminar).

Three elective courses chosen from the recommended list published annually in the program brochure; one of these courses must be drawn from among those not originating in Biological Anthropology and Anatomy.

The Research Internship and Senior Seminar arranged through the program are available only to students seeking the program certificate. Other components of the program are available to all undergraduates.

PRIMATOLOGY COURSES (PRIMATOL)

186S. Research Internship in Primatology. (NS) NS. Part of the Undergraduate Program in Primatology. Supervised work either in a laboratory or at the Primate Center. Consent of instructor required. Instructor: Glander. One course.

187S. Senior Seminar in Primatology. (NS) NS. Part of the Undergraduate Program in Primatology. Consent of instructor required. Instructor: Glander. One course.

Psychology (PSY)
Professor Putallaz, Director of Undergraduate Studies; Professor C. Erickson, Co-Director of Undergraduate Studies; Professors Asher, Bettman, Blumenthal, Brodie, Costanzo, Dodge, Eckerman, Flanagan, George, W. C. Hall, W. G. Hall, Hamilton, Holland, Keefe, Lockhead, Logue, Madden, Mangun, March, McCarthy, Meck, Palmer, Payne, Purves, Quinn, Roth (Chair: Psychology: Social and Health Sciences), Rubin, Sheppard, Siegler, Spener, Staddon, Strauman, Surwit, Thompson, Vidmar, M. Wallach, C. Williams (Chair, Psychological and Brain Sciences), and R. Williams; Associate Professors Curry, Day, Fairbank, Linville, Levin, Mazuka, Needham, Nicolelis, Nowicki, Robins, Schmajuk, Sherwood, and Welsh-Bohmer; Assistant Professors Brannon, Cabeza, Feng, Gustafson, Hill, LaBar, Moore, Lynch, Serra, and Swaab; Professors Emeriti Alexander, Carson, Cole, Crovitz, Diamond, R. Erickson, Kimble, Kremen, Lakin, H. Schiffman, and Wing; Research Professor L. Wallach; Associate Research Professors Gold, and
A major or minor is available in this department.

The General Courses, coded (G), do not count towards an area of concentration, but do count towards the major. The Biological Bases of Behavior area, coded (B), includes courses on the nervous system, the learning process, motivation, neurochemistry, hormones, and other biological factors in their relationship to behavior. The Cognitive Psychology area, coded (C), includes the topics of sensation and perception, cognition, learning, language, memory, and psycholinguistics. Developmental Psychology, coded (D), emphasizes the developmental aspects of all psychological processes such as sensory and motor behavior, cognition, children's thinking and reasoning, and social behavior. Courses in the Personality/Social Psychology area, coded (P), ultimately bear on the questions of human character and behavior, both normal and abnormal. These include personality, social and abnormal issues, along with strategies for the prevention of deviance.

11A. Introductory Psychology: A Natural Science Perspective. (NS) NS, STS Broad survey of the field of modern psychology, primarily for the nonmajor. Focuses on the natural science study of behavior, emphasizing biological, evolutionary, cognitive, and developmental perspectives while placing this work in historical, social, and philosophical context. The conceptual issues which unify the subfields of psychology highlighted along with a consideration of the 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 considered throughout the course. Not open to students who have taken Psychology 11 or 11B. Instructor: Hall. One course.

11B. Introductory Psychology: A Social Science Perspective. (SS) SS Survey of the field of modern psychology. Focuses on the social science study of behavior, emphasizing social, developmental, and cognitive perspectives while placing this work in historical and philosophical context. The conceptual issues which unify the subfields of psychology highlighted along with a consideration of the techniques and methods by which knowledge about mind, thought, emotion, and behavior is acquired and refined. Not open to students who have taken Psychology 11 or 11A. Instructor: Weinfurt. One course.


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

91. Biological Bases of Behavior: Introduction and Survey (B). (NS) NS, QID 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. Students required to participate as subjects in three to six hours of psychological research if not done in a previous introductory class. Prerequisite: Biology 19 or Biology 25L; may be taken concurrently. Instructor: C. Erickson or C. Williams. One course. C-L: Neurosciences Program

92. Cognitive Psychology: Introduction and Survey (C). (SS) QID, 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 three to six hours of psychological research if not completed in a previous introductory class. Instructor: Cabeza, Day, or Rubin. One course.

97. Developmental Psychology: Introduction and Survey (D). (SS) QID, SS Overview of the cognitive, social, and emotional changes that occur throughout the lifespan, with emphasis on the period from infancy to adolescence. The approach examines both the empirical evidence (data collection and analysis) and the theoretical models (constructs using inductive-deductive reasoning) used in understanding human psychological development. Instructor: Bonner, Feng, Hill, Needham, or Putallaz. One course.

99. Personality and Social Behavior: Introduction and Survey (P). (SS) QID, SS The determinants of socially significant human behavior—those residing in the person, those that are the product of interpersonal context, and those resulting from the interaction of both sources. Formative as well as contemporary influences considered. Emphasis on the reasoning, research designs and methods used to examine the complex interplay of individual and social context. Students participate in three to six hours of psychological research if not done in a previous introductory class. Not open to students who have taken Psychology 108. Instructor: Costanzo, Grimes or Lynch. One course.

100BS. Mind, Brain, and Cognition (B, C). (SS) QID, SS How humans function in a complex world given their biology and their experience. Emphasis on the methods, models and reasoning used by scientists in investigating the mind and behavior. The perceptual and memory systems used as examples to examine how psychologists study the mind and integrate their findings with insights from anthropology, biology, and philosophy. Open only to students in the FOCUS Program. Instructor: LaBar or Mangun. One course.

100CS. Adolescence and Coming to Grips with Ideals (D). (SS) SS Adolescence as a critical period for grappling with challenges of identity, beliefs, and goals. The process of coming to grips with these challenges from both psychological and social perspectives, including gender roles and sexuality, family, peer relationships, and popular culture. Examination of empirical findings, implications, and current theories of development. Open only to students in the FOCUS Program. Instructor: Staff. One course.

101. Research Methods in Psychological Science (G). (NS) (SS) NS, QID, R, SS, W A systematic approach to the problem of designing and conducting psychological research putting that research into a larger scientific context featuring both experimental and nonexperimental methods, including observational, archival, and case-study methods. Problems of validity and control. Analysis of theorizing coupled with examination of psychological constructs used in behavioral neuroscience, cognitive science, developmental psychology, sensation and perception, as well as psychological aspects of the social and health sciences. Prerequisite: one prior course in psychology. Instructor: Cerutti or Schmajuk. One course.

102. Alcohol: Brain, Individual, and Society (B, P). (NS) (SS) NS, SS, STS Multidisciplinary course exploring the impact of alcohol use on individuals and society. Integrated segments will focus on: biomedical effects; addiction and treatment; historical context of drinking; and public policy issues. Students will complete a literature review research paper. Not open to first-year students. Prerequisite: Psychology 11 or 91, or substitute course approved by instructor. Instructors: Perreira, Rezvani, Roberts, and Swartzwelder. One course.

103. Practicum (B,C,D,P). 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. Register by designated suffix. Consent of instructor required. Pass/ fail grading only. Instructor: Staff. Half course.

104. Intelligence (C, D, P). (SS) QID, SS Issues include alternative definitions of intelligence, history of intelligence testing, basic principles of psychological tests and measurements, hereditarian views of intelligence, critique of hereditarian views, environmentalist views of intelligence, critique of environmentalist views, current perspectives on the nature vs. nurture controversy, The Bell Curve and its critics, and alternatives to the psychometric approach to intelligence and intellectual development. Prerequisites: Psychology 11 or 97 and Statistics 110 or equivalent. Instructor: Pfeiffer. One course. C-L: Education 104

106. The Psychology of Gender (P). (SS) 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: Hamilton or Roth. One course. C-L: Women's Studies

107. Introduction to Perception (C). (SS) SS Perception as the means by which we become aware of the world and of ourselves. An introduction to the senses and the means by which meaningful experience is derived from their functioning. Emphasis given to visual perception. Prerequisite: a prior course in psychology. Instructor: Lockhead. One course.

109A. Health Psychology (P). (SS) QID, 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: Hamilton or staff. One course.

109B. Stress and Coping (P). (SS) QID, 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. Not open to students who have taken Psychology 163S. Prerequisite: Psychology 99. Instructor: Edwards or Keefe. One course.

109C. Behavioral Medicine (P). (SS) 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.

110. Sports Psychology: Introduction, Issues, and Controversies (P). (SS) SS Psychological factors in athletic performance. Topics include history of sports in society, sports and the socialization process, organized programs for children, sports and aggression, deviance in sports, coaching, and techniques to enhance performance. Participation in field-based learning experience required. Prerequisite: course in introductory development, or personality recommended. Instructor: Pfeiffer. One course.

111. Learning and Adaptive Behavior (B, C). (NS) NS, QID 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: Cerutti. One course.
112. Introduction to Cognitive Neuroscience (B, C). (NS) NS, QID Biological bases of
higher mental functions including attention, memory, language, emotion, executive
functions, and consciousness. Emphasis on evaluation of experimental designs,
methodological approaches, and current theories. Quantitative approaches that have
significantly contributed to the growing understanding of the cognitive processes.
Prerequisites: background in cognitive psychology (Psychology 92 or equivalent) and
biological psychology (Psychology 91 or Psychology 135 or equivalent). Instructor:
Mangun or Swaab. One course.

113A. Self and Society (P). (SS) CCI, SS One course. C-L: see Cultural Anthropology
141; also C-L: Women's Studies

113B. Psychological Anthropology (C, D, P). (SS) SS One course. C-L: see Cultural
Anthropology 165

113C. Culture and Thought (C). (SS) R, SS One course. C-L: see Cultural
Anthropology 151; also C-L: Linguistics 151

114. Personality (P). (SS) SS Major theories of personality from Freud to the present.
Focus on three central perspectives in personality: psychoanalytic theories from
classical analysis through ego psychology to contemporary object relations models;
learning theories from behavioral models through social learning theory to
contemporary cognitive models; and biological and trait theories, including recent
factor analytic models. The scientific basis of each theory and the technologies derived
from the theories which are used for personality assessment and psychotherapeutic
intervention. Instructor: Curry or Rabiner. One course.

116. Social Psychology (P). (SS) QID, SS The 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. Instructor: Costanzo, George,
or staff. One course. C-L: Sociology 106, Women's Studies

117. Statistical Methods (G). (QR) M, QID One course. C-L: see Sociology 133

118. Special Topics in Social Psychology (P). (SS) 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 116. Instructor: Costanzo, or Hamilton. One course.

119A. Abnormal Psychology (P). (SS) CCI, EI, QID, SS Disordered behavior and
constructive personality change viewed in interpersonal and social contexts for purposes
of understanding normal and abnormal personality development and functioning. The
research designs, methods and reasoning by which psychologists assess behavioral
disorders and personality variants. How these disorders vary from culture to culture
and the ethical issues associated with treatment. Instructor: Rabiner or Robins. One
course.

119B. Child Clinical Psychology (D, P). (SS) QID, 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 97 or 99. Instructor: Bonner or Moore.
One course.

120. Comparative Psychology (B). (NS) NS A survey of animal behavior from the
psychologist's perspective. Prerequisite: Biological Anthropology 93, Biology 25L, or
Psychology 91. Instructor: Holland. One course. C-L: Biology 168

121. Early Cognitive Development (C, D). (SS) QID, SS Critical analysis of major
theories and research findings in cognitive development during the first few years of
life. Beginning with Piaget’s theory, models of cognitive development are evaluated in light of experimental evidence. This background used to design new experiments to test student-generated hypotheses on topics including perception, knowledge acquisition, memory, and categorization. Prerequisite: Psychology 97. Instructor: Needham. One course.

122. Psychology of Thinking (C). (SS) QID, SS, STS Overview of high level cognitive processes in both theoretical and applied areas. Emphasis on the research designs, methods, and reasoning for understanding how people engage in categorization, problem solving and decision making. The social implications of cognitive testing and an appreciation of the role of human factors in a technological age. Prerequisite: one previous psychology course. Instructor: Serra or Weinburg. One course.

123. Introduction to Human Memory (C). (SS) QID, SS A review of the theoretical and empirical study of human memory. Emphasis on the research designs, methods, and reasoning by which understanding is gained of memory across the life span, abnormal memory (for example, amnesia), and conscious and unconscious memory processes. Special attention to applications of memory research in the “real” world such as the courtroom and in advertising. Instructor: Rubin or Serra. One course.

124. Human Development (D). (SS) CCI, EI, R, SS One course. C-L: see Human Development 124; also C-L: Sociology 124


126. Behavior and Neurochemistry (B, P). (NS) NS, QID 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 91. Instructor: Buhusi or Meck. One course.

127. Drugs, Brain, and Behavior (B). (NS) NS, QID One course. C-L: Pharmacology 160

128. The Creative Mind (C). (AL) (SS) AL, 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.

130. Psychosocial Aspects of Human Development (D). (SS) CCI, EI, SS One course. C-L: Human Development 180, Sociology 169

131. Early Social Development (D). (SS) CCI, EI, 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. Includes service learning component, volunteering with agencies in Durham. Prerequisite: Psychology 97. Instructor: Asher, Hill, or Putallaz. One course.

132A. Cognitive Aspects of Human Development (C, D). (SS) QID, SS The development of mind and its relation to other aspects of human development. Development of visual and auditory perception, language, memory, concepts, problem solving, academic skills, social cognition, and cognition and culture. Emphasis on the research designs, methods and reasoning for assessing developmental changes in cognitive capabilities. Prerequisite: one course in psychology. Instructor: Mazuka. One course.
132B. Cross-Cultural Perspectives on Development: A View from Japan (C, D). (SS) CCI, SS Cross-cultural examination of issues in developmental psychology from an Asian perspective, especially from modern day Japan. Selected topics in developmental psychology evaluated from the perspectives of Japan and other cultures in Asia, and contrasted to American studies. Instructor: Mazuka. One course. C-L: Cultural Anthropology 166

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. Instructor: Hill. One course. C-L: African and African American Studies 134

134. Psychology of Language (C). (SS) QID, 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) NS, QID 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: LeBar or Meck (psychology). One course. C-L: Biology 154, Neurobiology 154, Neurosciences Program

137. Adolescence (D). (SS) QID, 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. Instructor: Stocking. One course.


141S. Emotions and the Brain (B, C). (NS) 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 91 or 92 required and Psychology 126 or 135 preferred. Instructor: LaBar. One course.


153S. Issues in Language Development (C, D). (SS) CCI, QID, SS "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

154S. Education, Children, and Poverty (D). (SS) EI, SS Psychological hypotheses concerning the roles of preschool intervention programs, improved quality of resources, teacher expectancy effects, and enhancement of pupil self-confidence in relation to the goal of improved cognitive competence for poverty background children. Criteria for defining competence, such as scores on psychometric intelligence tests, performing on Piagetian tasks, and development of specific skills. Interpretations concerning intelligence and cognitive deprivation in poor children in light of relevant psychological evidence. Prerequisite: one course in psychology or consent of instructor. Instructor: M. Wallach. One course.


157S. Life Span Analysis of Social Relationships (D, P). (SS) CCI, R, SS, W The developmental changes that occur in social relationships (for example, parent, sibling, peer) across the lifespan; 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 97 or 99. Instructor: Putallaz. One course.

159S. Biological Psychology of Human Development (B, D, P). (SS) QID, 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. Preference given to senior psychology majors and to students in the Program in Human Development. Consent of Instructor required. Instructor: Thompson. One course. C-L: Human Development

162S. Clinical Issues: Conceptions, Techniques, and Problems of Professional Clinical Psychology (P). (SS) QID, SS Assessment of personality and psychopathology. Consultation and psychotherapy in individuals, groups, family, and organizational contexts. Research on clinical questions. Intended for those contemplating advanced graduate or professional study and careers in clinical psychology, counseling, psychiatry, social work, or cognate fields. Prerequisites: junior or senior status and consent of instructor. Instructor: Lakin. One course.

165S. Neurobiology of Learning and Memory (B, C)). (NS) 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 neurophysiological experiments related to memory. Prerequisite: Psychology 91. Instructor: Swartzwelder. One course.

168S. Fundamental Issues in the Study of the Brain (B). (NS) QID Various approaches to study of the brain. The field of neurobiology divided into four areas: molecular, cellular, developmental, and systems. Methods of reasoning and deduction applied by investigators taking each approach. Fundamental issues including the concept of the receptive field, why neurons in the central nervous system do not
regenerate after injury, and cellular basis of memory. Guest scientists describe how their own research addresses these issues. Instructor: W. C. Hall. One course. C-L: Neurobiology 168S

170S. A-R, U-Z. Selected Problems. New courses not yet in the bulletin are designated as 170S or 270S depending on their level. Since all faculty offer these courses, their contents vary accordingly. Different courses indicated by the letter. Instructor: Staff. One course.

171T. A-R. Tutorials. Small group discussions about influential books and articles in psychology. The availability of tutorials, their content, and the instructors will be announced before registration. Different courses indicated by letter. Consent of instructor required. Pass/fail grading only. Instructor: Staff. Half course.

172S. The Psychology of Obesity. (NS) (SS) CCI, NS, R, SS The psychophysiology and treatment of obesity. Topics include: the epidemiology of obesity, the physiology of energy balance, the genetics of obesity, race and gender as they relate to obesity, medical and psychological comorbidities of obesity, behavioral, pharmacologic and surgical treatments of obesity, as well as review of the safety and efficacy of fad diets. Background in biology and psychology and consent of instructor required. Instructor: Sunwit. One course.

173S. Theoretical Issues in General Psychology (C, D, P). (SS) SS In-depth consideration of certain issues that cut across different areas of psychology: Are human beings bound to act in their own interests, or can they be genuinely altruistic? What do we mean when we talk about the mind or mental states, how do we know about these states in others as well as ourselves, and how are these states related to the body? Is psychology a science? Should it try to be, can it be, a science? Instructor: L. Wallach. One course.

174S. Infancy (C, D, P). (SS) QID, 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 97 and one other psychology course. Instructor: Eckerman or Needham. One course.

176S. Great Ideas in Psychology (C). (SS) QID, 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) NS, QID, 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 91 or background in biology. Instructor: Staff. One course. C-L: Study of Sexualities

178S. The Psychology of Exceptional Ability (C, D). (SS) QID, SS The reasoning, research designs and methods used in the study of exceptional intellectual, cognitive, academic, and artistic abilities, with an emphasis on children and adolescents traditionally referred to as gifted, talented, or precocious. Psychosocial and emotional aspects and consequences of exceptional ability. The Duke University Talent Identification Program (TIP) will be a focus as well as a resource. Prerequisite: courses in either
developmental or cognitive psychology and statistics recommended. Instructor: Staff. One course. C-L: Education 178S

180S. Advanced Topics in the Psychology of Gender (P). (SS) SS Study of one broad domain in the psychology of gender, exact content area to vary by semester. Emphasis on how gender influences human experience and behavior. The research designs, methods and reasoning for understanding gender issues. How gender biases have shaped scientific inquiry and how new knowledge about the psychology of gender influences ethical, sociological and public debates. Possible areas include theory of gender differences; victimology; gender role socialization; psychological issues in marriage, sexuality, and parenthood; biosocial aspects of gender; gender and mental health; and achievement. Prerequisites: Psychology 106 and consent of instructor. Instructor: Hamilton, or Roth. One course. C-L: Women’s Studies

181AS. Methods in Behavioral Neurobiology (B). (NS) NS, QID R Research in neural bases of behavior using simple biological systems as models for more complex behavior. Emphasis on the reasoning, research designs and methods used by neurobiologists in their studies of behavior. Laboratory experience in these various experimental methodologies. Observational techniques in study of natural behaviors and neurophysiological recording and stimulation. Not open to students who have had Psychology 149S. Prerequisite: Psychology 91 or background in biology, and consent of instructor. Instructor: Changizi, W. G. Hall, or staff. One course.

181BS. Studying the Animal Mind (B, C). (NS) NS, R Tools and methods in animal learning and cognition. Field observations and lab exercises, using locally available animal species, leading to a research project. Prerequisite: Psychology 111. Instructor: Cerutti. One course.

181CS. Methods in Cognitive Neuroscience: Event Related Potentials (B, C). (NS) NS, QID, R The Event-Related Potential (ERP) method and its use in cognitive neuroscience. Emphasis on the reasoning, research designs and methods used in measuring event-related potentials. How ERPs are recorded, analyzed, and used to study cognitive processes. Students complete projects and experience this methodology. Prerequisites: two of the following three courses (Psychology 91, 92, or 135) and consent of instructor. Instructor: Swaab or Woldorff. One course.

181ES. Molecular Electrophysiology and Imaging of the Nervous System (B, C). (NS) NS, QID, R Hands-on laboratory experiments studying molecular mechanisms of electrical and synaptic signaling in neurons and neural networks. Topics covered include molecular biology of ion channels and transporters, single-channel and whole-cell patch-clamp recording, heterologous gene expression, and real-time calcium and voltage imaging in single neurons and brain slices. Prerequisites: Biology 154, Mathematics 31, 32 or 25L, 26L, or equivalent; Chemistry 12L or 22L; and Physics 53L, 54L, or 51L, 52L, or equivalent. Instructors: Lo and Reinhart. One course. C-L: Neurobiology 181LS

181FS. Functional Neuroimaging (B). (NS) NS, R Lecture and lab to provide overview of use of functional magnetic resonance imaging (MRI) in the investigation of human sensory, motor, and cognitive function. Topics will include MRI to study human brain systems involved with movement, sensation, perception, and memory. Students will design and execute a neuroimaging experiment. Consent of instructor required. Instructor: McCarthy. One course.

182AS. Cognitive Laboratory (C). (SS) R, SS, W Training in the methodologies necessary to do research in human cognition; language, memory, problem solving, and other higher mental processes. Not open to students who have had Psychology 143S. Prerequisite: Psychology 92, 107, 112, or 123. Instructor: Lockhead, Rubin, or Serra. One course.

182BS. Perception Laboratory (C). (SS) QID, R, SS Experimental approaches to basic phenomena of perception as determined by conditions in the external situation and the
person: biological and psychological. The reasoning, experimental design, and methods used to investigate perceptual mechanisms. Not open to students who have taken Psychology 148S. Prerequisite: Psychology 112 or consent of instructor. Instructor: Lockhead. One course.

182ES. Research Method in Psycholinguistics (C). (SS) QID, R, SS Experimental design, data collection, and data analysis/interpretation in psycholinguistic research. Experiments on speech perception, word recognition, and sentence comprehension. Recording and digitizing of speech segments for acoustic analyses/perception experiments; programming of experiments using commercially available software; conducting experiments to collect data; and analyzing the results for interpretation. Skills in conducting psychological experiments, research design in relation to the type of analysis planned. Prerequisite: Psychology 117, Statistics 110, 101, 102, or 103. Instructor: Mazuka. One course. C-L: Linguistics 182S

183AS. Research Methods in Developmental Psychology (D). (SS) R, SS, W Prerequisite: Psychology 97 or consent of instructor. Instructor: Eckerman. One course.

183BS. Child Observation (D). (SS) QID, 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. Prerequisite: Psychology 97 and consent of instructor. Instructor: Putallaz. One course.

185AS. Experimental Approaches to Personality (P). (SS) R, SS Methods applied to personality research. Not open to students who have taken Psychology 145S. Prerequisite: one course in psychology. Instructor: M. Wallach. One course.

185BS. Research Methods in Social Psychology (P). (SS) QID, R, SS, W Study of empirical research methods used to study contemporary issues in social psychology, including both experimental and nonexperimental strategies. Prerequisite: Psychology 99 or 116. Instructor: Costanzo or staff. One course.


185DS. Research Methods in Psychopathology and Psychotherapy (P). (SS) QID, 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. Instructor: Strauman. One course.

190S. History of Modern Psychology (B, C, D, P). (SS) 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. Prerequisite: prior course in psychology or consent of instructor. Instructor: H. Schiffman or 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.
course. Junior year fall. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.


195S. Topics in Neuroscience (B). (NS) (QR) NS, QID, R A formal research and training component of the Howard Hughes 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: W. G. Hall. One course.

196T. Tutorial Independent Study. An in-depth historical or theoretical analysis 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. Does not meet general requirement for a curriculum Research (R) course and does not fulfill major requirement for an upper-level seminar or methods course. Junior year fall. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

197T. Tutorial Independent Study. See Psychology 196T. Junior year spring. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

198T. Tutorial Independent Study. See Psychology 196T. Senior year fall. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

199T. Tutorial Independent Study. See Psychology 196T. Senior year spring. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

For Advanced Undergraduates and Graduates

205S. Children's Peer Relations (D). (SS) 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.

206S. Pediatric Psychology (D, P). (SS) QID, 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: Gustafson. One course.

207S. Topics in Psychobiology (B). (NS) (SS) NS, R, SS One course. C-L: Distinguished Professor Course 2075
212S. Human Memory (C). (SS) QID, SS Classical and modern literature, data, and theories relating to mechanisms of information processing, storage, and retrieval. Emphasis on reasoning, research designs and methods by which human memory is studied. Evaluation of experiments and interpretation of data. Research proposal required. Consent of instructor required. Instructor: Rubin, or Serra. One course.

2175. Advanced Social Psychology (P). (SS) SS Theoretical and empirical approaches to understanding socially significant human behavior and experience. Review of classic and contemporary research literatures, with an emphasis on applied issues. Prerequisite: Psychology 99 and 147S, and consent of instructor. Instructor: Costanzo. One course. C-L: Women's Studies

218S. Personality, Stress, and Disease (P). (SS) 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 98 or 109A for undergraduates and consent of instructor. Instructor: R. B. Williams. One course.

220S. Psycholinguistics (C). (SS) CCI, QID, SS Evaluation of empirical research in various areas of psycholinguistics, in particular whether or not the hypotheses, methodology and analyses are appropriate and whether or not the data gathered warrant the conclusions drawn. Emphasis on cross-linguistic approaches to psycholinguistics. Systematic comparison of languages from different cultures through selected readings. Topics include neurolinguistics, linguistic versus pictorial representation, individual differences, oral versus written expression, language and personality, and the language-thought interaction. Consent of instructor required. Also taught as Linguistics 220S. Instructor: Day or Mazuka. One course.

221S. Ethnicity, Culture, and Family Processes (D, P). (SS) CCI, R, SS Focus on the impact of culture and ethnicity on family processes; definitions and measurement of culture as a family level variable; family dynamics/interactions, family constellations, and parenting. Prerequisite: Consent of instructor. Instructor: Hill. One course. C-L: African and African American Studies 221S


227S. Behavioral Physiology: Basic Systems (P). (SS) QID, 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 91 or 159S for undergraduates and consent of instructor. Instructor: Surwit. One course.

230S. Social Behavior of Animals (B, D, P). (NS) NS, QID, W An examination of the developmental, ecological, and physiological aspects of territorial, sexual, parental, and aggressive behavior of animals, from invertebrates to primates. Emphasis on the research designs, methods and reasoning for understanding the social organizations and interactive patterns of animals. Instructor: C. Erickson. One course.

232S. Advanced Seminar in Perception (C). (NS) NS Discussions of selected, current topics, including illusions and psychophysics, concerning how context affects what we
know about the world and its objects. Consent of instructor required. Instructor: Lockhead. One course.

**234S. Advanced Personality (P). (SS) R, SS** Selected topics of current interest concerning empirical research on personality. Strategies for the definition of research questions and the evaluation of research progress. Consent of instructor required. Instructor: M. Wallach. One course.

**238S. Everyday Cognition (C). (SS) SS** Selected cognitive concepts (for example, encoding, retrieval, representation, information load) and their application to everyday situations. Cognition in the classroom, courtroom, hospital, grocery store, and laboratory, as well as on the job, athletic field, construction site, dance floor, and computer. For each situation: successful vs. mediocre performance, cognitive processes involved, task analysis, potential problems, experimental tests, and implications for both cognitive theory and everyday life. Class sessions include presentations by the instructor, students, and individuals from the everyday world. Prerequisites: for undergraduates: Psychology 92 or related course work and consent of instructor. Instructor: Day. One course.

**249S. Anthropology and Psychology (C, P). (SS) CCI, SS** One course. C-L: see Cultural Anthropology 249S

**258S. Social Behavior and Personality (P). (SS) SS** A broad examination of current theory and research on the interpersonal, personological, and social cognitive influences on social behavior and social interaction. Emphasis on contemporary thought on issues such as the nature of social influence, the function and construction of the self, relationship formation and maintenance, aggression and altruism, personality-based mediators and moderators of social behavior, and the application of social psychological theory and research to the study of clinical, social legal, and educational issues. Methodological approaches to the study of social phenomena including experimental, quasi-experimental, narrative, observational, and correlational models. Prerequisite: Psychology 99 or 116 and 185A or 185B and Statistics 110, Psychology 117 or equivalent and consent of instructor for undergraduates. Instructor: Costanzo. One course.


**264S. Gender, Hormones, and Health (P). (SS) CCI, QID, SS, STS** Hormone effects on behavior in animals and humans with topics including pubertal, menstrual-cycle, sex-related, and gender-related effects on mood, behavior, cognition, and health. Emphasis on the research designs, methods and reasoning by which hormonal effects are understood. How gender biases have shaped scientific inquiry and how new knowledge about the psychology of gender influences ethical, sociological and public debates. Cross-cultural, race-ethnicity and socioeconomic issues affecting gender and health. Consent of instructor required. Instructor: Hamilton. One course. C-L: Study of Sexualities, Women's Studies

**268S. Brain and Language (B, C). (NS) NS, QID** 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. Consent of instructor required. Instructor: Swaab. One course.

**270S. A-R, U-Z. Selected Problems.** New courses not yet in the bulletin are designated as 170S or 270S depending on level. Since all faculty offer these courses, their contents vary accordingly. Different courses indicated by the letter. Consent of instructor required. Instructor: Staff. One course.
273. Statistics I (G). (QR) M, QID, R Foundations of probability and statistical inference. Introduction to the general linear model via multiple regression. Emphasis on application via statistical computing with SAS. Prerequisite: Psychology 117 or Statistics 110 for undergraduates and consent of instructor. Instructor: Compton or staff. One course.

274. Statistics II (G). (QR) M, QID, R Basic and advanced ANOVA models via the GLM. Broad-based overview of multivariate models, including MANOVA, canonical correlation, discriminant analysis, and factor analytic models. Emphasis on application and use of computer packages. Prerequisite: Psychology 117 or Statistics 110 and Psychology 273 for undergraduates and consent of instructor. Instructor: Compton or staff. One course.

COURSES CURRENTLY UNSCHEDULED
136. Developmental Psychobiology (D)
150S. Hormones and Behavior (B, P)
156S. Tests and Measurements
167S. Brain Mechanisms of Behavior (B, C)
169S. Eating Behavior and Disorders (B, P)
182S. Neural Networks and Psychology (B, C)
202S. Autobiographical Memory (C)
209S. The Cognitive Psychology of Oral Traditions (C)
211S. Neural Development and Comparative Cognition (B, C)
214S. Development of Social Interaction (D, P)
224S. Timing and Time Perception (B, C)
225S. Ingestion: Behavior and Neurobiology (B)
233S. Nature and Nurture in Animal and Human Development (B, D, P)
261S. Advanced Learning Theory (C)
284S. Feminist Theory and Methods in the Social Sciences (P)
288S. Advanced Topics in Social Science and Law (P)

THE MAJOR
For the A.B. Degree

Major Requirements. Ten courses in psychology (eight of which must be at the level of 100 or above) are required for the major, which is devised to provide depth and breadth, a small group course in psychology, and familiarity with the quantitative techniques and methods used in psychology. For breadth, the student is required to take two introductory and survey courses including: (1) either 91 (Biological Bases of Behavior) or 92 (Cognitive Psychology), and (2) 97 (Developmental Psychology), or 99 (Personality and Social Behavior). These introductory and survey courses define four areas of concentration in psychology. For depth, the student is required to take at least two courses in one of these areas in addition to the introductory and survey course. For instruction in small groups, the student is to take at least one seminar (number 141S and above, including 200-level courses, but excluding the 181-186S methods courses). It is advisable that this seminar be in the student’s area of concentration. For quantitative techniques used in psychology, the student is to take one of the following: Mathematics 136; Sociology 133; Statistics 101, 102, 103, 110, 112, 210B, 213; or Psychology 117. One of these courses will count toward the ten courses required of the major. Each student will be introduced to the methods used in psychology by taking one of the following courses: Psychology 101, or one of the laboratory courses, Psychology 181-185.

A student guidebook describing the curriculum in detail is available from the director of undergraduate studies. Of the ten psychology courses required for the major at least eight must be taken in the department at Duke; others, if approved, may count toward the 34 credits needed for graduation. Information is also available at http://www.psych.duke.edu.
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, biological anthropology and anatomy, and biology; (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 the breadth requirement of two introduction and survey courses and the depth requirement of two more courses following one of these introduction and survey courses as described above for the major, plus one elective course numbered 100 or above.

SPECIAL OPPORTUNITIES

Neurosciences Concentration within B.S. Degree

Students completing a B.S. in psychology may elect to fulfill the requirements for a specialized concentration in neuroscience within the psychology major. Students in the neuroscience concentration will be expected to complete the following: the requirements for a B.S. major in psychology, the two introductory (core) course requirements (e.g., Psychology 91 and Psychology 135/Biology 154—prerequisites: Biology 25L and Chemistry 12L or 22L), and five elective courses to be selected from the listing of approved neuroscience courses in their major. Independent Study (Psychology 191-194) is highly recommended for all participants in the program and may be counted toward completion of the elective requirements. Completion of that concentration would be indicated on the official transcript. For more information, students should contact the director of undergraduate studies in psychology or either of the program co-directors, Professor Warren Meck (psychology: experimental), e-mail: meck@psych.duke.edu or Professor Stephen Nowicki, e-mail: snowicki@acpub.duke.edu, consult the neuroscience program world-wide-web homepage at http://www.duke.edu/neurosci/, or obtain materials at the program office, Rm. 245 Sociology/Psychology.

Human Development Program

Students completing a B.S. or B.A. in psychology who are interested in human development may elect to fulfill the requirements for a Human Development Program certificate. The goal of this interdisciplinary program is to foster an understanding of how biological, psychosocial, and cultural processes act together in development throughout the life course, and of the complementarity of disciplinary perspectives. Completion of the program certificate would be indicated on the official transcript. For information contact the director of the Human Development Program, Professor Deborah Gold.

Relation to Other Departments and Programs

Many psychology courses count toward certificates or concentrations in other areas as well as neurosciences and human development, for example: the certificate in early childhood education studies, the neuroscience certificate, the animal behavior concentration in the biology major, and the primatology concentration in the biological anthropology and anatomy major.

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 103 (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 area of concentration requirement, and only two may count toward the major.

**Departmental Distinction**

Graduation with Distinction in psychology requires completion of a special project, usually based on independent studies, the written form of which is reviewed in an oral examination by a committee composed of three faculty members. This must be done in time so that the mentor can nominate the student for this award one month before graduation. One level of distinction is awarded.

A student submitting a paper with extraordinary excellence may receive the Zener Award.

**Public Policy Studies (PUBPOL)**

Professor Jentleson, Chair; Associate Professor Conrad, Director of Undergraduate Studies; Professors Behn, Clotfelter, Cook, Dodge, Fleishman (law), Healy (environment), Hough (political science), Keyssar (history), Kuniholm, Ladd, Maqat (business), Mickiewicz, Pearse (engineering), Price (political science), Schroeder (law), and Sloan (economics); Associate Professors Korstad, Hamilton, Mayer, and Moore (business); Assistant Professors Charney, Gibson, Krishna, Pickus, Stangl (statistics), E. Vigdor, J. Vigdor, Whetten-Goldstein; Professor Emeritus Barber (political science); Professors of the Practice Brown, Glenday, Harris, Joseph, Kelly, Raspberry, Shukla, Spengler, and Tiff; Associate Professor of the Practice Fernholz; Research Professor Darby; Assistant Research Professors Conover, and Taylor; Visiting Professors Ahearne, Felsman, and Lapp; Visiting Associate Professors Krupp and Leachman; Visiting Assistant Professors Segal, and Schewel; Visiting Professors of the Practice Busek, Gergen, and Sparks; Emeritus Professor of the Practice Stubbing; Lecturers Blount, O'dor and Payne; Part-time Lecturer Stevens; Visiting Lecturers Alden, Bliwise, Dodson, Dorsen, Emmett, Frey, Grubb, Hart, Hartman, Healey, Howell, Jaroslovsky, Kaufman, Lin, Low, Moses, Montgomery, Okun, Prak, Rabiner, Slawson-Kuniholm, Stevens, Thomasson, Triebel, Van Sant, and Zanger; Senior Research Scientist Vaupel; Research Scholars Berlin, Sterns, Nicholson, and Lansford

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 and are described in the First-Year Seminars booklet. Instructor: Staff. One course.

**50. Duke-Administered Study Abroad: Special Topics in Public Policy Studies.** CCI

Topics differ by section. Instructor: Staff. One course.

**55D. Introduction to Policy Analysis. (SS) QID, 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: Hamilton, Lipscomb, Mayer, or Timmer. One course. C-L: Health Policy.

**80. Introductory and Basic Topics in Public Policy. (SS) SS**

Topics vary each semester. Does not count for public policy studies major. Instructor: Staff. One course.


**82. Essentials of Public Speaking.** Similar to Public Policy Studies 81, but for juniors and seniors. Not open to students who have taken Drama 81 or 82, or Public Policy Studies 81. Does not apply toward public policy studies major. Instructor: O'dor. One course.

105S. The Documentary Experience: A Video Approach. (AL) (SS) AL, IAA, 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. Consent of instructor required. Instructors: Howells and Segal. One course. C-L: Cultural Anthropology 134S, Film/Video/Digital 105S, History 150BS, Political Science 156S

107. Environmental Politics and Policies in the Industrial World. (SS) CCI, EI, SS, STS One course. C-L: see Political Science 107; also C-L: Comparative Area Studies

107D. Environmental Politics and Policies in the Industrial World. (SS) CCI, EI, SS, STS One course. C-L: see Political Science 107D; also C-L: Comparative Area Studies

108. AIDS: Ethics, Policy, and Representation. (SS) EI, SS, STS One course. C-L: see Women's Studies 108; also C-L: Study of Sexualities

110. Economic Analysis for Public Policy-Making. (SS) SS Application of microeconomic analysis to public policy areas, including agriculture, housing, taxation, and income redistribution. (Not open to students who have taken Economics 149, which also fulfills Public Policy Studies microeconomic requirement.) Prerequisite: Economics 55D or equivalent. Instructor: Clotfelter, Conrad, Cook, Krupp, or Ladd. One course.

114. Political Analysis for Public Policy-Making. (SS) QID, SS Analysis of the political and organizational processes which influence the formulation and implementation of public policy. Alternative models. Prerequisite: Political Science 90A, 91, 101, or equivalent. Instructor: Hamilton, Mayer, or Mickiewicz. One course. C-L: Political Science 145

115. Introduction to North America. (CZ) (SS) CCI, CZ, SS One course. C-L: see North American Studies 110; also C-L: History 108F, Political Science 119, Sociology 109, Latin American Studies

116. Policy Choice as Value Conflict. (SS) 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. Instructor: Blount, Charney, Korstad, or Payne. One course.

116D. Policy Choice as Value Conflict. (SS) EI, SS Same as Public Policy Studies 116 except instruction is provided in two lectures and one small discussion meeting each week. Instructor: Blount, Charney, Korstad, or Payne. One course.

118S. Television Journalism. (SS) SS Theories and concepts of television broadcasting; writing and editing for electronic media; issues of production. Consent of instructor required. Instructor: Hartman or Zanger. One course.

119S. Magazine Journalism. (SS) IAA, SS 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.

120S. Newspaper Journalism. (SS) 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: Film/Video/Digital

121S. Reporting Public Policy. (SS) SS Covering government, politics, and legislation in an adversarial climate. The journalistic line between skepticism and cynicism,
between analysis and editorializing; media conflicts of interest from corporate ownership and the impact of ratings and bottom-line considerations; standards of fairness, privacy and competition. Instructor: Tifft. One course.

122S. Who Owns the Press?. (SS) SS How media ownership has evolved from its political beginnings to family businesses, newspaper chains, international press barons, and cross-owning corporations; how recent consolidation of ownership has affected how news is selected, gathered, and disseminated; and what effect these developments have had on democratic institutions and what people know. Historical and analytical readings. Instructor: Tifft. One course. C-L: Markets and Management Studies

123S. Watchdogs and Muckrakers: Investigative Journalism and Public Policy. (SS) SS 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: Tifft. One course.


125S. News as Moral Battleground. (SS) SS The difficulty of determining which value system to apply and how to apply it to such issues as covering the private life of politicians, breaking the law in pursuit of a story, and accommodating the desires of an audience that increasingly demands to be entertained as much as informed. Instructor: Tifft. One course.

126S. Internet Politics and Policy. (SS) 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.

127S. The Press and the Public Interest. (SS) 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 series of more recent public controversies. Instructor: Raspberry. One course. C-L: African and African American Studies

130S. Violence and the Media. (SS) EI, R, SS Theories from economics, political science, and law used to examine role of violence in the media. Emphasizes ethical and political issues in media regulation. Research paper required. Instructor: Hamilton. One course.

131S. Law, Culture, and the Russian Legal Tradition. (CZ) (SS) CCI, CZ, EI, IAA, SS One course. C-L: see Russian 137S; also C-L: Comparative Area Studies

132S. Children on the Margins: A Documentary Approach. (AL) (SS) AL, IAA, SS, W Exploration of selected issues related to "at-risk" children and adolescents. Study of contemporary and historical documentary and literary works on this topic. Impact of documentary work on policy and public opinion. Emphasis on required individual service-learning projects and weekly required documentary papers. Focus on integration of service experience with readings and class discussion. Consent of instructor required. Instructors: Felsman and Harris. One course.
133. Globalizing Protest. (CZ) CCI, CZ One course. C-L: see History 121A; also C-L:
Political Science 160AD

136. Civic Participation and Community Leadership. (SS) EI, SS Explores ways in
which value conflicts in local communities can affect civic participation and public
policy design. By posing theoretical frameworks and case studies in which value
differences either hinder or help public problem-solving efforts, asks students to
analyze critically the ethical dimensions of decision making in a democratic society.
Includes service learning projects. Instructor: Blount. One course.

137. Integrating Community and Classroom. (SS) EI, R, SS Interns integrate what they
have learned from their summer work in community-based organizations with formal
study of concepts of service, social change, citizenship, and leadership, research aing
social policy issues. By posing theoretical frameworks and case studies in which value
differences either hinder or help public problem-solving efforts, asks students to
analyze critically the ethical dimensions of decision making in a democratic society.
Includes service learning projects. Instructor: Blount. One course.

138S. Public-Private Leadership. (SS)EI, SS Leadership of and relationships between
organizations in the public, private nonprofit, and business sectors. Includes
government privatization, nonprofit commercial ventures, socially responsible
business activities, hybrid organizations, and cross sector collaborative initiatives.
Instructor: Brown. One course.

139S. Business Leadership, Social Responsibility, and Public Policy. (SS) EI, SS
Effective business leadership, including individual leadership and companies as
leaders in society. Instructor: Brown. One course.

140S. Women as Leaders. (SS) 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: Alden. One course. C-L: Women's
Studies

141. Social Policy in America. (SS) EI, SS Public policies in the United States that affect
individuals in their roles as family members and workers. Social problems associated
with poverty, unemployment, old age, distressed urban and rural communities,
discrimination, and changing family patterns; theories seeking to explain these
problems. History of public policies adopted to deal with such social problems. Current
policies, their budgetary impact, their effectiveness, and the political debate that
surrounds them. Instructor: Clotfelter or Korstad. One course.

142S. Chinese Economy in Transition. (SS) CCI, R, SS One course. C-L: see Economics
142S; also C-L: Comparative Area Studies, Markets and Management Studies

143D. Environmental Politics Beyond Borders. (SS) CCI, EI, SS, STS One course. C-
L: see Political Science 148D; also C-L: Comparative Area Studies

144S. Enterprising Leadership. (SS) 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. Open only to first- and second-
year students. Includes a personal social innovator plan, campus and community
leadership projects, case discussions, and a ropes course experience. Consent of
instructor required. Instructor: Brown. One course.

145. Leadership, Policy, and Change. (SS) EI, IAA, 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

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faced by those supporting or opposing changes. Instructor: Payne or Schewel. One course.

146. Leadership, Development, and Organizations. (SS) 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. Instructor: Brown. One course. C-L: Markets and Management Studies

147. Environmental Politics and Policies in the Developing World. (SS) CCI, EI, SS, STS One course. C-L: see Political Science 147; also C-L: Comparative Area Studies

148S. Environmental Policy, Summer Internship. Pass/ fail grading only. Includes seminar in Washington, DC, as a follow-up to Public Policy Studies 149. Half course or one course. Prerequisite: Public Policy Studies 149. Instructor: Staff. Half course.

149. United States Environmental Policy. (SS) EI, SS, STS, W One course. C-L: see Environment 149

150S. Policy, Philanthropy, and the Arts. (SS) IAA, SS Democratic and aesthetic values in relation to past and present patterns of public, corporate, and philanthropic support for the arts. The uses of art criticism and political theory in evaluating subsidies, grants, tax incentives, and censorship. Consent of instructor required. Instructor: Payne. One course.

151. Administration of Justice. (SS) SS The history, structure, and function of the American legal system; emphasis on the courts as an institution for the resolution of disputes and administration of justice. Considers a variety of legal problems in both the criminal and civil law, examining policy choices that shape contemporary jurisprudence. Consent of instructor required. Instructor: Payne. One course.

152S. Administration of Justice, Summer Internship. Pass/ fail grading only. Includes seminar in Washington, DC, or Research Triangle Park, NC, area as a follow-up to Public Policy Studies 151. Half course or one course. Prerequisite: Public Policy Studies 151. Instructor: Staff. Half course.

153S. Leadership, Quality, and the Arts. (SS) IAA, SS Leadership in artistic organizations; problems of vision, ethics, authority, morale, creativity, and effectiveness. Insights about political and organizational leadership from classic and contemporary operas and plays. Discussions with choreographers, directors, conductors, performers, and critics. Consent of instructor required. Instructor: Payne. One course.

154S. Free Press and Public Policy. (SS) EI, SS, W Explores the historical and philosophical underpinnings of freedom of the press and other facets of the First Amendment, the relationship between the press and public policy, legal and ethical issues faced by journalists, and problems in interpreting and applying First Amendment principles to evolving information technologies. Topics include libel, privacy, national security, free press/ fair trial, and media responsibility. Consent of instructor required. Weekly papers required. Instructor: Stevens. One course. C-L: Film/ Video/ Digital

155S. Free Press and Public Policy, Summer Internship. Pass/ fail grading only. Includes seminar in Washington, DC, as a follow-up to Public Policy Studies 154S. Half course or one course. Prerequisite: Public Policy Studies 154S. Instructor: Staff. Half course.

156. Health Economics. (SS) QID, SS One course. C-L: see Economics 156; also C-L: Health Policy

157. Health Policy. (SS) CCI, EI, SS, STS Introduction to United States' health care policies and practices. Historical perspectives as backdrop to analyses of current topics.
Role of current debates in changes to United States health care system and structure. Ethics of selected health policy and health care decisions. Emphasis on differences in health outcomes and participation in health structures by race, ethnicity, and gender. Consent of instructor required. Instructor: Whetton-Goldstein. One course. C-L: Health Policy

158S. Health Policy, Summer Internship. Pass/fail grading only. Includes seminar in Washington, DC, as a follow-up to Public Policy Studies 157. Half course or one course. Prerequisite: Public Policy Studies 157. Instructor: Staff. Half course.

159S. State and Local Public Policy. (SS) 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, Grubb, or Ladd. One course.

160S. Long Term Care Policy. (SS) 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: Lin. One course.

161S. State and Local Public Policy, Summer Internship. Pass/fail grading only. Includes seminar in Washington, DC, or Research Triangle Park, NC, area as a follow-up to Public Policy Studies 159. Half course or one course. Prerequisite: Public Policy Studies 159. Instructor: Staff. Half course.

162. Human Rights in Theory and Practice. (CZ) (SS) CCI, CZ, EI, SS One course. C-L: see Political Science 162; also C-L: Philosophy 162

162D. Human Rights in Theory and Practice. (CZ) (SS) CCI, CZ, EI, SS One course. C-L: see Political Science 162D; also C-L: Philosophy 162D

163S. Telecommunications Policy and Regulation. (SS) SS, STS Broadcast policies, the rise of cable television, spectrum allocation and authorization, and developments in common carrier telecommunications. Consent of instructor required. Instructor: Prak. One course. C-L: Film/Video/Digital

164S. Telecommunications Policy, Summer Internship. Pass/fail grading only. Includes seminar in Washington, DC, as a follow-up to Public Policy Studies 163S. Half course or one course. Prerequisite: Public Policy Studies 163S. Instructor: Staff. Half course.

165. American International Economic Policy. (SS) CCI, SS, STS, W One course. C-L: see Economics 165; also C-L: Markets and Management Studies

167. International Policy. (SS) SS Relationships among organizations and agencies involved in international political and economic affairs, focusing on selected problems of international policy. Consent of instructor required. Instructor: Krupp, Kuniholm, Leachman, or Mayer. One course.


169A. United States Foreign Policy I: From World War I to Vietnam War. (CZ) (SS) CCI, CZ, EI, IAA, 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. (CZ) (SS) 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. Producing for the Theater. (AL) AL, IAA One course. C-L: see Theater Studies

173S. Race and Equity. (SS) 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: Raspberry. One course. C-L: African and African American Studies 177S

174. Separation and Inclusion. (SS) 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: Raspberry. One course. C-L: African and African American Studies 179

175. Distributive Justice. (SS) EI, SS One course. C-L: see Political Science 175B

176S. American Communities: A Photographic Approach. (AL) (SS) AL, CCI, IAA, SS A documentary approach to the study of American communities through individual documentary projects centered around the life of a particular refugee or immigrant family living in the triangle area. Students expected to pay special attention to the experiences of refugee or immigrant youth with regard to the ways in which these young people are able to integrate into American society while remaining connected to their families, country, and culture of origin. Consent of instructor required. Instructor: Harris or Sartor. One course. C-L: Visual Arts 118S, Film/Video/Digital

177S. Advanced Documentary Photography. (AL) (SS) AL, IAA, 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. One course. C-L: Visual Arts 119S, Film/Video/Digital

178. Comparative Health Care System. (SS) CCI, EI, SS One course.

180. Contemporary Theater in Production. (AL) AL, IAA One course. C-L: see Theater Studies 131

185D. Globalization and Public Policy. (SS) 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 149D, Comparative Area Studies
187S. The Canadian Health Care System. (SS) EI, SS One course. C-L: see Canadian Studies 185S; also C-L: Cultural Anthropology 185S, Political Science 185S, Sociology 185S, Comparative Area 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. Pass/fail grading only. Instructor: Conrad. One course.

191. Independent Study. Supervised reading in a field of special interest under the sponsorship of a faculty member. 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.

195. Selected Public Policy Topics. (SS) SS Instructor: Staff. One course.

195S. Selected Public Policy Topics. (SS) SS Seminar version of Public Policy Studies 195. Instructor: Staff. One course.

195T. Selected Public Policy Topics. (SS) 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) SS Instructor: Staff. One course.

196S. Selected Topics. (SS) SS Seminar version of Public Policy Studies 196. Instructor: Staff. One course.

197. Marine Policy. (SS) SS One course. C-L: see Environment 276; also C-L: Marine Sciences

198S. Senior Honors Seminar. (SS) R, SS, W Special research topics. Consent of the honors seminar instructor and director of undergraduate studies required. Instructor: Conrad. Half course.

199S. Senior Honors Seminar. (SS) SS Continuation of Public Policy Studies 198S. Consent of the honors seminar instructor and director of undergraduate studies required. Prerequisite: Public Policy Studies 198S. Instructor: Conrad. One course.

For Seniors and Graduates

216S. Economics of Education. (SS) QID, SS One course. C-L: see Economics 216S

218. Macroeconomic Policy. (SS) QID, 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: Lapp. One course. C-L: Economics 218

221S. Media and Democracy. (SS) 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. One course.

235S. Setting the National Agenda for the Twenty-First Century. (SS) R, SS Focus on the proper role of the federal government in the future. Includes individual student research, culminating in a major research paper and oral presentation, on one of the four main roles of the government: taxes, entitlements, defense, and domestic programs. Instructor: Stubbing. One course.
238. Public Budgeting and Financial Management. (SS) QID, SS Fund accounting for government; techniques of financial analysis, including break-even analysis, cost accounting, cash-flow analysis, and capital budgeting; and governmental budgeting, including the budgetary process and reforms, and the budget crunch in the public sector. Instructor: Spengler. One course.

239. Nonprofit Leadership and Management. (SS) SS The impact of nonprofit organizations on public policy making; management and leadership skills for nonprofit organizations; laws affecting nonprofit organizations. Instructor: Staff. One course.

242S. Chinese Economy in Transition. (SS) CCI, R, SS One course. C-L: see Economics 242S; also C-L: Comparative Area Studies

243S. Media in Post-Communist Societies. (SS) CCI, R, SS, STS Comparative analysis of role and impact of media in formerly Communist societies of Europe. Discussion of television and electoral process, dilemmas of newspaper sector, issues of privatization, new technology, and editorial autonomy. Develops understanding of relevant Soviet-era history and contemporary context of problems and prospects across a number of different countries, with special attention to Russia. Research paper. Instructor: Mickiewicz. One course. C-L: Political Science 276S; Comparative Area Studies

251S. Regulation of Vice and Substance Abuse. (SS) 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. One course. C-L: Economics 251S


258S. International Environmental Regimes. (SS) EI, SS, STS One course. C-L: see Political Science 271S; also C-L: Comparative Area Studies

259S. State and Local Public Finance. (SS) SS Analysis of state and local revenue sources, intergovernmental fiscal relations, budgets and expenditures, fiscal aspects of economic development, and the municipal bond market. Policy topics include financing schools and transportation systems, tax policy, and current fiscal issues. Prerequisite: Public Policy Studies 217 or equivalent. Instructor: Ladd. One course. C-L: Economics 259S

260S. Science and Technology Policy. (SS) SS Review of major political, international, and technical factors which led to the 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.

261. Evaluation of Public Expenditures. (SS) QID, 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. One course. C-L: Economics 261, Environment 272, Health Policy

262S. Seminar in Applied Project Evaluation. (SS) QID, 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. One course. C-L: Economics 262S

263S. Public Health Issues: Prevention and Management. (SS) CCI, QID, 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-Goldstein. One course.

264. Advanced Topics in Public Policy. (SS) SS Selected topics. Instructor: Staff. One course.

264S. Advanced Topics in Public Policy. (SS) SS Selected topics. Seminar version of Public Policy Studies 264. Instructor: Staff. One course.


267S. Policy-Making in International Organizations. (SS) CCI, R, SS The behavior of international organizations in the fields of development, environment, and security, including their relationships with the governments of member countries and non-governmental organizations within these countries. Required research paper focusing on how these organizations can be established or adapted to face changing challenges in the three substantive fields. Instructor: Staff. One course. C-L: Political Science 267S

269S. The Regulatory Process. (SS) 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. One course. C-L: Political Science 269S

270S. History of Poverty in the United States. (CZ) (SS) CCI, CZ, SS One course. C-L: see History 211S

271S. Schools and Social Policy. (SS) 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. Instructor: Ladd. One course.

272. Resource and Environmental Economics. (SS) SS One course. C-L: see Environment 270; also C-L: Economics 270

273S. Public Policy and African-American Life. (SS) CCI, SS Race-based public policies and African-American responses to these policies over the course of the twentieth century to the present; education, employment, housing, political participation, and social relations. The significance of race in the politics and policies of the
United States; the legacy of twentieth-century racial policies. Instructor: Korstad. One course. C-L: African and African American Studies 273S

274. Resource and Environmental Policy. (SS) SS One course. C-L: see Environment 274

275S. Seminar in Urban Politics and Urban Public Policy. (SS) EI, SS One course. C-L: see Political Science 274S

280S. Philanthropy, Voluntarism, and Not-for-Profit Management. (SS) 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: Staff. One course.

282S. Seminar in North American Studies. CCI, R Comparative or regional issues involving the cultures, societies, political institutions, or economies of Canada, Mexico and the United States. Specific topics vary each semester. Required research project that combines self-conscious consideration of research methodology with application to a particular issue. Instructor: Staff. One course.

283S. Congressional Policy-Making. (SS) SS One course. C-L: see Political Science 283S

284S. Public Policy Process in Developing Countries. (SS) CCI, R, SS How the distinctive characteristics of developing and transitional countries affect the patterns of public policymaking, especially in the areas of economic, environmental, and cultural policy. Examining cases from Latin America, formerly socialist countries, Africa, and Asia, through readings and student research papers, to illuminate both the commonalities and differences in how the policy process faces problems ranging from conservation to multilingualism. Instructor: Staff. One course. C-L: Political Science 284S, Comparative Area Studies, Latin American Studies

285. Land Use Principles and Policy. (SS) SS One course. C-L: see Environment 285

286S. Economic Growth and Development Policy. (SS) QID, 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. One course. C-L: Economics 286S, Comparative Area Studies, Latin American Studies

290S. Glasgow Seminar in Public Policy. (SS) CCI, 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 110, 114, or 116; or Statistics 101), and consent of director of undergraduate studies. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

83S. Argumentation
100A . East Asian Political Economy: Institutions, Networks, and Politics
112. Statistics and Public Policy
145D. Leadership, Policy, and Change
257. United States Policy in the Middle East
265S. The Process of International Negotiation

THE MAJOR

The public policy studies major is an interdisciplinary social science program designed to provide students with the skills, analytical perspectives, and descriptive
information 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 Institute of Public Policy to supplement material covered in class. As a matter of policy, students are asked to evaluate teaching and course content and are provided both formal and informal opportunities to shape the program and curriculum.

Prerequisites. Economics 2D or 55D; Political Science 90A, 91, 101 or equivalent; and Public Policy Studies 55D.

Major Requirements. Public Policy Studies 110, 114, 116, Statistics 101, plus four 100/200-level elective courses; one of these must be a 200-level course. Political Science 138 is an acceptable substitute for Statistics 101. Economics 149 is an acceptable substitute for Public Policy Studies 110. Political Science 90A, 91, 101 or equivalent is a prerequisite for Public Policy Studies 114. A satisfactory policy-oriented internship, approved by the department, 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 PPS Undergraduate Internships, outlining all specific internships requirements, is available through the department.

Prior to beginning the internship, all Public Policy Studies majors must have completed Public Policy Studies 55D and three of the four core courses (Public Policy Studies 110, 114, 116, or Statistics 101 or equivalent). This requirement may be waived by the director of undergraduate studies for transfer students or others in unusual circumstances. The internship application process is completed during the fall and spring semesters of the junior year, with the guidance and assistance of the Public Policy Studies Internship Office. All internship applications must be approved by the Internship Office. Typically the internship is completed during the summer between the junior and senior year. In some cases the internship may be completed during the regular academic year, depending on the student's course load. Upon completion of the internship, students are required to submit a short policy paper analyzing some aspect of their experience.

Students may elect to complete either the academic concentration or the general policy internship option. Students choosing the academic concentration option enroll in a pre-internship course during the spring of the junior year in one of the following policy topic areas: administration of justice, international policy, environmental policy, state and local policy, free press and public policy, telecommunications policy, and health policy. The pre-internship course serves as preparation for the ten-week internship experience, which usually begins in late May or early June and runs through mid-August. Academic concentration internships are conducted in all policy areas in Washington, D.C. In addition, academic concentration internships in state and local policy and administration of justice are conducted in the Research Triangle Park area of North Carolina. Interns in each policy area are required to enroll in a summer seminar conducted on-site (either in Washington, D.C. or in the Research Triangle Park area of North Carolina).
Park area). The summer seminar is taken on a pass-fail basis for either half or full course credit. Stipends are available for public policy studies majors participating in the academic concentration internship. Students receiving compensation from their internship employers are not eligible for the stipend.

Alternatively, students can design their own general policy internship, with the guidance and approval of the Public Policy Internship Office. There is no predesignated internship course in this case, but students are strongly encouraged to choose at least one course providing appropriate preparation for the summer experience. Likewise, there is no required summer seminar on-site, nor is there a stipend. General policy interns who wish to receive course credit can enroll in Public Policy Studies 190 on a pass/fail basis.

Public Policy Studies majors are strongly encouraged to take an advanced follow-up course that augments the knowledge gained from their internship experience.

**Departmental Graduation With Distinction**

For graduation with departmental distinction students are required to complete an honors seminar and an honors project. To be awarded distinction, a student must receive no less than an A- on the research paper and have a final 3.5 grade point average in the public policy studies major. If a student is judged to have done a clearly superior research project, as evidenced by a grade of A or A+, and if the 3.5 major grade point average requirement is met, Highest Distinction in Public Policy is awarded. The proposed program of research must be approved in advance by the director of undergraduate studies.

**Religion (RELIGION)**

Professor Lawrence, Chair; Professor Bland, Director of Undergraduate Studies; Professors Clark, Hillerbrand, Kort, C. Meyers, E. Meyers, Sanders, and Van Rompay; Associate Professor Peters; Assistant Professors Jaffe, Joyce, Maldonado-Torres, Nickerson, and Prasad; Associate Research Professor Moosa. Affiliated faculty: Professors Aers (English), Beckwith (English), Ehrman (University of North Carolina at Chapel Hill), Ewing (cultural anthropology) and Surin (literature)

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 are divided into 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.

**205. Special Topics in Writing. IAA** Various topics with diverse readings and intensive writing. Instructor: Staff. One course.

**166. FOCUS Seminars. (CZ) CZ, IAA** Topics vary from semester to semester. Open only to students in the FOCUS Program. Instructor: Staff. One course.

**GLOBAL RELIGIONS**

**40. Judaism. (CZ) CCI, CZ, IAA** Introduction to Judaic civilization from its origins to modern times. Instructor: Bland, E. Meyers, or staff. One course. C-L: Judaic Studies, Women's Studies

**41. Christianity. (CZ) CCI, CZ, EI, IAA** Introduction to Christian doctrine, ritual, social organization and ethics in the past and present. Instructor: Hillerbrand, Van Rompay, or staff. One course.
42. Islam. (CZ) CCI, CZ, EI, IAA Introduction to Islamic theology, practice, social institutions, and ethics in the past and present. Instructor: Lawrence. One course.
43. Hinduism. (CZ) CCI, CZ, EI, IAA An exploration of the beliefs, ethics, everyday and ceremonial practices, philosophies, mythologies, and movements that are part of the aggregates-named religion of Hinduism. Instructor: Prasad or staff. One course.
44. Buddhism. (CZ) CCI, CZ, EI, IAA Introduction to Buddhist texts, beliefs, rituals, and ethics in the past and present. Instructor: Jaffe or staff. One course.
45. Religions of Asia. (CZ) CCI, CZ, EI, IAA 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: Lawrence or staff. One course. C-L: Comparative Area Studies
46. Religions of China and Japan. (CZ) CCI, CZ, EI, IAA Traditional religion in China and Japan and its interaction with Sino-Japanese Buddhism, with attention to the ethical implications of these religions and cultural interactions. Instructor: Nickerson. One course. C-L: Comparative Area Studies
48. Japanese Religions: Buddhas, Kanmi, and other Deities. (CZ) 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.
49. First-Year Seminar. IAA Topics vary each semester offered. Instructor: Staff. One course.
71. Seminar for First- and Second-Year Students. (CZ) CZ, IAA Topics and instructors to be announced. Instructor: Staff. One course.
80. Approaches to Religion. (CZ) CCI, CZ, EI, IAA 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: Maldonado-Torres. One course.

TRADITIONS, TEXTS AND CONTEXTS
1. Biblical Hebrew I. (FL) FL (Divinity School course open to undergraduates with consent of instructor.) Elements of phonology, morphology, and syntax. Exercises in reading and writing Hebrew. Course credit contingent upon the successful completion of Religion 2. Instructor: Staff. One course. C-L: Judaic Studies
2. Biblical Hebrew II. (FL) FL (Divinity School course open to undergraduates with consent of instructor.) Second half of Religion 1. Study of the weak verb; exegetical treatment of the Book of Jonah. Instructor: Staff. One course. C-L: Judaic Studies
100. The Old Testament/Hebrew Bible. (CZ) CCI, CZ, EI, IAA 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: Judaic Studies
101A. Selected Studies in the Bible: Pentateuch. (CZ) CCI, CZ, EI, IAA Analysis and interpretation of major themes and figures, with special consideration of the narratives dealing with ethics, human, and Israelite origins. Not open to students who have taken Religion 100. Instructor: C. Meyers or staff. One course. C-L: Judaic Studies
101B. Selected Studies in the Bible: Prophets. (CZ) CCI, CZ, EI, IAA Analysis and interpretation of representative socio-political, ethical issues and personalities in the
historical and prophetic books composed in ancient Near East contexts. Instructor: Staff. One course. C-L: Judaic Studies

102. The New Testament. (CZ) CCI, CZ, EI, IAA Examination of the major books of the New Testament, covering their contents, ethical implications, historical and social setting, authorship, date, and theology. Instructor: Sanders or staff. One course.

103. Islam in East and Southeast Asia. (CZ) CCI, CZ, EI, IAA Development of Islam and Islamic civilization in Southeast and Eastern Asia from the rise of Islam to modern times. Special attention to the ethical implications of these cultural interactions. Instructor: Staff. One course. C-L: Comparative Area Studies

104. Religion in the West. (CZ) CZ Judaism, Christianity, and Islam in their historical and cultural contexts, with their precursors and successors. Instructor: Staff. One course.

105. Religion in Greece and Rome. (CZ) CCI, CZ, IAA, R One course. C-L: see Classical Studies 103

107A. Taoism and Chinese Religion. (CZ) CCI, CZ, EI, IAA Introduction to Taoism, its texts, practices, and ethical implications in history and modern times in mainland China and Taiwan. Instructor: Nickerson. One course.

108. The Life and Letters of Paul. (CZ) CCI, CZ, EI, IAA 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: Sanders. One course.

110. The Historical Jesus. (CZ) CCI, CZ, EI, IAA 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: Sanders. One course.

111. Gender and Expressive Culture in India. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 139; also C-L: Cultural Anthropology 123, Comparative Area Studies, Women's Studies

113. Mahayana Buddhism. (CZ) CCI, CZ, IAA 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.

118. Anthropological Approaches to Religion. (SS) CCI, IAA, SS One course. C-L: see Cultural Anthropology 161

119. Muslim World: Transformations and Continuities. (SS) CCI, SS One course. C-L: see Cultural Anthropology 126; also C-L: Comparative Area Studies, Women's Studies
120. History of the Christian Church. (CZ) CCI, CZ, EI, IAA  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

121. Roman Catholic Tradition. (CZ) CZ, IAA  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 gender equality, sexuality, and the post-Vatican II crisis of authority. Instructor: Clark or Joyce. One course.

122. Understanding Evil. (CZ) CCI, CZ, EI  Examination of classical formulations for and responses to the problem of evil in diverse religious as well as in modern western literature, philosophy, and religious thought. Instructor: Maldonado-Torres. One course.

124. Religion in American Life. (CZ) CZ, EI, IAA  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: Joyce. One course.


128. Christians in Crisis. (CZ) CCI, CZ, EI  Christian thought and debate on, and theological analysis of, such contemporary issues as abortion, creationism, homosexuality, liberation, poverty, racism, and sexism. Instructor: Staff. One course.

129. Religion and Science: Biology, Minds, and Souls. (CZ) 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-teleology 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.

130. Late Antique Christian Art. (AL) (CZ) AL, CCI, CZ, IAA, W  One course. C-L: see Art History 130; also C-L: Classical Studies 130, Medieval and Renaissance Studies 130

133. Classical Judaism, Sectarianism, and Early Christianity. (CZ) CCI, CZ, IAA  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: Judaic Studies

134. Jewish Mysticism. (CZ) CZ, EI, IAA  The main historical stages, personalities, texts, ethical doctrines, and social teachings, and metaphysical doctrines from rabbinitic to modern times. Instructor: Bland. One course. C-L: Medieval and Renaissance Studies 134C, Comparative Area Studies, Judaic Studies

136. Contemporary Jewish Thought. (CZ) CCI, CZ, EI, IAA  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: Judaic Studies

138. Women and Religion in America. (CZ) CCI, CZ, IAA  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: Joyce. One course. C-L: Study of Sexualities, Women's Studies

139. Women in Islam: Fact and Fiction. (CZ) CCI, CZ, R  One course. C-L: see Asian & African Languages and Literature Studies 190; also C-L: African and African American Studies, Comparative Area Studies

140. Religions of India. (CZ) CCI, CZ, IAA  Major religious traditions of the subcontinent: Hinduism, Buddhism, Jainism, and Islam. Instructor: Lawrence, Prasad, or staff. One course.

144. Introduction to the Civilizations of Southern Asia. (CZ) CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 160; also C-L: Cultural Anthropology 101, History 193, Comparative Area Studies

145. Introduction to Islamic Civilization. (CZ) CCI, CZ, EI, IAA One course. C-L: see Asian & African Languages and Literature Studies 160; also C-L: Cultural Anthropology 101, History 193, Comparative Area Studies

146. Introduction to Islamic Civilization. (CZ) CCI, CZ, EI, IAA  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 or staff. One course. C-L: Cultural Anthropology 147, History 101G, Medieval and Renaissance Studies 146A, Comparative Area Studies

147. Introduction to Islamic Civilization. (CZ) CCI, CZ, EI, IAA  Continuation of Religion 146. Instructor: Lawrence, or staff. One course. C-L: Cultural Anthropology 147, History 101G, Medieval and Renaissance Studies 146A, Comparative Area Studies

148. Alternative Religion in America. (CZ) CCI, CZ, IAA  Focus on both the historical development of particular traditions (for example, Mormon, Adventist, New Age) and general themes in American religious life (for example, relationship between religion and health, appeal of communitarian and millennial movements). Instructor: Joyce or staff. One course.


151. Indian Dance and Hindu Cosmology. (AL) CCI, AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 151; also C-L: Dance 152


152B. Islamic Mysticism: Perso-Indian (Eastern) Traditions. (CZ) CCI, CZ, EI, IAA  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: Comparative Area Studies

154. African-American Religion and Identity. (CZ) CCI, CZ, EI, IAA  Religious formation of African-American identity, from slavery to the present time; focus on the

155. Jewish Culture in the Mediterranean. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Asian & African Languages and Literature Studies 158; also C-L: Literature 163E

158. The Reformation of the Sixteenth Century. (CZ) CCI, CZ, EI, IAA A survey of the changes in sixteenth-century European society, with particular reference to the continent, which grew out of the movement for religious reform and socio-political renewal. Focus on new developments in theology and religion and their relationship to society in such issues as the definition of a “good society,” just war, and social justice. Instructor: Hillerbrand. One course. C-L: History 156A, Medieval and Renaissance Studies 156A

1595. Ethical Issues in Early Christianity. (CZ) CCI, CZ, EI, IAA One course. C-L: see Distinguished Professor Course 185S

THEORETICAL PERSPECTIVES


165. Religion and Psychology. (CZ) (SS) CZ, IAA, SS Contributions of major psychological theories to an understanding of religion, especially Christianity. Instructor: Staff. One course.

171. Religion and Society. (CZ) CZ, IAA Introduction to the interface between religion and its social contexts. Issues such as social organizations, politics, systems of value, and the arts from a global and comparative perspective. Instructor: Staff. One course.


181. Ethical Issues in Social Change and Public Policy. (CZ) CZ, EI, IAA American moral tradition and factors in social change in the normative analysis of public policy, with a consideration of specific ethical issues. Instructor: Staff. One course.

182. Medicine and Religion in American Society. (CZ) CZ, EI, IAA, 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: Joyce. One course. C-L: Study of Sexualities

183. Comparative Approaches to Global Issues. (CZ) (SS) CCI, CZ, SS One course. C-L: see Comparative Area Studies 125; also C-L: Cultural Anthropology 125, History 137, Political Science 125, Sociology 125, Marxism and Society

184. Religion and Film. (CZ) CCI, CZ, EI, IAA 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: Film/Video/Digital

186. The Theology and Fiction of C. S. Lewis. (AL) (CZ) AL, CZ, EI, IAA 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.
187. Atmosphere and Belief in Modern English Fiction. (AL) AL, IAA  The language of place and belief concerning the moral and spiritual effects of place-relations in modern English fiction. Instructor: Kort. One course. C-L: English 132B


SPECIAL TOPICS, INDEPENDENT STUDIES, AND SMALL GROUP LEARNING EXPERIENCES

185. Special Topics in Religion. IAA  Topics vary from semester to semester. Instructor: Staff. One course.

185S. Special Topics in Religion. IAA  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) CZ, IAA  Topics and instructors to be announced. Instructor: Staff. One course.

196S. Junior-Senior Seminars. (CZ) CZ, IAA  Topics and instructors to be announced. Instructor: Staff. One course.

197. Honors Research. Course credit contingent upon successful completion of Religion 198. Consent of the director of undergraduate studies required. Instructor: Staff. One course.
198R. **Honors Research.** R 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) CZ, EI, IAA 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) 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. Instructor: Staff. One course. C-L: Old Testament 207, Judaic Studies

208. **Classical Hebrew Poetry: An Introduction.** (FL) 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 for undergraduates. Instructor: Staff. One course. C-L: Old Testament 208, Judaic Studies

212. **Theorizing Religion.** (CZ) CCI, CZ, EI, IAA 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) CZ, EI, IAA 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.

216. **Syriac.** (CZ) CZ, FL The script and grammar, with readings from the Syriac New Testament and other early Christian documents. Prerequisite: some knowledge of Hebrew and Aramaic. Instructor: Van Rompay. One course.

217. **Islam and Islamic Art in India.** (AL) (CZ) AL, CCI, CZ, IAA To engage and enjoy the intellectual and social history and the religious, literary, and aesthetic legacy of the several Muslim communities of South Asia. Focus on the major creative saints/scholars/leaders of institutional Sufism. Includes a gallery field trip. Instructor: Lawrence. One course. C-L: Art History 217, Comparative Area Studies


220. **Rabbinic Hebrew.** (FL) 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: Judaic Studies


224B. **Comparative Semitic II.** (FL) FL An introduction to the morphology and syntax of classical Arabic and the Semitic languages of Palestine-Syria, together with a consideration of their relationships to Hebrew. Instructor: Staff. One course.

226B. **Exegesis of the Greek New Testament (Romans).** (CZ) CZ, FL, IAA Consent of instructor required. Instructor: Staff. One course.

227F. Exegesis of the Greek New Testament II: The Synoptic Gospels. Concentration on the "classical" methods of studying the first three gospels: source criticism, form criticism, and redaction criticism. Some attention to textual criticism. Students expected to become proficient in using the Greek synopsis. Prerequisite: two years of Greek or the equivalent. Also taught as New Testament 227F. Consent of instructor required for undergraduates. Instructor: Sanders. One course.

230. Sainthood in Comparative Perspective. (CZ) CCI, CZ, EI, IAA Examination of the ethical and religious dimensions of sainthood, saint cults, and sacred biography from a multidisciplinary and comparative perspective. Instructor: Staff. One course.

231S. Seminar in Religion and Contemporary Thought. (CZ) CCI, CZ, IAA Analytical reading and discussion of such critical cultural analysis as is found in the works of Polanyi, Arendt, Trilling, and others, with appraisal of the relevance of theological inquiry. Instructor: Staff. One course.

232S. Religion and Literary Studies. (AL) AL, IAA Theories concerning the relation of religion to literary forms, particularly narrative. Instructor: Kort. One course.

233. Modern Fiction and Religious Belief. (AL) AL, CCI, IAA A study of kinds of religious meaning or significance in representative American, British, and continental fiction of the first half of the twentieth century. Instructor: Kort. One course.


241. Classical Islamic Theology and Ethics. (CZ) CZ, EI, IAA Islamic theology and ethical philosophy: topics include the nature of God, free will and predestination, Aristotelian and Neoplatonic influences on Islamic thought, the construction of orthodoxy, ethical rationalism and voluntarism, and Islamic moral philosophy. Instructor: Staff. One course. C-L: African and African American Studies 241, Medieval and Renaissance Studies 244

243. Archaeology of Palestine in Biblical Times. (CZ) CCI, CZ, IAA, STS Investigation of selected material remains from the Bronze Age to the Persian period. Trends in biblical studies, with particular attention to methodological considerations and current developments. Instructor: C. Meyers. One course. C-L: Judaic Studies

244. Archaeology of Palestine in Hellenistic-Roman Times. (CZ) CCI, CZ, IAA, 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: Judaic Studies

245. Special Topics in Religion. (CZ) CZ Subject varies from semester to semester. Instructor: Staff. One course.

254. Justice, Law, and Commerce in Islam. (CZ) CZ, EI, IAA History and schools of Islamic jurisprudence: Islamic legal reasoning; approaches to ethics and procedural justice, the ethical regulation of commerce, including a detailed study of pertinent issues in Islamic law. Also taught as Law 568. Instructor: Staff. One course. C-L: African and African American Studies 254, Medieval and Renaissance Studies 254, Comparative Area Studies

258. Coptic. (FL) FL Introduction to the Sahidic dialect with selected readings from Christian and Gnostic texts. Prerequisite: one year of Greek or consent of instructor. Instructor: Staff. One course.
262. Special Topics in Gender and Religion. (CZ) CZ, R Study of gender and sexualities; emphasis on cultural and social constructions of womanhood, masculinity, and sexual identities in the American context. Instructor: Joyce. One course. C-L: Study of Sexualities, Women's Studies

283. Islam and Modernism. CCI, IAA Cultural, religious, and ideological forces which shape Muslim responses to modernism. Instructor: Lawrence. One course. C-L: Comparative Area Studies

284. The Religion and History of Islam. (CZ) CCI, CZ, IAA, 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: Comparative Area 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: Hütter. One course.


COURSES CURRENTLY UNSCHEDULED

101C. Selected Studies in the Bible: Writings
112. Muslim Minorities in Society: From Asia to America
123. Issues in Early Christian History
126. Russian Orthodoxy
132D. Palestine in Late Antiquity
149. Introduction to Christian Theology and Ethics
173. Religious Movements
175. Archaeology and Art of the Biblical World
176. Principles of Archaeological Investigation
177. Perspectives in Archaeology
180. Ethical Issues in the Life Cycle
189. Autobiography and Religious Identity
199. Colloquium for Majors
201. Studies in Intertestamental Literature
218. Religions of East Asia
224A. Comparative Semitic I
229S. Old Church Slavonic
239. Introduction to Middle Egyptian I
240. Introduction to Middle Egyptian II
253. Feminist Theory and the Study of Christianity
261. Islam in the African-American Experience
264. The Sociology of the Black Church
274A. Philosophies, Sciences, and Theologies of the European Enlightenment: Descartes to Kant
274B. Philosophies, Sciences, and Theologies after the European Enlightenment: Schleiermacher to Troeltsch
275S. Topics in Early Christian and Byzantine Art
277. Judaism in the Greco-Roman World
280. The History of the History of Religions
288. Buddhist Thought and Practice
297. Philosophical and Theological Discourses on Modernity
THE MAJOR

Major Requirements. Ten courses, at least eight of which must be at the 100-level, including a small group learning experience: a junior-senior seminar, a 200-level course, independent study (Religion), a departmental honors project (Religion), or the Colloquium for Majors (Religion 199). The student, in consultation with an assigned advisor and with the advisor's approval, will select at least one course apiece for each of three different religions and will choose a set of four courses which constitute a thematic or methodological focus on a particular aspect of religion.

Departmental Graduation With Distinction

The Department of Religion has a program for Graduation with Distinction (see the bulletin under that heading). This program is intended for the outstanding religion major who has demonstrated the desire and talent to pursue independent research. The student, under supervision by an advisor, will produce a thesis of exceptional quality.

THE MINOR

Requirements. The religion minor offers students specializing in another department or program the opportunity to enrich their studies with a wider perspective in religions. The requirements consist of a minimum of five religion courses, at least four of which must be at the 100-level or above.

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 (ROM ST)

Professor Bell, Chair; Associate Professor Finucci, Director of Undergraduate Studies; Professors Garcia-Gómez, Greer, Jameson, Kaplan, Mignolo, Moi, Moreiras, Orr, Stewart, and Thomas; Associate Professors Hardt, Longino, Sieburth, Solterer, and Vilaros; Assistant Professors Dainotto, Fischer, Gabara, Jonassaint, Nouzeilles, Schachtler, and Viego; Associate Professor of the Practice and Director of French Language Program Tufts; Assistant Professor of the Practice and Director of the Spanish Language Program Paredes; Associate Professor of the Practice of Portuguese Damasceno; Research Professor Dorfman; Research Associate Professor Keineg; Adjunct Associate Professor Byrd

Majors (in French Studies, Italian Studies, and Spanish) and minors are available in this department.

Prerequisites for all courses numbered 100 or above not taught in English:
Courses: French or Spanish 15
Italian 22
French, Italian, Spanish 76
or SAT II: French: score of 640+
Spanish: score of 660+
or AP: French or 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 French or 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, or Spanish must be placed by the director of undergraduate studies.
FRENCH (FRENCH)

1. Elementary French 1. (FL) 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. Students do not receive credit for French 1 until they have completed French 2. Five class meetings a week. Instructors: Tufts and staff. One course.

2. Elementary French 2. (FL) 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. Five class meetings a week. Instructor: Tufts and staff. One course.

14. Intensive Elementary French. (FL) 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, reading, and writing French, and an introduction to some aspects of French/francophone cultures. Computer, video, and audio laboratory work required. Eight class meetings a week. Instructors: Tufts and staff. Two courses.

15. Intensive Intermediate French Language and Culture. (FL) 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. Eight class meetings a week. Prerequisite: French 1-2, 12, 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.

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

63. Intermediate French Language and Culture. (FL) 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, 12, or 21 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. (FL) 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 during first five weeks of course, followed by 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 AP Literature Test score of 3, or an AP Language Test score of 4. Instructors: Tufts and staff. One course.

100. Cultural and Literary Perspectives. (FL) FL Designed to give students leaving intermediate French the reading and writing skills necessary to enter 100-level courses in French studies. A close reading of cultural and literary texts which focus on themes such as daily life, philosophy, art, etc. Instructor: Staff. One course.

101. Advanced French Language/Writing Workshop. (FL) 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 AP Literature Test score of 4 or 5, or equivalent. Instructors: Tufts and staff. One course.

103A. Advanced French Language Abroad. (FL) CCI, FL Topics may vary. Instructor: Staff. One course.

103B. Advanced Expression. (FL) CCI, FL Intensive practice in speaking and writing. Offered only in the Duke in France Program. Instructor: Staff. One course.

104S. French for Current Affairs. (FL) CCI, FL Changes and controversies in today's France. Readings, discussions, and exposes. Instructor: Kelneg or staff. One course. C-L: Comparative Area Studies


108. Advanced Translation and Stylistics. (FL) CCI, FL Cultural and social difference between French and English patterns in written and oral expression. Extensive practice in actual translation of different types of texts. Stylistic exercises. Prerequisite: French 101 or equivalent or consent of instructor. Instructor: Thomas or staff. One course. C-L: Linguistics 121

109S. French for Business. (FL) CCI, FL Current issues in French business and commerce. Not open to students who have taken the course as French 113S. Instructor: Staff. One course.

111. Introduction to French Literature I. (AL) (FL) AL, CCI, FL, IAA Major writers of the French literary tradition from the Middle Ages to the eighteenth century. Poetry, fiction, theater, and essay. Conducted in French. Not open to students who have taken the course as French 101. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 111C


114S. Discussions of Readings. (AL) (FL) AL, CCI, FL, IAA 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.

115. Topics in French Thought and Culture from the Middle Ages to 1900. (CZ) (FL) CCI, CZ, FL, IAA Topics such as class and social relationships; the nation and centralization; authority and the state; the rise of public education; language and centralization; history of ideas and mentalities; film and media. Readings in French from documents. May be repeated. Instructor: Staff. One course.

116. Topics in Modern French Thought and Culture: 1900 to the Present. (CZ) (FL) CCI, CZ, FL, IAA Topics such as racism, colonialism and its aftermath; postwar ideology; women's movement; communication development; elitist technology; community and privacy; environmental issues. May be repeated. Instructor: Staff. One course.

117S. Contemporary Ideas. (CZ) (FL) CCI, CZ, FL Readings and discussion of French works which have provoked political or intellectual thought in recent years. For freshmen and sophomores only. May be repeated. Instructor: Staff. One course. C-L: Comparative Area Studies
120. Topics in French Literature and/or Culture. (AL) (CZ) AL, CCI, CZ  Topics to be announced. Taught in English. Instructor: Staff. One course.

124A. Topics in French Literature and/or Culture Abroad. (AL) (CZ) AL, CCI, CZ Topics to be announced. Taught in English. Instructor: Staff. One course.

130. Comics and Culture: Images of Modern France in the Making. (FL) CCI, FL, IAA 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.

136A. Topics in French and/or Francophone Culture Abroad. (CZ) (FL) CCI, CZ, FL Topics may vary. Instructor: Staff. One course.

137. Aspects of Contemporary French Culture. (CZ) (FL) 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: Comparative Area Studies

139. French Civilization. (CZ) (FL) CCI, CZ, FL, IAA An exploration of what it means to be French, with a special emphasis on the period starting with the French Revolution. Instructor: Keineg. One course. C-L: Comparative Area Studies

140. France in the Making: Language, Nation, and Literary Culture in Premodern Europe. (CZ) (FL) CCI, CZ, FL, IAA Fifteenth-century France, a transitional world where a national language was crystallizing, ideas and images of French sovereignty were taking shape, and literature became a state affair. Urban theater, political polemics, Joan of Arc, courtly culture. Instructor: Solterer. One course. C-L: Medieval and Renaissance Studies 140A, Comparative Area Studies

141S. French Literature. (AL) (FL) AL, CCI, FL, IAA 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.

142S. French Literature. (AL) (FL) AL, CCI, FL, IAA Topics to be announced. Open to juniors and seniors. May be repeated. Instructor: Staff. One course.

143. Aspects of French Literature. (AL) (FL) AL, CCI, FL, IAA 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.

144. Medieval Fictions. (AL) (FL) AL, CCI, FL, IAA Introduction to the literature and culture of medieval France. Topics include Old French and the rise of literacy, allegory, the invention of romantic love, social class and literary taste, modern renditions of the premodern past. Instructor: Solterer. One course. C-L: Medieval and Renaissance Studies 144A

145S. Topics in Renaissance Literature and Culture. (AL) (FL) AL, CCI, FL, IAA Topics may include: women writers, love and death, the Wars of Religion, identity and alterity, travel, literature, the new world. Instructor: Schachter. One course. C-L: Medieval and Renaissance Studies 160S, Comparative Area Studies


149. Topics in Seventeenth-Century French Literature. (AL) (FL) AL, CCI, FL, R Readings from philosophers, poets, moralists, historians, travelers, novelists, and letter writers. Topics include taste, science, religion, love, death, and autobiography as contextualized through documentary research projects. Instructor: Longino. One course.


154. Upheavals That Made Modern France. (CZ) (FL) CCI, CZ, FL, IAA One course. C-L: see History 154BS; also C-L: Comparative Area Studies

155. Insiders and Outsiders of Nineteenth-Century France. (AL) (FL) AL, CCI, FL How France consolidated its social, literary, and cultural identity after the Revolution. Topics include peasants, the new bourgeois wealth, the emerging power of the 'people,' expansion to the New World and Africa, and sexual and gender definitions. Works by Chateaubriand, de Duras, Balzac, Hugo, and memoirs edited by Foucault. Instructor: Orr. One course. C-L: Comparative Area Studies

156. The Age of the Novel. (AL) (FL) AL, CCI, FL, IAA Flaubert, Balzac, and Stendhal. Instructor: Bell or Orr. One course.


159. Topics in Sexuality and Gender Studies. (AL) (FL) AL, 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

162. French Drama of the Twentieth Century. (AL) (FL) AL, CCI, FL, IAA Topics vary and may include Alfred Jarry (1896) and the theater of the absurd of the fifties, dramatic production between the wars, the French stage and World War II, post-May 1968 political theater, francophone theater, regional theater, and women in theater. Instructor: Tufts. One course. C-L: Theater Studies 119

163. World War II and French Film. (CZ) (FL) CCI, CZ, FL, IAA 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: Orr. One course.

164. French Cinema. (AL) (FL) AL, CCI, FL, IAA 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. Instructor: Bell. One course. C-L: Film/Video/Digital

Languages and Literature Studies 168S, Canadian Studies, Comparative Area Studies, Latin American Studies


170. Contemporary Culture Wars. (CZ) (FL) CCI, CZ, EI, FL Contemporary French cultural problems such as immigration, historical memory, intimacy in a materialistic world, feminist critique, sexualities, AIDS, and the new Europe. Literary and historical texts, essays, and films will be used. Instructor: Orr. 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. Open only to qualified juniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

192. Research Independent Study. R See French 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 French 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 French 191. Open only to qualified seniors by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

195. Topics in French Literature and Culture. (AL) (FL) AL, FL Topics to be announced. (Offered only in the Duke-in-France Program.) Instructor: Staff. One course.

196A. Advanced Topics in French and/or Francophone Literature/Culture Abroad. (AL) (FL) AL, CCI, FL, IAA Topics may vary. 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.

200S. Seminar in French Literature. (AL) (FL) AL, CCI, FL, IAA Cross-cultural analysis of literary and cultural topics focusing on specific objects of inquiry. May be repeated. Instructor: Staff. One course.


223. Semiotics for Literature. (AL) AL, CCI, FL, IAA Theoretical writings in general semiotics by Frege, Peirce, Saussure, Mukarovsky, and Morris and their applications for textual analysis of French literary works by representative contemporary critics such as Eco, Riffaterre, Corti, and Greimas. Taught in English. Instructor: Thomas. One course. C-L: Literature 280

240. Medieval Narrative. (AL) (FL) AL, CCI, FL, IAA The literatures and cultures of premodern France. Introduction to vernacular languages. Topics include literacy, orality, the experience of allegory, fictionality, the uses of the past. Major writers include Chrétien de Troyes, troubadours and trouvères, Guillaume de Machaut, Christine de Pizan, Alain Chartier. Instructor: Solterer. One course. C-L: Medieval and Renaissance Studies 240

247. Early Modern Studies. (AL) (FL) AL, FL, IAA, 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.


256. Modern Literature and History. (AL) (CZ) AL, CCI, CZ, FL, IAA 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: Kaplan, Orr, or staff. One course. C-L: History 256, Comparative Area Studies

COURSES CURRENTLY UNSCHEDULED
131S. French in the New World
147. Seventeenth-Century Fictions of Women
148. Topics in Seventeenth-Century French Theater
151. French Comedy
165. French Existentialism
166. Contemporary French Life and Thought
167. Contemporary French Life and Thought
211. History of the French Language
257. Problems of Identity in the Nineteenth-Century Novel
258. The Narrative of Social Crisis
261. French Symbolism
264. Contemporary French Poetry
265. French Literature of the Early Twentieth Century
266. French Literature of the Mid-Twentieth Century
267. Writers, Artists, and Intellectuals in Twentieth-Century France
281. Paradigms of Modern Thought
290S. Studies in a Contemporary Figure

ITALIAN (ITALIAN)
1. Elementary Italian 1. (FL) FL Introduction to Italian language and culture. Aural comprehension, speaking, reading, and writing skills. Conducted in Italian. Computer, video and audio labs. Not open to students with prior knowledge of Italian. No credit for Italian 1 without completion of Italian 2. Five class meetings a week. Instructor: Staff. One course.

2. Elementary Italian 2. (FL) FL Second half of Italian 1-2 sequence. Required for credit for Italian 1. Italian 2 develops and expands skills acquired in Italian 1: aural comprehension, speaking, reading and writing. Conducted in Italian. Computer, video and audio labs. Five class meetings a week. Prerequisite: Italian 1 or placement through Italian Language Coordinator. Instructor: Staff. One course.

11. Italian for Beginners. (FL) 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.

21. Accelerated Elementary Italian. (FL) FL Basic grammar structures in one semester; emphasis on oral work. Conducted in Italian. Prerequisites: four college semesters or the equivalent of another foreign language or consent of instructor. Five class meetings a week. Instructor: Staff. One course.

22. Accelerated Intermediate Italian. (FL) FL Readings in modern literature; analysis and discussion. Prepares students to enroll in courses at the 100 level. Prerequisite: Italian 21 or consent of instructor. Instructor: Staff. One course.
495. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

63. Intermediate Italian. (FL) FL Grammar review, reading, oral practice including laboratory experience. Instructor: Staff. One course.

76. Advanced Intermediate Italian. (FL) FL Oral practice, reading, and composition. Prerequisite: Italian 63 or equivalent. Instructor: Staff. One course.

101. Writing Workshop in Italian. (FL) 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 76 or appropriate placement test score. Instructor: Staff. One course.

103. Topics in Italian Culture. (AL) (FL) AL, CCI, FL Practice in understanding, speaking, reading, and writing Italian with special attention to cultural topics and issues. (Offered in Italian to students enrolled in programs in Italy.) Instructor: Staff. One course.

110S. Introduction to Italian Civilization. (CZ) (FL) CCI, CZ, FL The institutions and culture of Italy throughout the centuries. Instructor: Dainotto, Finucci, or Hardt. One course.

111. Introduction to Italian Literature I. (AL) (FL) AL, CCI, FL, IAA Major writers of the Italian literary tradition from the Middle Ages to the seventeenth century. Poetry, fiction, theater, and essay. Instructor: Dainotto or Finucci. One course. C-L: Medieval and Renaissance Studies 111A


114. Italian Poetry. (AL) (FL) AL, CCI, FL, IAA An introduction to major poets, movements, and techniques of the Italian lyrical tradition. May include different historical periods. Instructor: Dainotto or Hardt. One course.

115. Italian Women Writers. (AL) (FL) AL, EI, FL, IAA 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. Instructor: Dainotto, Finucci, or Hardt. One course. C-L: Comparative Area Studies, Women's Studies

118S. Italian Literature and Popular Culture. (AL) (FL) AL, CCI, FL, IAA 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: Comparative Area Studies

122. Topics in Italian Literature in Translation. (AL) (CZ) AL, CCI, CZ, IAA Topics on single authors, genres, movements, or themes across centuries. Instructor: Finucci. One course.

123. Aspects of Italian Literature. (AL) AL, CCI, IAA Concentration on single authors, periods, genres, regions, or themes. (Taught in Italy.) Instructor: Staff. One course. C-L: Comparative Area Studies

125. Aspects of Renaissance Culture. (AL) (CZ) AL, CZ One course. C-L: see Medieval and Renaissance Studies 115; also C-L: Art History 149, History 148A
126. Topics in Italian Literature, Culture, Civilization, and/or Cinema. (AL) (CZ) AL, CCI, CZ, IAA  Topics on literature, culture, civilization, and/or cinema. May concentrate on one or many periods. Instructor: Staff. One course.

128. Historical Overview of Italian Cinema. (AL) (CZ) AL, CZ, IAA  Introduction to specifically Italian theoretical concerns regarding cinema. Instructor: Dainotto or Hardt. One course. C-L: Film/Video/Digital


129B. Dante in Translation II. (AL) (CZ) AL, CCI, CZ, IAA  The Purgatorio and the Paradiso in the context of Dante's cultural world. Readings in English. Instructor: Staff. One course. C-L: Medieval and Renaissance Studies 167

141S. Italian Literature. (AL) (FL) AL, FL, IAA  A literary, cross-cultural critique focusing on specific topics to be announced. Open to juniors and seniors. Instructor: Staff. One course.

142S. Italian Literature. (AL) (FL) AL, FL  Topics to be announced. Open to juniors and seniors. Instructor: Staff. One course.

145S. Topics in Early Modern Literature and Culture. (AL) (FL) AL, CCI, FL, IAA  Topics may include: the Italian Middle Ages, the Renaissance, the baroque, humanism. Instructor: Finucci. One course. C-L: Medieval and Renaissance Studies 161S

148S. Italian and/or Italophone Culture and Literature Abroad. (CZ) (FL) CCI, CZ, FL, IAA  Focus on issues of identity, nationality, race, and origin, narratives of discovery, the Italian “Orient,” colonial and post-colonial experiences, immigrant literature, ethnicity and cultural assimilation. Instructor: Finucci. One course. C-L: Comparative Area Studies

151S. The Italian Theater. (AL) (FL) AL, FL, IAA  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. Instructor: Finucci. One course. C-L: Theater Studies 1205

155S. Topics in Modern Literature and Culture. (AL) (FL) AL, CCI, FL, IAA  Topics may include: the Enlightenment, romanticism, modernism, avant-garde. Instructor: Dainotto or Hardt. One course. C-L: Comparative Area Studies

159S. Topics in Sexuality and Gender Studies. (AL) (FL) AL, CCI, FL  The study of identity and difference and the representation of bodies, genders, and desires in mainstream and popular Italian literature. May include different historical periods. Readings from classical and contemporary works, memoirs, letters, diaries, medical treatises, pamphlets. Instructor: Finucci or staff. One course. C-L: Comparative Area Studies, Study of Sexualities, Women's Studies

160S. Italian Identities Between Europe and the Mediterranean. (CZ) CCI, CZ, FL  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. Instructor: Dainotto. One course.

170S. Cinema and Literature in Italy. (AL) (FL) AL, CCI, FL, IAA  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. Instructor: Dainotto, Finucci, or Hardt. One course. C-L: Film/Video/Digital
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. (AL) (FL) AL, 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.

211S. Methodologies in Italian Studies. (AL) (FL) AL, CCI, FL, IAA Critical methods and theoretical issues concerning the study of Italian literature and culture. Instructor: Dainotto, Finucci, or Hardt. One course.

248. Topics in Italian Civilization. (CZ) (FL) CCI, CZ, FL Specific aspects of Italian history, civilization, culture, and institutions. Topics may vary. Instructor: Dainotto, Finucci, or Hardt. One course.

283. Topics in Italian Literature. (AL) (FL) AL, FL, IAA Close study of a particular author, genre, movement, or century. Instructor: Dainotto, Finucci, or Hardt. One course.


PORTUGUESE (PORTUGUE)

1. Elementary Portuguese I. (FL) 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. Students do not receive credit for Portuguese 1 until they have completed Portuguese 2. Five class meetings a week. Instructors: Damasceno and staff. One course.

2. Elementary Portuguese II. (FL) FL  Builds on the elements of language acquired in Elementary Portuguese I; 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.

53. Portuguese as a Second Romance Language. (FL) 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. Language lab oratory required. Meets five times a week. Instructor: Damasceno or staff. One course.

63. Intermediate Portuguese. (FL) 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. (FL) 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. Prerequisites: Portuguese 63 or equivalent. Instructor: Damasceno or Staff. Spring only. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Portuguese. CCI, FL Topics differ by section. Instructor: Staff. One course.

108S. Advanced Colloquial Portuguese. (FL) 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 and consent of instructor. Instructor: Damasceno or staff. One course.

111S. Research Seminar in Contemporary Lusophone Issues. (CZ) (FL) CCI, CZ, FL, R 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. Research paper required; research resources concentrate on journalistic and other media sources, including the Internet. Prerequisite: Portuguese 76 or equivalent. Instructor: Damasceno. One course. C-L: Comparative Area Studies, Latin American Studies

113. Introduction to Brazilian Literature. (AL) (FL) AL, CCI, FL, IAA Major writers and movements of Brazilian literature from the period of discovery to present, using short texts, novels, plays, short stories. Instructor: Damasceno or Staff. One course.

139S. Portugal, Portuguese-Speaking Africa, and Brazil: Old Problems, New Challenges. (CZ) CCI, CZ, IAA 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.

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.

200S. Seminar in Luso-Brazilian Literature and Culture. (AL) (FL) AL, CCI, FL, IAA A literary, cross-cultural critique focusing on specific topics to be announced. Prerequisite: 100-level Portuguese course or consent of instructor. Instructor: Damasceno. One course.

202S. Topics in Lusophone Literature and Culture. (AL) AL, CCI, IAA, 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, Lusophony 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.

244S. Brazilian Cultural Theory and Literature. (FL) CCI, FL, IAA, R Designed to present cultural debates in a way that fosters comparison with cultural and literary issues concurrent in Spanish America and Europe. Offers graduate students in Latin America and Comparative fields a strong introduction to Brazil. Readings include theories of cultural identity, manifestos of cultural movements, literary selections, films, and theatre. Taught in Portuguese with readings in Portuguese (Spanish and/or English translations available); students may participate in Portuguese, Spanish, or English. Recommended for graduate students or upper-level undergraduates with a background in cultural theory. Prerequisite: 100-level Portuguese course or consent of instructor. Instructor: Damasceno. One course.

248S. Transatlantic Cultures: Narratives of Discovery, Empire, Decolonization, and Europeanization. (FL) CCI, FL, IAA, 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.

SPANISH (SPANISH)

1. Elementary Spanish 1. (FL) FL Introduces the basic elements of the language and includes exposure to some aspects of Spanish-speaking cultures. Equal attention to aural comprehension, speaking, reading, and writing skills. Conducted entirely in Spanish, using a communicative approach. No previous study of Spanish, or appropriate placement test score. Five class meetings a week. Instructors: Staff. One course.

2. Elementary Spanish 2. (FL) FL This course builds on the elements of the language acquired in Elementary Spanish 1; enrollment in Spanish 2 presupposes acquisition of the contents in Spanish 1. Speaking, reading, and writing skills emphasized; exposure to some aspects of Spanish-speaking cultures an important component. Classes conducted entirely in Spanish, using a communicative approach. Five class meetings a week. Prerequisite: Spanish 1 or appropriate placement test score. Instructors: Staff. One course.

14. Intensive Elementary Spanish. (FL) FL The elementary language curriculum (Spanish 1 and 2) in one semester. Introduces the basic elements of the language and includes exposure to some aspects of Spanish-speaking cultures. Equal attention to
aural comprehension, speaking, reading and writing skills. Conducted entirely in Spanish, using a communicative approach. Eight class meetings a week. Prerequisite: No previous study of Spanish, or appropriate placement test score. Instructors: Staff. Two courses.

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

62. Intensive Study of Spanish. (CZ) (FL) CZ, FL Practice in understanding, speaking, and reading; emphasis on spoken language patterns used in everyday life in Costa Rica, with special attention to cultural and environmental topics and issues. (Offered only at the Duke/ Organization of Tropical Studies Undergraduate Program in Las Cruces, Costa Rica.) Prerequisite: Spanish 1-2, Spanish 12, or equivalent. Instructor: Staff. One course.

63. Intermediate Spanish. (FL) 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 some aspects of Spanish-speaking cultures. Increasing ability to express ideas in speaking and writing in an original manner. Prerequisite: Spanish 2 or 14, or appropriate placement test score. Instructors: Staff. One course.

76. Advanced Intermediate Spanish. (FL) 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 some aspects of 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. Prerequisite: Spanish 63, or appropriate placement test score. Instructors: Staff. One course.

101. Advanced Spanish Writing. (FL) CCI, FL, W Development of composition skills related to expository and other forms of writing, focus on techniques for organizing information, vocabulary, editing, revising, rewriting and grammatical accuracy. 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 literature classes in Spanish. Prerequisite: Spanish 76, or appropriate AP, SAT II, or placement test score. Instructors: Staff. One course.

102. Advanced Intensive Spanish. (FL) CCI, FL Practice in understanding, speaking, reading, and writing Spanish; emphasis on spoken and written language patterns used in everyday life in Costa Rica, with special attention to cultural and environmental topics and issues. Open to advanced students of Spanish. (Taught in Costa Rica.) Instructor: Staff. One course.

103A. Advanced Spanish Language Abroad. (FL) CCI, FL Topics may vary. Instructor: Staff. One course.

104. Advanced Spanish Grammar. (FL) 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. Does not count towards the Spanish major, and not open to students who have previously taken both 101 and 105. Prerequisite: Spanish 76 or appropriate achievement/placement test score. Instructors: Staff. One course.

104S. Discussion of Readings. (AL) (FL) AL, FL Instructor: Staff. One course.

105. Spanish for Oral Communication. (FL) 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. Some sections use materials from Latin America and others use materials from Spain. Does not count towards the Spanish major or minor; not open to students who have previously taken both Spanish 101 and 104. Prerequisite: Spanish 76, or appropriate AP, SAT II, or placement test score. Instructors: Staff. One course.

106S. The Making of Barcelona: Introduction to Catalan Language and Culture. (CZ) (FL) 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.

107. Advanced Grammar. (FL) CCI, FL A systematic study of modern Spanish morphology and syntax. (Taught in Spain and Bolivia.) Not open to students who have taken Spanish 108S or 109S. Instructor: Staff. One course.

108S. Advanced Colloquial Spanish. (FL) 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: Garci-Gómez. One course.

109S. Fundamentals of Spanish Linguistics. (FL) (SS) FL, QID, 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 122S

110S. Introduction to Literary Analysis. (AL) (FL) AL, FL, IAA, W Different genres, including narrative, poetry, drama, essay, and film. Texts drawn from different periods of Spanish and Spanish-American literature. Prerequisite: Spanish 76, or appropriate AP, SAT II, or placement test score. It is strongly recommended that students take Spanish 101 before enrolling in this course. Instructor: Staff. One course.

111. Introduction to Spanish Literature I. (AL) (FL) AL, CCI, FL, IAA 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. Instructor: Garci-Gómez, Greer, Villarós, or staff. One course. C-L: Medieval and Renaissance Studies 111B

112. Introduction to Spanish Literature II. (AL) (FL) AL, CCI, FL, IAA A survey of major writers and movements of the Spanish literary tradition in the eighteenth, nineteenth, and twentieth centuries. Instructor: Garci-Gómez, Villarós, or staff. One course.

114S. Discussion of Readings. (AL) (FL) AL, CCI, FL, IAA 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+. Instructor: Staff. One course.

115. Introduction to Spanish-American Literature. (AL) (FL) AL, CCI, FL, IAA First part of a two semester sequence providing a survey of major writers and movements from the period of discovery to the present day. The periods of conquest, colonial rule, and independence are covered. Includes works by native Indian, mestizo, and women writers. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies

116. Introduction to Spanish-American Literature. (AL) (FL) AL, CCI, FL, IAA Continuation of Spanish 115. From modernismo to the contemporary period. Instructor:
121. Latin-American Literature in Translation. (AL) AL, CCI, IAA 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: Comparative Area Studies, Latin American Studies

122S. Topics in Spanish and/or Latin-American Literatures and Cultures. (AL) (CZ) AL, 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. (AL) (CZ) AL, CCI, CZ One course. C-L: see Latin American Studies 198; also C-L: Comparative Area Studies


128. The Art and Cultural History of Flamenco. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Dance 128

130S. Post Nationalism Immigration and Multiculturism in the European Union: The Case of Spain. (CZ) (FL) AL, CCI, CZ, FL, IAA Spain, home of some of the oldest nationalities in Europe, as a site where a multiplicity of negotiations are produced and managed by local nationalities and immigrants. The cultural processes of interaction at work through the analysis of literary texts, film and testimony narratives. Instructor:.Vilarós. One course.

131. Topics of Hispanic Civilization. (CZ) (FL) CCI, CZ, FL, IAA A humanistic, cross-cultural study of Spain or Spanish America through history, culture, people, and institutions. Topics may vary each semester. Taught at Duke. Instructor: Staff. One course. C-L: Comparative Area Studies


133. Contemporary European Issues. (CZ) (FL) 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, Comparative Area Studies

136A. Spanish and/or Latin American Culture Abroad. (CZ) (FL) CCI, CZ, FL, IAA Transfer credit for courses on aspects of Spanish and Latin American cultures taught abroad. Taught only in non-Duke programs abroad. Instructor: Staff. One course.

137. Topics in Contemporary Spanish Culture. (CZ) (FL) CZ, FL (Taught in Spain.) Instructor: Garcí-Gómez. One course. C-L: Comparative Area Studies

138S. The Spanish Civil War in History and Literature. (AL) (FL) AL, EI, FL, R The Spanish Civil War of 1936-39 through literary and historical readings, art, music, and film. The various factions on both sides of the conflict trying to put into practice a specific world view and set of values during and after the war; what the volunteers on both sides were willing to die for, and their own deeply-held values. Research presentation and paper required. Instructor: Sieburth. One course.
140A. Bolivian Contemporary Short Fiction. (AL) (FL) AL, CCI, FL, IAA
Introduction to Bolivian and Latin American short fiction. The relationship between contemporary short fiction and the concept of magical realism. The influence of writers such as Borges, Cortazar, Garcia Marquez, Carpentier, and of the popular folk tale, legend, and myth, on contemporary Bolivian fiction writers. Taught in Bolivia. Instructor: Staff. One course. C-L: Latin American Studies

140BS. Bolivian Culture and Society since 1978. (AL) (FL) AL, CCI, FL, IAA
Expressions of Bolivian society and culture, such as feminism, syndicalism, ethnic groups, social history, cinema, literature, and political thought and history, from the restoration of democracy in 1978 to the present. Special attention given to how the various expressions have reacted and evolved during the transition from authoritarian regime to democracy. Includes guest lectures by contemporary Bolivian artists, essayists, political analysts, active members of feminist groups. (Taught in Bolivia.) Instructor: Staff. One course. C-L: Cultural Anthropology

140CS. Cultural Diversity in the Andes. (CZ) (FL) CCI, CZ, FL, IAA
Social, political, and cultural issues of the indigenous Aymara population in present-day Bolivia. Focus on the educated Aymara elite and their struggle to attain recognition in a multicultural society deeply divided along racial and ethnic lines. (Taught in Bolivia.) Instructor: Staff. One course. C-L: Cultural Anthropology, Comparative Area Studies, Latin American Studies

140E. Film and Political Culture in Contemporary Bolivia. (AL) (FL) AL, CCI, FL, IAA
Focus on films and mass media used to appeal to the dispossessed and marginal sectors of society. (Taught in Bolivia.) Instructor: Staff. One course. C-L: Latin American Studies

141. Spain: Cultural Studies. (CZ) (FL) CCI, CZ, FL, IAA
Intensive course. Selected linguistic, literary, social, and political issues. Discussions on the role of the regional autonomies and the place of Spain within the European Union. (Taught in the Duke-in-Madrid and Duke-in-Spain Programs.) Instructor: Staff. One course.

142S. Spanish Literature. (AL) (FL) AL, CCI, FL, IAA
Various aspects of the literatures of Spain and Spanish-America with a cross-cultural perspective. Specific topics to be announced. Open to juniors and seniors. Instructor: Staff. One course.

143S. Literature of the Discovery and Conquest of America. (AL) (FL) AL, CCI, FL, IAA
Prose and poetry from the sixteenth through eighteenth centuries, exploring the idea of the New World from conquest to independence. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies

144S. Duke in Andes: Special Topics. (AL) (FL) AL, CCI, FL, IAA
Various aspects of literatures and cultures of the Andes. Specific topics to be announced. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies

145S. Literature of the Hispanic Minorities of the United States. (AL) (FL) AL, CCI, FL, IAA
Representative Spanish-language works by Puerto Rican, Cuban-American and Chicano writers. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies

146. The Spanish-American Novel. (AL) (FL) AL, CCI, FL, IAA
Masterworks of the twentieth century. Instructor: Moreiras or staff. One course. C-L: Comparative Area Studies, Latin American Studies

147S. Latin-American Women Writers. (AL) (FL) AL, CCI, FL, IAA
Exploration of common themes across the region, such as family, love, feminism, and violence. May include only contemporary writers or cover authors from earlier periods as well. May study Brazilian writers in Spanish or in English translation. May concentrate on narrative or include poetry and drama. Open only to juniors and seniors. Instructor: Staff. One course. C-L: Comparative Area Studies, Latin American Studies, Women’s Studies

Romance Studies (ROMST) 465
148. Colonial and Postcolonial Studies in Latin America and the Caribbean. (CZ) (FL) CCI, CZ, FL Focus on Western colonial expansion since the sixteenth century and on the national periods, following the movement of independence. Cultural differences of colonial and postcolonial experiences; transition from colonial to postcolonial regimes. Languages and literatures, history of ideas, cartography, and the social imaginary expressed in everyday life, from architecture to clothing, from rules of social behavior to ecological consciousness. Limited to juniors and seniors. Instructor: Mignolo. One course. C-L: Latin American Studies, Marxism and Society

149A. Spanish and/or Latin American Literature Abroad. (AL) (FL) AL, CCI, FL, IAA Transfer credit for literature courses taught in non-Duke programs abroad. Special topics course. Instructor: Staff. One course.

151. Spanish Literature of the Renaissance and the Baroque. (AL) (FL) AL, CCI, FL, IAA 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 repress of Judaic and Islamic traditions, the relationship between tightened religious, social and political controls and the Baroque. Instructor: Greer or staff. One course. C-L: Medieval and Renaissance Studies

153. Golden Age Literature: Cervantes. (AL) (FL) AL, CCI, FL, IAA Includes reading either selected works by Cervantes (dramas, novellas, and part of Don Quijote) 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. Instructor: Greer. One course. C-L: Medieval and Renaissance Studies

161S. Literature and the Performing Arts I. (AL) (FL) AL, CCI, FL, IAA Selected literary works written before the nineteenth century 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.

162S. Literature and the Performing Arts II. (AL) (FL) AL, CCI, FL, IAA 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.

165S. Major Spanish Authors. (AL) (FL) AL, CCI, FL, IAA Textual studies; methods of literary interpretation and criticism. Emphasis on gender, class, and psychoanalysis. Instructor: Vilarós or staff. One course.

169. Topics in Nineteenth- and Twentieth-Century Spanish Literature. (AL) (FL) AL, CCI, FL, IAA Literary, cultural critique on a specific genre or theme to be announced. Emphasis on issues of gender, class, psychoanalysis, and/or popular culture. Instructor: Sieburth or Vilarós. One course.

171. Literature of Contemporary Spain. (AL) (FL) AL, CCI, FL, IAA 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. Instructor: Vilarós or staff. One course. C-L: Comparative Area Studies, Marxism and Society

175S. Hispanic Literature and Popular Culture. (AL) (FL) AL, CCI, FL, IAA Works of Spanish and Latin American fiction that parody or rewrite popular culture genres such as serial novels, detective stories, or Hollywood films. Authors include Cervantes, Galdós, Borges, Marsé, and Puig. Instructor: Sieburth. One course. C-L: Comparative Area Studies, Latin American Studies

177S. 20th Century Latin American Photography. (CZ) (FL) CCI, CZ, FL, IAA The photographic representation of major events in Latin America throughout the twentieth
century. Questions of the construction of a shared Latin American identity, problems of photographic representation, and how different kinds of photographs (journalistic, artistic, touristic, ethnographic) work. The importance of photography for key literary figures of the century. Instructor: Gabara. One course. C-L: Art History 177S

181S. United States Latina/o Literatures and Cultural Studies. (AL) AL, CCI, IAA Special topics in United States Latina/o literatures and cultural studies. Topics to be announced. Open to juniors and seniors. Taught in both Spanish and English. Instructor: Mignolo, Viego, or staff. 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. 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.


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.

195. Topics in Spanish Literature and Culture. (AL) (FL) AL, FL Topics to be announced. (Offered only in the Duke-in-Madrid Program.) Instructor: Staff. One course.

196. 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. (AL) (FL) AL, FL Topics to be announced. Instructor: Staff. One course.


212S. Topics in Spanish Linguistics. (FL) (SS) FL, QID, 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

244. Topics in Twentieth-Century Latin-American Fiction. (AL) (FL) AL, CCI, FL, IAA Study of various critical problems in the narrative of the area. Focus on one or more major issues, such as the representation of violence, magical realism, indigenismo, novela de la tierra. Prerequisite: Spanish 106. Instructor: Gabara or Moreiras. One course.

248. Studies in Spanish-American Literature. (AL) (FL) AL, FL Concentration on single authors, genres, movements, or themes. Instructor: Staff. One course.

251S. Spanish Film. (AL) (FL) AL, CCI, FL, IAA Cultural critique of Spanish film history. Topics range from the study of the production of a Spanish national identity within a changing global context to the study of a particular movement (for example, Nuevo cine de mujeres), period (for example, Civil War), or author (for example, Luis Buñuel or Pedro Almodóvar), to a critical survey of Spanish film from the 1920s to the present. Instructor: Vilarós. One course. C-L: Comparative Area Studies, Marxism and Society
255. Topics in Early Modern Spanish Literature and Culture. (AL) (FL) AL, CCI, FL, IAA Focus on one or more areas, including the Other Cervantes (including study of the Persiles); mysticism and orthodoxy (e.g., the role and suppression of Judaic and Islamic traditions in the emergence of mysticism in Spain and the rigorous imposition of orthodoxy; the socio-political role of visionaries); the picaresque (a critical study of the influence of economic, religious and social change in shaping the emergence and evolution of a literary genre); witchcraft (study of concepts of gender and of cultural difference in the definition of witchcraft; the effects of social change in its production); the disciplinary role of the Inquisition. Instructor: Greer. One course.

280. The Cultures of Immigration in Spain. (AL) (FL) AL, CCI, FL, IAA 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 industrial areas. The study will use literary and cinematic texts, and testimonial narratives. Instructor: Vilarós. One course. C-L: Comparative Area Studies

COURSES CURRENTLY UNSCHEDULED
1175. Spanish-American Short Fiction
163. The Generation of 1898
166. Nineteenth-Century Prose Fiction
245. Latin-American Poetry
246. Textual Politics in Nineteenth-Century Spanish-American Literature
250. Latin-American Film
262. The Romantic Movement
275. Modern Spanish Poetry
276. Modern Spanish Drama
277. Modern Spanish Novel

INDIGENOUS LANGUAGES

Aymara (AYMARA)
21. Beginning Aymara. (FL) FL Introduction through immersion to the history and structure of Aymara. (Taught in the Duke in the Andes Program only.) Instructor: Staff. One course.


100. Duke-Administered Study Abroad: Advanced Special Topics in Aymara. CCI Topics differ by section. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED
63. Intermediate Aymara

Quechua (QUECHUA)
21. Beginning Quechua. (FL) FL Introduction through immersion to the history and structure of Quechua. (Taught in the Duke in the Andes Program only.) Instructor: Staff. One course.

63. Intermediate Quechua. (FL) FL Grammar review, reading, and oral practice. Review of the history of Quechua/ Spanish contact. (Taught in the Duke in the Andes Program only.) Instructor: Staff. One course.

76. Advanced Quechua. (FL) FL Oral practice, writing exercises, and advanced grammar. Further studies of Quechua/ Spanish contact in the current Bolivia and the Andes. (Taught in the Duke in the Andes Program.) Instructor: Staff. One course.
100. Duke-Administered Study Abroad: Advanced Special Topics in Quechua. CCI
Topics differ by section. Instructor: Staff. One course.

ROMANCE STUDIES (ROMST)

50. Duke-Administered Study Abroad: Special Topics in Romance Studies. CCI
Topics differ by section. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Romance Studies. CCI
Topics differ by section. Instructor: Staff. One course.

124. Modernity, Ethnicity, and Colonization. (AL) (CZ) AL, CCI, CZ, IAA
Cultural issues related to Spanish, Portuguese, and French colonial expansion in the New World.
Topics such as languages and ethnicity; cultural literacy in colonial and multilingual situations; education and the state; civilization and modernity; postcoloniality and postmodernity. Taught in English; readings in Spanish and/ or Portuguese and/ or French, according to the particular topic of the semester. Instructor: Mignolo or staff.
One course. C-L: African and African American Studies 123, Cultural Anthropology 130, Canadian Studies, Comparative Area Studies

1505. Topics in Romance Studies. (AL) (CZ) AL, CZ
A comparative study of languages, literatures, and/ or cultures related to Romance Studies. Instructor: Staff. One course.

176D. Globalization and the Limits of Translation. (CZ) CCI, CZ, IAA, W
One course. C-L: see History 176D; also C-L: Cultural Anthropology 176D, Literature 143B, Dance 176

200S. Seminar in Romance Studies. CCI
Topics to be announced. Instructor: Staff. One course.

210S. Topics in Linguistics. (SS) SS
Instructor: Staff. One course.

250S. Issues in Second Language Acquisition. (FL) (SS) FL, QID, R, SS
An 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.

COURSES CURRENTLY UNSCHEDULED

283S. Seminar in North American Studies

THE MAJOR

Prerequisite. French 76, Italian 22 or 76, Spanish 76, or equivalents.

Majors are offered in French Studies, Italian and European Studies, and Spanish. The French Studies and Spanish majors offer several different tracks, as described below. The range of courses offered in Romance Studies may be taken toward fulfillment of the following Curriculum 2000 requirements: CCI, EI, FL, IAA, 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. Departmental courses numbered 120-129 and 180-189, offered in English, will be counted as related courses. 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 literature score of 4 or 5, 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 two survey courses (either 111 or 115, and either 112 or 116), and at least three courses at the 140 level or above. 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. Of these seven core courses at least three must be at the 140 level or above. Three related courses on any French/ European 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).

Italian and European Studies Major Requirements: An interdisciplinary track requiring a total of ten courses at the 100 level or above. Five Italian courses must be taken, at least two of which must be at the 140 level or above. Five related courses on any Italian/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).

Spanish Major Requirements. The Spanish major offers three tracks: (1) Spanish Studies, (2) Spanish and Latin American Studies, and (3) Spanish and European Studies. 

(1) Spanish Studies: A total of ten courses at the 100 level and above, eight of which must be from departmental offerings taught in Spanish, except that Spanish 104 and 105 do not count toward the major. These eight core courses must include any two survey courses (111, 112, 115, 116) and at least three courses at the 140 level or above. The two 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).

(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 that Spanish 104 and 105 do not count toward the major. 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 literature course 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, seven of which must be from departmental offerings taught in Spanish, except that Spanish 104 and 105 do not count toward the major. 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).
Departmental Graduation with Distinction

The department encourages French, Italian, and Spanish majors to work towards the completion of a thesis for the honor of Graduation with Distinction. The student’s grade point average in the major must be at least 3.3 (French, Italian) or 3.5 (Spanish) at the time of application. This average must be sustained until graduation. The student must satisfy the requirements of the major program as they are stated in the previous section on the major in this bulletin.

Students interested in pursuing the Graduation with Distinction program should obtain more detailed information for the relevant program of Graduation with Distinction and an application from 104 Languages Building. The application should be filled out no later than the pre-registration period for the fall semester of his/her senior year. The student will be expected to approach the instructor whom he/she wishes to have as the supervising professor for his/her thesis. During the senior year the student is required to register in the fall for a course designated as the “honors capstone” course in his/her language which can be counted as part of the major. During the spring the student will register for an independent study course in order to complete the thesis with his/her advisor. The principal document that the student will offer in support of his/her candidacy for Graduation with Distinction will be the completed thesis. The thesis should be approximately 40 pages in length and conform in style to the specifications of the MLA Style Manual. The thesis should be written in the language of the student’s major and will normally be defended in that language before the Committee on Graduation with Distinction. (The committee will consist of three persons: the supervising professor and two other faculty members.) If the committee finds that the thesis and defense merit consideration for Graduation with Distinction, the student will be awarded one of the following levels of distinction: Highest Distinction or Distinction.

Students interested in pursuing the Graduation with Distinction program should obtain more detailed information and an application from 104 Languages Building.

Suggested Work in Related Disciplines. In order to give perspective to a student’s program, students completing a major in French or Spanish will normally select, with the approval of the major advisor, appropriate courses from such fields as: (1) other languages and literatures; (2) history and cultural anthropology; (3) philosophy; (4) music and art and (5) linguistics. It is the responsibility of the student to update regularly with his/her advisor the “course tracking form” that documents which core and outside courses have been approved towards the completion of the major.

THE MINOR

Minors are offered in French Studies, Italian Studies, and Spanish.

French Studies

Requirements. A total of five courses from departmental French offerings numbered 100 or above and taught in French. These must include one survey course (111, 112, 115, or 116) and at least two courses numbered at the 140 level or above.

Italian Studies

Requirements. A total of five courses from departmental Italian offerings numbered 100 or above. These must include at least one course numbered at the 140 level or above. Four (4) of the five (5) courses must be taught in Italian.

Spanish

Requirements. A total of five courses from departmental Spanish offerings numbered 100 or above, except Spanish 104 and 105. 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: A maximum of three courses per semester (one Educo course plus two others) may be counted toward the core-course requirement. Minor: A maximum of two courses per semester (one Educo course plus one other) 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.

II. Duke-Administered Semester Programs (Office of Study Abroad)

A. Duke-Administered Semester Programs in the Language (Duke-in-the-Andes). Major: a maximum of two courses may be counted toward the core-course requirement; others may be counted as related courses. Minor: A maximum of one course may be counted.

B. 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 (Duke-in-Spain; Duke-in-Paris). Major: Two courses may be counted toward the core-course requirement. Minor: One course may be counted.

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 Languages and Literatures.

Science, Technology, and Human Values Program (STHV)

Professor Mauskopf (history) and Adjunct Assistant Professor Vallero (civil and environmental engineering), Co-Directors; Affiliated faculty (advisory): Professors O’Rand
A certificate, but not a major, is available for this program.

The Program in Science, Technology, and Human Values offers students opportunities to cross departmental and professional lines to enrich their educational experience. The program offers monthly dinners, seminars, and panel discussions on current and emerging issues in science within a societal context. These are occasions for sharing among students and faculty. The four STHV courses cover topics that bridge scientific and cultural perspectives in modern society. The courses are designed to complement other courses offered at Duke University.

COURSE OF STUDY

To receive a certificate, Trinity College undergraduates must complete seven courses, of which four must be at the 100-level or higher. Six of these courses may be selected from the STHV matrix of courses. The courses are classified according to their emphases and approaches: ethical; analytical; or policy-centered. The analytical courses may be historical, philosophical, or sociological. Each of these approaches is applied to three different areas of study: science; medicine; or technology, forming nine categories in a 3 x 3 matrix of approved courses (e.g., ethical x science; analytical x technology, etc.). Students must take courses in four of the nine categories and must also complete the senior capstone course (STHV 108S). The two special topics seminar courses (STHV 112 and 113) are “wildcards” that may be applied to any of the nine categories. No more than three courses in the same department or program other than those in STHV may be applied to the certificate requirements.

Science, pre-medical and engineering majors are urged to take at least one course in each of the three approaches in relation to the science, medicine, and technology areas, respectively.

Undergraduates in the Pratt School of Engineering must complete four courses from the nine categories and STHV 108S. Engineering students are also exempt from the other course restrictions listed above.

108S. Ethics in Professions: Scientific, Personal, and Organizational Frameworks. (SS) EI, SS, STS An introduction to 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. Also taught as Engineering 108S. Instructor: Vallero and staff. One course. C-L: Markets and Management Studies

112S. Special Topics in Science, Technology, and Human Values. STS Six four-week segments offered sequentially over the fall and spring semesters by faculty of the Program in Science, Technology, and Human Values. Credit for 112S or 113S is awarded for completion of three to five segments within a single academic year; credit for 112S and 113S for completion of six segments. Only students who take three segments in the fall semester should register for 112S; those who take no more than two segments in the fall and one or more segments in the spring semester should register instead for 113S in the spring. Instructor: Vallero and staff. One course. C-L: Markets and Management Studies
113S. Special Topics in Science, Technology, and Human Values. STS
Six four-week segments offered sequentially over the fall and spring semesters by faculty of the Program in Science, Technology, and Human Values. Credit for 112S or 113S is awarded for completion of three to five segments within a single academic year; credit for 112S and 113S for completion of six segments. Only students who take three segments in the fall semester should register for 112S; those who take no more than two segments in the fall and one or more segments in the spring semester should register instead for 113S in the spring. Instructor: Valerio and staff. One course. C-L: Markets and Management Studies.

199S. History and Systems of Science and Technology. (CZ) (SS) CZ, R, SS, STS
A case study approach to understanding the historical, philosophical and sociological frameworks for scientific inquiry and science policy. Examines contemporary case studies from fields like information sciences, molecular biology and genomics, and biomechanical engineering. Taught by teams of faculty from Pratt, Trinity and Nicholas Schools. Instructor: Staff. One course.

ELIGIBILITY AND CERTIFICATION
Once they have declared a major, undergraduates may apply to the program at any time. To students who complete the program, Duke University gives official recognition of their participation.

Study of Sexualities (SXL)
E. Glasberg, 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, Cultural Anthropology 103 or Sociology 149, and five additional courses, one of which may be a special seminar 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.

STUDY OF SEXUALITIES COURSES (SXL)
115S. Perspectives in Gay, Lesbian, and Bisexual Studies. (CZ) 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: English 101S

120S. Seminars in Selected Topics. Topics vary each semester offered. Instructor: Staff. One course.

121S. Seminars in Selected Topics. Topics vary each semester offered. Instructor: Staff. One course.

191. 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 only to qualified juniors and seniors. Consent of instructor and program director required. Instructor: Staff. One course.
192. **Independent Study.** See Study of Sexualities 191. Open only to qualified juniors and seniors. Consent of instructor and program director required. Instructor: Staff. One course.

**OTHER COURSES**

**African and African American Studies**
- 209S. Race, Class, and Gender in Modern British History
- 216S. Gender, Race, and Class

**Biological Anthropology and Anatomy**
- 146. Sociobiology
- 146S. Sociobiology Seminar

**Cultural Anthropology**
- 113. Gender and Culture
- 216S. Gender, Race, and Class

**English**
- 124. Sexualities in Film and Video
- 184. Literature and Sexualities

**History**
- 169A. American Women, 1600-1877
- 169B. American Women, 1877 to the Present
- 209S. Race, Class, and Gender in Modern British History

**Italian**
- 159S. Topics in Sexuality and Gender Studies

**Literature**
- 115. Sexualities in Film and Video

**Psychology**
- 177S. Human Sexuality (B)
- 264S. Gender, Hormones, and Health (P)

**Public Policy Studies**
- 108. AIDS: Ethics, Policy, and Representation

**Religion**
- 125. Women and Sexuality in the Christian Tradition
- 138. Women and Religion in America
- 182. Medicine and Religion in American Society
- 262. Special Topics in Gender and Religion

**Sociology**
- 118. Sex, Gender, and Society
- 149. Sexuality and Society

**Women’s Studies**
- 108. AIDS: Ethics, Policy, and Representation

**SPECIAL TOPIC COURSES OFFERED PERIODICALLY**

**Cultural Anthropology**
- 112. Gender and Languages
- 280S. Gender and Learning and Teaching

**Classical Studies**
- 195S. Gender and Sexuality in Ancient Greece
- 195S. Gender and Sexuality in Ancient Rome

**English**
- 268. Homosexuality-Masculinity in Drama

**History**
- 103. Cultural Perspectives of the Twentieth-Century, United States South

**Literature**
- 125. Special Topics in Gender and Sexuality
- 152. Love, Marriage, and Adultery in the Nineteenth Century
- 289. Sex and Gender.

**Psychology**
- 180S. Advanced Topics in the Psychology of Gender

*Study of Sexualities (SXL) 475*
Religion
72C. Defining Deviance

Slavic Languages and Literatures
Professor Andrews, Chair; Assistant Professor of the Practice Maksimova, Director of Undergraduate Studies; Associate Professor Gheith; Associate Professor of the Practice Flath; Assistant Professor of the Practice Van Tuyl; Research Scholar Mickiewicz; Affiliated Faculty: Professors Lahusen (literature), Lerner (history), and Miller (history); Associate Professor Tetel (English); Associate Professor of the Practice McAuliffe; Adjunct Assistant Professor Newcity

A major or minor is available in this department.

The Department of Slavic Languages and Literatures has a strong commitment to increasing the language proficiency of its students in the context of culture acquisition, to helping students develop their own scholarly interests and research abilities, and to acquainting students with trends in literary and linguistic theory. Areas of specialization include nineteenth and twentieth century Russian and Soviet literature, gender studies, film and media, legal and business Russian language, translation, Slavic linguistics, contemporary Russian literature, scientific and scholarly Russian language, stylistics, and history of the Russian literary language. Other Slavic languages occasionally taught include Polish, Ukrainian, Serbian and Croatian.

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 offers both semester-long and summer language and culture programs at St. Petersburg University. The department also hosts a Russia-based 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.

RUSSIAN (RUSSIAN)
1. Elementary Russian. (FL) FL  Introduction to understanding, speaking, reading, and writing. Audiolingual techniques are combined with required recording-listening practice in the language laboratory. Course credit contingent upon successful completion of Russian 2. Instructor: Van Tuyl. One course.
2. Elementary Russian. (FL) FL  Introduction to understanding, speaking, reading, and writing. Audiolingual techniques are combined with required recording-listening practice in the language laboratory. Second half of Russian 1-2; required for credit for Russian 1. Prerequisite: Russian 1. Instructor: Van Tuyl. One course.
3. Elementary Russian Conversation. (FL) FL  Introduction to spoken Russian with emphasis on basic conversational style and increasing vocabulary. Instructor: Staff. Half course.
10. Accelerated Russian Language and Culture I. (FL) 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.
14. **Intensive Russian.** (FL) FL Russian 1 and 2 combined in one semester. Two meetings daily, as well as daily computer and language laboratory work. Instructor: Andrews or Maksimova. Two courses.

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.

615. **Intermediate Russian Language and Culture.** (CZ) (FL) 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.

625. **Intermediate Russian Language and Culture.** (CZ) (FL) CZ, FL Continuation of Russian 615. (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) 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) 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.** (FL) FL Consolidation of oral skills. Intensive conversation on a broad range of topics. Prerequisite: Russian 1 and 2, or equivalent. Instructor: Staff. Half course.

67. **Intermediate Russian Conversation.** (FL) FL Continuation of Russian 66. Prerequisite: Russian 66 or equivalent. Instructor: Staff. Half course.

70. **Intensive Intermediate Russian.** (FL) FL Russian 63 and 64 combined. Two meetings daily, as well as daily computer and language laboratory work. Instructor: Staff. Two courses.

100. **Duke-Administered Study Abroad: Advanced Special Topics in Russian.** CCI, FL Intensive in-country study of Russian language and culture. Analysis of literary and journalistic texts, film, television and popular culture. Specific body of texts differs by section. Instructor: Staff. One course.

101S. **Contemporary Russian Composition and Readings.** (FL) 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.** (FL) CCI, FL Continuation of Russian 101S. Prerequisite: Russian 101S. Instructor: Staff. One course.

103S. **Studies in the Russian Language and Culture.** (CZ) (FL) 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: Comparative Area Studies

104S. **Studies in the Russian Language and Culture.** (CZ) (FL) CCI, CZ, FL Continuation of Russian 103S. Prerequisite: Russian 103S or equivalent. Instructor: Staff. One course. C-L: Comparative Area Studies

105. **Third-Year Russian Conversation.** (FL) CCI, FL Conversation course for students enrolled in Russian 101. Not open to students currently taking Russian 63 or Russian 196. Instructor: Staff. Half course.

106. **Third-Year Russian Conversation.** (FL) CCI, FL Continuation of Russian 105. Conversation course for students enrolled in Russian 102. Not open to students currently taking Russian 64 or Russian 196. Instructor: Staff. Half course.
107S. Russian Phonetics. (FL) CCI, FL Analysis of contemporary standard Russian literary pronunciation, phonology, and intonational structures. Prerequisite: Russian 64 or consent of instructor. Instructor: Staff. One course.

108S. Soviet Civilization: History and Its Mythologies. (AL) (CZ) AL, CCI, CZ, IAA The most significant concepts, events, and personages of Russian and Soviet history through the prism of Soviet and post-Soviet official and popular culture, literatures, the arts, and cinema. Topics include: proletarian dictatorship and woman's liberation, the 'Russian Idea' and the 'struggle for peace,' the October Revolution, and industrialization, Russian Czars, post-Soviet leaders from Ivan the Terrible and Peter the Great to Lenin, Stalin, and Gorbachev. Taught in English. Instructor: Staff. One course. C-L: Comparative Area Studies

111S. Senior Honors Seminar. IAA, 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. IAA, R, W Continuation of Russian 111S. Consent of the director of undergraduate studies required. Instructor: Staff. One course.

113. Studies in Comparative World Cinema. (AL) AL, CCI, IAA, STS One course. C-L: see Literature 113; also C-L: English 122, German 113, Film/Video/Digital

114S. Twentieth-Century Women Playwrights. (AL) AL, CCI, IAA One course. C-L: see Theater Studies 130S; also C-L: Literature 123AS, Women's Studies

115. Russian Language Studies in St. Petersburg. (FL) 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.

116S. Russian Fiction and Film. (AL) AL, CCI, IAA 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. Open only to students in the FOCUS Program. Instructor: Gheith. One course.

120S. Topics in Slavic and Northern European Languages. (FL) (SS) FL, SS Instructor: Staff. One course.

123S. Studies in Contemporary Russian Culture and Cognition. (CZ) (SS) CCI, CZ, QID, 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. Open only to students in the FOCUS Program. Instructor: Andrews. One course.

124S. Russian Language and Culture through Film. (FL) (SS) CCI, FL, IAA, SS Study of Russian cultural paradigms and constructs of self and other as demonstrated in Russian and Soviet films, primarily from 1950s to the present. Special attention given to the analysis of linguistic constructs and their cultural and semantic content 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. Instructor: Andrews or Maksimova. One course.

125. Eastern Europe in Transition: Markets, Media, and the Mafia. (CZ) (SS) CCI, CZ, SS The progress of political, economic, and social transformations in Eastern Europe and the former Soviet Union. Topics include: The Historical Context for Reform in

126S. Russian Language and Culture through Film II. (AL) AL, CCI, FL, IAA, SS Continuing of Russian 124S. Analysis of Russian cultural paradigms and linguistic issues through contemporary Russian and Soviet film. Prerequisite: Russian 101S or equivalent or consent of instructor. Instructors: Andrews and Maksimova. One course.

127. Russian Language and Culture through Theatre. (AL) AL, CCI, FL, IAA, 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. (AL) AL, CCI, FL, IAA, 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. (AL) AL, CCI, IAA 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. Instructor: Staff. One course.

132. Culture, Class, and Consumption in Russia. (CZ) CCI, CZ, IAA Reading in anthropology, history, cultural studies, and sociology to explore the significance of consumption (including survival strategies, exchange networks, and aesthetics of material culture) in processes of change from the revolutionary through post-Soviet periods. Instructor: Staff. One course.

135. Contemporary Russian Media. (FL) (SS) CCI, EI, SS Analytical readings and study of change and development in all the primary forms of mass media in the former Soviet Union from 1985 to present (newspapers, journals, and television). Topics include censorship, TASS, samizdat. Analysis of ethical principles in Soviet and post-Soviet Russia that control and direct broadcasting and publication. Comparative analysis with American and European mass media. Taught in English, readings in Russian. Prerequisite: Russian 64 or equivalent. Instructor: Andrews. One course. C-L: Comparative Area Studies, Film/Video/Digital

135A. Contemporary Russian Media. (FL) (SS) 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: Comparative Area Studies, Film/Video/Digital
136. Eastern European Cultures in Transition. (CZ) CCI, CZ, IAA Apects of cultures and mentalities in the Eastern European culture after the fall of communism; the Eastern European culture in search of individual and regional identity; Eastern Europe and globalization. Consideration of particular countries (Poland, Romania, Russia). Instructor: Staff. One course.

145. Theory and Practice of Translation. (FL) CCI, FL, IAA 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.

148. Ethnography of Postsocialism. (CZ) (SS) CCI, CZ, SS Fundamental questions resulting from the collapse of the Soviet Union: the influence of socialist-era institutions and ideologies on efforts to create (or adapt to) a new kind of society; the "transition to capitalism" as perceived by particular groups of people. Focused primarily, though not exclusively, on Russia. Instructor: Staff. One course.

149S. Russian Culture in the Era of Terror: A Reexamination. (AL) (CZ) AL, CCI, CZ, IAA, 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. Also taught as History 195S. Instructor: Lahusen. One course. C-L: Comparative Area Studies, Marxism and Society

150. Russian Revolutionary Cinema. (CZ) CCI, CZ, IAA One course. C-L: see History 150E; also C-L: Film/Video/Digital

154A. Soviet Propaganda. (AL) (CZ) AL, CCI, CZ The manipulation of all types of Soviet media from the origins of the Bolshevik state to the start of World War II. The influences from Tsarist propaganda, key themes from the Soviet era such as the cults of Lenin and Stalin; ideas about progress and technological change as well as the Soviet place in the modern world; the development of a new type of citizen; and ethnic relations in the USSR. Readings and discussions in English. Instructor: Staff. One course. C-L: History 154A

155. Special Topics in Russian and American Culture. (AL) AL, CCI, IAA 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: Lahusen and Van Tuyl. One course. C-L: Comparative Area Studies

156. Twentieth-Century Russian Women. (AL) (CZ) AL, CCI, CZ, IAA Issues of gender and society in Russia in the twentieth century. Readings include autobiographical writings, works of fiction, and selected historical sources. Taught in English. Instructor: Staff. One course.

157S. Law, Culture, and the Russian Legal Tradition. (CZ) (SS) CCI, CZ, EI, IAA, 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. Open only to students in the FOCUS Program. Instructor: Newcity. One course. C-L: Public Policy Studies 131S, Comparative Area Studies

158. The Russian Novel. (AL) AL, CCI, IAA, 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.

159. Women's Autobiographies in European Contexts: Telling the Self in Russia, France, and Britain. (AL) AL, CCI, IAA A comparative approach to women's autobiography (in England, France, and Russia) in the nineteenth and twentieth centuries, using texts from approximately the same time periods. Instructor: Gheith. One course. C-L: Comparative Area Studies, Women's Studies

160. The Classics of Russian Twentieth-Century Literature. (AL) (CZ) AL, CCI, CZ, IAA Prose works that marked the canon and anticanon of twentieth-century Russia. Readings include: Petersburg (A. Bely), Mother (M. Gorky), How the Steel Was Tempered (N. Ostrovsky), The Master and Margarita (M. Bulgakov), Doctor Zhivago (B. Pasternak), One Day in the Life of Ivan Denisovich (A. Solzhenitsyn), and The Long Goodbye (Yu. Trifonov). Contrastive analysis of Russian, American and European literatures of the 20th century. Taught in English. Instructor: Lahusen. One course. C-L: Comparative Area Studies

161. Masterpieces of Nineteenth-Century Russian Literature I. (AL) AL, CCI, IAA, W Selected nineteenth-century authors, works, and genres. Authors include Pushkin, Lermontov, Gogol, Turgenev, Herzen, Goncharov, and Dostoevsky. Discussion of place of Russian literature in world literature. Taught in English. Instructor: Staff. One course. C-L: Comparative Area Studies

162. Masterpieces of Nineteenth-Century Russian Literature II. (AL) AL, CCI, IAA, W Selected authors, works, and genres from the second half of the nineteenth century. Authors include Turgenev, Chernyshevsky, Dostoevsky, Tolstoy, Saltykov-Shchedrin, and Chekhov. Comparative analysis of Russian, European and American literature of the period. Taught in English. Instructor: Staff. One course. C-L: Comparative Area Studies

166. Tolstoy and Dostoevsky. (AL) AL, CCI, IAA 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. (AL) AL, CCI, IAA The symbolic and metaphoric 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.

170. Russian Dissident and Emigré Literature. (AL) AL, CCI, IAA The literature of opposition in Russia during the nineteenth and twentieth centuries, from Chaadaev and Chernyshevsky to Grossman, Solzhenitsyn, and Zinoviev. Taught in English or Russian. Instructor: Lahusen. One course. C-L: Comparative Area Studies


175. Tolstoy. (AL) AL, EI, IAA, W Introduction to life, works, and criticism. Readings include: War and Peace, Anna Karenina, shorter fiction, dramatic works and essays. Analysis of Tolstoy's views on the importance of ethics and the structure of society. Taught in English. Instructor: Van Tuyll. One course. C-L: Comparative Area Studies
176. *Dostoevsky. (AL) AL, CCI, IAA, W* Introduction to life, works, and criticism. Readings include *Crime and Punishment, The Idiot,* and *The Brothers Karamazov.* Taught in English. Instructor: Flath, Gheith, or Van Tuyl. One course. C-L: Comparative Area Studies

177. *Chekhov. (AL) AL, CCI, IAA, W* Drama and prose works. Taught in English. Not open to students who have taken Drama 157S/Russian 174S (Chekhov). Instructor: Flath and staff. One course. C-L: Theater Studies 122S, Comparative Area Studies

179. *Selected Topics in Russian Literature. (AL) AL, CCI, IAA* Women writers of the twentieth century, Soviet film, *samizdat*/*tamizdat*, the Petersburg paradigm in Russian literature and culture. Taught in English. Instructor: Staff. One course. C-L: Comparative Area Studies

181. *The Soviet 1920s: The Road to a New Synthesis. (AL) AL, CCI, IAA* The literary struggle of the 1920s; proletarian literature from the Smithy to RAPP, LEF and the fate of the avant-garde, the aesthetic conception of Pereval, the literature of the absurd, Oberiu and the Serapion Brothers. Authors include Kirillov, Gladkov, Babel, Pilnyak, Olesha, Zamyatin, Platonov, Kharms, and Pasternak. Taught in English. Not open to students who have taken the former Russian 181, Early Twentieth-Century Russian Literature. Instructor: Lahusen. One course. C-L: Marxism and Society

182. *Socialist Realism: Soviet Literature of the 1930s and 1940s. (AL) AL, CCI, IAA* The Stalin era of Russian literature, the genesis and development of socialist realism, Soviet literature and the themes of boundaries and war. Authors include Sholokhov, Ostrovsky, Fadeev, Azhaev, Babaevsky, Kochetov, and Simonov. Taught in English. Instructor: Lahusen. One course. C-L: Comparative Area Studies, Marxism and Society

183. *Post-Stalinist and Contemporary Soviet Literature. (AL) AL, CCI, IAA* Literature of the thaw after Stalin, the young prose, little realism, new modernism, and rural prose. Authors include Aksyonov, Trifonov, Baranskaya, Bitov, Solzhenitsyn, Rasputin, Shukshin, and Zalygin. Taught in English. Instructor: Lahusen. One course. C-L: Comparative Area Studies


185S. *History of the Russian Language. (AL) (FL) AL, CCI, FL, QID* The development of the Russian language from the eleventh century, with consideration of the origins of modern literary and dialectal features. Contrastive analysis of Old Russian to contemporary Russian. Comparative study of the constructions of other Slavic literary languages. Readings in Russian and English. Prerequisite: second year Russian or consent of instructor. Instructor: Andrews. One course. C-L: Comparative Area Studies

190S. *Introduction to Russian Civilization. (CZ) CCI, CZ* Basic knowledge of Russian society, history of ideas, folklore tradition, orthodoxy, and history of Russian readership. Taught in English. Instructor: Pelech. One course. C-L: Comparative Area Studies

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. Open only to qualified students by consent of instructor and director of undergraduate studies. Instructor: Staff. One course.

192. *Independent Study.* See Russian 191. Open only to qualified students by consent of instructor and director of undergraduate studies. 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.


195. Advanced Russian. (FL) 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: Andrews or Maksimova. One course. C-L: Comparative Area Studies

196. Advanced Russian: Readings, Translation, and Syntax. (FL) 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: Andrews or Maksimova. One course. C-L: Comparative Area Studies

198. Russian Stylistics and Conversation. (AL) (FL) AL, 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. (AL) (FL) AL, CCI, FL, W Continuation of Russian 198. Prerequisite: Russian 195 and 196, or consent of instructor. Instructor: Maksimova. One course.

For Seniors and Graduates


206. Russian Modernism. (AL) AL, CCI, IAA 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.
2075. Semantics. (SS) IAA, QID, R, SS Survey of modern semantic theory, including a range of theoretical approaches: communication theory, structuralism, markedness, formal, cognitive and generative semantics. Emphasis on lexical meaning in two or more languages with a strong comparative semantic component. Examples from the world’s languages. Final research project required. Taught in English. Instructor: Andrews. One course. C-L: Linguistics 2075

208. Stylistic and Compositional Elements of Scholarly Russian. (FL) CCI, FL, IAA 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. (CZ) (FL) 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. (SS) CCI, QID, 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.

217S. Global Issues in Feminism. (CZ) (SS) CCI, CZ, R, SS An interdisciplinary investigation of feminist, postcolonial, and nationalist theories as they apply to international women’s issues, including social, economic, and political situations. Open to advanced undergraduates and graduates. Research paper regarding women’s agency in selected locations required; students who enroll under Russian expected to focus on Russian issues. Consent of instructor required. Instructors: Staff. One course. C-L: Women’s Studies 209S

245. Theory and Practice of Translation. (FL) CCI, FL, IAA 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.

250. Trends in Russian and East European Literary Criticism and Beyond. (AL) AL, CCI, FL, IAA The major critical movements in the nineteenth and twentieth centuries in Russia, East-Central Europe, and the West. Authors and theories include the Belinsky school, formalism, Bakhtin, structuralism, semiotics, and psychoanalytic and feminist theory. Taught in English or Russian. Readings in English and Russian. Instructor: Gheith. One course.

256. Twentieth-Century Russian Women. (AL)(CZ) AL, CCI, CZ, IAA Issues of gender and society in Russia in the twentieth century. Readings include autobiographical
258. The Russian Novel. (AL) AL, CCI, IAA, 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.

261. Masterpieces of Nineteenth-Century Russian Literature I. (AL) AL, CCI, FL, IAA Selected nineteenth-century authors, works, and genres. Authors include Pushkin, Lermontov, Gogol, Turgenev, Herzen, Goncharov, and Dostoevsky. Taught in English. Readings in Russian. Instructor: Staff. One course. C-L: Comparative Area Studies

262. Masterpieces of Nineteenth-Century Russian Literature II. (AL) AL, CCI, FL, IAA 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: Mickiewicz. One course.

264. Symbolist Movement in Russia. (AL) AL, CCI, IAA History and theory of the philosophy, poetry, prose, and criticism of the Russian variant of the interdisciplinary and international movement. The momentous movement spawning a variety of other creative schools that constitute twentieth-century Russian modernism. Taught in English. Readings in Russian. Instructor: Mickiewicz. One course.

269. Women and Russian Literature. (AL) AL, CCI, FL, IAA 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: Comparative Area Studies, Women's Studies

275. Tolstoy. (AL) AL, CCI, FL, IAA Introduction to life, works, and criticism, including Tolstoy's philosophical and ethical discourse. Readings include: *War and Peace*, *Anna Karenina*, the shorter fiction, and essays. Taught in English. Readings in Russian. Instructor: Van Tuyl. One course.


281. The Soviet 1920s: The Road to a New Synthesis. (AL) AL, CCI, FL, IAA The literary struggle of the 1920s; proletarian literature from the Smithy to RAPP, LEF and the fate of the avant-garde, the aesthetic conception of Pervel, the literature of the absurd, Oberg and the Serapion Brothers. Authors include Kirillov, Gladkov, Babel, Pilnyak, Olesha, Zamyatin, Platonov, Kharns, and Pasternak. Readings in Russian. Instructor: Lahusen. One course. C-L: History 242B

282. Socialist Realism: Soviet Literature of the 1930s and 1940s. (AL) AL, CCI, FL, IAA The Stalin era of Russian literature, the genesis and development of socialist realism, Soviet literature and the theme of boundaries and war. Authors include Sholokhov, Ostrovsky, Fadeev, Azaev, Babaevsky, Kochetov, and Simonov. Readings in Russian. Instructor: Lahusen. One course.

283. Post-Stalinist and Contemporary Soviet Literature. (AL) AL, CCI, FL, IAA Literature of the thaw after Stalin: the young prose, little realism, new modernism, and
rural prose. Authors include Aksyonov, Trifonov, Baranskaya, Bitov, Solzhenitsyn, Rasputin, Shukshin, and Zalygin. Readings in Russian. Instructor: Lahusen. One course. C-L: Comparative Area Studies


299S. Special Topics. CCI Seminars in advanced topics, designed for seniors and graduate students. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

110. Intensive Russian Composition and Readings
121S. Introduction to Russian Literature
122S. Introduction to Russian Literature
129. Russian Orthodoxy
141. Teaching Practicum
142. Teaching Practicum
151. Fourth-Year Russian Conversation
152. Fourth-Year Russian Conversation
163. Literature of Former Soviet Republics
164. Symbolist Movement in Russia
165S. Old Russian Literature
168S. Russian Classical Literature and Music
169. Women and Russian Literature
172S. Pushkin and His Time
173S. Gogol
178A. Russian Short Fiction
178B. Russian Short Fiction in the Original
180. Early Twentieth-Century Russian Literature: From Symbolism to the 1920s
184. Late- and Post-Soviet Literature
187. Intensive Advanced Russian
189S. Advanced Russian Language and Culture
189S. Advanced Russian Language and Culture
197. Russian Poetry
203S. Old Church Slavonic
204S. Russian Folklore and Popular Culture
209. Intensive Advanced Stylistics
210. Literature and Criticism of Socialist Realism
212S. Proseminar
213. Silver Age of Russian Literature
214. Gender, Nationalities, and Russian Literary Traditions
216. Cognitive Linguistics
230. Soviet Cinema
240S. Russian Literary Discourse
257. Law, Culture, and the Russian Legal Tradition
265S. Literature of Early Russia
266S. The Sources of Modern Russian Literature: The Eighteenth Century
272S. Pushkin and His Time
273S. Gogol
2775. Chekhov
278. Russian Short Fiction
2795. Literature of the Former Soviet Republics
280. Early Twentieth-Century Russian Literature: From Symbolism to the 1920s
284. Late- and Post-Soviet Literature
285. Babel and the Russian-Jewish Cultural Dialogue of the Twentieth Century
2865. Zamyatin
2875. Platonov
290. Trifonov, or the Life and Death of the Soviet Intelligentsia
298. Akhmatova

BALTO-FINNIC (BALTFIN)
100. Duke-Administered Study Abroad: Advanced Special Topics in Balto-Finnic.
    CCI Topics differ by section. Instructor: Staff. One course.

Courses Currently Unscheduled
1. Elementary Estonian
2. Elementary Finnish
3. Elementary Finnish
4. Elementary Finnish
200. Balto-Finnic Linguistics

HUNGARIAN (HUNGARN)
1. Elementary Hungarian. (FL) FL Introduction to understanding, speaking, reading, and writing Hungarian. Course credit contingent upon successful completion of Hungarian 2. Instructor: Viktorov. One course.
2. Elementary Hungarian. (FL) FL Second half of Hungarian 1-2; required for credit for Hungarian 1. Prerequisite: Hungarian 1. Instructor: Viktorov. One course.
63. Intermediate Hungarian Language and Culture. (FL) 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) 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.

POLISH (POLISH)
1. Elementary Polish. (FL) FL Introduction to understanding, speaking, reading, and writing Polish. No preliminary knowledge of Polish necessary. Course credit contingent upon successful completion of Polish 2. Instructor: Lahusen. One course.
2. Elementary Polish. (FL) FL Introduction to understanding, speaking, reading, and writing Polish. No preliminary knowledge of Polish necessary. Second half of Polish 1-2; required for credit for Polish 1. Prerequisite: Polish 1. Instructor: Lahusen. One course.
63. Intermediate Polish. (FL) 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: Lahusen. One course.
64. Intermediate Polish. (FL) FL Continuation of Polish 63. Prerequisite: Polish 63 or consent of instructor. Instructor: Lahusen. One course.


101S. Contemporary Polish Composition and Readings. (FL) 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. (FL) CCI, FL Continuation of Polish 101S. Prerequisite: Polish 101S. Instructor: Staff. One course.

Courses Currently Unscheduled
100. Poland in Transition
174S. Topics in Polish Literature
187. Introduction to Polish Literature

ROMANIAN (ROMANIAN)


63. Intermediate Romanian Language and Culture. (FL) 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) FL Intensive study of Romanian at the intermediate level. Equivalent of two semesters. Prerequisite: Romanian 70 or equivalent. Instructor: Staff. Two courses.

101S. Contemporary Romanian Composition and Readings. (FL) CCI, FL, IAA Advanced grammar and syntax with intense composition component. Analytical readings in the original. Prerequisite: Romanian 70 or equivalent. Instructor: Staff. One course.

102S. Contemporary Romanian Composition and Readings. (FL) CCI, FL, IAA Continuation of Romanian 101S. Prerequisite: Romanian 101S. 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.

Courses Currently Unscheduled
1. Elementary Serbian and Croatian
63. Intermediate Serbian and Croatian
70. Intensive Intermediate Serbian and Croatian

TURKISH (TURKISH)

1. Elementary Turkish. (FL) FL Introduction to understanding, speaking, reading, and writing Turkish. Course credit contingent upon successful completion of Turkish 2. Instructor: Staff. One course.

2. Elementary Turkish. (FL) FL Introduction to understanding, speaking, reading, and writing Turkish. Second half of Turkish 1-2; required for credit for Turkish 1. Prerequisite: Turkish 1. Instructor: Staff. One course.

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14. Intensive Turkish Language and Culture. (FL) FL Introduction to Turkish comprehension, speaking, writing, reading, and cultural acquisition. Instructor: Staff. Two courses.

63. Intermediate Turkish. (FL) 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.

70. Intensive Intermediate Turkish. (FL) FL Intensive study of Turkish at the intermediate level. Equivalent of two semesters. Prerequisite: Turkish 1 and 2, or 14 Instructor: Staff. Two courses.

101S. Contemporary Turkish Composition and Readings. (FL) CCI, FL, IAA 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. (FL) CCI, FL, IAA Continuation of Turkish 101S. Prerequisite: Turkish 101S. Instructor: Staff. One course.

120S. From Ottoman Empire to Turkish Empire: Narrative and Culture. (AL) (CZ) AL, CC1, CZ, IAA Twentieth-century Ottoman/ Turkish culture examined through Turkish literature in translation. Primary focus on the Turkish Republic's love-hate relationship with Ottoman cultural past through poetry, prose, and autobiography. Historical background, cultural revolution, nationalism, identity, colonialism, and orientalism. Knowledge of Turkish not required. Instructor: Goknar. One course. C-L: Asian & African Languages and Literature Studies 1275

UKRAINIAN (UKRAIN)

1. Elementary Ukrainian. (FL) FL Introduction to understanding, speaking, reading, and writing Ukrainian. No preliminary knowledge of Ukrainian necessary. Course credit contingent upon successful completion of Ukrainian 2. Instructor: Staff. One course.

2. Elementary Ukrainian. (FL) FL Second half of Ukrainian 1-2; required for credit for Ukrainian 1. Prerequisite: Ukrainian 1. Instructor: Staff. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Ukrainian. CCI Topics differ by section. Instructor: Staff. One course.

Courses Currently Unscheduled


187. Introduction to Ukrainian Literature

THE MAJOR

Major Requirements. A minimum of ten 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.

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

Requirements. Five courses, three of which must be at the 100 level or above. Completion of at least two semesters of Russian language required.

Sociology (SOCIOL)

Professor Spenner, Chair; Professor O’Rand, Director of Undergraduate Studies; Lecturer Bach, Associate Director of Undergraduate Studies; Professors DiPrete, George, Gereffi,
Land, Lin, Morgan, Simpson, Tiryakian, Wilson, and Zhou; Associate Professor Gao; Assistant Professors Brady, Buchmann, J. Cook, Hughes, Parrado, and Shanahan; Professors Emeriti Maddox, Preiss, and Smith; Professor of the Practice Merkx; Adjunct Professors Carroll (divinity), J. Cook (public policy), Lewin (business), O'Barr (cultural anthropology), and Payne (history); Adjunct Associate Professor Gold (psychiatry and aging center); Adjunct Research Professor Manton (demographic studies); Adjunct Assistant Professor of the Practice Brown (public policy); Lecturer Williams

A major or 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.

10D. Introduction to Sociology. (SS) 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: Cook or Shanahan. One course.

11. Contemporary Social Problems. (SS) CCI, QID, 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, and human progress and social change. Emphasis on research issues, especially how and to what degree the understanding of social problems is a direct result of the inductive processes used to define social problems and the research methods and procedures used to investigate them. Instructor: Land or Simpson. One course.

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


98. Introduction to Canada. (SS) SS One course. C-L: see Canadian Studies 98; also C-L: History 98, Political Science 98, Comparative Area Studies

100. Duke-Administered Study Abroad: Advanced Special Topics in Sociology. CCI An introduction to the cultures of Ghana, focusing on social and political structures as well as language and arts. Topics include Ghanaian history, slavery, gender, family life, religion, drumming, dance, craft production and philosophy. Taught by Ghanaian professors, this course can also count toward the Cultural Anthropology and African and African-American Studies majors. Instructor: Staff. One course.

101A. Contemporary American Society. (SS) CCI, EI, R, SS Domestic issues that have challenged American society, including social inequality, immigration, ethnic and racial strife, crime, and problems of children, work and business, and health. New issues, including problems of the elderly, the family, environment and other ecological issues. How these problems arise from the structure of American society and how their effects differ over time and place and among social groups. Individual and team research projects required. Open only to students in the Twentieth Century America FOCUS Program. Instructor: Simpson or Spender. One course.

101B. Biology and Society. (SS) R, SS, STS The reciprocal relationships between the biological sciences and social institutions studied through historical and contemporary cases of biological technologies in their social contexts. Only open to students in the FOCUS program. Instructor: O’Rand. One course.

101C. A Single Europe? Dreams and Reality. (SS) CCI, EI, R, SS An examination of the idea and ideal of a unified Europe in the course of centuries culminating in the
establishment of the European Union in the 1990s. Problems of harmonizing different political, economic, and cultural systems within the framework of the European Union, as well as criteria used for new applicants. Changes in national identity and citizenship, demographic and structural changes in the composition of Europe, and ethical dilemmas facing Europe. Group project and research paper required. Open only to students in the FOCUS program. Instructor: Tiryakian. One course.

101ES. The Political Economy of East Asia: From Nation-State to Regional Cooperation. (SS) CCI, R, SS The Asian-Pacific regions emerging as the center of international political economy in the next century. Emphasis on China, Japan, South Korea, Taiwan, and Hong Kong; focus on how East Asian countries responded to the great challenge of industrialization in the nineteenth and twentieth centuries, what kind of impact the industrialization exerted on their cultures and societies, and what the significance of ongoing regional cooperation in this region will be to the new order of international politics and economy in the post-cold war era. Open only to students in the FOCUS Program. Instructor: Gao. One course.

101FS. Society and Identity: Origins and Transformations. (SS) SS, STS An examination of the interrelationships between complex social systems and individual identity (or self). How such social systems emerge, perpetuate, and are transformed. At the individual level, the links between social structures and individual identity, including the processes by which individuals become agents of change who transform social structures. Particular emphasis on science and technology as agents of social change and as determinants of individual identity. Both contemporary and historical materials included. Short weekly writing exercises, biweekly essay development, and final research paper required. Open only to students in the FOCUS Program. Instructor: O’Rand. One course.

101GS. Computers and Society. (SS) R, SS, STS Examination of some of the many ways that computer technology has influenced the nature of work, leisure, social identity, and more generally the structure and economy of the society. At the macro, societal level, how the structure of economy and society have been affected by the development and implementation of advanced technologies related to computerization. At the individual level, the effects of these technologies on individual lives. Both contemporary theories and historical perspectives incorporated. Requirements include two short papers and research paper. Open only to students in the FOCUS Program. Instructor: DiPrete. One course.

106. Social Psychology. (SS) QID, SS One course. C-L: see Psychology 116; also C-L: Women’s Studies

107. Bargaining, Power, and Influence in Social Interaction. (SS) QID, SS How power and influence are exercised, conflict is handled, cooperation promoted, and agreements regulated in social groups. Related issues in the study of social interaction, such as the role of emotion. The dynamics of small groups in experimental situations, with attention to experimental design, what it contributes, how it is limited, and implications of generalizing to natural settings. Instructor: Spenner. One course.


110. A-E. Comparative Sociology: Selected Areas. (SS) 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, Parrado, or Tiryakian. One course. C-L: Comparative Area Studies, Markets and Management Studies

111. Social Inequality: An International Perspective. (SS) 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: DiPrete or O’Rand. One course. C-L: Women’s Studies

112. American Demographics. (SS) EI, QID, R, SS Population growth and its components—mortality, fertility and migration. Focus on what is general/unique about the demography of the United States in comparison to other countries. Demographic techniques and data, their usefulness and limitations. Historical, social, political, and economic roots of scientific research on population growth and its consequences. Ethical and political issues related to population growth and its components within a policy context. Three demographic projects required. Instructor: Land or Morgan. One course. C-L: Markets and Management Studies

114. Cybernetworks and the Global Village. (CZ) (SS) CCI, CZ, QID, 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. 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: Markets and Management Studies

116. Race and Ethnic Relations. (SS) CCI, EI, R, SS The social and legal construction of "race." The ways in which racial/ethnic identities change in relation to historical time period, politics, and social privilege. Cross-cultural cases of identity formation; the normative cases 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. Competing claims of fairness regarding social issues like Affirmative Action, and the ethical and political component of these controversial issues within a particular historical context. Research paper required. Instructor: Staff. One course. C-L: African and African American Studies


119. Juvenile Delinquency. (SS) CCI, EI, QID, 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 Williams. One course.

120. Causes of Crime. (SS) EI, QID, 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
Sociology (SOCIOL) 493

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 Williams. One course.

121. Eastern Europe in Transition: Markets, Media, and the Mafia. (CZ) (SS) CCI, CZ, SS

One course. C-L: see Russian 125

122. Punishment and Treatment of Deviants. (SS) 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: Williams or staff. One course.

123. Social Aspects of Mental Illness. (SS) CCI, EI, R, SS

Theories and research in the sociology of mental disorder. How sociologists and psychiatrists view mental disorder, the causes of mental disorder, and the social and institutional responses to the mentally ill. Interpretive ways of understanding the meaning of mental illness and religious practices. Social definitions of the self across different cultures and the links among these definitions of illness behavior. Mental hospitals around the world, the situational, structural, cultural and environmental factors that influence mental health policy in three nations, and the psychiatric and anti-psychiatric view of labeling. Research paper required. Instructor: George or Staff. One course.

124. Human Development. (SS) CCI, EI, R, SS

One course. C-L: see Human Development 124; also C-L: Psychology 124

125. Comparative Approaches to Global Issues. (CZ) (SS) CCI, CZ, SS

One course. C-L: see Comparative Area Studies 125; also C-L: Cultural Anthropology 125, History 137, Political Science 125, Religion 183, Marxism and Society

126. The Challenges of Development. (SS) 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: Buchmann or Gereffi. One course. C-L: Comparative Area Studies, Latin American Studies, Markets and Management Studies

127. The Latino Population in the U.S. (SS) 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: Parrado. One course.

129. Gender, Work, and Organizations. (SS) 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: Markets and Management Studies

132. Methods of Social Research. (SS) QID, R, SS, W Principles of social research, design of sociological studies, sampling, and data collection with special attention to survey techniques. Instructor: Brady, George, Hughes, or Lin. One course.


138D. History of Social Thought. (SS) CCI, IAA, SS 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. Two lectures and one discussion. Instructor: Tiryakian or Wilson. One course.

139. Marxism and Society. (SS) SS One course. C-L: see Cultural Anthropology 139; also C-L: Education 139, History 186, Literature 181, Comparative Area Studies, Marxism and Society

140S. Ethics in Management. (SS) 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. C-L: Markets and Management Studies

141. Consuming Passions. (SS) 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 or Wilson. One course. C-L: Markets and Management Studies

142. Organizations and Global Competitiveness. (SS) 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: Buchmann or Gereffi. One course. C-L: Comparative Area Studies

143. Management and Labor Relations. (SS) CCI, R, SS Theories and current research on the interlocking roles of business and labor in the United States and elsewhere. Research paper required. Instructor: Brady or Gereffi. One course. C-L: Comparative Area Studies

144. Technology and Organizational Environments. (SS) 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.
145. Nations, Regions, and the Global Economy. (SS) 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: Buchmann, Gereffi, or Shanahan. One course. C-L: Comparative Area Studies

146. Organizational and Occupational Deviance. (SS) QID, R, SS Deviance as an organizational problem, whether the wrongdoing is for individual or organizational gain. Case studies of malfeasance in profit and nonprofit organizations to identify characteristics of offending organizations and offenders, as well as to evaluate variations in control strategies and mechanisms such as regulatory agencies, investigative reporting and whistleblowing in bringing the cases to public attention. Comparisons to infer the organizational conditions associated with deviance and legal and moral compliance, and to spot organizational flaws, malfunctions, and criminal violations. Group and individual research projects required. Instructor: Simpson or staff. One course. C-L: Markets and Management Studies

147. Business in Literature. (AL) (SS) AL, IAA, 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. C-L: Markets and Management Studies

148. Demography for Business and Policy. (SS) QID, SS An introduction to applied demography and its uses for business and public policy. Applied demography used to make real-world decisions such as selecting an optimal store site, assessing the demands for health services, and quantifying the impact of employees' families on the cost of providing health care benefits. The tools needed to apply standard demographic methods to business and public policy decisions, which tools include empirical analysis techniques, estimating and projecting populations, types and sources of relevant data, and ways to present data and findings clearly and concisely. Emphasis on "hands on" applications of demographic techniques to real world problems. Instructor: Hughes or Morgan. One course. C-L: Markets and Management Studies

149. Sexuality and Society. (SS) CCI, EI, 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. Instructor: Bach or staff. One course. C-L: Study of Sexualities, Women's Studies

150. The Changing American Family. (SS) CCI, QID, 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, childbirth, 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: Morgan or Simpson. One course. C-L: Women's Studies

153. Sport and Society. (SS) EI, QID, 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: Wilson. One course.

155. Organizations and Management. (SS) QID, 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, DiPrete, or Zhou. One course. C-L: Women’s Studies

156. Global Contexts of Science and Technology. (SS) CCI, R, SS, STS National variations in the structure of scientific systems, and their consequences for the production and application of scientific knowledge. Particular attention to how these differences are shaped by cultural values and social institutions based on those values (politics, economics, education). Focus on recent developments in the biomedical sciences, such as genetic engineering and bio-ecology, and how they are incorporated into the scientific agendas of different cultures. Requires research paper addressing cross-cultural comparisons in the context of a selected scientific principle or technological development. Instructor: O’Rand. One course. C-L: Markets and Management Studies

158. Markets and Marketing. (SS) 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: DiPrete or Spanner. One course.

159. The Sociology of Entrepreneurship. (SS) CCI, QID, 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.

160. Advertising and Society: Global Perspective. (SS) CCI, IAA, SS One course. C-L: see Cultural Anthropology 110; also C-L: English 120, Canadian Studies, Comparative Area Studies, Film/Video/Digital, Linguistics, Markets and Management Studies, Women’s Studies

160D. Advertising and Society: Global Perspective. (SS) CCI, IAA, SS One course. C-L: see Cultural Anthropology 110D; also C-L: English 120D, Undergraduate Canadian Studies Program, Comparative Area Studies, Film/Video/Digital

161. Adulthood and Aging. (SS) EI, SS, W Sociological and psychological perspectives on aging, from adolescence through old age and death; demography of human aging; problems caused by increased longevity; policy issues. Instructor: George, Gold, or O’Rand. One course. C-L: Women’s Studies

162. Health and Illness in Society. (SS) CCI, EI, R, SS The history of medicine and religion’s role in medicine. Interpretive ways of understanding the meaning of illness and religious practices within a social context. Definitions of the self and identity across historical time periods and across nations as linked to health and illness behaviors. Distribution of diseases within society, power relations between majority and minority
group members, and health care systems around the world. The situational, structural, cultural, and environmental factors that influence health care policy in five nations, including the United States. The ethical dilemmas facing physicians and their patients. Research paper required. Instructor: Lin. One course.

163. Aging and Health. (SS) 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. Instructor: George or Gold. One course.


165. Occupations, Professions, and Careers. (SS) CCI, R, SS How occupations organize and control labor markets, define services, chart career lines, and develop and sustain identities. Course is organized around a major research paper on a specific occupation or profession, including consideration of issues of education-training, socialization, labor force trends, career lines, power and control, and issues of gender and race. Instructor: O’Rand, Simpson, or Spenner. One course. C-L: Markets and Management Studies, Women's Studies

167. The Social Bases of Politics. (SS) SS Political power, state action, political mobilization, and policy formation seen through the lens of sociological theory and research. Instructor: Cook. One course.

169. Psychosocial Aspects of Human Development. (SS) 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 agegroups 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: Human Development 180, Psychology 130

170. Mass Media. (SS) 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: Undergraduate Canadian Studies Program, Comparative Area Studies Program, Film/Video/Digital

171. Comparative Health Care Systems. (SS) 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: Staff. One course. C-L: Undergraduate Canadian Studies Program, Comparative Area Studies, Health Policy
173. Social Conflict and Social Movements. (SS) 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: Shanahan, Tiryakian or Wilson. One course.

182. Media in Comparative Perspective. (SS) CCI, R, SS, W Impact of mass media outside the United States. Cross-national comparison of media content, audiences, and control. Relationships of governments to media policies. International flow of media materials and their cross-national impact. Students do systematic research on a country and transnational media or corporation to understand the basis of international conflict over the cultural industries. Research paper required. Instructor: Staff. One course. C-L: Political Science 180, Canadian Studies, Comparative Area Studies, Film/Video/Digital

184S. Canadian Issues. (SS) CCI, SS One course. C-L: see Canadian Studies 184S; also C-L: Cultural Anthropology 184S, History 184S, Political Science 184S, Comparative Area Studies

185S. The Canadian Health Care System. (SS) EI, SS One course. C-L: see Canadian Studies 185S; also C-L: Cultural Anthropology 185S, Political Science 185S, Public Policy Studies 187S, Comparative Area Studies

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.

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.

For Seniors and Graduates

206. Sociological Theory. (SS) QID, 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: Tiryakian or Wilson. One course.

208. Survey Research Methods. (SS) QID, 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.
2115. **Proseminars in Sociological Theory. (SS)** Development of sociological thought; systematic sociological theory; interrelations with other social and behavioral sciences.

   A. Background of Sociology
   B. Formal Aspects of Theory
   C. Sociology of Knowledge
   D. Evolutionary Theory and Sociobiology
   E. Special Topics in Sociological Theory

   Instructor: Tiryakian or Wilson. One course.


213. **Social Statistics II: Discrete Multivariate Models. (QR)** 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: DiPrete or Land. One course.


217. **Proseminars in Social Statistics and Research Methods. (SS)** Selected topics in the collection and analysis of social science data.

   A. Discrete and Continuous Models of Measurement
   B. Hazards Models, Event History Analysis, and Panel Data
   C. Dynamic Models and Time Series Analysis
   D. Research Design
   E. Evaluation Research Methods
   F. Special Topics in Social Statistics and Research Methods

   Instructor: DiPrete, Land, Lin, or Zhou. One course.

222. **Proseminars in Comparative and Historical Sociology. (SS)** Selected topics in the differentiation and transformation of societies.

   A. Theories of Social Change
   B. Globalization and Comparative Development
   C. Societal Transformations and Social Institutions
   D. Culture, Values, and Ideas
   E. Social Movements and Political Sociology
   F. Comparative Social Policies
   G. Special Topics in Comparative and Historical Sociology

   Instructor: Brady, Buchmann, Gao, Gereffi, Lin, Shanahan, Simpson, or Tiryakian. One course.

223. **Proseminars in Crime, Law, and Deviance. (SS)** Selected topics in crime and the institutions of social control.

   A. Theories of Crime Causation
   B. Human Development and Criminal Careers
   C. Social Control and the Criminal Justice System
D. Sociology of Law
E. Special Topics in Crime, Law, and Deviance
Instructor: Land, Simpson, or Wilson. One course.

A. Population Dynamics
B. Mortality, Morbidity, and Epidemiology
C. Urbanization and Migration
D. Demography of the Labor Force
E. Demography of Aging
F. Special Topics in Population Studies
Instructor: DiPrete, Hughes, Land, Manton, Morgan, Parrado, or O’Rand. One course.

225S. A-F. Proseminars in Economic Sociology. (SS) Selected topics in organizations and institutions, social networks and social capital, globalization and markets, and occupations and work.
A. Basic Concepts, Theories, and Methods.
B. Organizations and Institutions.
C. Social Networks and Social Capital.
D. Globalization and Markets.
E. Occupations and Work.
F. Special Topics.
Instructor: Brady, Buchmann, Cook, DiPrete, Gao, Gereffi, Lin, Merkx, Simpson, Spener, or Zhou. One course.

226S. A-G. Proseminars in Social Institutions and Processes. (SS) Selected topics in the sociology of institutions and social and institutional behavior.
A. Social Psychology
B. Social Stratification
C. Political Sociology
D. Sociology of Religion
E. Sociology of Science
F. Sociology of Education
G. Special Topics in Social Institutions and Processes
Instructor: Staff. One course.

227S. A-D. Proseminars in Medical Sociology. (SS) Selected topics in medical sociology.
A. Social Structure and Health
B. Social Behavior and Health
C. Organization and Financing of Health Care
D. Special Topics in Medical Sociology (for example, social epidemiology, stress and coping, health and aging)
Instructor: George, Gold, Hughes, or Lin. One course.

228S. A-F. Proseminars in 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.
A. Intergenerational Mobility
B. Social Structure and the Life Course
C. Social Inequality and the Structure of Poverty
D. Careers and Labor Markets
E. Societal Transformation
F. Special Topics in Stratification and Mobility Research

Instructor: Buchmann, DiPrete, Lin, Spanner, or O’Rand. One course.

234S. Political Economy of Development: Theories of Change in the Third World. (SS) CCI, SS One course. C-L: see Political Science 234S; also C-L: Cultural Anthropology 234S, Comparative Area Studies

282S. Canada. (SS) SS One course. C-L: see Canadian Studies 282S; also C-L: Cultural Anthropology 282S, History 282S, Political Science 282S, Comparative Area Studies

283S. Seminar in North American Studies. Topics vary each semester. Instructor: Staff. One course.


298S. Seminar in Selected Topics. Substantive, theoretical, or methodological topics. Instructor: Staff. One course.

299S. Seminar in Selected Topics. Substantive, theoretical, or methodological topics. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

117. Childhood in Social Perspective
175. Contemporary Global Issues (D)
188C. East Asian Political Economy: Institutions, Networks, and Politics
214. Comparative and Historical Methods (B)
216. Advanced Methods of Demographic Analysis

THE MAJOR

Prerequisite. Sociology 10D or, under exceptional circumstances, an equivalent course (Sociology 11, 49S) with the consent of the director of undergraduate studies.

Major Requirements. Nine courses, eight of which must be at the 100 level or above, including Sociology 132, Sociology 138, and Statistics 101, and one seminar or independent study in sociology. Only one independent study credit can be applied to the major (with the exception of an honors thesis).

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.

Institute of Statistics and Decision Sciences (STA)

Professor West, Director; Professor of the Practice Stangl, Associate Director and Director of Undergraduate Studies; Professors Berger, Johnson, Levine, Sacks, Winkler, and Wolpert; Associate Professors Burdick, Clyde, and Müller; Assistant Professors Chen, Higdon, Huber, Iversen, and Schmidler; Adjunct Associate Professor Parmigiani; Adjunct Assistant Professor Dunson; Senior Lecturing Fellow Ulmer; Visiting Assistant Professors Barber, Chattopadhyay, Kottas, Lee, McBride, and Pittman

The Institute of Statistics and Decision Sciences coordinates teaching and research in statistics and decision theory at Duke. It offers courses in basic statistics and advanced mathematical statistics. The research emphasis on statistical decision theory within offerings of the institute leads to a variety of courses, at various levels, in statistics and decision sciences. There is no undergraduate major in statistics. The Institute maintains and runs a Statistical Consulting Center which provides statistical assistance to members of the Duke community.

495. First-Year Seminar. (QR) M, QID Topics vary each semester offered. Instructor: Staff. One course.


100. Duke-Administered Study Abroad: Advanced Special Topics in Statistics. QID Topics differ by section. Instructor: Staff. One course.

101. Data Analysis and Statistical Inference. (QR) M, QID First principles in the construction and critique of quantitative arguments for research questions in the social and behavioral sciences and public policy. Topics include: descriptive statistics, graphical methods for exploring distributions and relationships between variables, elementary probability, point and interval estimation in one-, two-, and multi-sample problems, and statistical inference from frequentist and Bayesian perspectives. Historical and philosophical developments of classical and Bayesian statistics are discussed. Applications in education, sports, law, environment, government, discrimination, psychology, sociology, and public policy included. Not open to students who have credit for another 100-level statistics course. Instructor: Staff. One course.

102. Introductory Biostatistics. (QR) M, QID Reading and interpretation of statistical analyses from life science and medical literature. Conceptual bases for using data and understanding uncertainty when making treatment decisions about patients. Includes extensive reading and class discussion of articles from the 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 decision trees, and basic survival analysis. Emphasizes role of biostatistics, drug treating, and clinical trials in modern society. Not open to students who have credit for another 100-level statistics course. Instructor: Staff. One course.

103. Probability and Statistical Inference. (QR) M, QID 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.

104. Probability. (QR) M, QID One course. C-L: see Mathematics 135

112. Introduction to Applied Statistics. (QR) M, QID Classical techniques of testing and estimation. Emphasis on applications of the theory to applied problems. Not open to students who have taken Statistics 213 or equivalent. Prerequisite: Mathematics 32 or equivalent, or consent of instructor. Instructor: Staff. One course.

113. Probability and Statistics in Engineering. (QR) M, QID 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 112 or 213. Prerequisite: Mathematics 103 or equivalent. Instructor: Staff. One course.

114. Statistics. (QR) M, QID An introduction to the concepts, theory, and application of statistical inference, including the structure of statistical problems, probability
modeling, data analysis and statistical computing, and linear regression. Inference from the viewpoint of Bayesian statistics, with some discussion of sampling theory methods and comparative inference. Applications to problems in various fields. Prerequisite: Mathematics 104 and Mathematics 135/Statistics 104. Instructor: Staff. One course. C-L: Mathematics 136

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.

205. Probability and Measure Theory. (QR) M, QID 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: Staff. One course.

207. Probability. (QR) M, QID One course. C-L: see Mathematics 287

213. Introduction to Statistical Methods. (QR) M, QID 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 Statistics 114 or Mathematics 136. Prerequisite: Mathematics 103 (may be taken concurrently) or equivalent, or consent of instructor. Instructor: Staff. One course.

214. Probability and Statistical Models. (QR) M, QID An introduction to applied probability and to the parametric probability models commonly used in statistical analysis. The generation of random variables with specified distributions, and their use in simulation. Mixture models; linear regression models; random walks, Markov chains, and stationary and ARMA process; networks and queuing models. Prerequisite: Statistics 213 and 244 or consent of instructor. Instructor: Staff. One course.

215. Statistical Inference. (QR) M, QID 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: Staff. One course.

216. Generalized Linear Models. (QR) M, QID 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: Staff. One course.

217. Ordinal Data Modeling. (QR) M, QID 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. One course.

226. **Statistical Analysis of Ecological Data. (NS) (QR) NS, QID** One course. C-L: See Biology 266; also C-L: Environment 241

240. **Applied Data Analysis for Environmental Sciences. (QR) M, QID** 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: Staff. One course.

241. **Environmental Experimental Design. (QR) M, QID** One course. C-L: see Environment 257


244. **Linear Models. (QR) M, QID** 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 or equivalent. Instructor: Staff. One course. C-L: Mathematics 217

245. **Introduction to Multivariate Statistics. (QR) M, QID** Multinormal distributions, multivariate general linear model, Hotelling's $T^2$ statistic, Roy union-intersection principle, principal components, canonical analysis, factor analysis. Not open to students who have taken the former Mathematics 242. Prerequisite: Statistics 244 or equivalent. Instructor: Staff. One course. C-L: Mathematics 218


273. **Numerical Analysis. (QR) M, QID, R** One course. C-L: see Computer Science 250; also C-L: Mathematics 221

290. **Statistical Laboratory. (QR) M, QID** 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: Staff. One course.

293. **Special Topics in Statistics. (QR) M, QID** An introduction to statistical inference from observations of stochastic processes. Examples include inference about Markov chains, Gaussian processes, diffusion processes and Levy processes. Evaluations will be based on (group or individual) brief student presentations of topics chosen from the literature in collaboration with the instructor. No examinations. Students are expected to be familiar with probability theory at the level of Statistics 205, Mathematics 216 or Mathematics 287. Instructor: Staff. One course.

294. **Special Topics in Statistics. (QR) M, QID** Prerequisite: Statistics 213 or consent of instructor. Instructor: Staff. One course.
294A. Computational Methods for Macromolecular Structure. (QR) QID One course. C-L: see Bioinformatics & Genome Technology 207

COURSES CURRENTLY UNSCHEDULED
30. Introduction to Decision Analysis
31. Applied Game Theory
115. Statistical Data Analysis in Engineering
203S. Senior Seminar in Statistics
210B. Statistics and Data Analysis in Biological Science
246. Experimental Design
282. Optimization Methods
297. Topics in Probability Theory

Theater Studies (THEATRST)
Professor of the Practice Riddell, Chair; Assistant Professor of the Practice Morris, Director of Undergraduate Studies; Professors Beckwith, Burian, Clum, and Lentricchia; Professor of the Practice Storer; Associate Professors of the Practice Damasceno, McAuliffe, Voss, and Wilson; Professor Emeritus Randall; Adjunct Professor Azenberg; Adjunct Assistant Professor of the Practice Catotti; Adjunct Lecturers Kartheske, Martelon, and Webb; Visiting Assistant Professors of the Practice Chambers and Worster; Instructors Hemphill, Lopez-Barrantes, O’Berski, and West

A major or a minor is available in this program.

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 play, 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.

INTRODUCTORY COURSES
49S. First-Year Seminar. (AL) AL, IAA Topics vary each semester offered. Instructor: Staff. One course.
91. Introduction to Theater Studies. (AL) AL, CCI, IAA An introduction to the study of theater. Aspects of play production, text analysis, and an introduction to the key periods in the history of theater (classical Greek, English Renaissance, modern European, and contemporary), including close analysis of representative plays. Attention given to theater as expression of different, specific cultural circumstances. Instructor: Clum or Riddell. One course. C-L: English 94
92S. The Theatrical Process. (AL) AL, IAA Examination in theory and practice of the creative and collaborative processes that go into producing theater. Intensive laboratory work giving students an experiential understanding of the theater production organization, facilities, and equipment thereby enabling each student to participate in a theater ensemble. Required of all Theater Studies majors and minors. Consent of instructor required. Instructor: Chambers. One course. C-L: Dance 75S
995. Introduction to Performance. (AL) AL, IAA Storytelling and exploration of the self including: movement, voice, imaginative work, and the basic actor's vocabulary. Scene work. The process of acting will be studied from in-class work and observation of Theater Studies productions. Course geared to the student with little or no experience in acting. Instructor: Hemphill, O'Berski, Lopez-Barrantes, or West. One course.

AMERICAN DRAMA

101. American Drama and Film: 1918-1945. (AL) AL, IAA Key works from the end of World War I through the end of World War II. Playwrights include Eugene O'Neill, Elmer Rice, Susan Glaspell, George Kelly, Zona Gale, Lillian Hellman, and Clifford Odets. This course will also include a selection of major films from the period. Instructor: Clum. One course. C-L: English 162A


103. American Drama Since 1960. (AL) AL, IAA American plays from Albee's Who's Afraid of Virginia Wolfe to the present. Instructor: Clum or Worster. One course. C-L: English 162C

104. American Musical Theater from Showboat to Sondheim. (AL) AL, IAA The work of Rodgers, Hart, Hammerstein, Kern, Porter, Bernstein, Sondheim, and contemporary composers and lyricists. One course. C-L: Music 164

105. The History of Performance Art. (AL) (CZ) AL, CZ, IAA One course. C-L: see Art History 179; also C-L: Comparative Area Studies, Women's Studies

BRITISH DRAMA

109. Shakespeare before 1600. (AL) AL, EI, IAA, R One course. C-L: see English 143; also C-L: Medieval and Renaissance Studies 182

110. Shakespeare after 1600. (AL) AL, EI, IAA, R One course. C-L: see English 144; also C-L: Medieval and Renaissance Studies 183


112S. The Tragedies of Shakespeare. (AL) AL, IAA Instructor: Staff. One course. C-L: English 129BS, Medieval and Renaissance Studies 109S

113. British and Irish Drama: 1890-1950. (AL) AL, IAA The works of Wilde, Shaw, Synge, O'Casey, Coward, Rattigan, and others. Instructor: Staff. One course. C-L: English 133A

114. After the Fall of the Empire: British and Irish Drama 1945 to the Present. (AL) AL, IAA The work of Osborne, Pinter, Stoppard, Edgar, Hare, Churchill, Kane, Fried, McGuinness and others. Instructor: Staff. One course. C-L: English 133B

116S. Theater in London: Text. (AL) AL, IAA 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

EUROPEAN DRAMA

117. Drama of Greece and Rome. (AL) AL, CCI, IAA One course. C-L: see Classical Studies 106

118. Classical to Neoclassical. (AL) AL, CCI, IAA Theater and drama as productions of specific urban cultures from Athens in the fifth century B.C. to London, Madrid, and Paris in the seventeenth century: Greek tragedy and comedy, Roman comedy, medieval and Renaissance drama, Restoration drama and drama of Spain and France's Golden Age. Instructor: Clum. One course. C-L: English 174A, Literature 151A
119. French Drama of the Twentieth Century. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see French 162
120. The Italian Theater. (AL) (FL) AL, FL, IAA One course. C-L: see Italian 151S
121. Toward and Beyond Realism. (AL) AL, CCI, IAA Development of British, European, and American drama and theater from the eighteenth century to the present. Key playwrights, genres, theories, and movements. Instructor: Clum. One course. C-L: English 174B, Literature 151B
122S. Chekhov. (AL) AL, CCI, IAA, W One course. C-L: see Russian 177S; also C-L: Comparative Area Studies
123S. Introduction to German Drama. (AL) (FL) AL, CCI, FL, IAA One course. C-L: see German 133S; also C-L: Comparative Area Studies
129. Special Topics in Dramatic Literature. (AL) AL, IAA May be repeated for credit. Instructor: Staff. One course.
129S. Special Topics in Dramatic Literature, History, Theory, or Criticism. (AL) AL, IAA May be repeated for credit. Instructor: Staff. One course.

INTERNATIONAL DRAMA
130S. Twentieth-Century Women Playwrights. (AL) AL, CCI, IAA Text analysis of leading international women playwrights of the twentieth century including Hellman, Stein, Churchill, Fornes, Sontag, Kennedy, Sadur, and Petrushevskaya. Exploration and analysis of difference among women writers of different cultures and generations. Examination of political, social, aesthetic, and cultural differences through the study of plays in their historical contexts. Particular critical attention paid to issues of gender, race, ethnicity, identity, power, and privilege. Instructor: McAuliffe. One course. C-L: Literature 123AS, Russian 114S, Women's Studies
131. Contemporary Theater in Production. (AL) AL, IAA Analysis of how contemporary theater is received by audiences, especially the Broadway audience. The course focuses on text analysis of dramatic literature that has been- or is likely to be-produced on Broadway in resident theaters in the USA or on the West End in London. Weekly writing assignments ask students to explore their responses to a range of contemporary dramatic literature. Instructor: Azenberg. One course. C-L: Public Policy Studies 180

DRAMATIC WRITING
135S. Dramatic Writing. (AL) AL, IAA, W Fundamentals of writing for stage. Open to sophomores, juniors, and seniors. Prerequisite: a practical theater course (for example, acting, directing, design, stagecraft) and consent of instructor. Instructor: Clum or Wilson. One course. C-L: English 107S, Film/Video/Digital
138S. Transforming Fiction for Stage and Screen. (AL) AL, IAA, 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: McAuliffe. One course. C-L: English 108BS, Film/Video/Digital
139S. Special Topics in Dramatic Writing. (AL) AL, IAA May be repeated for credit. Instructor: Staff. One course.
**ACTING**

145S. Acting: Analysis and Performance. (AL) AL, IAA
Text analysis from the actor’s point of view, research, preparation, technique, voice, and movement. Scene work with focus on bringing innovative interpretation to performance of modern and contemporary plays. Consent of instructor required. Instructor: Morris, O’Berski, Storer, or West. One course.

146S. Shakespeare Lab for Actors and Directors. (AL) AL, IAA
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: Morris. One course.

147S. Advanced Acting: Contemporary Texts. (AL) AL, IAA
Scene study based on reading, analysis, and research. Examination and development of performance/ critical choices. Prerequisite: Drama 131S or Theater Studies 145S and consent of instructor. Instructor: McAuliffe and Storer. One course.

148S. Voice and Speech. (AL) AL, IAA
Vocal production and articulation. Breathing, emotional response, placement, phonetics, and awareness of regionalisms. Prerequisite: Drama 131S or Theater Studies 145S and consent of instructor. Instructor: Morris. One course.

149S. Special Topics in Acting. (AL) AL, IAA
May be repeated for credit. Instructor: Staff. One course.

150S. Voice and Body Gesture Theater. (AL) AL, IAA
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. Instructor: Lopez-Barrantes. One course.

151S. Theater in London: Performance. (AL) AL, IAA
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

**DIRECTING**

155S. Directing. (AL) AL, IAA
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: Drama 99S, Theater Studies 99S, Drama 131S, or Theater Studies 145S and consent of instructor. Instructor: McAuliffe or Storer. One course. C-L: Film/ Video/ Digital

159S. Special Topics in Directing. (AL) AL, IAA
May be repeated for credit. Instructor: Staff. One course.

**DESIGN, MANAGEMENT, AND PRODUCTION**

161S. Design for the Theater. (AL) AL, IAA
Basic design principles and techniques for the three primary stage design areas: scenery, costumes, and lighting, with an introduction to sound design. Aesthetic and analytical skills, design appreciation, drafting ground plans, light plots, model building, and costume rendering. Laboratory requirement. Prerequisite: Drama 93, Theater Studies 92S, or consent of instructor. Instructor: Chambers. One course. C-L: Dance 169S
163S. Producing for the Theater. (AL) AL, IAA The history and organization of profit and nonprofit theater in America. Methods and techniques for establishing and maintaining theater organizations. Practical application in connection with Department of Theater Studies productions. Instructor: Voss. One course. C-L: Public Policy Studies 170S

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 pass/ fail basis. Prerequisite: Drama 93 or Theater Studies 92S. 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 pass/ fail basis. Prerequisite: Drama 93 or Theater Studies 92S. Instructor: Staff. One course.

168S. Entrepreneurship and International Arts Management. (AL) AL, CCI, IAA 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: Voss. One course. C-L: Markets and Management Studies 169S. Special Topics in Design, Management, and Production. (AL) AL, IAA Topics in set, costume, and lighting design, and their history, culture, and technology. May be repeated for credit. Instructors: Chambers, Riddell, or Voss. One course.

SPECIAL COURSES IN THEATER STUDIES

170S. The Art of Transformation: A Workshop in Movement and Theater. (AL) AL, IAA 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 Arts in Contemporary Society FOCUS Program. Instructor: Staff. One course. C-L: Dance 153S

171. Introduction to Film. (AL) AL, IAA One course. C-L: see Film/ Video/ Digital 130; also C-L: English 101A, Literature 110

172. Studies in Film History. (AL) AL, IAA One course. C-L: English 185, Literature 116, Film/ Video/ Digital

173S. Film and Video Theory and Practice. (AL) AL, IAA One course. C-L: see Film/ Video/ Digital 100S; also C-L: English 183S


178S. Special Topics in Film. (AL) AL, IAA One course. C-L: see English 189S; also C-L: Film/ Video/ Digital

ADVANCED STUDY

181A. Theater Studies Workshop. (AL) AL, IAA Exploration of a dramatic text or other performance material, culminating in a laboratory presentation for the public. Emphasis on the process of investigating a text, theory, or body of dramatic work. Students may focus on acting, directing, design, dramaturgy, or management, determined through audition and/ or arrangement with the instructor. Consent of instructor required. May be repeated for credit. Instructor: Staff. One course.

181B. Theater Studies Workshop. (AL) AL, IAA Same as Theater Studies 181A except half-credit. Consent of instructor required. May be repeated for credit, but only counted once toward requirements for major or minor. Instructor: Staff. Half course.
185A. Theater Studies Production. (AL) AL, CCI, IAA 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.

185B. Theater Studies Production. (AL) AL, IAA Same as Theater Studies 185A except half credit. May be repeated for credit. Consent of instructor required. Instructor: Staff. Half course.

189S. Senior Colloquium. (AL) AL, IAA, R Major research project in production (acting, directing), critical writing, dramatic writing, or design. Instructor: Clum or 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.


192B. Independent Study. See Theater Studies 192A. Consent of instructor and director of undergraduate studies required. Instructor: Staff. One course.

197. Senior Distinction Project. (AL) AL Consent of instructor required. Instructor: Staff. One course.


THE MAJOR

The major in theater studies offers students a grounding in (1) the history of theater and dramatic literature, and (2) the interrelated disciplines of the art of theater, for example, acting, design, directing, playwriting, and technical production. Students completing the major will be prepared for either graduate study, advanced theater training, or entry-level work in the profession.

Major Requirements: First- and second-year students with an interest in the theater are encouraged to take Theater Studies 91: Introduction to Theater Studies or Theater Studies 92S: The Theatrical Process. Majors are expected to have taken these courses by the beginning of the second semester after declaring the major.

- Theater Studies 91: Introduction to Theater Studies.
- Theater Studies 92S: The Theatrical Process.
- Three courses in dramatic literature from those numbered Theater Studies 101-134 (one of which must focus on theater before 1900).
- Two courses in theater arts from those numbered Theater Studies 135S-169S, 181-185 (Note: only one of the following courses—181A or 185A—may be used to satisfy a major requirement.)
- Two Electives.
- Theater Studies 189S: Senior Colloquium.

Theater Studies Graduation With Distinction

Students with at least a B average in their Theater Studies courses are eligible to apply for a project. They should acquire the Policy for Graduation with Distinction in Theater Studies and an application form from the Theater Studies office. The student's proposed project needs the approval of the project supervisor and the director of
undergraduate studies. All projects must be approved by registration in the spring semester of the year prior to the project.

A student may pursue a project in writing, directing, design, acting, dramatic literature, theater history, or dramatic theory. All projects must have a research and a substantial written component. They may also have a production component. Distinction projects usually are granted one and a half course credits (one course credit in the fall [Theater Studies 197] and one half course in the spring [Theater Studies 198]).

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

Theater Studies 91: Introduction to Theater Studies.
Theater Studies 92S: The Theatrical Process.
Three additional courses.
(Note: only one of the following courses- 181A or 185A- may be used to satisfy a major requirement.)

Swahili

For courses in Swahili see Asian and African languages and literature.

University Writing Program (WRITING)

Associate Professor Harris, Director of the University Writing Program; Assistant Professor of the Practice Hillard, Director of First-Year Writing; Senior Lecturing Fellow Kellogg, Director of Writing-in-the-Disciplines Program; Senior Lecturing Fellow Russell, Director of the Writing Studio; Professor of the Practice Gopen; Lecturer Askounis; Mellon Writing Fellows Ahern, Bailey, Budhecha, Castellanos, Comer, Cook, Dostert, Dufour, Erisman, Estes, Friedman, Freytag, Hammer, Horton, Malone-France, Moskovitz, Mukherjee, Pet; D. Reichert Powell, P. Reichert Powell, Sayle, and Troutman.

The University 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, located in the Academic Advising Center on East Campus.

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 University Writing Program reviews these courses and provides support for the faculty teaching them.

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.

20. Academic Writing. Instruction in the complexities of producing sophisticated academic argument, with attention to critical analysis and rhetorical practices. Instructor: Staff. One course.
Women's Studies (WOMENST)

Associate Professor Wiegman, Director; Professor of the Practice J. O’Barr; Associate Professor Rudy; Associate Research Professor Pierce-Baker; Affiliated faculty: Associate Professors Gheith (Slavic), Rasmussen (German), and Sieburth (romance studies); Assistant Professor of the Practice Curtis (political science); Adjunct Professor White; Adjunct Assistant Professors Krahulik and Lisker

A major or 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 (WOMENST) 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.

REGULARLY SCHEDULED COURSES IN WOMEN’S STUDIES

Women’s Studies Core Courses (WOMENST)

49S. First Year Seminar in Gender Studies. (SS) 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. (SS) 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. One course.

100. Duke-Administered Study Abroad: Advanced Special Topics in Women’s Studies. CCI Topics differ by section. Instructor: Staff. One course.


110S. Social Movements: An Overview. (SS) CCI, EI, R, SS A comparative analysis of how and why people come together to address an injustice and the ethical implications of their actions. Focuses on the social ideals embedded in the theory and praxis of international and local movements, and the cultural contexts in which movements occur. Research paper required. Open only to students in the FOCUS Program. Instructor: O’Barr. One course.

113. Gender Across Cultures. (SS) CCI, SS Gender practices, structures, and discourses in cross cultural and comparative perspective, with either a cross national or a United
States subcultural focus. Emphasis on understanding "culture" in historical, political, and economic terms. Instructor: Staff. One course.

115. Cyborgs. (SS) CCI, SS One course. C-L: see Cultural Anthropology 143A


120S. Gender Studies. W Topics emphasize interdisciplinary scholarship in gender studies. Instructor: Staff. One course.

130. Women and the Political Process. (SS) 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

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.

160. Feminism in Historical Contexts. (CZ) (SS) CCI, CZ, SS Comprehensive introduction to feminist theoretical conceptions of the social, the political, the economic and the human. The rise of gender based discourses and social movements studied in the context of broader considerations of modernity, democracy and liberal humanism and the value of rights discourse for feminist agendas, using cross-cultural and historical analysis. Instructor: Staff. One course.

161S. Money, Sex and Power. (CZ) (SS) 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. Prerequisite: 90 or 160 or by consent of instructor. Instructor: Staff. One course.

162S. Gender, Culture and Representation. (SS) CCI, IAA, SS The role of culture-its economic creation, critical interpretation, political function, commodification, and consumption- in the social and material organizations of gender, race, and sexuality. Semiotic, psychoanalytical, economic and social analysis of cultural forms across both national divides and historical periods. Film, television, advertising, traffic signs, graffiti, body language, city planning, landscaping and both home and factory design. The history and complexity of cultural politics. Prerequisite: Women's Studies 90 or 160 or by consent of instructor: Instructor: Staff. One course.

163S. Identity, Subjectivity, and the Body. (SS) 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. (SS) 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.

174. Gender and Language. (SS) CCI, QID, R, SS One course. C-L: see Russian 174; also C-L: Cultural Anthropology 174, English 115, Linguistics 174
175. Feminism in Art. (AL) (CZ) AL, CCI, CZ, IAA One course. C-L: see Art History 186; also C-L: Literature 133A

180S. Feminism and Practice. (SS) CCI, R, SS Designed for students who have worked in an organization or studied abroad. Reflection on a cross-cultural experience, interpreting that experience in the contexts of gender, race, class, sexuality, conflicting values, and other issues surrounding identities and world views, including transitions back into student life at home, as well as integration of knowledge and experience. Focus on a major research paper based on questions arising from the student's experience. Instructor: Lisker, Sieburth, or staff. One course.

190. Independent Study. Half-course project of research and analysis of selected women's issues under the supervision of a faculty member. Consent of instructor and program director required. Instructor: Staff. Half 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. 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 seniors. Consent of instructor and program director required. Instructor: Staff. One course.


195S. Senior Seminar in Women's Studies. CCI, R, W Advanced research course for majors in Women's Studies. Topics vary by semester. Students produce a significant research paper. Consent of instructor required. Instructor: Staff. One course.

209S. Global Issues in Feminism. (CZ) (SS) CCI, CZ, R, SS An interdisciplinary investigation of feminist, postcolonial, and nationalist theories as they apply to international women's issues, including social, economic, and political situations. Open to advanced undergraduates and graduates. Research paper regarding women's agency in selected locations required; students who enroll under Russian expected to focus on Russian issues. Consent of instructor required. Instructors: Staff. One course. C-L: Russian 217S

210S. Selected Topics in Women's Studies. A seminar in contemporary issues, methodology, and/or selected theoretical questions pertaining to feminist scholarship. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED

117. Black Women and the Civil Rights Movement

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 of Africa: From Early Modern Times to Independence
160. Women in Islam: Fact and Fiction
216S. Gender, Race, and Class

Art History
167. Twentieth-Century Art, 1900-1945: The Avant-garde and Modernism
168. Art since 1945: Modernism and Postmodernism
179. The History of Performance Art
187. Dada and Surrealism

Asian & African Languages and Literature
139. Gender and Expressive Culture in India
190. Women in Islam: Fact and Fiction

Classical Studies
107. The Ancient Family: Comparative Histories

Cultural Anthropology
110. Advertising and Society: Global Perspective
113. Gender and Culture
115S. The Anthropology of Gender: Special Topics
116S. Advertising and Masculinity
123. Gender and Expressive Culture in India
126. Muslim World: Transformations and Continuities
137. Gender Inequality
141. Self and Society
191AS. Feminist Ethnography
216S. Gender, Race, and Class

English
120. Advertising and Society: Global Perspective
269. American Women Writers

French
159. Topics in Sexuality and Gender Studies

German
137S. Introduction to Twentieth-Century German Women Writers

History
115A. History of Africa: From Antiquity to Early Modern Times
115B. History of Africa: From Early Modern Times to Independence
117. Early Modern Europe
160. The United States from the New Deal to the Present
169A. American Women, 1600-1877
169B. American Women, 1877 to the Present
171A. Women in the Middle Ages and Renaissance
190. The History of Women in Science and Medicine

Italian
115. Italian Women Writers
159S. Topics in Sexuality and Gender Studies

Literature
114. Film Theory
121. Special Topics in Women in Literature
123. Special Topics in Women Writers
123AS. Twentieth-Century Women Playwrights
125. Special Topics in Gender and Sexuality

Medieval and Renaissance Studies
118. Early Modern Europe
234A. Early Christian Asceticism

Music
120S. Women in Music

Philosophy
122. Philosophical Issues in Feminism
203S. Contemporary Ethical Theories

Political Science
140. Feminist Theory
187S. Politics and the Libido
289S. Contemporary Ethical Theories
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. Gender and Everyday Life (Women's Studies 90) and a senior seminar (Women's Studies 195S) are required, along with three of the following: Feminism in Historical Context (Women's Studies 160), Money, Sex, Power (Women's Studies 161S), Gender, Culture, and Representation (Women's Studies 162S), Identity, Subjectivity, and the Body (Women's Studies 163S), and Race, Gender, and Sexuality (Women's Studies 164S). The remaining five courses are electives and may be chosen from the following Women's Studies offerings: AIDS: Ethics, Policy, and Representation (Women's Studies 108), Social Movements: An Overview (Women's Studies 110S), Gender Across Cultures (Women's Studies 113), Gender, Science, Technology, and Society (Women's Studies 116), Gender Studies (Women's Studies 120S), Women and the Political Process (Women's Studies 130), Selected Topics in Women's Studies (Women's Studies 150), Gender and Language (Women's Studies 174), Feminism in Art (Women's Studies 175), Feminism and Practice (Women's Studies 180S), and Research Independent Study (Women's Studies 193, 194). 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. Gender and Everyday Life (Women's Studies 90) is required, along with two courses from the following: AIDS: Ethics, Policy, and Representation (Women's Studies 108), Gender Across Cultures (Women's Studies 113), Gender, Science, Technology, and Society (Women's Studies 116), Feminism in Historical Context (Women's Studies 160), Money, Sex, Power (Women's Studies 161S), Gender, Culture, and Representation (Women's Studies 162S), Identity, Subjectivity, and the Body (Women's Studies 163S), and Race, Gender, and Sexuality (Women's Studies 164S). In addition, students choose two courses from the following Women's Studies offerings: Social Movements: An Overview (Women's Studies 110S), Gender Studies (Women's Studies 120S), Women and the Political Process (Women's Studies 130), Selected Topics in Women's Studies (Women's Studies 150), Gender and Language (Women's Studies 174), Feminism in Art (Women's Studies 175), and Feminism and Practice (Women's Studies 180S).

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 the web-site: www.duke.edu/womstud/.

**Writing**

See University Writing Program.

**Pratt School of Engineering**

Professor Johnson, Dean; Professor Jones, Associate Dean

**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. Pass/ fail grading only. Instructor: Staff. Half 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.
495. First-Year Seminar. Topics vary each semester offered. Instructor: Staff. One course.

53L. Computational Methods in Engineering. 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 includes instruction in the C programming language and does not require any prior knowledge of computer programming. Instructor: Staff. 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: Stetten. One course.

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 51L. Instructor: Dolbow, Gavin, Hueckel, Laursen, or Nadeau. One course.

108S. Professional Ethics. Case study approach used to introduce professional ethics. Topics include moral development, confidentiality, risk and safety, social responsibility, fraud and malpractice, legal aspects of professionalism, and environmental ethics. The capstone course for students completing the certificate in the Program in Science, Technology, and Human Values. Also taught as Science, Technology, and Human Values 108S. Instructor: Staff. One course.

115. Engineering Systems Optimization. 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 111. Instructor: Peirce. 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, Knight, Virgin, or Wright. One course.


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. Quarter course.
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: Pearsall. One course.

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 searise, 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: Strohbehn. 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.

221. Computational Linear Algebra. Linear vector spaces of real and complex n-tuples, norms, metrics, inner-products, basis vectors, rank and dimensionality; matrices as linear maps, rank and nullity; particular and general solutions of Ax=b; factorization of matrices by successive transformations; solution of Ax=b by direct and iterative methods; special and general eigenvalue problems; diagonalization and tridiagonalization by similarity transformations; power methods; and computational complexities, storage requirements, convergence characteristics, error propagation, and the mathematical basis of the studied algorithms. Prerequisites: Mathematics 111 or equivalent, and knowledge of any algorithmic programming language. Instructor: S. Utku. One course.

COURSES CURRENTLY UNSCHEDULED
50. Introduction to Numerical Computing
135. Continuum Mechanics
151. Computer Simulations in Engineering
170. Forecasting Techniques
172A. Contemporary Science: Issues and Challenges
172B. Contemporary Technology: Issues and Challenges
174. Technology Assessment and Social Choice
187. History of Nuclear Energy: Civilian Applications
Biomedical Engineering (BME)

Professor Friedman, Chair; Professor Truskey, Director of Undergraduate Studies; Professors R. Anderson, Barr, Dewhirst, Floyd, Glower, Guilak, Hammond, Hochmuth, Jaszczak, Johnson, Katz, Needham, Nolte, Reichert, Simon, S. Smith, Strohbehn, Trahey, von Ramm, and Wolbarsht; Associate Professors Burdick, Dobbins, Gauthier, Henriquez, Izatt, Krassowska, Laursen, MacFall, Myers, Nicolelis, Setton, Toth, and Wolf; Assistant Professors Chilkoti, Collins, Hsu, Niklason, Song, Wong, and Yuan; Professors Emeriti Clark, McElhaney, and Plonsey; Adjunct Research Professor R. Nightingale; Assistant Research Professors Baydush, Bohs, Carlson, Chen, Henderson, Hooper, Hyun, Klitzman, Liu, Lo, Lobach, Nath, K. Nightingale, Owen, Taylor, and Turkington; Adjunct Professors Ideker, Neuman, and W. Smith; Adjunct Associate Professors Cooper and Lindner

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, biomechanics and biotechnology, b) graduate work in biomedical engineering, or c) entrance into medical school. The program is flexible to match the student’s interests. An elective course sequence is chosen to meet the respective requirements of the direction chosen by the student. Options exist for dual majors and to provide specific knowledge in biomedical imaging and instrumentation, biomechanics, electobiology or cellular and biosurface engineering.

The undergraduate and graduate programs are complemented by the wide range of ongoing research activities within the department. Biomedical engineering in cardiac electrophysiology involves the use of large-scale computer modeling, scientific visualization, and experimental data acquisition of electrical activity of the heart 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. Design experience is developed and integrated throughout the curriculum and includes a capstone design course, BME 164. Many students gain valuable design experience in the course of independent student projects within the research laboratories and programs of the BME department.

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 medical imaging group studies the physics of various modalities including x-ray, SPECT and MRI and develops new computer-aided methods for processing, enhancing, and analyzing images.

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.

Cell and biosurface 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 cultures, and the mechanics of biofluids, tissues, and cells. Applications include the development of novel biosensors and micro/nanocarrier drug delivery systems, new techniques for enhanced biological transport, and improved techniques for stimulated repair or inhibited degradation of biological tissues.

Work in medical informatics focuses on the creation and dissemination of health care data and related knowledge. Areas of investigation include networking, database structures, query languages, workstation design and the development of data interchange standards.

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.

7. Membranes. An introduction to the elementary properties of membranes, both electrical and mechanical from a mathematical perspective, with some computer exercises. Prerequisite: limited to freshmen who are prospective biomedical engineering majors. Instructor: Barr or Henriquez. One course.

8. Biomedical Device Design. 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 053L or equivalent; limited to freshmen. Instructor: Henriquez. One course.

83L. Introduction to Biomaterials. The principles of materials science and engineering with particular attention to topics most relevant to biomedical engineering. The structure-property relationships of metals, ceramics, polymers, and composites as well as skin, bone, cartilage, ligament, and vasculature; extensive treatment of the properties unique to materials' surfaces. Behavior of materials in the physiological environment. Prerequisites: Chemistry 11L and 12L or 21L and 22L; corequisite: Physics 51L. Instructor: Chilkoti or Reichert. 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. Instructor: Truskey. 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 163L or Electrical Engineering 62L, and Mathematics 111. Instructor: Barr, Henriquez, or Krassowska. One course.
110L. **Introductory Biomechanics.** This course is designed to give students in Biomedical Engineering basic training in statics, dynamics, solid mechanics, and mechanical design with applications to the human body. Areas of focus include the determination of the state of stress and strain, experimental measurement in biomechanical systems, mechanical and biomechanical failure criterion, human tolerance, and injury risk. Prerequisites: Mathematics 32 and Physics 51L. Instructor: Myers or R. Nightingale. One course.


155. **Safety of Medical Devices.** 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 52L or equivalent. Instructor: S. Smith. One course.

163L. **Biomedical Electronics and Measurements I.** Basic principles of electronic instrumentation with biomedical examples. Concepts of analog signal processing, filters, input and output impedances. System design concepts such as amplifier design and digital switching theory and application. Laboratories reinforce basic concepts and offer design opportunities in groups. Prerequisite: Electrical Engineering 61L. Instructor: Izatt, S. Smith, Trahey, von Ramm, or Wolf. One course.

164L. **Biomedical Electronics and Measurements II.** Further study of the basic principles of biomedical electronics with emphasis on transducers, instruments, and micro-controller systems for data acquisition and processing. Laboratories focus on measurements and circuit design emphasizing a group design project of a working medical instrument. Prerequisite: Electrical Engineering 62L or Biomedical Engineering 163L. Instructor: Hsu, S. Smith, Trahey, von Ramm, or Wolf. One course.

170. **Optics in Nature.** This introductory class examines the basic theory of light in nature. Topics include the fundamental properties of light, the principles of geometrical optics, optical instruments, color and vision perceptions, the interaction of light with matter and lasers. This class serves as the foundation for the Introduction to Biomedical Optics class taught in the Spring semester. Prerequisites: Mathematics 111 and Physics 52L, or consent of instructor. Instructor: Hooper. 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: Electrical Engineering 61L and Mathematics 111 or equivalents. Instructor: Barr or Krassowska. One course.

190. **Projects in Biomedical Engineering.** 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.** 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.** 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. 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. 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. 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. 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. 3 units; 4 units with laboratory. Instructor: Barr, Henriquez, or Krassowska. One course.

204. Measurement and Control of Cardiac Electrical Events. 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 163L or equivalents. Instructor: Wolf. One course.

205L. Microprocessors and Digital Instruments. Design of microcomputer-based devices including both hardware and software considerations of system design. Primary emphasis on hardware aspects, including a progression through initial design, prototype construction in the laboratory, testing of prototypes to locate and correct faults, and final design evaluation. Evaluation includes examination of complexity, reliability, and cost. Design and construction oriented toward biomedical devices or instruments that include dedicated microcomputers, usually operating in real time. Prerequisites: Biomedical Engineering 163L, 164L and Engineering 53L or equivalents. Instructor: Hammond. One course.

207. Transport Phenomena in Biological Systems. An introduction to the modeling of complex biological systems using principles of transport phenomena and biochemical kinetics. Topics include the conservation of mass and momentum using differential and integral balances; rheology of Newtonian and non-Newtonian fluids; steady and transient diffusion in reacting systems; dimensional analysis; homogeneous versus heterogeneous reaction systems. Biomedical and biotechnological applications are discussed. Instructor: Katz, Truskey, or Yuan. One course. C-L: Civil Engineering 207, Mechanical Engineering and Materials Science 207

208. Theoretical and Applied Polymer Science. One course. C-L: see Mechanical Engineering and Materials Science 211

211. Theoretical Electrophysiology. 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 Krassowska. One course.
212. Theoretical Electrocardiography. 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.

213L. Nonlinear Dynamics in Electrophysiology. Electrophysiological behavior of excitable membranes and nerve fibers examined with methods of nonlinear dynamics. Phase-plane analysis of excitability 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: Krassowska. One course.

215. Biomedical Materials and Artificial Organs. 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, Chemistry 151L or Mechanical Engineering 83L or consent of instructor. Instructor: Reichert. One course. C-L: Mechanical Engineering and Materials Science 215

216. Transport Phenomena in Cells and Organs. 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.

218. Biotechnology and Bioprocess Engineering. 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: Reichert. One course.

220L. Introduction to Biomolecular Engineering. 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.

222. Principles of Ultrasound Imaging. 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 111 and Physics 52L. Instructor: von Ramm. One course.

228. Laboratory in Cellular and Biosurface Engineering. 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. Instructor: Truskey. One course.

229. Tissue Mechanics. Introduction to conservation laws and thermodynamic principles of continuum mechanics with application to tissues of the musculoskeletal and cardiovascular systems. Constitutive equations for hyperelastic solids and multiphase viscoelastic materials using mixture theory formulation. Emphasis on the application of these constitutive formulations to determination of stress and strain fields in equilibrium and transient deformations of calcified tissues (for example, cortical and trabecular bone), soft tissues (for example, ligament, cartilage, cornea, intervertebral disc, left ventricle, aorta), and biological fluids (for example, mucus, synovial fluid, polymer solutions). Tensor fields and indicial notation. Prerequisites: Biomedical Engineering 110L or Engineering 75L or equivalent, and Mathematics 111 or equivalent. Instructor: Setton. One course.

231. Intermediate Biomechanics. Biomechanics of hard and soft tissues: nonlinear viscoelastic behavior of tendon and ligament; poroelastic behavior of cartilage and meniscus; continuum modeling of bone. 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 or equivalent, and Biomedical Engineering 83L or Mechanical Engineering 83L or equivalent. Instructor: Myers or Setton. One course.

232L. Biomedical Instrumentation. A study of the basic principles of biomedical electronics and measurements with emphasis on the operational performance and selection of transducers, instruments, and systems for biomedical data acquisition and processing. Selected laboratory work emphasizes the measurement of specific physiologic events. Students will design and build a working medical instrument. Consent of instructor required. Not open to students who have taken Biomedical Engineering 164L. Instructor: Wolf. One course.

233. Modern Diagnostic Imaging Systems. 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: junior or senior standing. Instructor: Hsu, Smith, or Trahey. One course. C-L: Applied Science

235. Acoustics and Hearing. 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: Mathematics 111 and Physics 52L or equivalents. Instructor: Collins or Trahey. One course. C-L: Electrical Engineering 284, Applied Science

Biomedical Engineering (BME) 525
237. **Biosensors.** 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 215 and consent of instructor. Instructor: Rechert. One course.

239. **Cell Transport Mechanisms.** 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. Consent of instructor required. Instructor: Katz. One course.

241. **Artificial Intelligence in Medicine.** Basic concepts of artificial intelligence (AI) and in-depth examination of medical applications of AI. Knowledge of heuristic programming; brief examination of classic AI programming languages (LISP and PROLOG) and AI programming; rule-based systems and cognitive models. Instructor: Hammond. One course.

243. **Introduction to Medical Informatics.** An introduction to medical informatics: an in-depth study of the use of computers in biomedical applications. Hardware, software, and applications programming. Data collection, analysis, and presentation studied within application areas such as patient monitoring, computer-based medical records, computer-aided decision making, computer-aided instruction, quality assurance laboratory systems, wave form analysis, hospital information systems, and medical information systems. Instructor: Hammond. One course.

246. **Computational Methods in Biomedical Engineering.** 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 111 or equivalent, or consent of instructor. Instructor: Henriquez. One course.

247. **Drug Delivery.** Introduction to drug delivery in solid tumors and normal organs (for example, reproductive organs, kidney, skin, eyes). Emphasis on quantitative analysis of drug transport. Specific topics include: physiologically-based pharmacokinetic analysis, microcirculation, network analysis of oxygen transport, transvascular transport, interstitial transport, transport across cell membrane, specific issues in the delivery of cells and genes, drug delivery systems, and targeted drug delivery. Prerequisite: Biomedical Engineering 207. Instructor: Yuan. One course.

248. **Tissue Engineering.** 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. Consent of instructor required. Instructor: Niklason. One course.

260. Devices for People with Disabilities. 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 associative technologies, patent issues, engineering ethics. Oral and written reports will be required. Selected projects may be continued as independent study. Prerequisite: Biomedical Engineering 164L or equivalent and consent of instructor. Instructor: Bohs or Goldberg. One course.

264L. Medical Instrument Design. 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 164L or equivalent or senior standing. Instructor: 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.

270. Introduction to Biomedical Optics. This introductory class examines the basic theory of laser light interaction with tissue, and the diagnostic and therapeutic uses of lasers in medicine. The class is divided into three parts: (I) Tissue Optics; (II) Laser-Tissue Interactions; and (III) Medical Applications of Lasers. Prerequisites: Biomedical Engineering 170, or consent of instructor. Instructor: Hooper. One course.

COURSES CURRENTLY UNSCHEDULED
106. Mass and Energy Balances in Chemical and Biological Systems
132. Statistical and Computational Methods in Signal Processing
206L. Microprocessors and Digital Instruments
209. Kinetics and Reactor Design
223. Cellular and Integrative Cardiovascular Physiology and Biophysics
230. Biomechanics
244. Mathematical Models of Physiological Systems
250. Cardiovascular Mechanics

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 be included: Biomedical Engineering 83L, 101, 110L, 145, 163, 164, 171, and 207.

Civil and Environmental Engineering (CE)
Professor Avissar, Chair; Associate Professor Laursen, Director of Undergraduate Studies; Professors Haff, Malin, Medina, Petroski, Reckhow, and Trangenstein; Associate Professors Albertson, Boadu, Hueckel, Kabala, Katul, Laursen, Peirce, Rojstaczer, and Virgin; Assistant Professors Dolbow, Gavin, Griffin, Linden, Nadeau, Schuler, and Vasudevan; Professors Emeriti Brown and Wilson; Adjunct Professors Ahearn and McKinney; Lecturing Fellow Gustafson; Lecturers Brasier and Bryson

A major in civil engineering 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: space structures and launch facilities, hazardous waste disposal facilities, water supply and treatment facilities, power plants, bridges, dams, buildings, tunnels, highways, subways, 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 help graduates develop:

1. a solid understanding of the engineering sciences and the process of engineering design;
2. the ability to think critically;
3. the ability to communicate orally, in writing, and mathematically;
4. the ability to analyze and understand the social, economic, ethical and environmental implications of their engineering work;
5. the ability to work individually, as well as in teams, and manage the work of others; and
6. a commitment to life-long learning and professional development.

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, 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.

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 non-engineering students. Instructor: Bryson. One course.

120L. Chemistry and Microbiology for Environmental Engineers. Fundamentals of physical and organic chemistry: equilibrium conditions, surface tension, chemical kinetics, mixtures, osmosis, sorption, and solvent extraction. Elements of biotechnology: cells, microorganisms, nutrition and growth conditions, metabolism, and population dynamics. Applications of chemistry and microbiology to water and waste treatment processes in engineered systems. Prerequisite: Chemistry 11L or 21L. Instructor: Linden. One course. C-L: Applied Science

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, Griffin, Kabala, Laursen, or Medina. One course.


124L. Environmental Engineering. Physical, chemical, and microbiological characterization of water and wastewater. Introduction to water treatment processes and wastewater collection, treatment, and disposal systems. Air pollution control; solid and hazardous waste engineering. Laboratory included. Field trips to be arranged. Prerequisite: Civil Engineering 122L. Instructor: Griffin, Linden, Peirce, or Schuler. One course.


131L. Theory of Structures. Application of the principles of mechanics of deformable bodies to the analysis of plane and space structures: linear analysis by hand and by machine, of statically determinate and indeterminate structures of one-dimensional elements, with the force, displacement, and mixed methods. Prerequisites: Engineering 75L and Mathematics 103. Instructor: Gavin, or Virgin. 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. Half course.

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. Half course.


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.


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: Staff. 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 131L, 133L, 134L. Instructor: Staff. One course.
serviceability considerations. Open only to civil engineering students during their final
two semesters. Prerequisites: Civil Engineering 120L, 123L, 124L. Instructor: Staff. One
course.

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. Half course.

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. Half course.

201. Continuum Mechanics. Tensor fields and index notation. Analysis of states of
stress and strain. Conservation laws and field equations. Constitutive equations for
elastic, viscoelastic, and elastic-plastic solids. Formulation and solution of simple
problems in elasticity, viscoelasticity, and plasticity. Instructors: Hueckel, Laursen, or
Nadeau. One course.

Thermo-plasticity. Visco-plasticity. Prerequisite: Civil Engineering 201 or consent of
instructor. Instructor: Hueckel. One course.

204. Plates and Shells. Differential equation and extremum formulations of linear
equilibrium problems of Kirchhoffian and non-Kirchhoffian plates of isotropic and
anisotropic material. Solution methods. Differential equation formulation of thin
anisotropic shell problems in curvilinear coordinates; membrane and bending theories;
specialization for shallow shells, shells of revolution, and plates. Extremum formulation
of shell problems. Solution methods. Prerequisites: Engineering 75L or 135 and
Mathematics 111. Instructor: Staff. One course.

206. 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,
motion 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.

207. Transport Phenomena in Biological Systems. One course. C-L: see Biomedical
Engineering 207; also C-L: Mechanical Engineering and Materials Science 207

210. Intermediate Dynamics. One course. C-L: see Mechanical Engineering and
Materials Science 210

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 111 or consent of instructor.
Instructor: Franzoni. One course. C-L: Mechanical Engineering and Materials Science
234
220. Water Resources Systems Planning and Management. Focus on the development and application of mathematical modeling techniques to water resources systems problems. Deterministic and stochastic river basin modeling, irrigation planning and modeling, water quality prediction and management, wetlands management, the optimal expansion of existing water resources systems and reservoir operations. Emphasis on development and application of optimization models for the planning and management of complex water resources systems involving the interaction of groundwater and surface water resources. Mathematical techniques include linear and dynamic programming, Monte Carlo simulation, simulated annealing, nonlinear optimization and stochastic optimization. Prerequisites: Civil Engineering 123L and Engineering 115 or equivalent. Instructor: Staff. One course.

225. Dynamic Engineering Hydrology. Dynamics of the occurrence, circulation, and distribution of water; climate, hydrometeorology, geophysical fluid motions. Precipitation, surface runoff and stream flow, infiltration, water losses. Hydrograph analysis, catchment characteristics, hydrologic instrumentation, and computer simulation models. Prerequisite: Civil Engineering 122L or consent of instructor. Instructor: Medina. 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.

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. Instructors: Dubay and Vasudevan. One course. C-L: Environment 240
241. **Physical and Chemical Treatment 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: Linden. One course.

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: Schuler. 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.

247. **Air Pollution Control Engineering.** The problems of air pollution with reference to public health and environmental effects. Measurement and meteorology. Air pollution control engineering: mechanical, chemical, and biological processes and technologies. Instructor: Peirce. 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


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.
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, discretization, element design and evaluation, mixed formulations, and transient analysis. Prerequisites: a working knowledge of ordinary and partial differential equations, numerical methods, and programming in FORTRAN. Instructor: Dolbow and Laursen. One course.

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: Civil Engineering 254 or consent of instructor. Instructor: Laursen. One course.

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 111, or consent of instructor. Instructor: Kabala. One course.

261. Stochastic Subsurface Hydrology. Stochastic partial differential equations of subsurface hydrology and their solutions for the first few concentration moments and for the full concentration probability density function. Local and nonlocal models. Formulation in terms of integral properties of porous media which account for heterogeneities that influence solute transport. Prerequisites: Civil Engineering 122L and Mathematics 111, 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 111 and either Civil Engineering 122L or 123L, or consent of instructor. Instructor: Kabala. One course.

stability. Applications to vibration control, noise suppression, tracking, and guidance. Prerequisite: a course in linear systems and classical control, or consent of instructor. Instructor: Bushnell, Clark, Gavin, or H. Wang. 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 mathematical framework. Prerequisites: Civil Engineering 122L and Mathematics 111, or consent of instructor. Instructor: Kabala. One course.

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.

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 111 or Physics 52L or consent of instructor. Instructor: Boadu. One course.


272. Wave Propagation in Elastic and Poroelastic Media. Basic theory, methods of solution, and applications involving wave propagation in elastic and poroelastic media. Analytical and numerical solution of corresponding equations of motion. Linear elasticity and viscoelasticity as applied to porous media. Effective medium, soil/rock materials as composite materials. Gassmann’s equations and Biot’s theory for poroelastic media. Stiffness and damping characteristics of poroelastic materials. Review of engineering applications that include NDT, geotechnical and geophysical case histories. Prerequisite: Mathematics 111 or consent of instructor. Instructor: Boadu. One course.


281. Experimental Systems. Formulation of experiments; Pi theorem and principles of similitude; data acquisition systems; static and dynamic measurement of displacement, force, and strain; interfacing experiments with digital computers for data storage, analysis, and plotting. Students select, design, perform, and interpret laboratory-scale experiments involving structures and basic material behavior. Prerequisite: senior or graduate standing in engineering or the physical sciences. Instructor: Gavin. One course.
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.

COURSES CURRENTLY UNSCHEDULED
99. Structures in Byzantine Architecture
127. Environmental Pollution Control
202. Advanced Mechanics of Solids II
205. Elasticity
209. Kinetics and Reactor Design
212. Mechanical Behavior and Fracture of Materials
215. Engineering Systems Analysis
217. Transportation Systems Analysis
221. Engineering Systems Reliability, Safety, and Risk Assessment
226. Operational Hydrology
231. Theory of Adaptive Structures
232. Reinforced Concrete Design
233. Prestressed Concrete Design
234. Advanced Structural Design in Metals
235. Foundation Engineering
236. Earth Structures
242. Environmental Aquatic Chemistry
257. Structural Optimization
258. Analysis of Dynamic and Nonlinear Behavior of Structures

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 24L, 25L, 53L, 75L, 115, 123L, and 150L: Civil and Environmental Engineering 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 Brown, Chair; Associate Professor of the Practice Ybarra, Director of Undergraduate Studies; Professors Brady, Carin, Casey, Fair, Johnson, Joines, Krolik, Marinos, Massoud, Nolte, Trivedi, and P. Wang; Associate Professors Board, Kedem, Liu, and Teltzworth; Assistant Professors Chakrabarty, Collins, Cummer, George, and H. Wang; Professors Emeriti Owen, Mccumber, and Wilson; Associate Research Professor Daniels-Race; Assistant Professor of the Practice Huettel; Assistant Research Professor Tantum; Adjunct Professor Guenther; Adjunct Associate Professor Derby; Adjunct Assistant Professors Ardalan, Bollapragada, Cramer, Gustafson, Janet, Morizio, Richards, Retana, and Sadri; Visiting Professor Kaiser

A major in electrical engineering is available in this department. This major program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Electrical and computer engineering is a broadly-based engineering discipline dealing with the processing, control, and transmission of information and energy by
making use of electrical and electromagnetic phenomena. Electrical and computer engineers design, build, and make extensive use of computers.

The goals of the Electrical Engineering Program at Duke are to help students develop: a solid understanding of the engineering sciences and of the practice of engineering design; the ability to formulate and solve problems; the ability to think critically; the ability to communicate well in the written and spoken word and in the language of mathematics; the ability to use modern computer tools to assist in problem solving; the ability to understand the social, economic, ethical and environmental implications of their work; the ability to work individually, as well as in teams, and to manage the work of others; and a commitment to life-long learning and professional development. Most Duke electrical engineers graduate to a first job in engineering or management, to graduate or professional schools, or to an ROTC appointment in the armed forces. Some are creating or joining start-up companies after graduation.

The Electrical Engineering Program builds upon a logical progression from basic principles to more advanced and specialized topics. To ensure breadth of exposure, each student must choose a minimum of two upper-level electrical engineering courses in each of two concentration areas among computer engineering, signal processing and communications, solid-state electronics and circuits, systems and robotics, photonics, and electromagnetic fields and optics. These course sequences prepare students for professional work in at least two areas of concentration. They reinforce in those students expecting to enter fields such as medicine or law the broad relevance of the powerful problem-solving methodologies of engineering, and they illuminate some of the exciting productivity enabling possibilities of sophisticated uses of computers and information technology. Many students explore additional areas more deeply either by taking additional advanced courses or by independent study with faculty experts in the field. The total program provides an excellent foundation for continuing professional development after graduation.

Engineering design is integrated throughout the curriculum. In addition, prior to graduation, each electrical engineering major must complete an approved design course which requires significant design experience and integrates science, engineering and design principles learned in prior courses into a meaningful design outcome.

The major program is sufficiently flexible to permit motivated students to complete the requirements for a second major. In particular, the departments of biomedical engineering, computer science, and physics have second major programs for electrical engineers. Electrical engineers also complete second majors in other departments such as mathematics, economics, and public policy studies. 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. In addition, juniors and seniors can, with proper planning, participate in international programs. These include a semester of study abroad, the International Honors Program, and an International Telecommunications Program which leads to a master's degree.

Classroom lectures are enhanced and augmented by intensive use of the department's extensive computer and laboratory facilities. The department maintains over eighty networked computer workstations and servers interconnected via an Ethernet network which also gives access to the Internet. Undergraduate laboratories are well-equipped with electronic components, digitizing oscilloscopes, PC-controlled instrumentation, logic analyzers, and commercial-quality CAD tools for system and IC design. Laboratories and equipment are also available for microprocessor and computer architecture studies, rapid system prototyping, custom integrated circuit
design and testing, integrated circuit fabrication, digital speech processing, image processing, robotics, digital communications, and microwaves. These facilities are important to the undergraduate program since they permit students to become very familiar with the devices and design tools of practicing electrical engineers through scheduled laboratory experiments, projects, and independent study with faculty members engaged in research. Current areas of research include photonics, computer engineering, computer architecture, fault-tolerant computer systems, scientific computing, parallel processing, VLSI CAD tools, signal processing, digital speech processing, signal detection and estimation, ocean acoustic signal processing, image processing, neural networks, fuzzy logic, solid-state electronics, integrated circuit processing and process simulation, molecular beam epitaxy, III-V compound semiconductor materials and devices, machine intelligence, and applications of electromagnetic fields and waves.

**61L. Introduction to Electric Circuits.** Techniques for analyzing linear circuits. Nodal and mesh analysis, superposition and linearity, Thevenin and Norton equivalent circuits, operational amplifiers, energy storage, transient analysis, phasors and impedance, RMS values, AC power, frequency response, resonance, and filters. Circuit simulation using PSpice. Prerequisite: Mathematics 32. Instructor: Ybarra. One course.

**62L. Introduction to Electronics: Devices.** Fundamentals of semiconductor physics. Device modeling. Basic device operation, I(V) characteristics, temperature effects, capacitance effects, equivalent circuit and SPICE models, high frequency and switching properties of PN junction diodes, bipolar-junction transistors, MOS capacitors, and MOSFETs. Application to basic electronic circuits. Prerequisite: Electrical Engineering 61L. Instructor: Casey, Daniels-Race, Fair, or Massoud. One course. C-L: Applied Science

**64. Linear System Theory.** Signal representations, system response, convolution, correlation; Fourier series and transforms, transfer functions; Laplace transforms, state variables, stability; discrete signals and transforms, fast Fourier transform; z transforms. Applications to networks, modulation, sampling, filtering. Computer solutions of problems using MAPLE, Matlab, and SPICE. Prerequisite: Electrical Engineering 61L. Instructor: Collins, Gustafson or H. Wang. One course.

**122. Modern Optics I.** 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. Instructor: Guenther. One course.

**123. Photonic and Electronic Design Projects.** A team activity based on photonic and electronic design problems obtained from industry involving the formulation and written presentation of a solution to the design problem; the execution and evaluation of the approved design; and a written and oral presentation of the performance of the design solution all for faculty review. The design project exposes students to basic scientific concepts and to the processes by which scientific and technological advances are made and incorporated into society. Prerequisites: Electrical Engineering 163 and Electrical Engineering 122 Instructor: Guenther. 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 timedomain analysis and design. Prerequisite: Electrical Engineering 64 or consent of instructor. Instructor: H. Wang. 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 Engineering 64 and consent of instructor. Instructor: Janet. One course.

148L. Electrical Energy Systems. Electrical systems including energy distribution, static, linear, and rotary energy conversion, and control functions, linear and discrete, for energy conversion. DC and steady-state AC circuits. Transmission lines for distribution and signal transfer. Studies of static transformers, linear transducers, and rotary machines. Control theory applied to system operation. Laboratory. Prerequisites: Physics 52L and either Electrical Engineering 61L or Mathematics 111. Instructor: George. One course.

149. Electric Vehicle Project. The study of electrical components found in and the construction of an electric vehicle. Traction motors, controllers, and chargers, batteries, and metering. Project portion includes building of needed 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 52 or Electrical Engineering 61. Instructor: George. Also taught as ME 149. One course. C-L: Mechanical Engineering and Materials Science 149

151L. Introduction to Switching Theory and Logic Design. 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 Computer Science 120L. Instructor: Cramer or Marinos. One course.

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 Engineering 151. Instructor: Board. One course.

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.


Electrical and Computer Engineering (ECE) 539
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. Pass/fail grading only. Prerequisite: knowledge of at least one programming language at level of Computer Science 1. Instructor: Board. Half course.

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.


164L. Electronic Design Projects. Electronics project laboratory in which individuals or small teams, build, and test custom designed circuits or small systems to gain experience in the design process. Requirements: a written plan, project organization, a written report describing the project and test results, a presentation to the class of the constructed project. Enrollment limited to 20. Prerequisites: Electrical Engineering 163L (or Biomedical Engineering 163L with consent of instructor) and at least one of 141, 151L, or 180. Instructor: George. One course.

170L. Introduction to Electromagnetic Fields. Postulatory treatment of electromagnetic fields based on Maxwell's equations. Discussion of the Lorentz force equation and the Poynting theorem. Treatment of propagation, reflection, and transmission of plane waves through various media and dielectric interfaces. Introduction to electrostatic and magnetostatic fields and potential functions. Prerequisites: Mathematics 104 or 111 and Physics 52L. Instructor: Carin, Crummer or Joines. 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 Engineering 170L. 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, 52L or equivalent. Instructor: Staff. One course. C-L: Applied Science

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 Engineering 64 and Mathematics 135 or
Statistics 113, or consent of instructor. Instructor: Nolte. One course.

**184. Introduction to Digital Communication Systems.** Introduction to the design and
analysis of modern digital communication systems. Communication channel character-
ization. Baseband and passband modulation techniques. Optimal demodulation
techniques with performance comparisons. Key information-theoretic concepts
including entropy and channel capacity. Channel-coding techniques based on block,
convolutional and Trellis codes. Equalization techniques. Applications to design of
digital telephone modems, compact discs and digital wireless communication systems.
Prerequisite: Electrical Engineering 180. Instructor: Krolik. One course.

**186. Wireless Communication Systems.** Analog and digital cellular radio. Techniques
for increasing capacity including cell division, multiple access techniques (TDMA,
CDMA), speech compression, and discontinuous transmission. Direct sequence and
frequency hopped spread spectrum systems. Radiowave propagation models.
Intelligent antenna systems. Traffic considerations for cellular radio. Packet switched
data access to the Internet and information services via wireless modems. Prerequisite:
Mathematics 135 or Statistics 113. Corequisite: Electrical Engineering 184. Instructor:
Ybarra. One course.

**189. Image Processing.** Basic concepts of the manipulation and analysis of images by
computer, linear operations on pictures, Fourier transform and 2-D Z-transform,
hexagonal sampling theorem, image transforms, image enhancement, image filtering
and restoration, image coding, matching, segmentation, representation and description.
Project presentation by students. Prerequisites: Electrical Engineering 180 and

**191. Undergraduate Research in Electrical Engineering.** For juniors only. Half course
or one course each. Instructor: Staff. Half course.

**192. Undergraduate Research in Electrical Engineering.** For juniors only. Half course
or one course each. Instructor: Staff. Half course.

**193. Undergraduate Research in Electrical Engineering.** For seniors only. Half course
or one course each. Instructor: Staff. Half course.

**194. Undergraduate Research in Electrical Engineering.** For seniors only. Half course
or one course each. Instructor: Staff. Half course.

**195. Special Topics in Electrical 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. Half course.

**196. Special Topics in Electrical 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. Half course.

**197. Projects in Electrical 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. Half course.

**198. Projects in Electrical 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. Half course.
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 111 or equivalent. Instructor: Staff. 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 Engineering 211. Instructor: Daniels-Race or Teitsworth. One course. C-L: Applied Science

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 Engineering 211 or consent of instructor. Instructor: Staff. One course.

216. **Devices for Integrated Circuits.** Derivation of basic semiconductor properties such as the effective mass, effective density of states, SHR recombination, avalanche breakdown and energy-band diagrams, Application of the continuity equation, Gauss' law, and Poisson's equation to obtain the I-V and C-V behavior of Si and GaAs Schottky barriers, GaAs MESFETs; Si JFETs, bipolar transistors and MOSFETs. Relation of device physics to SPICE parameters. Four laboratory exercises. Instructor: Casey or Massoud. One course. C-L: Applied Science

217. **Analog Integrated Circuits.** Analysis and design of bipolar and CMOS analog integrated circuits. SPICE device models and circuit macromodels. Classical operational amplifier structures, current feedback amplifiers, and building blocks for analog signal processing, including operational transconductance amplifiers and current conveyors. Biasing issues, gain and bandwidth, compensation, and noise. Influence of technology and device structure on circuit performance. Extensive use of industry-standard CAD tools, such as Analog Workbench. Prerequisite: Electrical Engineering 216. Instructor: Staff. One course.


220. **Optoelectronic Devices.** Devices for conversion of photons to electrons and electrons to photons in semiconductors: absorption, spontaneous emission and stimulated emission. Light-emitting diodes (LEDs), semiconductor lasers, quantum-well emitters, photodetectors, modulators and optical fiber networks. Prerequisite: Electrical Engineering 216 or equivalent. Instructor: Casey. One course.

241. **Linear System Theory and Optimal Control.** Consideration of system theory fundamentals; observability, controllability, and realizability; stability analysis; linear feedback, linear quadratic regulators, Riccati equation, and trajectory tracking. Prerequisite: Electrical Engineering 141. Instructor: H. Wang, or P. Wang. One course.
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 104, Statistics 113 or Mathematics 135, Computer Science 6, or consent of instructor. 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. Theory and hands-on experience in advanced digital system design. High-speed design, high complexity design (more than 10,000 gates), implementation technology selection, system modeling, power and clock distribution, line termination, and cooling. Case studies and demonstrations. Extensive use of CAD tools for logic minimization, logic synthesis, and system simulation. Rapid system prototyping with off-the-shelf and custom components. Laboratory exercises and a semester project. Prerequisite: Electrical Engineering 151L and 163L (or Biomedical Engineering 163L with consent of instructor). Instructor: Marinos. One course.


261. **Full Custom VLSI Design.** A first course in VLSI design with CMOS technologies. A study of devices, circuits, fabrication technology, logic design techniques, subsystem design and system architecture. Modeling of circuits and subsystems. Testing of gates, subsystems and chips, and design for testability. The fundamentals of full-custom design, and some semi-custom design. Prerequisite: Electrical Engineering 151L or equivalent; Electrical Engineering 163L (or Biomedical Engineering 163L with consent of instructor) or equivalent. Instructor: Chakrabarty. One course. C-L: Applied Science


263. **Multivariable Control.** One course. C-L: see Civil Engineering 263; also C-L: Mechanical Engineering and Materials Science 263

266. **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 Engineering 151L or equivalent. Instructor: Chakrabarty. One course.

269. **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 Engineering 151L or equivalent. Instructor: Chakrabarty. One course.

271. **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 Engineering 170. Instructor: Carin, Joines, or Liu. One course.

communication systems. Prerequisite: Electrical Engineering 170L or 271. Instructor: Joines. One course. C-L: Applied Science

273. **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 Engineering 170L or equivalent. Instructor: Joines. One course. C-L: Applied Science


277. **Computational Electromagnetics.** Systematic discussion of useful numerical methods in computational electromagnetics including integral equation techniques and differential equation techniques, both in the frequency and time domains. Hands-on experience with numerical techniques, including the method of moments, finite element and finite-difference time-domain methods, and modern high order and spectral domain methods. Prerequisite: Electrical Engineering 170. 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 (EE 271), or consent of instructor. Instructor: Liu. One course.

279. **Propagation for Modern Wireless Systems.** This course provides a detailed understanding of radio propagation that is required to design and build wireless systems that deliver maximum performance and reliability. A complete review of techniques for predicting radio propagation is followed by the presentation of sophisticated propagation models with comparisons to field measurements. Extensive examples from both narrowband and wideband systems are examined. Topics covered include: an understanding of radio-wave propagation for the wireless channel; an in-depth study of the effects of buildings, terrain, and foliage on path loss; a unified view of key propagation effects in narrowband and wideband systems including spatial variation, angle of arrival and delay of spread; diffraction at building corners; mobile-to-mobile path loss in cities; ray-based models for site-specific predictions and simulation of channel statistic; parabolic-wave-equation analysis of long-range in naturally occurring environments; and simulation of fast fading and shadow loss. Prerequisites: EE170. Instructor: Carin. One course.


282. **Digital Signal Processing.** Introduction to the fundamentals of processing signals by digital techniques with applications to practical problems. Discrete time signals and
systems, elements of the Z-transform, discrete Fourier transforms, digital filter design techniques, fast Fourier transforms, and discrete random signals. Instructor: Nolte. One course.


284. Acoustics and Hearing. One course. C-L: see Biomedical Engineering 235; also C-L: Applied Science

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 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 Engineering 182 or equivalent or consent of instructor. Instructor: Staff. One course.


299. Advanced Topics in Electrical Engineering. Opportunity for study of advanced subjects related to programs within the electrical engineering department tailored to fit the requirements of a small group. Instructor: Staff. One course.

COURSES CURRENTLY UNSCHEDULED
276. Laser Physics

THE MAJOR

The major requirements are included in the minimum total of 34 courses listed under the general requirements and departmental requirements. The program of courses must include an approved electrical engineering course which must be taken in the junior or senior year of the program. This course must have as a prerequisite at least one course in the discipline.
Mechanical Engineering and Materials Science (ME)

Professor Hall, Chair; Associate Professor Knight, Director of Undergraduate Studies; Professors Bejan, Clark, Cocks, Dowell, Garg, Harman, Hochmuth, Needham, Shaughnessy, and Tan; Associate Professors Bliss, Franzoni, Howle, Jones, Quinlan, Virgin, and Wright; Assistant Professors Zauscher and Zhelev; Associate Research Professor Zhong; Assistant Research Professors Patil, Stoytcheva, and Thomas; Adjunct Professors Gosele and Wu; Adjunct Associate Professors Crowson and Jenkins; Adjunct Assistant Professors Kasbekar, Prabhu, and Stepp; Visiting Professor Kielb

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 goals of the undergraduate mechanical engineering program are to provide:

- the knowledge, skills, and credentials needed to be successful at the entry level of the practice of engineering.
- the preparation necessary to undertake the initial steps leading to professional registration.
- an educational preparation for graduate or professional study.
- an educational background that is the basis for professional growth and leadership throughout a career that may encompass a broad range of endeavors, both technical and nontechnical.

The curriculum capitalizes on the exceptional abilities of our highly select students to cultivate the learning, thinking, and problem-solving abilities needed to adapt, to develop, and to exercise responsible leadership through times of rapid change. The program provides firm preparation in the essential engineering topics while allowing wide flexibility for students to pursue their own specialized interests.

11. Undergraduate Research in Mechanical Engineering. An elective program in which undergraduate students participate in an ongoing program of research with
mechanical engineering faculty members. The research topic pursued by the student is arranged by mutual agreement between the student and the participating faculty member. For freshmen only. Instructor: Staff. Quarter course.

12. Undergraduate Research in Mechanical Engineering. An elective program in which undergraduate students participate in an ongoing program of research with mechanical engineering faculty members. The research topic pursued by the student is arranged by mutual agreement between the student and the participating faculty member. For freshmen only. Instructor: Staff. Quarter course.

21. Energy Technology and the Environment. Energy production and use has had an increasing impact on the global environment, especially via a concomitant increase in the level of carbon dioxide in the atmosphere. Both new and traditional energy technologies will be analyzed, together with projected environmental impacts of these technologies. Open only to first- or second-year engineering majors, or all nonengineering majors. Instructor: Cocks, Harmon, or Knight. One course.

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 11L or 21L and Mathematics 31 or 33. Instructor: Cocks, Jones, Needham, Tan, or Zauscher. One course.


115L. Failure Analysis and Prevention. A study and analysis of the causes of failure in engineering materials and the diagnosis of those causes. Elimination of failures through proper material selection, treatment, and use. Case histories. Examination of fracture surfaces. Laboratory investigations of different failure mechanisms. Prerequisites: Engineering 75L and Mechanical Engineering 83L or consent of instructor. Instructor: Cocks, Jones, or Pearsall. One course.

125L. Measurement and Modeling of Dynamic Systems. Mathematical modeling of mechanical, electrical, fluid, and thermal systems. State variables, linearization methods, transfer functions and block diagrams, feedback techniques for control of dynamic systems. Analysis, design, and application of instrumentation. Experimental laboratory using computer based data acquisition and processing. Prerequisite: Engineering 123L. Instructor: Clark, Franzoni, or Virgin. One course.

126L. Fluid Mechanics. An introductory course emphasizing the application of the principles of conservation of mass, momentum, and energy to a fluid system. Physical properties of fluids, dimensional analysis and similitude, viscous effects and integral boundary layer theory, subsonic and supersonic flows, normal shock waves. Selected laboratory work. Corequisites: Engineering 123L and Mechanical Engineering 101L. Instructor: Bliss, Hall, Howle, Knight, or Shaughnessy. 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 the design process through design projects. Prerequisite: Mechanical Engineering 83L. Instructor: Wright. One course. C-L: Applied Science

149. Electric Vehicle Project. One course. C-L: Electrical and Computer Engineering 149

150L. Heat and Mass Transfer. A rigorous development of the laws of mass and energy transport as applied to a continuum. Energy transfer by conduction, convection, and

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 141L and 150L. Instructor: Staff. One course. C-L: Applied Science

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. Half 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.


198. 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. Prerequisites: B average and consent of the director of undergraduate studies. Instructor: Staff. Half course.


207. Transport Phenomena in Biological Systems. One course. C-L: see Biomedical Engineering 207; also C-L: Civil Engineering 207

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.

210. Intermediate Dynamics. Comprehensive treatment of the dynamic motion of particles and rigid bodies with an introduction to nonlinear dynamics and the vibration of continuous systems. Topics include: conservation of linear and angular momentum,
superposition applied to linear systems, motion in inertial and noninertial frames of reference, Hamilton’s principle and Lagrange’s equations, and generalized coordinates. Instructor: Hall or Knight. One course. C-L: Civil Engineering 210

211. Theoretical and Applied Polymer Science. An advanced course in materials science and engineering dealing specifically with the structure and properties of polymers. Particular attention paid to recent developments in the processing and use of modern plastics and fibers. Product design considered in terms of polymer structures, processing techniques, and properties. Instructor: Pearsall. One course. C-L: Biomedical Engineering 208


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. 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: Jones. 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.


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. Instructor: Hochmuth. 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, constitutive equations for a Newtonian fluid, the Navier-Stokes equations, and boundary conditions on velocity and stress at material interfaces. Instructor: Shaughnessy. One course.


228. Lubrication. Derivation and application of the basic governing equations for lubrication; the Reynolds equation and energy equation for thin films. Analytical and computational solutions to the governing equations. Analysis and design of hydrostatic and hydrodynamic slider bearings and journal bearings. Introduction to the effects of fluid inertia and compressibility. Dynamic characteristics of a fluid film and effects of bearing design on dynamics of machinery. Prerequisites: Mathematics 111 and Mechanical Engineering 126L. Instructor: Knight. 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.


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: Clark. 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 111 or consent of instructor. Instructor: Franzoni. One course. C-L: Civil Engineering 211

235. Advanced Mechanical Vibrations. Analytical and experimental procedures applied to the design of machines and systems for adequate vibration control. Determination of eigenvalues and eigenvectors by iteration and computer techniques, transfer matrices applied to lumped and distributed systems, analytical and numerical methods of obtaining the pulse response of plane and three-dimensional multime mass systems, convolution and data processing, introduction to random vibration. Instructor: Knight or Wright. 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. Prerequisites: Engineering 123L and Mathematics 111 or consent of instructor. Instructor: Bliss. One course.


245. Applications in Expert Systems. A comprehensive introduction to the key practical principles, techniques, and tools being used to implement knowledge-based systems. The classic MYCIN system studied in detail to provide historic perspective. Current systems employing combinations of production rules, prototypical knowledge, and frame-based case studies. Student term projects consist of the development of individual, unique expert systems using the Texas Instruments Personal Consultant. Knowledge of LISP not a prerequisite. Instructor: Wright. One course.

252. Buckling of Engineering Structures. One course. C-L: see Civil Engineering 252

263. Multivariable Control. One course. C-L: see Civil Engineering 263; also C-L: 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.

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: Staff. 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 111 or consent of instructor. Instructor: Staff. One course.

290. Physical Oceanography. One course. C-L: Environment 290

COURSES CURRENTLY UNSCHEDULED
102. Thermodynamics II
113. Introduction to Electronic Materials
208. Introduction to Colloid and Surface Science
224. An Introduction to Turbulence

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 75L, 83L, and 123L; Mechanical Engineering 83L, 101L, 125L, 126L, 141L, 150L, and 160L; Electrical Engineering 148L.
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