The Mission of Duke University

The founding Indenture of Duke University directed the members of the university 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 foster health and well-being through medical research and patient care; and to promote a sincere spirit of tolerance, 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.
The information in this bulletin applies to the academic year 1999-2000 and is accurate and current, to the extent possible, as of January 1999. 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 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.

Duke University does not discriminate on the basis of race, color, national origin, handicap, 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. For further information, please call the Office of the Vice-President for Institutional Equity at (919) 684-8222.

The Bulletin of Duke University, Volume 71, 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 Studies; Summer Session; Graduate Program in Nursing; The School of Law; and Information and Regulations.

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.
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<th>Event</th>
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<tbody>
<tr>
<td>March</td>
<td>Wednesday—Registration begins for Term I and/or Term II</td>
</tr>
<tr>
<td>*</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>Thursday—Term I classes begin</td>
</tr>
<tr>
<td></td>
<td>Monday—Drop/ Add for Term I ends</td>
</tr>
<tr>
<td>June</td>
<td>Monday—Memorial Day, classes in session</td>
</tr>
<tr>
<td></td>
<td>Wednesday—Last day to withdraw W/ P or W/ F from Term I courses</td>
</tr>
<tr>
<td></td>
<td>Monday—Term I classes end</td>
</tr>
<tr>
<td></td>
<td>Tuesday—Reading period</td>
</tr>
<tr>
<td></td>
<td>Wednesday—Term I final examinations begin</td>
</tr>
<tr>
<td>July</td>
<td>Thursday—Term I final examinations end</td>
</tr>
<tr>
<td></td>
<td>Tuesday—Term II classes begin</td>
</tr>
<tr>
<td></td>
<td>Thursday—Term II final examinations begin</td>
</tr>
<tr>
<td>August</td>
<td>Monday—Last day to withdraw W/ P or W/ F from Term II courses</td>
</tr>
<tr>
<td></td>
<td>Thursday—Term II classes end</td>
</tr>
<tr>
<td></td>
<td>Friday—Term II final examinations begin</td>
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<tr>
<td></td>
<td>Saturday—Term II final examinations end</td>
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### Fall 1999

<table>
<thead>
<tr>
<th>Month</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>August</td>
<td>Wednesday—Orientation begins; assemblies for all new undergraduate</td>
</tr>
<tr>
<td></td>
<td>students</td>
</tr>
<tr>
<td></td>
<td>Monday, 8:00 A.M.—Fall semester classes begin</td>
</tr>
<tr>
<td>September</td>
<td>Monday—Labor Day, classes in session</td>
</tr>
<tr>
<td>6</td>
<td>Monday—Drop/ Add ends</td>
</tr>
<tr>
<td>10</td>
<td>Friday—Drop/ Add ends</td>
</tr>
<tr>
<td>24-26</td>
<td>Friday-Sunday—Homecoming</td>
</tr>
<tr>
<td>October</td>
<td>Sunday—Founders' Day</td>
</tr>
<tr>
<td>3</td>
<td>Friday, 7:00 P.M.—Fall break begins</td>
</tr>
<tr>
<td>8</td>
<td>Wednesday, 8:00 A.M.—Classes resume</td>
</tr>
<tr>
<td>13</td>
<td>Friday—Last day for reporting midsemester grades</td>
</tr>
<tr>
<td>15</td>
<td>Friday—Parents' Weekend</td>
</tr>
<tr>
<td>22-24</td>
<td>Wednesday—Registration begins for spring semester, 2000</td>
</tr>
<tr>
<td>November</td>
<td>Friday—Registration ends for spring semester, 2000</td>
</tr>
<tr>
<td>19</td>
<td>Saturday—Drop/ Add begins</td>
</tr>
<tr>
<td>20</td>
<td>Wednesday, 12:40 P.M.—Thanksgiving recess begins</td>
</tr>
<tr>
<td>24</td>
<td>Monday, 8:00 A.M.—Classes resume</td>
</tr>
<tr>
<td>December</td>
<td>Thursday, 7:00 P.M.—Fall semester classes end</td>
</tr>
<tr>
<td>9</td>
<td>Monday, 9:00 A.M.—Final examinations begin</td>
</tr>
<tr>
<td>10-12</td>
<td>Friday-Sunday—Reading period</td>
</tr>
<tr>
<td>13</td>
<td>Saturday, 10:00 P.M.—Final examinations end</td>
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</tbody>
</table>

*The Nicholas School of the Environment, the Fuqua School of Business, the Marine Laboratory, the Graduate Nursing Program, and Physical Therapy may have different starting dates during the summer; consult the appropriate bulletins and schedules.
January
11 Tuesday—Registration and matriculation of new undergraduate students
12 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 19
17 Monday—Martin Luther King, Jr. Day holiday: classes are rescheduled on Wednesday, January 12
26 Wednesday—Drop/Add ends

February
25 Friday—Last day for reporting midsemester grades

March
10 Friday, 7:00 P.M.—Spring recess begins
20 Monday, 8:00 A.M.—Classes resume
29 Wednesday—Registration begins for fall semester, 2000, and summer 2000

April
14 Friday—Registration ends for fall semester, 2000; summer registration continues
15 Saturday—Drop/Add begins
26 Wednesday, 7:00 P.M.—Spring semester classes end
27-30 Thursday-Sunday—Reading period

May
1 Monday, 9:00 A.M.—Final examinations begin
6 Saturday, 10:00 P.M.—Final examinations end
12 Friday—Commencement begins
14 Sunday—Graduation exercises. Conferring of degrees
University Administration

GENERAL ADMINISTRATION
Nannerl Overholser Keohane, Ph.D., President
John W. Strohbehn, Ph.D., Provost
Ralph Snyderman, M.D., Chancellor for Health Affairs; Executive Dean, School of Medicine; President and Chief Executive Officer; Duke University Health System, Inc.
Tallman Trask III, M.B.A., Ph.D., Executive Vice-President
Eugene J. McDonald, LL.M., Executive Vice-President – Asset Management
John F. Burness, A.B., Senior Vice-President for Public Affairs
John J. Piva, Jr., B.A., Senior Vice-President for Alumni Affairs and Development
Charles E. Putman, M.D., Senior Vice-President for Research Administration and Policy
Myrna C. Adams, J.D., Vice-President for Institutional Equity
H. Clint Davidson, M.B.A., Vice-President for Human Resources
Janet Smith Dickerson, M.Ed., Vice-President for Student Affairs
Robert S. Shepard, Ph.D., Vice-President for University Development
Joseph S. Beyel, M.S., Vice-Chancellor for Medical Center Development and Alumni Affairs
William J. Donelan, M.S., Vice-Chancellor for Medical Center Administration and Chief Financial Officer
Edward W. Holmes, M.D., Vice-Chancellor for Medical Center Academic Affairs and Dean, School of Medicine
Michael Israe1, M.P.H., Vice-Chancellor for Health Affairs and Chief Executive Officer, Duke University Hospital
Jean Gaillard Spaulding, M.D., Vice-Chancellor for Health Affairs
Alvis R. Swinney, M.P.H., Vice-Chancellor for Medical Center Business Development and Marketing
David B. Adcock, J.D., University Counsel
N. Allison Haltom, A.B., University Secretary
William H. Williamson, S.T.D., Dean of the Chapel
Joseph L. Alleva, M.B.A., Director of Athletics

GENERAL ACADEMIC ADMINISTRATION
John W. Strohbehn, Ph.D., Provost
David S. Ferriero, M.A., University Librarian and Vice-Provost for Library Affairs
Judith Ruderman, Ph.D., Vice-Provost for Academic Services
Bruce W. Cunningham, Ph.D., Registrar
Cathy N. Davidson, Ph.D., Vice-Provost for Interdisciplinary Studies
Bruce R. Kuniholm, Ph.D., Vice-Provost for Academic and International Affairs
James S. Roberts, Ph.D., Vice-Provost for Budgets and Planning
Lewis M. Siegel, Ph.D., Vice-Provost and Dean of the Graduate School
David Jamieson-Drake, Ph.D., Director of Institutional Research
Amy Oates, B.A., Director, Academic Financial Services and Systems
Betty B. Leydon, M.A.M., Vice-Provost for Information Technology

Arts and Sciences
William H. Chafe, Ph.D., Dean of the Faculty of Arts and Sciences and Dean of Trinity College
James N. Siedow, Ph.D., Dean of Faculty Development
Robert J. Thompson, Jr., Ph.D., Dean of Undergraduate Affairs
Robert F. Barkhaus, B.S., Director of Facilities for Arts and Sciences
Charles W. Byrd, Ph.D., Associate Dean for Academic Affairs
Thomas D. Mann, A.B., Associate Dean for Administration
Melissa J. Mills, M.B.A., Assistant Dean for Computing
Jane H. Dittmann, J.D., Associate Dean for Advancement
William G. Slebos, B.A., Assistant Dean for Management Services
Lee W. Willard, Ph.D, Associate Dean for Academic Planning and Special Projects

*Through June 30, 1999
Trinity College

William H. Chafe, Ph.D., Dean of Trinity College and Dean of the Faculty of Arts and Sciences
Robert J. Thompson, Jr., Ph.D., Dean of Undergraduate Affairs
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
Mary Nijhout, Ph.D., Associate Dean for Natural Sciences and Pre-Graduate School
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
Christa T. Johns, Ph.D., Director of Foreign Academic Programs and Assistant Dean for Study Abroad
Norman C. Keul, Ph.D., Assistant Dean for Pre-Majors and Director of the Pre-Major Advising Center
Kay H. Singer, Ph.D., Assistant Dean for Natural Sciences, Director of Health Professions Advising Center

The School of Engineering

Earl H. Dowell, Ph.D., Dean
Marion L. Shepard, Ph.D., Associate Dean for Undergraduate Affairs
Constance E. Simmons, M.B.A., Assistant Dean for Undergraduate Affairs

Student Affairs

Janet Smith Dickerson, M.Ed., Vice-President for Student Affairs
Maureen D. Cullins, A.M., Assistant Vice-President and Dean of Campus Community Development
Suzanne Wasiolk, M.H.A., J.D., LL.M., Assistant Vice-President
Barbara Baker, M.A., Dean of Student Development and Residential Education
R. James Clack, Ph.D., Director, Counseling and Psychological Services
William A. Christmas, M.D., F.A.C.P., Director of Student Health
Susan L. Coon, M.A., Dean of University Life
Caroline Nisbet, M.A., Director of Resource Administration
Leo Charette, M.Ed., Director, Career Development Center

Admissions and Financial Aid

Christoph O. Guttentag, M.A., Director of Undergraduate Admissions
James A. Belvin, Jr., A.B., Director of Undergraduate Financial Aid
General Information
Duke University

In 1839 a group of citizens from Randolph and adjacent counties in North Carolina assembled in a log schoolhouse to organize support for a local academy founded a few months earlier by Brantley York. Prompted, they said, by "no small share of philanthropy and patriotism," they espoused their belief that "ignorance and error are the banes not only of religious but also civil society which rear up an almost impregnable wall between man and happiness." The Union Institute, which they then founded, was reorganized in 1851 as Normal College to train teachers, and again in 1859 as Trinity College, a liberal arts college, which later moved from the fields of Randolph County to the growing city of Durham, North Carolina. Trinity College was selected by James B. Duke as the major recipient of a fortune when, in 1924, he provided endowment funds for the university that would be organized around Trinity College and named for the Duke family.

The old Trinity College had, like almost all institutions in America at the time it was founded, been restricted to men. In 1896, Washington Duke gave an endowment with the condition that women be admitted "on equal footing with men." Thereafter, women were educated in Trinity College, and in 1930 the Woman's College was established as a separate college. Trinity College and the Woman's College continued as coordinate colleges for over forty years. To assure that women were indeed admitted "on equal footing with men," and to recognize that the education which men and women had received at Duke had long taken place in the same classrooms, the university merged these coordinate colleges in 1972 to form Trinity College of Arts and Sciences, the liberal arts undergraduate college of the university. The Bachelor of Arts and Bachelor of Science degrees may be earned in the college.

Instruction in engineering started at Normal College in 1851 and was continued at Trinity College as an option in the arts and sciences program. A Department of Engineering was established at Trinity in 1910. Following the establishment of Duke University in 1924, the Departments of Civil and Electrical Engineering were formed in 1927, and a Department of Mechanical Engineering was added four years later. The three engineering departments were joined to form the Division of Engineering as a separate administrative unit of the university. In 1939 this division was renamed the College of Engineering, which in 1966 became a professional school of engineering. The Division of Biomedical Engineering was added to the School of Engineering in 1967, and it was recognized as a department in 1971. In 1974, the name of the mechanical engineering department was changed to the Department of Mechanical Engineering and Materials Science; in 1982, the Department of Civil Engineering was renamed the Department of Civil and Environmental Engineering; in 1995, the Department of Electrical Engineering was renamed the Department of Electrical and Computer
Engineering. All four departments offer courses leading to Bachelor of Science in Engineering, Master of Science, and Doctor of Philosophy degrees.

The School of Nursing was established in 1931 in association with the School of Medicine and Duke Hospital. From 1944 until 1984, the Bachelor of Science in Nursing Education degree was offered. In 1980, the University Board of Trustees approved the phaseout of the existing undergraduate degree programs. At present, the School of Nursing offers courses leading to the Master of Science in Nursing degree, a program initiated in 1988.

As the university developed around the core of undergraduate colleges and schools, the Graduate School, organized in the 1920s, expanded in areas of instruction and research. It now consists of some fifty-five departments and programs and offers A.M., M.S., M.A.T., M.P.P., and Ph.D. degrees. In 1930, the School of Law of Trinity College was established as a graduate professional school, the Duke University School of Law, and was followed by other professional schools. The Divinity School was organized in 1926 and the School of Medicine in 1930. The School of Forestry which began in 1938 grew into the School of Forestry and Environmental Studies in 1974, was restructured to become the School of the Environment in 1991, and named the Nicholas School of the Environment in 1995. The Graduate School of Business Administration was established in 1969 and renamed the Fuqua School of Business in 1980.

Duke, a privately supported, church-related (Methodist) university, has over 10,000 students enrolled in degree programs. These students represent nearly every state and many foreign countries; Duke has more than 85,000 alumni in all fifty states and innumerous foreign countries. The university is a member of the North Carolina Association of Independent Colleges and Universities, the Southern Association of Colleges and Schools, and the Association of American Universities.

From academy to university, some of the basic principles have remained constant. The Duke University motto, Eruditio et Religio, reflects a fundamental faith in the union of knowledge and religion, the advancement of learning, the defense of scholarship, the love of freedom and truth, a spirit of tolerance, and a rendering of the greatest service to the individual, the state, the nation, and the church. Through changing generations of students, the objective has been to encourage individuals to achieve, to the extent of their capacities, an understanding and appreciation of the world in which they live, their relationship to it, their opportunities, and their responsibilities.

Resources of the University

The Faculty. The university faculty, numbering approximately 1,900, maintains a tradition of personal attention to students and devotion to research. Many members of the faculty have been cited for excellence in teaching and are elected to membership in the national societies which honor those best in scholarship and research. Leaders in their disciplines and their professional organizations, they are authors of significant books and articles. Members of the faculty also act as consultants to industry, government, and foundations. To honor its outstanding faculty, the university has established more than one hundred James B. Duke and other named professorships.

The Library System. The libraries of the university consist of the William R. Perkins Library and its seven branches on campus: Biological and Environmental Sciences, Chemistry, Lilly, Engineering, Music, Mathematics-Physics, and the Rare Book, Manuscript, and Special Collections Library; the Pearse Memorial Library at the Duke Marine Laboratory in Beaufort; and the independently administered libraries of Divinity, Law, Medicine, and Business (Fuqua). As of June 1998, these libraries contained over 4.7 million volumes. The collection includes 11million manuscripts, and over 2,000,000 public documents. An array of resources and services is available electronically from the university's libraries. For access, visit the Duke University libraries web site at http://www.lib.duke.edu.
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 directions of scholarship and teaching as well as the historical strengths of area programs at the university. Included are extensive research collections from and about South Asia, Latin America, Africa, Europe, Russia, and Poland, as well as the country's largest collection of Canadiana. The East Asian Collection offers resources in Japanese, Chinese, and Korean on a variety of topics, predominantly history, politics, literature, and language. 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; as well as many European and Latin American papers.

The Rare Book, Manuscript, and Special Collections Library holdings range from ancient papyri to records of modern advertising. They number more than 200,000 printed volumes and more than 11 million items in manuscript and archival collections. 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 in the collections include 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. The subject-focused branch libraries on the west campus (Biological and Environmental Sciences, Chemistry, 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, 100,000 books on music, and over 200 music-related journals. The Music Media Center's 20,000-item collection includes compact discs, cassettes, LP recordings, laser discs and videos, plus 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 location of the Paul B. Williams Multimedia Broadcast Center. This state-of-the-art facility administers the film and video collection and features remote transmission facilities for the campus.

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 on-line cataloging system. From the on-line 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 campus 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.
Tours of the Perkins Library are given frequently during Orientation Week and upon request throughout the year. 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. Mudd Building, provides the services and collections necessary to further educational, research, and clinical activities in the medical field. Services are available to Medical Center faculty, staff, and students from the School of Medicine, School of Nursing, Division of Allied Health, and Duke Hospital; as well as graduate departments in the basic medical sciences.

Over 290,000 volumes are available, including the Trent Collection in the History of Medicine. Approximately 2,250 journal subscriptions are currently received and the library has extensive back files of older volumes. The collection contains over 1,200 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 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 card 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 500,000 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.
The Office of Information Technology. The Office of Information Technology (OIT) is responsible for computing, telephony, and tele-video services and support for the university community. OIT's website at http://www.oit.duke.edu, offers software downloads, detailed procedures, and numerous contact points, and many other resources, to help students, faculty, and staff make the most of Duke's information networks. Computing. All undergraduate residence halls and Central Campus apartments are wired for direct access to DukeNet, the campus-wide computer network. This direct connection means fast and solid Internet connections, too. Every member of the Duke community is assigned their own e-mail account, which they can use on their own computers or on computers stationed all over campus. During the first weeks of school, OIT helps students establish their "dormnet" connections and provides them with a free Internet survival kit, which includes a CD-ROM containing a World Wide web browser, e-mail program, virus detection program, and other software and instructions to help them get started on the Internet.

Located throughout campus, OIT's public computer clusters offer up-to-date UNIX, Windows and Macintosh computers that students can use for e-mailing, writing papers, surfing the Web, and so on. All clusters offer laser printers and DukeNet access. OIT's Help Desk staff is available to assist students with Duke supported software, hardware, and services, with satellite help desks available on both East and West campus sites in the evenings. The Help desk Web site is at http://www.oit.duke.edu/helpdesk; you can send electronic mail to helpdesk@duke.edu or you can call (919) 684-2200.

Telephones. OIT offers telephone service for a nominal installation fee and a monthly charge. Various rate-based services include a discount long-distance and international dialing plan, paging, and voicemail. For more information contact the Residential Services office at (919) 684-2538, Monday through Friday, 8 am to 5 p.m. You can also visit the website at http://www.oit.duke.edu/phone.html. When you reach campus, you can visit the office in Room 100, Tel-Com building.

Cable Television. DTV, Duke Television, provides state-of-the-art cable TV service. Viewing options include: EdNet, which has 12 educational channels; DevilVision, which offers 27 entertainment channels; and other premium channel options and combinations. Students sign up by visiting the customer service center in Room 100 of the Tel-Com Building. For more information see http://oit.duke.edu/resserv/cable.htm or call (919) 613-4388.

Science Laboratories. In addition to the teaching and research laboratories in the departments of natural and social sciences and in the 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; and the Free Electron Laser Laboratory, also on campus. The Levine Science Research Center, which opened recently, 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. In particular, undergraduates will have the opportunity to use the expanded laboratory space in the center for research for their own academic work or as assistants to others.

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 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 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 observe at close range 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 as well.

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. In Trinity College, the liberal arts are a means through which students explore the world of ideas from art and music to neurosciences and physics. The undergraduate program, rated one of the finest in the country, helps students learn how to deal successfully with the challenges, intellectual and philosophical, that modern life provides. Trinity College is a community of outstanding students and talented, nationally ranked faculty. As members of this community, students learn to ask questions, analyze rationally, challenge ideas, and contribute to the continuing development of knowledge.

The Trinity experience offers a traditional liberal arts base of study and currently offers, within broad limits, exposure to great ideas in six major areas: arts and literatures, civilizations, foreign languages, quantitative reasoning, natural sciences, and social sciences. It offers exposure across a broad spectrum as well, and interdisciplinary and interdepartmental programs stretch horizons even further. Internships and apprenticeships in areas related to students' majors are increasingly available so that practical experience can complement a more formal education. In a world where people are drawn ever closer together, the understanding of cultural difference and diversity becomes increasingly important. Our study abroad programs are varied and plentiful.

The undergraduate college of arts and sciences is unique in that it is set within a distinguished research university. We believe that this combination provides unparalleled opportunities for interaction with faculty, both inside and outside the classroom. The arts and sciences faculty boasts some of the most highly rated scholar-teachers in the country. They challenge students both to master and to reach
beyond the basics of fundamental knowledge. At Duke there is a genuine concern for learning, and students are prepared by academic challenges and their individual experiences for the critical decision-making required of them for participatory citizenship, full personal lives, and successful careers.

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 Duke 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 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.
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 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.

Credit toward a degree is earned in units called semester courses(s.c.), commonly abbreviated as courses. These courses 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.

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 unless the course is offered only on that basis.

Students must accept personal responsibility for understanding and meeting the requirements of the curriculum.
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 8. See the section University Writing Program in the chapter "Courses and Academic Programs."

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).

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 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
Trinity College of Arts and Sciences 21

...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.

**The Major.** Students are expected to acquire some mastery of a particular discipline or interdisciplinary area as well as to achieve a breadth of intellectual experience. They therefore complete a departmental major, a program major, or an interdepartmental major. 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 departmental 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 department 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, chemistry, classical languages, classical studies, 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, 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, biology, Canadian studies, comparative area studies, drama, 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 director of undergraduate studies in the advisor's department, as an alternate means of satisfying the major requirement. An interdepartmental major consists of ten courses, at least four of which must be at the 100 level or above in each of two or more Trinity College departments or programs that offer a major. 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...
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 and at least one of which is either an introductory or 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: Early Childhood Education Studies; Film and Video; Genetics; Health Policy; Human Development; Integrated Arts; 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 twenty) 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. Twelve courses must be at the advanced (100-200) level. The thirty-four course credits may include (1) no more than one semester-course credit in physical education activity courses; (2) no more than four semester-course credits in dance/American Dance Festival technique/performance courses (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 general studies (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, including the courses needed to meet the senior year residence requirement. (For the purposes of the residence requirement, advanced placement credits are not considered as courses taken at Duke; see the section "Advanced Placement" in the chapter "Academic Procedures and Information"). If only seventeen courses are taken at Duke, they must include the student's last eight courses. A student with more than seventeen courses at Duke may take two of the last eight courses at another approved institution. A student who has completed twenty-six courses at Duke may take four of the last eight courses at another approved institution. Courses taken elsewhere must be approved in advance by the appropriate director of undergraduate studies and the student's academic dean.

Former students of Trinity College or the Woman's College who have been out of college for at least six years, and left in good standing, may, with certain provisos, take up to eight semester-courses in another institution of approved standing in final fulfillment of graduation requirements. Further information can be obtained from the associate dean of Trinity College of Arts and Sciences responsible for coordinating readmission.

**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.

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; that department or program will become the sponsor for the student. Admission 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, although it may be modified later with the approval of the advisor and the Committee on Program II. 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 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 other 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 their faculty advisors, director of undergraduate studies, or academic dean at the earliest opportunity. Since many graduate and professional schools require special tests for students seeking admission, information regarding requirements should also be obtained from the catalogs of the appropriate schools. Applications for the testing programs required for admission to graduate or professional schools can be obtained from the appropriate pre-professional school or pre-graduate school advisor in Trinity College of Arts and Sciences or from the Office of Counseling and Psychological Services (CAPS).

**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 or 04 Allen Building. 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 dean of the 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, 03 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 course work in the natural sciences and behavioral sciences within a liberal arts curriculum. Descriptive literature on each of the allied health schools and professions is part of the library maintained in the Health Professions Advising Office, where students will also find publications of selected advanced degree programs in biomedical research, including the combined M.D./Ph.D. degree programs.

**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 1A or 2A 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 judicatories to determine requirements for a successful application to the school of their choice. Generally speaking, appropriate preparation for theological study could include the following subjects: English language and literature; history, including non-Western cultures as well as European and American; philosophy, particularly its history and its methods; natural sciences, both the physical and the life sciences; psychology, sociology, and anthropology; the fine arts and music; biblical and modern languages; religion, both in the Judeo-Christian and in the Near and Far Eastern traditions.

This kind of course work introduces the student to ways of thinking that will be germane to theological study. Some theological schools require various languages for admission. This may include a year of language study at the college level. It may also include biblical languages, Greek and/or Hebrew. More detailed information about theological education may be obtained from the director of admissions of the Divinity School.
The School of Engineering

Duke University offers in the 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*

<table>
<thead>
<tr>
<th>Category</th>
<th>Credits</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing</td>
<td>1 s.c.</td>
<td>This requirement is met by completing a University Writing Course.</td>
</tr>
<tr>
<td>Mathematics</td>
<td>4 s.c.</td>
<td>This requirement is met by completing Mathematics 31, 32, and 103; plus 104 or 111 or 135.**</td>
</tr>
<tr>
<td>Natural Science</td>
<td>4 s.c.</td>
<td>This requirement is met by completing Chemistry 11L, 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.†</td>
</tr>
<tr>
<td>Humanities and Social Sciences</td>
<td>5 s.c.</td>
<td>This requirement is met by completion of 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.</td>
</tr>
<tr>
<td>Engineering and Applied Sciences</td>
<td>4 s.c.</td>
<td>This requirement is met by completion of 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.</td>
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</tbody>
</table>

*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.

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

†Physics 41L and 42L may be substituted for Physics 51L and 52L. 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.
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 Requirement 34 s.c.

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 11L</td>
<td>1</td>
<td>Chemistry 12L</td>
<td>1</td>
</tr>
<tr>
<td>University Writing Course</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 or Social Science or Humanities Elective</td>
<td>1</td>
<td>Social Science or Humanities</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Elective or Engineering 53L</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></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 163</td>
<td>1</td>
</tr>
<tr>
<td>Electrical Engineering 61</td>
<td>1</td>
<td>Elective</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 Engineering 83L†</td>
<td>1</td>
<td>Social Science or Humanities Elective</td>
<td>1</td>
</tr>
<tr>
<td>Life Science Elective</td>
<td>1</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>

Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Engineering 110 or Engineering 75L</td>
<td>1</td>
<td>Biomedical Engineering 145 or Mechanical Engineering 101L or Electrical Engineering 176</td>
<td>1</td>
</tr>
<tr>
<td>Electrical Engineering 64 or Biomedical Engineering 171</td>
<td>1</td>
<td>Life Science Elective</td>
<td>1</td>
</tr>
<tr>
<td>Biomedical Engineering 101</td>
<td>1</td>
<td>Biomedical Engineering 164</td>
<td>1</td>
</tr>
<tr>
<td>Social Science-Humanities Elective</td>
<td>1</td>
<td>Mathematics 114</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

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

†Biomedical Engineering 83 is not required for students who complete a second major in electrical engineering.
### 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 include all 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 11L</td>
<td>1</td>
<td>Physics 51L</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 31</td>
<td>1</td>
<td>Engineering 24L and/or 25L*</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 53L</td>
<td>1</td>
<td>Mathematics 32</td>
<td>1</td>
</tr>
<tr>
<td>University Writing Course</td>
<td>1</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
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</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>Engineering 24L and/or 25L*</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>Engineering 115</td>
<td>1</td>
</tr>
<tr>
<td>Statistics 113 or Elective</td>
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<td>1</td>
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<tr>
<td>Civil Engineering Course(^1)</td>
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<td>Civil Engineering Course(^2)</td>
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<tr>
<td>Civil Engineering Course(^3) or Elective</td>
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<td>Civil Engineering Course(^2) or Elective</td>
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<tr>
<td>Civil Engineering Course(^3) or Elective</td>
<td>1</td>
<td>Civil Engineering Course(^2) or Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>

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\(^1\)Students declaring a civil engineering major without having taken EGR 24 and/or EGR 25 during the freshman 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 CEE courses [Junior Year: Fall Semester - CEE 131L, Spring Semester - CEE 122L, CEE 133L, CEE 139L; Senior Year: Fall Semester - CEE 134L. Students selecting the E/W sequence should take the following CEE courses [Junior Year: Fall Semester - CEE 120L, CEE 122L, CEE 139L or Elective; Spring Semester - CEE 123L; Senior Year: Fall Semester - CEE 124L, Elective or CEE 139L]
**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†</td>
<td>1</td>
<td>Civil Engineering 192L ‡</td>
<td>1</td>
</tr>
<tr>
<td>Civil Engineering Course† or 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>Elective</td>
<td>1</td>
<td>Total</td>
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</tr>
<tr>
<td>Total</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

‡ CEE 192L Civil Engineering Design is taught in two sections. CEE 192.01L has prerequisites of CEE 131L, CEE 133L, and CEE 134L; CEE 192.02L has prerequisites of CEE 120L, CEE 123L, and CEE 124L.

The regular program of electives shall include: at least one from CEE 61L, ECE 148L, EGR 83L, ME 101L, 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 CEE 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 11L</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 100E or Engineering 53L or Social Science-Humanities Elective</td>
<td>1</td>
<td>Computer Science 6 or 100C or Engineering 53L or Social Science-Humanities Elective</td>
<td>1</td>
</tr>
<tr>
<td>University Writing Course</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>

**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>Civil Engineering 130L</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 103</td>
<td>1</td>
<td>Mathematics 1A*</td>
<td>1</td>
</tr>
<tr>
<td>Social Science-Humanities Elective</td>
<td>1</td>
<td>Social Science-Humanities Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>5</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>Mathematics 1B*</td>
<td>1</td>
<td>Mathematics 1C</td>
<td>1</td>
</tr>
<tr>
<td>Electrical Engineering 1A **</td>
<td>1</td>
<td>Electrical Engineering 1B**</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-Humanities Elective</td>
<td>1</td>
<td>Social Science-Humanities Elective</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>

* Students interested in computer engineering, signal processing and communications, systems and robotics, or power electronics 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.

** To 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.

*** The following courses are recommended: Chemistry 12L; Physics 100, 105, 176, 181, and 185; Biology 21L.
## 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 1</td>
<td></td>
</tr>
<tr>
<td>Electrical Engineering Elective</td>
<td>1</td>
<td>Electrical Engineering 2B</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 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>

\*To 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 (engineering 83L or Biomedical Engineering 215)

**Note:** The selection of approved electives should take into account a departmental requirement that a student must have accumulated by graduation time the equivalent of 13.0 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. Two courses may be selected from any two of the following areas: information and computer science (Engineering 53L or Computer Science 6 or 100E may be used to satisfy this requirement), mechanics, materials science, and thermal sciences.

An 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</th>
<th>Courses</th>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 11L</td>
<td>1</td>
<td>Physics 51L</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 31</td>
<td>1</td>
<td>Elective or Engineering 83L</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 53L or Elective*</td>
<td>1</td>
<td>Mathematics 32</td>
<td>1</td>
</tr>
<tr>
<td>University Writing Course</td>
<td>1</td>
<td>Elective or Engineering 53L*</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

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

#### 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>Mechanical Engineering 101L</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics 103</td>
<td>1</td>
<td>Mathematics 111</td>
<td>1</td>
</tr>
<tr>
<td>Engineering 83L or Elective*</td>
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<td>Elective*</td>
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</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>Total</td>
<td>4</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering 125L 1</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering Elective 1</td>
<td></td>
</tr>
<tr>
<td>Natural Science Elective** 1</td>
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<tr>
<td>Elective* 1</td>
<td></td>
</tr>
<tr>
<td>Total 4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering 126L 1</td>
<td></td>
</tr>
<tr>
<td>Electrical Engineering 148L*** 1</td>
<td></td>
</tr>
<tr>
<td>Mathematics or Natural Science† 1</td>
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</tr>
<tr>
<td>Elective* 1</td>
<td></td>
</tr>
<tr>
<td>Quantitative Elective† 1</td>
<td></td>
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<tr>
<td>Total 4</td>
<td></td>
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</tbody>
</table>

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### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering 150L 1</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering 141L 1</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering Elective†† 1</td>
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</tr>
<tr>
<td>Elective* 1</td>
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</tr>
<tr>
<td>Total 4</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering 160L 1</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineering Elective†† 1</td>
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<tr>
<td>Elective* 1</td>
<td></td>
</tr>
<tr>
<td>Total 4</td>
<td></td>
</tr>
</tbody>
</table>

---

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

** A list of disallowed courses is maintained in the dean's office.

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

† Including statistics, with the exception of Statistics 10. See recommendations below.

†† Restricted 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.

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### 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 dean of the School of Engineering or through the director of undergraduate studies in the second department. The completion of the requirements for the major in this department must be confirmed no later than the time of registration for the final semester. Courses which are common to both majors shall be counted toward satisfying the requirements of both majors.

### IDEAS

These interdisciplinary programs in engineering and applied science, leading to the Bachelor of Science in Engineering degree, provide opportunities for students to establish special majors in interdisciplinary fields such as computer engineering, environmental engineering, and materials science. Programs with a broad foundation in the engineering sciences also may be developed under this program by those who intend to enter nonengineering professions. Although not individually accredited, these programs satisfy the national engineering accreditation criteria.
Any student, in consultation with the advisor or another faculty member, may propose a unique combination of courses designed to meet particular career objectives. A proposal must be submitted to the associate dean of the 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 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 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 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.
Academic Procedures and Information
Advanced 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. If questions arise, students should consult the director of undergraduate studies in the appropriate department or the university registrar.

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 recording AP courses on a student’s permanent Duke record as well as 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 in an advanced course. Departmental policies regarding advanced placement may vary. In the case of French, German, Latin, and Spanish, AP scores of 4 or 5 may result in placement in courses at the 100 level; approval of the director of undergraduate studies or supervisor of freshmen instruction in the appropriate department is required before final placement is made. Scores should be submitted to the Office of the 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 PHY 41 and PHY 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 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 PHY 21; a score of 4 or 5 on the “Physics-C” Electricity and Magnetism exam earns credit for PHY 22; these course numbers denote only AP credit and are not actual Duke courses. (2) To obtain credit for PHY 51 (equivalent to PHY 41 and PHY 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 PHY 52 (equivalent to PHY 42 and PHY 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 other than the scheduled time during the first week of classes of the first semester at Duke.

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. Credit toward the degree is awarded for recorded AP courses according to the following policy.

In Trinity College, students may be granted up to two elective course credits toward the degree requirement of 34 course credits; up to six additional credits may be awarded for acceleration toward the degree. Specifically, the two elective as well as two
acceleration credits may be included in the graduation total for students graduating after seven semesters; the two elective and six acceleration credits may be included in the graduation total for students completing their degrees after 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.

For students who matriculated through January 1998: Students in this category should review the section on the College Board Advance Placement (AP) Program Examination in the bulletin of the year they matriculated at Duke.

International Entrance Examinations. Duke University recognizes the International Baccalaureate Program, the French Baccalaureate, the British A-Level Examinations, the Hong Kong A-Level Examinations, the German Arbitur, 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 College Board Advanced Placement (AP) courses (see above).

College Board Tests. Scores on College Board Tests are the basic criteria for placement in French, German, Spanish, 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>French*</th>
<th>Achievement Score</th>
<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>240-410</td>
<td>French 1-2</td>
<td></td>
</tr>
<tr>
<td>420-480</td>
<td>French 12</td>
<td></td>
</tr>
<tr>
<td>490-580</td>
<td>French 63</td>
<td></td>
</tr>
<tr>
<td>590-630</td>
<td>French 76</td>
<td></td>
</tr>
<tr>
<td>640 plus</td>
<td>French 100-level course</td>
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</tr>
</tbody>
</table>

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<thead>
<tr>
<th>German*</th>
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<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-400</td>
<td>German 1†</td>
<td></td>
</tr>
<tr>
<td>410-510</td>
<td>German 65-66</td>
<td></td>
</tr>
<tr>
<td>520-590</td>
<td>German 69</td>
<td></td>
</tr>
<tr>
<td>600 plus</td>
<td>Third year‡</td>
<td></td>
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<table>
<thead>
<tr>
<th>Spanish*</th>
<th>Achievement Score</th>
<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-430</td>
<td>Spanish 1-2</td>
<td></td>
</tr>
<tr>
<td>440-510</td>
<td>Spanish 12</td>
<td></td>
</tr>
<tr>
<td>520-600</td>
<td>Spanish 63</td>
<td></td>
</tr>
<tr>
<td>660 plus</td>
<td>Spanish 100-level course</td>
<td></td>
</tr>
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<table>
<thead>
<tr>
<th>Latin*</th>
<th>Achievement Score</th>
<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-520</td>
<td>Latin 1</td>
<td></td>
</tr>
<tr>
<td>530-630</td>
<td>Latin 63</td>
<td></td>
</tr>
<tr>
<td>640 plus</td>
<td>Third year‡</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mathematics**</th>
<th>Achievement Score</th>
<th>Placement</th>
</tr>
</thead>
<tbody>
<tr>
<td>500-650</td>
<td>Mathematics 25L</td>
<td></td>
</tr>
<tr>
<td>660-800</td>
<td>Mathematics 31L, or with one year of high school calculus, Mathematics 41</td>
<td></td>
</tr>
</tbody>
</table>

* 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 and Spanish, from 117 to 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 or Spanish could not receive credit for 63, but could for 76). In no case will credit be given for 1 and 2 to students with three or more years of high school French or Spanish.

† The first year 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.

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

** In the absence of an achievement test score, course placement is determined by the SAT score as follows: 670 or below — Math. 25L; 680-800 — Math. 31L.
Newly admitted students who wish to continue the study of French, German, Spanish, or Latin begun in secondary school must take a College Board Achievement Test or College Board Advanced Placement (AP) Examination in that language by June of the senior year in secondary school. 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 or in languages covered by the Achievement Test or Advanced Placement Examination programs of the College Board. New students who wish to continue the study of French, German, Spanish, or Latin but who found that it was not possible due to extraordinary circumstances to take the appropriate College Board examinations, may petition to take a placement test at Duke University prior to the beginning of New Student Orientation. Petitions explaining the reason a test was not taken must be received by the Coordinator of Testing, Counseling and Psychological Services, P.O. Box 90955, by July 1. If the petition is granted, a fee will be charged to cover testing costs. Because residence halls are not open before the beginning of New Student Orientation, students whose petitions are granted will also need to arrange accommodations in the Durham area.

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.

**Placement in Languages Other Than French, German, Spanish, and Latin.** Students who wish to continue in any language other than French, German, Spanish, or Latin should consult with the appropriate director of undergraduate studies. In the case of Russian, the department offers an examination which is used in conjunction with other criteria for placing students at the appropriate level.

**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 Elsewhere**

**Work Done Prior to Matriculation at Duke.** First-year Duke students may submit for evaluation college courses taken after the commencement of the student's junior year of high school. Students transferring from a degree program in another regionally accredited institution may be granted credit for up to seventeen semester-course credits. Students will not be awarded more than four semester-course credits for one semester's work unless they have satisfactorily completed more than the normal course load at the institutions from which they are transferring credit. Courses taken at other institutions prior to matriculation at Duke are evaluated by the university registrar and the faculty.
Evaluation of Work Taken Elsewhere. Courses in which grades of less than C- have been earned are not accepted for transfer credit; students seeking transfer credit for courses in which they earned a P grade must present official verification that the P is equivalent to at least a C- grade. 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. Further information is available from the university registrar.

College-level courses taken during the high school years are eligible for consideration for transfer of credit to Duke upon receipt of the following documentation: an official transcript of all college courses, sent directly from the college(s) attended to Duke; 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; an official letter of verification from each college attended indicating 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. Course descriptions of all courses taken are required for evaluation. By policy, all precalculus and English composition courses taken during the high school years do not transfer to Duke.

After matriculation as a full-time degree candidate at Duke University, a student in Trinity College of Arts and Sciences may receive credit toward the Bachelor of Science or Bachelor of Arts degree for two courses taken in the domestic United States at another institution, whether in the summer while regularly enrolled at Duke, while withdrawn voluntarily from the college, or while on leave of absence for personal, medical, or financial reasons. Trinity College students, when eligible, may also receive transfer credit for up to ten courses taken in an approved program for study abroad (see the section on Study Abroad). In some cases, transfer credit may be received for a maximum of four of the final eight courses toward the bachelor's degree (see the section on Residence Requirements). Once matriculated, however, a student may not receive credit for more than a total of ten transfer courses toward the Bachelor of Science or Bachelor of Arts degree. Full-time degree candidates in the 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 course work taken while a student is withdrawn involuntarily. For purposes of this regulation, advanced placement and interinstitutional credit (see the section on agreement with neighboring universities) are not considered as work taken at another institution.

Students may not transfer credit from two-year colleges after completing their sophomore year. At least half 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 for Courses Taken Elsewhere. 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.

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 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. Students prepare a course program, and submit it at an appointed time to their advisors for review. In the 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; they also forfeit their registration deposits unless they indicate at the time of registration their intention not to continue in the university the following term. 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. See the chapter "Special Programs" for information regarding the reciprocal agreement with neighboring universities.

Duke Identification Card and Term Enrollment. Undergraduate students are issued identification cards which they should carry at all times. The card is a means of identification for library privileges, university functions, and services available to university 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 Duke Card Office where new ones can be obtained for $10. 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, the telephone 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 the approval of 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 grade (withdraw passing) or WF (withdraw failing) from the instructor. Course work discontinued without the dean’s permission will result in a grade of F.

When students note an error in their course schedules, they should consult immediately with their academic dean.

**Course Changes for the Summer Terms.** Course changes are accomplished through ACES, the telephone 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 for 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.)

**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. To take more than five semester courses, students must have the approval of their academic deans. No student, however, may take more than six courses in any semester. 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 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 and well-qualified sophomores may enroll in a 200-level (senior-graduate) course if they have obtained written consent of the instructor, as well as that of the director of graduate studies in the department concerned. 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 may not register for two courses meeting at the same time. In Trinity College no course may be repeated for credit if a C- or higher has been earned.
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 in the Premajor Advising Center and on the internet at http://pmac-www.aas.duke.edu/lp.html.

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 at least ten courses, including four courses at the 100 level or above in each of at least 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. 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, an annotation of the second major will appear on the transcript. 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 languages, classical studies, comparative area studies, computer science, cultural anthropology, drama, earth and ocean sciences,
Final Examinations and Excused Absences  45

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, visual
arts, and women's studies.

Bachelor of Science. Biological anthropology and anatomy, biology, chemistry,
computer science, earth and ocean sciences, economics, 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). 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 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 or spring semester 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 matricula-
tion to clear the I. Students may not complete work in a course after graduation. Once
recorded, an 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 summer session brochure calendar. 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, 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 sent 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.
**Pass/Fail Option.** With the consent of the instructor and faculty advisor, a student who has declared a major may register 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 the pass/fail option, unless the course is offered only on that basis. Preceptorials, discussion sections, seminars, and tutorials may not be taken on the pass/fail basis, unless the course is offered only on that basis.

After the drop/add period in any term, no changes from pass/fail to regular status, or from regular to pass/fail status, are permitted in any course. A P may not be converted subsequently to a regular letter grade, and the course may not be retaken under the regular grading system.

**Grades When Absent from Final Examination.** See the section on final examination and excused absences in this chapter.

**Effects of Incomplete Work.** For purposes of determining satisfactory progress each term and toward graduation, incomplete work in a course indicated by a grade of I or X is considered a failure to achieve satisfactory performance in that course. Furthermore, an incomplete during the academic year cancels eligibility for semester honors; i.e., Dean’s List and Dean’s List with Distinction. See the section on incomplete work in this chapter.

WP, WF, and W Grades, and WE Designation. WP and WF grades may be issued if a student withdraws from a course after the drop/add period. (See the sections on course changes in this chapter.) W grades are issued if a student withdraws from the university before the last four weeks of regular classes in the fall or spring semester, or before the last two weeks of classes in a regular summer term. (See the section on withdrawal and readmission in this chapter.)

WE indicates correction of an error in registration. It is not a grade.

**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. Moreover, no student may enter the fall semester with more than one incomplete grade from the preceding spring and summer.

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>
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<tr>
<td>6th semester at Duke</td>
<td>19 semester courses at Duke</td>
</tr>
<tr>
<td>7th semester at Duke</td>
<td>22 semester courses at Duke, plus two additional courses*</td>
</tr>
<tr>
<td>8th semester at Duke</td>
<td>26 semester courses at Duke, plus two additional courses*</td>
</tr>
</tbody>
</table>

For students who have interrupted their university studies, the continuation requirement must still be satisfied before the beginning of each fall term. For such students, the number of courses needed to satisfy the continuation requirement is determined from the table above, based on which semester they will enter in the fall term.

Courses taken in the summer term at Duke may be used to meet this requirement; except as noted,* advanced placement may not be used to satisfy it. 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.

*The additional semester courses may be earned through advanced placement and/ or transferred courses.
**Academic Probation.** For a student enrolled in four or more semester courses, the following grades will result in academic probation for the succeeding semester: during the first semester of the freshman year, grades including DD, DF, or FF; during any subsequent semester, grades including DDD, DF or FF (as long as the student has passed three other semester courses); and during two consecutive semesters, grades including DDDD, DDDF, or DDFF. For a student enrolled in an authorized underload (i.e., fewer than four course credits), the following academic performance will result in academic probation: during the first semester of the freshman year, grades of DD or DF; during any subsequent semester, grades including DDD or DF; and during two consecutive semesters, grades including DDDD, DDDF, or DDFF.

The probation status will be reflected on those academic records used for internal purposes only. Students placed on academic probation must acknowledge their probationary status in writing to their academic dean in order to continue in the college. They are also expected to seek assistance from campus resources, have their course selection approved by their academic deans, and meet periodically with them. 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 upperclassman 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 mailed 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 written application and request for a letter of recommendation from their academic dean. 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 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, a student must complete in Trinity College a total of seventeen additional courses. Transfer credit, AP credit, or courses previously used to satisfy requirements for the degree in engineering cannot be counted.

**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 need 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, seniors 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 for academic excellence achieved during each semester. To be eligible for this honor, undergraduates must earn a semester grade point average placing them in the highest one third of undergraduates in their respective college 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 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.

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. In Program II this committee is established by the directors of undergraduate study in the units concerned. Graduation with distinction may be awarded at one of three levels: highest distinction, high distinction, or distinction.

Latin Honors By Overall Academic Achievement accord 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

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 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 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. The total number of persons elected annually is limited by chapter bylaw to 10 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 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. Membership to the national academic honors organization, the Golden Key National Honor Society, is by invitation to the top 15 percent of university juniors and seniors in all fields of study. Chapter activities are service and interaction oriented. All members are encouraged to become active participants. Scholarships are awarded annually. A national network for career assistance is available to members. Inquiries may be directed to 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, 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 academic dean in charge of fellowships, 04 Allen Building. Specific information about deadlines and procedures is available through that office.

Notification of Intention to Graduate

The Diploma Card for students in Trinity College of Arts and Sciences and the 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 file the card on or before established deadlines. For students in Trinity College, the cards, to be filed during the fall registration period, are available in the college record office; in the School of Engineering, 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. 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.

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 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 1983 through the generosity of Louis C. Sudler, Chicago, Illinois.

The David Taggart Clark Prize in Classical Studies. This prize derives from income earned on the generous bequest (1956) of Professor David Taggart Clark, classicist and economist. It is awarded to the senior major in classical studies 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.

**Tommaso Iacovella 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 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, the competition for prose fiction (5,000-word limit) and poetry (200-line limit) is sponsored in the spring semester by the Department of English. Entries are judged by the department’s Committee on Creative Writing; awards range from $200 to $500.
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 Hernstein 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 Tyler, 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. Entries are judged by the Department's Creative Writing Committee.

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

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

SOCIAL SCIENCES

The Winfred Quinton Holton Prize in Primary Education. This prize was 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 to provide a prize for investigative work in primary education. This prize may be made annually. Competition is open to Duke seniors and graduate students who are eligible to obtain certification to teach. A student who wishes to be considered for the prize must submit a paper to be judged by a faculty committee 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 Rankins 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 of Political Science, who have demonstrated excellence in the study of American government and whose past achievements and future promise manifests not only high intellectual attainments, but also an exemplary leadership role in service to Duke University or to the community as broadly defined.

*Alona E. Evans Prize in International Law. An annual award to an undergraduate and/or graduate student in arts and sciences whose paper(s) on international law reflect(s) excellence in scholarship. Substantial money prizes 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. This award is given to qualifying juniors as a scholarship to help defray the costs of participating in the summer internship program.

The Joel Fleishman Distinguished Scholar Award. This award is presented annually by the Sanford 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 shown outstanding performance and scholarship. 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 by the Botany 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 Excellence in Botany Prize. Given each year by the Botany 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 Outstanding Freshman Chemistry Award. A copy of the Chemical Rubber Company’s Handbook of Chemistry and Physics is awarded annually to a freshman 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.

North Carolina Institute of Chemists Award. This prize is awarded annually to a graduating senior who has demonstrated a record of leadership and scholastic achievement and who has shown potential for advancement of the chemical and chemical engineering profession.

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 membership in the American Chemical Society and a one-year subscription to an appropriate journal.

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

The Hypercube Scholar Award. This prize is awarded annually to an outstanding senior chemistry major in the bachelor of science program. Selection, by a faculty committee, is based on the student’s scholastic achievement, performance in independent study, and interest in pursuing advanced work in a field of chemistry 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 potential future success in the earth sciences. The recipient receives a gift and his/her name is engraved, with those of past recipients, on a granite tablet located in the divisional office. The award is sponsored by Andrew J. and Vera Laska in memory of their son, Thomas Vadav Laska.

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

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

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

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 benefited the community of the School of Engineering. The names of the recipients are inscribed on a plaque displayed in the Engineering Building.

The T.C. Heyward Scholarship Award. This award is presented annually to an outstanding senior in mechanical engineering at Duke University. The recipient is chosen by a committee of the mechanical engineering faculty and selection is based on academic excellence, engineering ability, and leadership. The recipient receives a monetary award and his or her name is inscribed on a plaque displayed in the Engineering Building.
The William Brewster Snow Award in Environmental Engineering. This award is presented to an outstanding senior in civil engineering who, through superior academic achievement and extracurricular activities, has demonstrated interest and commitment to environmental engineering as a career. Selection of the recipient is made by the civil engineering faculty. The recipient is presented with an inscribed plaque and his or her name is also inscribed on a plaque permanently displayed in the Engineering Building.

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

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

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

Aubrey E. Palmer Award. This award, established in 1980, is presented annually by the faculty of the Department of Civil and Environmental Engineering to a civil engineering senior in recognition of outstanding 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 Mechanical Engineering and Materials Science Faculty Award. This award is presented annually in recognition of academic excellence to the graduating mechanical engineering senior who has attained the highest level of scholastic achievement in all subjects. The name of the recipient is inscribed on a plaque displayed in the Engineering Building.

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

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

The Sirenna WuDunn Memorial Scholarship Fund. This fund was created by the family and friends of Sirenna WuDunn. An award is made annually to a student who best embodies Sirenna’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.

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

SPORTS

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

The William Senhauser Prize. Given by the mother of William Senhauser in memory of her son, a member of the Class of 1942, who gave his life in the Pacific theater of war on August 4, 1944. This award is made annually to the student in Trinity College of Arts and Sciences or the 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.

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 48), contained in any student records is released to 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.
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 and African culture, Chinese, Japanese, and Korean (language and literature); art history, 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.

**Latin American Studies Program.** The Council on Latin American Studies is charged with the oversight and coordination of undergraduate and graduate education in Latin American Studies, and with the promotion of research and dissemination of knowledge about the region. The council 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 council offer a wide range of courses in the humanities, the social sciences, Portuguese and Spanish. The council also sponsors visiting professors and lecturers from Latin America, a speakers series, conferences, and summer and academic year programs abroad. In addition, the council and the Institute of Latin American Studies at the University of North Carolina-Chapel Hill sponsor the Duke-University of North Carolina Program in Latin American Studies, that includes yearly faculty exchanges of two 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 program coordinator at 2114 Campus Drive, Box 90254, Durham, NC 27708-0254; telephone (919) 681-3980; e-mail: las@acpub.duke.edu; website: http://www.duke.edu/web/elas/index.html.

**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 encourages people to explore each other's lives and their own using photography, filmmaking, writing, oral history, and community service. Programs at the center include teaching, historical research, community-based documentary projects, exhibits, public events and presentations, and publishing. With the tools of documentary work we can look closely at ourselves and others, at our histories, our work and our lives. The center offers a variety of undergraduate courses in the documentary tradition designed to challenge the ways we view and render the world. Offered under the auspices of several academic departments, the undergraduate program is supplemented by short courses and workshops offered in collaboration with Duke University Continuing Education. Other opportunities for involvement with the center include volunteer work with community-based documentary programs, work-study positions, internships, and a limited number of graduate assistantships. For more information about the center and current courses, internships, and volunteer opportunities, see our website at cds.aas.duke.edu or consult Darnell Arnoult, Education and Curriculum Director, Center for Documentary Studies, 1317 West Pettigrew St., Durham, NC, 27705, (919) 660-3657.

**ACADEMIC SKILLS CENTER**

The Academic Skills Center 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 individual conferences with instructors who provide assistance in such areas as time management, reading efficiency, note taking, and preparing 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 Services for Students with Disabilities Program 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.

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. An undergraduate 
certificate program in the arts is offered as well as a one-semester, off-campus residency 
program in New York City 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 was founded in 1965 to conduct 
and coordinate teaching and research in statistics and the application of quantitative 
methods to the study of decision making. The institute offers a wide range of course 
work and consultation in mathematical statistics, statistical modeling, applied statistics, 
statistical computing, decision analysis, and utility theory. Students interested in the 
activities of the institute should consult the institute office, 214 Old Chemistry Building, 
(919) 684-4210.
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 Course 7, 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; email FOCUS@pmac.duke.edu; web page http://pmac-www.aas.duke.edu/focus). In 1998 the following programs were offered: The Arts in Contemporary Society; Changing Faces of Russia: Redefining Boundaries; Computers and Society; Diversity and Identity: Unstable Labels; Environmental Change: Scientific and Social Dimensions; Exploring the Mind; Forging Social Ideals; Globalization and Cultural Changes; Health Care and Society; Medieval Spaces: Cities, Bodies, Monuments, and Spirits; Origins; Twentieth Century America; and Twentieth Century Europe. Similar programs will be offered in the fall of 1999.

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.

Cadets may compete for two- and three-year scholarships. These scholarships pay up to full tuition, books, and a monthly tax-free stipend of $150. 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.

The Army Reserve Officers' Training Corps (AROTC). Army ROTC provides students with an opportunity to earn a commission as a second lieutenant in the U.S. Army, U.S. Army Reserve, or Army National Guard while completing requirements for a baccalaureate degree. Two programs are available, the Basic Course and Advanced Course.

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 April 1 of their sophomore year. There is only one mandatory summer training requirement, Advanced Camp, 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 up to $16,000 yearly towards tuition and fees, a $450 textbook and equipment allowance, and $150 per month for each month in school (up to $1,500 per year). Nonscholarship Advanced Course cadets also receive the $150 monthly stipend. All of the above benefits are tax-free. Participants in Advanced Camp 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 $1,500 a year. Each summer they participate in four weeks of training either aboard ship or at naval shore facilities to augment their academic studies. 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 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.

Approval forms for courses to be taken at these neighboring institutions may be obtained from the offices of the academic deans at Duke. Only those courses not offered at Duke will be approved. 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 student pays any special fees required of students at the host institution and provides transportation.

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 03 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, 660-3356.

LEADERSHIP AND THE ARTS (pending approval for 1999-2000)

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 as many as fifteen operas at the Met and more than that number of plays and musicals, in addition to 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

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 160S—The United States Culture Industries); an internship for credit; 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 Catherine Benamou, faculty director, 681-7446, or Kathy Silbiger, Administrative Director, 660-3356.

**DUKE UNIVERSITY MARINE LABORATORY**
*(Nicholas School of the Environment)*

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 collisions of oceanic currents offshore of the Outer Banks provide excellent opportunities for marine study. A component of the Nicholas School of the Environment, 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 boats 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, Nicholas School of the Environment, Marine Laboratory, 135 Duke Marine Lab Road, Beaufort, North Carolina 28516-9721 (252-504-7502 or email hnearing@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 the policymakers 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 Foreign Academic Programs)**

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. Approved non-Duke programs earn transfer credit. To receive the maximum amount of study abroad 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 British universities for the full academic year can transfer a maximum of eight courses. However, at British 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 generally 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. A leave of
absence from the university is granted for a semester or academic year of approved study abroad. Duke-administered programs do not involve transfer credit and do not require a leave of absence.

A student who wishes to receive transfer credit for study abroad should take into account the following criteria established by the faculty and administered by the 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 or advisors 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.

Transfer credit will be awarded for work satisfactorily completed abroad when the conditions outlined are met.

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 a Study Abroad Advisor. Arrangements are made normally for students to register, while abroad, for the term in which they plan to return. Seniors planning to spend their last 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. Information on these programs are available in the Office of Foreign Academic Programs, 121 Allen Building. The Duke-administered programs are as follows:

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

**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.** In cooperation with Nanjing University and Capital Normal University, Duke conducts a six-month study program in the People's Republic of China in the summer and fall terms. The program includes a fall term at Nanjing University, preceded by an intensive language session in Beijing. Participants must have at least one year of Chinese language.

**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 and Spanish language and Latin American culture. 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 two courses at the 100-level or above with a grade 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 (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 chosen from the regular course offerings of the Free University. One year (fall or year program) or two years (spring program) of college-level German or its equivalent are required.

Italy, Florence. A consortial program offered jointly by Duke, the University of Michigan and the University of Wisconsin. Florence and Italy are the focus of this rigorous 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 five miles from the center of Florence.

Italy, Rome. As the managing 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, Instituto Universitario di Architettura di Venezia, Duke University, Ludwig Maximilians Universität (Munich, Germany), and Universidad Autònoma de Barcelona (Spain). Faculty from all five 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 and earn Duke credits.

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 Department 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 electives from the general university curriculum.

Spain, Madrid. This program offers advanced students a variety of on-site experiences and an opportunity to hear and speak Spanish in an ideal environment. The program offers courses in Spanish history, culture, literature, politics, and arts, as well as several organized excursions. Students are housed with selected Spanish 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. 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 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 and Westfield 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; St. Andrew's University; 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 spring 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. These 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 course work in the subject to be pursued at Oxford is also required. Admission to this program is at the discretion of the University of Oxford.

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 in 121 Allen Building. All Trinity College and School of Engineering students are responsible for following the procedures and meeting the deadlines set forth in materials available in 121 Allen Building. In all cases, the dean of study abroad must be informed in advance about a student's plans.

Duke Summer Programs Abroad

The Office of Foreign Academic Programs, in cooperation with several university departments, provides many opportunities for students to study abroad during the summer while earning Duke University credit. Information about Duke summer programs abroad and about the time they will next be offered can be obtained from the program directors or the Office of Foreign Academic Programs, 121 Allen Building.

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 (AL) (cross-listed with Comparative Area Studies), is taught in English by Professor Hans van Miegroet of Duke, 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 (Belgium). Participants visit numerous Dutch and Belgian cities and museums. Accommodations are in hotels.

Canada. This two-course, six-week program provides a complete immersion in French. This is an exchange program; students receive transfer credit for work successfully completed. Students are placed in one of nine levels of language instruction during the program. Upon return they are tested and then placed in the appropriate Duke level if they intend to continue with French language studies at Duke. Instruction and accommodations are by the University of Québec, Trois Rivières campus.

Costa Rica. This intensive four-week laboratory course in tropical biology blends conceptual issues with fieldwork to provide a rigorous introduction to the theoretical underpinnings of current research and to the great diversity of tropical ecosystems in Costa Rica. In addition, the course introduces major topics of conservation biology and resource management. The language of instruction is English. Students live dormitory-style at biological field stations. The program is co-sponsored by the Organization for Tropical Studies and the Office of Foreign Academic Programs.

Cuba, Havana. This six-week, two-course program involves intensive study of Cuban cultural and social life, as well as investigations of the role of Cuba in the greater historical dynamics of the Americas from the colonial period to the present. The courses are conducted at the Casa de las Américas in Havana. Students are housed in a nearby apartment. Two years of college-level Spanish or the equivalent is 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 (CZ, FL) (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.

Germany, Erlangen. (German Language and Culture Program.) Duke offers two programs at the Friedrich-Alexander Universität at Nürnberg. One 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 Advanced Grammar Review, Composition, and Current Issues (FL) and Aspects of Contemporary German Culture (CZ, FL) (cross-listed with Comparative Area Studies). Two semesters of college German or the equivalent are required. In the other program (early May to the end of July), advanced students may choose from a variety of FAU courses, all taught in German, and remain for a full summer semester (through early August). Semester program students live in dormitories.

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

Greece. A four-week, one-course program in Greece focusing on the cultures of ancient Greece. The course, Ancient Greece (CZ), is taught by Professor John Younger...
of Duke University who is also the program director. The course concentrates on Athens and southern Greece and consists 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.

Israel, Galilee. This two-course, six-week program gives students an opportunity to participate in an archaeological dig. The program is designed to introduce students to the discipline of field archaeology and to the religious, social, and cultural history of ancient Palestine from the Greek period to the Islamic period. The field excavations are located in Galilee at ancient Sepphoris, the administrative capital of that region in the first century C.E. Students register for Perspectives in Archaeology (CZ) and Archaeology and Art of the Biblical World. All courses are taught in English.

Italy, Rome. This one-course, three and one-half 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.
Morocco. This two-course, six-week program offers the opportunity to study North African religion and Moroccan culture in Marrakesh and Fez and at Mohammed V University, Rabat. Courses are taught in English. Field trips are part of the courses. Accommodations are in hotels.

Russian Republic. This program offers two Russian language and culture courses in St. Petersburg. Russian 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.

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. Participants can choose two of the following courses: Spain, Yesterday and Today (CZ, FL); Art and Civilization (CZ, FL); Literature and the Performing Arts (AL, FL); and Government and Politics of Spain (SS). There will also be excursions to Barcelona, Salamanca, Toledo, Segovia, Granada, Seville, and Cordoba. All courses are conducted in Spanish, and students live with Spanish families.

United Kingdom, Cambridge. This two-course, six-week program directed by Duke faculty focuses on various aspects of British life and culture, depending on the interests of the faculty. The courses are taught by a Duke faculty member and guest lecturers. Accommodations are at a Cambridge college. There are frequent weekend excursions.

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 (AL) and Theater in London: Performance (AL). Both courses are taught jointly by Professor John Clum of Duke and a distinguished group of British theater practitioners from London. The group attends many theater productions in London and at 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 (SS), C-L: Comparative Area Studies, taught jointly by Professor David Paletz of Duke University and British faculty members. Optional internships are available. Accommodations are in a dormitory of University College, London.

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 University Life, 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 1999, Duke University will offer a Term II program for academically talented rising high school seniors from across the country. 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 90780, Durham, North Carolina 27701 (919)683-1725.
Student Affairs

The mission of Student Affairs is to create opportunities and challenges for students to broaden their intellectual, spiritual, and emotional horizons; and, in so doing, to engage them with the widest range of persons both within the university and beyond in striving towards a community that fosters social responsibility and reflects the highest aspirations of all its members.

The Division of Student Affairs complements the educational mission of the university by helping to relate many of the nonacademic components of the university to the academic experiences of the students. The residence halls, the athletic fields, the Chapel, 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 university residence halls. After the first year, students may elect to reside in selective and independent residence halls or the Central Campus apartments. Nearly 90 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 and North Campuses and in the Central Campus Apartments. There are two types of residence hall living groups, independent and selective. Independent living group spaces are filled by a general housing lottery. The selective living groups, which include residential fraternities, select their own members. Also included among the selective houses are academically sponsored theme houses such as the Decker Tower Languages House, the Mitchell Tower Arts House, the Round Table, and the
Ann Firor Scott Women's Studies House. Other selective houses include PRISM, a multicultural theme house, and the Women's Selective House (Cleland). Each living group or house is governed by a House Council elected by the group's membership. Within all upperclass houses, except those located in Edens, there are triple as well as single and double rooms.

Central Campus provides another housing option—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, and assignment to any of these areas fulfills the university's four-year housing guarantee to eligible students. Since the 1995-96 academic year, entering students have been required to live on-campus for three years, and after that commitment has been met, they may consider moving off-campus or continue to enjoy their four-year housing guarantee option. 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 Student Development. 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 Student Development staff. 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.

Each house is located within a residential quadrangle, and 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 cocurricular pursuits. All residential students will 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 shall comprise the Campus Council which serves as the governing body to support and provide direction for residential life. A subcommittee of the Campus Council also will serve as an advisory body to the dean of student development, and will seek, through its action, to foster an environment of responsibility, initiative, and creativity on the part of all individual students and groups living in residence.

**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 Student Development, Trinity College of Arts and Sciences, the 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 residually-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 a 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 a wide variety of dining locations by accessing a prepaid account carried on the student identification card, or DukeCard (see ‘Food and Other Expenses’ in the chapter ‘Financial Information’). First-year plans include both board and debit accounts; plans for upperclassmen are debit accounts.

Duke Dining Services provides three cafeterias, nine fast food locations, three restaurants and three coffee bars. Facilities on East Campus include The Marketplace which serves the first-year plan (featuring fresh baked goods, rotisserie roasted meats, steamed vegetables, stir-fry specialties, pizza, pasta grilled sandwiches, and an extensive salad bar) and Trinity Café (gourmet coffee and pastries). West Campus options include The Great Hall (cafeteria), Han’s Fine Chinese Cuisine (restaurant), the Oak Room (restaurant), the Cambridge Inn (featuring Chick-fil-A, Alpine Bagels & Brews, and Fresh Fare to Go), the Rathskellar (Tex-Mex, pasta, and sandwiches), Mean Gene’s Burgers, Le Grande Cafe and The Perk (gourmet coffee and pastries), LSRC Pratt Dining Commons (cafeteria), and fast food outlets, Sanford Institute Deli, J.D.’s, and Cattlemans Subs, Etc. North Campus is home to Grace’s Cafe, and on Central Campus there is Duke’s own sports bar, The Devil’s Den. Additionally, University Catering accepts dining plan funds from individual students or student groups and will provide food and/or catering services for cookouts, study breaks, banquets, parties, or any other campus event. Students may also use the funds in their dining plan 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 local commercial 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. People from all segments of the university and the community gather in Duke Chapel on Sunday morning to worship in a service which offers excellent liturgy, music, and preaching. The world’s outstanding Christian preachers have preached from the Duke Chapel pulpit.

The dean of the Chapel and the director of Religious Life work with the campus ministers and staff from the Roman Catholic, Jewish, 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 Student Development. 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 to plan and present educational and cultural programs within the residence halls.

One hundred thirty-one resident advisors (RAs), staff members of the Office of Student Development, reside in the residence halls and are directly responsible for the
administration of the student residences and their programs. Resident advisors guide and support the efforts of their respective house councils, serve as valuable resources for students with a variety of questions and needs, and enforce university policies when required.

Members of the Office of Student Development staff advise and support a number of residencially-based governing bodies, notably the East Campus Council, the eight quadangle councils, Central Campus Council, and the Campus Council. The office also plans and implements New Student Orientation and coordinates the first-year student advisory counselors (FACs), upper class men and women assigned to small groups of entering students, who, during orientation, welcome their groups and help to acquaint them with the university.

Judicial affairs are handled through the office 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 the student advising system.

The Office of Student Development also works with transfer students and oversees the university's response protocol to student emergencies.

**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 the Department of Community and Family Medicine, Duke University Medical Center.

The primary location for medical care is the Duke Family Medicine Center (Marshall Pickens Building) 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. The infirmary, another Student Health facility, provides inpatient treatment of illnesses too severe to manage in residence halls or apartments, but not requiring hospitalization. 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 treatment of sports-related injuries.

The health education component of Student Health is located at the Healthy Devil Education Center on West Campus. 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.

A list of students in the infirmary is routinely provided to the academic deans, who issue excuses to students when appropriate. However, 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 through the bursar's office.

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 that they are covered by other generally comparable insurance. This waiver statement, contained in the remittance form of the university invoice, requires that the name of the insurance company and policy number be indicated as well as the signature of the student or parent. 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://h-devil-www.mc.duke.edu/ h-devil/, the webpage for student health, where information about hours of operation, available services, and other helpful information is posted. During the academic year they may call 684-3367 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. Seminars have addressed such topics as stress management, social skills development, and dissertation problems.

As Duke's center for administration of national testing programs, CAPS also offers a variety of graduate/professional school admission tests at a fee. The staff is also 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 Development Center.** The mission of the Career Development Center is to provide 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. We seek to develop meaningful partnerships with alumni, faculty, university divisions, employers and other colleges to inform and empower our students and alumni, linking them with career information, employment, and experiential opportunities. The center primarily serves the students and alumni of Trinity College, the School of Engineering, and the Graduate School.

Career counselors are on staff to help students early in their lives at Duke begin the process of discovering career interests. Career specialists then help students focus on specific career fields. They are knowledgeable about the resources of the center and can
help students expedite their research into career possibilities. Career specialists also work closely with the faculty and the deans of Trinity College by referring students whose interest 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 complete the CDC advising system by offering advice from all over the country and overseas 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 are in place to help students gain experience in areas of career interests. The Internship Exchange is a consortium of thirteen universities working together to create a database of more than 10,000 internships. Students can access the database through the CDC web site. The Ventures Internship Program offers semester-long, part-time internships in local area businesses. The Health Careers Internship Program offers experiences at the Duke Medical Center for students exploring careers in medicine and life sciences. The Summer Mentor Program offers shadowing of health professionals. The Service Learning Project offers stipends for summer work in community services. Students develop their own service project and apply for funding. The Hospital School Tutors Program provides teaching experience for those interested in elementary and secondary school and special needs populations.

Orientations to the programs of the CDC 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 CDC 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.

The On-Campus Recruiting Program offers interviews with more than 200 organizations that visit Duke annually to conduct interviews with sophomores and juniors for summer positions and graduating seniors, master’s or doctoral candidates to fill professional positions. The CDC website, http://cdc.staff.duke.edu, provides information 24-hours a day. Students can review bulletins, information about the center, review summer and full-time job listings, and register to participate in center programs including internships and on-campus recruiting. Stay on top of the latest career news and information by subscribing to the electronic mailing lists offered by the CDC. Information is posted about jobs, workshops, and seminars on career specific topics and fields. The Credential Service provides a depository and distribution point for confidential letters of recommendation for those students seeking positions in education. Finally, the Duke Career Fair, the DC Career Expo, the Summer Job Fair, the Conference on Career Choices provide additional opportunities to explore career options in many different fields.

**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 services to survivors of rape, sexual assault, child sexual abuse, or relationship violence and to their friends and families. The S.A.S.S. coordinator coordinates peer support networks, trains groups such as the resident advisors and DARE (Duke Acquaintance Rape Education), and initiates ongoing educational programs to alert students to problems of sexual assault and interpersonal violence. Call the S.A.S.S. coordinator at (919) 684-3897 for more information.

**Services for Students With Disabilities.** Duke University admits students without regard to disability and offers reasonable accommodations to the needs of students with
disabilities. The Office of Institutional Equity has been designated to ensure that the university is in compliance with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act of 1990. Several other offices and individuals assist the office in a continuing effort to make its programs and services accessible to members of the Duke community. Undergraduate students who have special needs, including those related to physical and learning disabilities, may seek disability accommodation through the Academic Skills Center (919) 684-5917.

In the interest of providing appropriate accommodations under the Americans with Disabilities Act, Trinity College and the School of Engineering will accommodate students, who after matriculating, experience a documented health or physical problem resulting in a 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, part-time enrollment will be authorized by the respective student’s academic dean upon the recommendation of the clinical director of the Academic Skills Center. Students so authorized (and for as long as they continue to enroll on a part-time basis) 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. Failure to meet this standard of academic performance will result in the student being withdrawn for academic reasons. Students receiving accommodation under these conditions are eligible for limited financial aid in accordance with federal, state, and university guidelines and may occupy university housing, subject to availability, but cannot be guaranteed on-campus housing. Moreover, they are expected to return to full-time enrollment if their health or physical condition improves sufficiently. For further information regarding this policy, please consult Dr. Kathryn Gustafson, Clinical Director, Academic Skills Center (919) 684-5917.

Offices for Program Planning

The Office of University Life. The Office of University Life helps enhance the climate of the campus through the programming efforts of such organizations as the University Union, the Duke Artists Series, Broadway at Duke, Duke Debate, the Craft Center, and through advising student clubs and organizations. The Bryan Center Information Desk is also under the auspices of this office.

The Office of University Life is responsible for the creation, coordination, and implementation of many of the cultural and popular entertainments which take place on campus. The office is responsible for the Chamber Arts Society Series; it also schedules the use of Page Auditorium and directs the use of this hall. For the Summer Session Office, this office directs the Duke University Summer Festival of the Arts and works with the Institute of the Arts. In addition to these arts-related activities, the Duke University Yearly Calendar is published and distributed from this office. All campus events should be recorded by the calendar office as early as possible in order to avoid conflicts. The office, with the Event Advising Center, serves in an advisory capacity to student groups sponsoring and registering major events.

The Office of University Life also 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, both providing counsel and direct services.
Another responsibility of the Office of University Life is advising the Duke University Union which was founded in 1955 "to promote social, cultural, intellectual, and recreational interaction among all members of the university community in such a way as to complement the educational aims of the university." Operating under a board consisting of undergraduate and graduate students, faculty, administrators, and university employees, the union’s programming committees present a range of programs including touring professional theater, rock, pop, jazz and classical music concerts, film screenings, art exhibits, major speakers, crafts fairs and more constituting over 200 performances and presentations each year. In addition the union operates the on-campus television station (Cable 13), FM radio station (WXDU), a film production program and produces and markets the world’s first annual college video yearbook. The union also operates craft centers on East Campus and West Campus and coordinates planning and operating policies of the Bryan Center. Union programming committees are open to any member of the Duke community.

The Mary Lou Williams Center for Black Culture was dedicated in memory of the "great lady of jazz" and former artist-in-residence whose name it bears. Since its establishment in 1983, the center has served as a significant gathering place on campus where broadly-based issues of social/cultural relevance are addressed to a cross-section of the Duke community. The center sponsors programs that honor black culture (African-American, South American, Caribbean, and African). These programs promote a better understanding of black history and culture. Among past programs have been art exhibits by renowned African-American artists, dance performances, musical performances, African-American film, film seminars, and a number of lecture-discussions on various aspects of the black diaspora. Black visiting artists from South Africa and London have performed in the center.

Over the years, the Mary Lou Williams Center has expanded its programming from focus on the American Black to include all groups which form the category called "black" – African, Brazilian, European, Caribbean as well as other ethnic and cultural groups. This outreach creates new possibilities for multicultural collaboration and appreciation.

The Admissions Office uses the center as a recruitment site for black students. In the past several years, the center has been used increasingly by faculty, student, and employee groups for meetings, receptions, lunches, seminars, and social activities. The atmosphere of the center is designed to inform and create cultural awareness and pride. Visit the website at http://mlw.stuaff.duke.edu.

The Women's Center. Located in 126 Few Fed, 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 3,000 volume feminist lending library; and publishes VOICES, a semestery 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, B ASES (a student-to-student mentoring program for first-year women), GWPN (Graduate and Professional Women’s Network), WISE (Women in Science and Engineering), DARE (Duke Acquaintance Rape Education), 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. Call (919) 684-3897 for more information or visit the center’s website at http://wc.stuaff.duke.edu.

International House. International House serves as the center of co-curricular programs for internationals and U.S. Americans interested in other cultures and peoples. As part of the Division of Student Affairs, 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. In 1998-99, there were approximately 1,173 international students from 95 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; Stress Fest, an outdoor festival held the first Friday of classes which provides the opportunity for students to experience world-wide methods of stress relief (such as massage therapy, tai chi, yoga, acupuncture, and aroma therapy) in addition to learning about campus resources which address stress relief (such as Counseling and Psychological Services, Academic Skills Center, the Healthy Devil, sports and club activities, University Life with its array of cultural opportunities); Friday Coffee Hours (held at noon in the basement of Duke Chapel) 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; and the International Association, a student-run group which sponsors culture nights, trips, sports, teams, and an annual campus-wide International Festival. For more information, contact Carlisle Harvard, Director, (919) 684-3585, Box 90417, Durham, NC 27708 or e-mail: ihouse@duke.edu, or on the web: http://www.ihouse.stuaff.duke.edu/.

Office of Intercultural Affairs. The Office of Intercultural Affairs (OIA) 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 resource on issues of students of color for the university community. Call (919) 684-6756 or visit the web site at http://ica.stuaff.duke.edu/.

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. Call (919) 684-4377 for more information, or visit the center’s website at http://csc.stuaff.duke.edu.

The Center for Lesbian, Gay, Bisexual, and Transgender Life. The mission of the Center for Lesbian, Gay, Bisexual, and Transgender Life (Center for LGBT Life) is to provide education, advocacy, support, and space for lesbian, gay, bisexual, transgender, questioning, and straight-allied students, staff, and faculty at Duke, as well as alumni/ae and members of neighboring communities. The center does not discriminate based on sexual orientation or gender identity. 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, 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 students, faculty, staff, and alumni/ae to challenge intolerance and 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.

The cabinet is responsible for generating ideas and for the coordination of the organization. It consists of the president, five vice-presidents (executive, student affairs, academic affairs, facilities/athletic affairs, and community interaction), the Student Organizations Finance Committee (SOFC) chair, chief of staff, vice president pro-tem, attorney general, chief justice, public relations directors, director of student services, treasurer, and undergraduate computing directors. The cabinet also includes the director of DSG computing, executive legislative secretary, executive cabinet secretary, and headline monitors. The DSG president also has the authority to create temporary (one-term) cabinet positions.

The DSG legislature is composed of 50 representatives selected from the entire student body and divided proportionally according to the population of each undergraduate living area (East, West, Central, and off-campus). Vacant seats are filled by at large representatives without regard to where they reside. Position statements and policies are initiated and debated through this body. Representatives then return to their constituencies to discuss the issues at hand. Within the legislative body, there are four standing committees which focus more closely on specific issues and projects. Every representative is required to participate on at least one standing committee. The SOFC is the only elected committee from the DSG legislature. The SOFC serves as both an appropriations and advisory committee for student-run organizations. It is responsible for presenting recommendations to the legislative body for the allocation of the student activities fee to various chartered student organizations.

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 four 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. Sixteen National Interfraternity Council fraternities and ten National Panhellenic Council sororities are represented on campus as are five fraternities and three 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 governed by the Chronicle board. 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 literature publication (Prometheus Black), a journal of campus opinion (Open Forum), Eruditio, a social science journal, and Blind Spot, a journal of science fiction and horror-inspired creative works published on a regular basis by students. In addition, the Duke Women's Handbook, the Course Evaluation Online, 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. The Duke Engineer, the official student magazine of the School of Engineering, appears twice each year and contains articles on technical and semitechnical topics as well as other matters of interest to the school. VOICES magazine, published by the Women's Center, addresses issues of gender, ethnicity, and sexual orientation. Additionally, there are a number of independent publications on a variety of topics published by students and distributed on campus. WXDU 88.7 FM is the student-managed and programmed radio station, broadcasting to the Duke and Durham communities. Duke 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. The University Union produces Yearbook, Duke's video yearbook.

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-rec 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, 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. The Wilson Recreation Center is scheduled to open on West Campus in the very near future. 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.

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 communication 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 School of Engineering 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 violation of this Code.

I join the undergraduate student body of Duke University in a commitment to this Code of Honor.

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 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 academic 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. Failure to meet these requirements may result in dismissal by the appropriate officer of the university.
Admission
Principles of Selection

James B. Duke, in his Indenture of Trust, requested that "great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination, and application evincing a wholesome and real ambition for life." Therefore, in considering prospective students, Duke University looks beyond the basic characteristics of academic competence possessed by the majority of applicants. It seeks, regardless of race, color, religion, national and ethnic origin, gender, handicap, sexual orientation or 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: Undergraduate Admission 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 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 College Board SAT-I examination or the American College Test (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 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 exam in that language. The SAT-I and SAT-II should be taken by October of the senior year for Early Decision and by January of the senior year for Regular Decision. 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: Undergraduate Admission 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 $60 must accompany the first part of the application. Students who would like to make use of the Common Application are encouraged to do so. The Common Application is generally available in secondary school guidance offices.

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. Area alumni interviews 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 $500.

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 $500 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 collegework 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 a 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. 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 April 1, learn of their decisions by May 1, and respond to the university by June 1 with a nonrefundable deposit of $400, or $500 if housing is requested. 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></th>
<th>Two Summer Terms, 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(one semester equivalent)</td>
</tr>
<tr>
<td>Academic Year, 1999-2000</td>
<td>Two Summer Terms, 1999</td>
</tr>
<tr>
<td></td>
<td>(two semesters)</td>
</tr>
<tr>
<td>Tuition</td>
<td></td>
</tr>
<tr>
<td>Trinity College</td>
<td>$24,040</td>
</tr>
<tr>
<td>Engineering</td>
<td>$24,130</td>
</tr>
<tr>
<td>Residential Fee</td>
<td></td>
</tr>
<tr>
<td>Single Room</td>
<td>$5,022-6,023</td>
</tr>
<tr>
<td>Double Room</td>
<td>$3,788-4,542</td>
</tr>
<tr>
<td>Triple Room</td>
<td>$3,382-4,055</td>
</tr>
<tr>
<td>Food (projections include a meal plan service fee)</td>
<td></td>
</tr>
<tr>
<td>100% board plan</td>
<td>$3,597</td>
</tr>
<tr>
<td>75% board plan</td>
<td>$3,087</td>
</tr>
<tr>
<td>Books and Supplies</td>
<td>$ 775</td>
</tr>
<tr>
<td>Student Health Fee</td>
<td>$ 444</td>
</tr>
<tr>
<td>Recreation Fee†</td>
<td>$ 150</td>
</tr>
<tr>
<td>Residential Program Fee‡</td>
<td>$ 70</td>
</tr>
<tr>
<td></td>
<td>$6,480-7,560</td>
</tr>
<tr>
<td></td>
<td>$6,480-7,560</td>
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<tr>
<td></td>
<td>n/ a</td>
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<td></td>
<td>$996</td>
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<td>n/ a</td>
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<tr>
<td></td>
<td>$1,270</td>
</tr>
<tr>
<td></td>
<td>$ 790</td>
</tr>
<tr>
<td></td>
<td>$ 360</td>
</tr>
<tr>
<td></td>
<td>$ 142</td>
</tr>
</tbody>
</table>

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 $32,830. The budget estimate for the summer (two terms, one semester equivalent) is $9,248. These budgets represent most student living expenses except for cable, telephone, parking, travel costs, and major clothing purchases.

Registration 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 a deposit of $430. The deposit will not be refunded to accepted applicants who fail to matriculate. For those who do matriculate $100 of the deposit serves as a continuing residential deposit for successive semesters, and the remaining $330 serves as a continuing registration deposit.

*The figures in this section are projections and are subject to change.
†This fee applies to students matriculating Fall 1996 and after.
‡This fee applies to students matriculating Fall 1998 and after.
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, $3,005 (engineering, $3,017); half course, $1,503 (engineering, $1,508); quarter course, $751 (engineering, $754). Registration for more than two courses requires payment of full tuition. Graduate students registered for undergraduate courses will be assessed three units for nonlaboratory courses and four units for laboratory courses. Men and women in nondegree programs who are being considered for admission to degree programs, as designated by the Office of Continuing Education, pay fees by the course whether the course load is one, two, or three courses.

Auditing one or more courses without charge is allowed for students paying full fees, provided that the consent of the instructor is obtained. Students who are enrolled for one or two courses may audit other courses by payment of $300 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 Office of the Bursar will issue invoices to registered students for tuition, fees, and other charges approximately four to six weeks prior to the beginning of classes each semester. The total amount due on the invoice is payable by the invoice late payment date which is normally one week prior to the beginning of classes. Inquire at the bursar's office, (919) 684-3531, if an invoice has not been received three weeks prior to the first day of classes, so that payment can be forwarded while a duplicate invoice is issued to document the balance owed. As part of the admission agreement to Duke University, a student is required to pay all invoices as presented. If full payment is not received, a late payment charge as described below will be assessed on the next invoice and certain restrictions as stated below will be applied. Failure to receive an invoice does not warrant exemption from the payment of tuition and fees nor from the penalties and restrictions. Nonregistered students will be required to make payment for tuition, fees, required deposits, and 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 years expenses in ten equal monthly payments from July 1 to April 1. The only cost is an annual, nonrefundable fee of $95. The participation fee can be paid by Visa or Mastercard. Payments may be made by check or by bank draft. Questions regarding this plan should be directed to Tuition Management Services, (800) 722-4867 or (401) 849-1550. At renewal, the plan can be extended to twelve months. The monthly payments can be increased or decreased without additional cost.

Late Payment Charge. If the total amount due on an invoice is not received by the invoice late payment date, the next invoice will show a penalty charge of 1 1/4 percent per month assessed on the past due balance regardless of the number of days past due. The past due balance is defined as the previous balance less any payments and credits received on or before the late payment date which appear on the invoice.

Restrictions. An individual will be in default if the total amount is not paid in full by the due date. A student in default will not be allowed to register for future semesters, to receive a transcript of academic records, 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 $1,710 per semester, or $825 per each
summer session, 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 $1,620 for each 3 semester hour (s.h.) course, $2,160 for each 4 s.h. course, $1,080 for each half course (2 s.h.), and $3,240 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 $71 per term. All students at the Marine Laboratory are required to pay $60 per five-week registration period.

**Music Fee.** A fee of $157 will be charged for Music 81 and 85. A fee of $314 will be charged for Music 91 and 95. A fee of $78 will be charged for Music 79.

**Auditing Fees.** With permission of the instructor, students registered for a full course program (two courses) may audit one nonlaboratory 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 $270 for the course if it is in Arts and Sciences. Professional school course audit policies may differ.

**Payment of Tuition and Fees.** The university does not mail statements in time to meet summer session tuition deadlines. All summer tuition and fees (which students must calculate from the information above) and any past due balance should be paid in the Office of the Bursar (101 Allen Building) at least five full working days prior to the beginning of the term (see Summer Session calendar). Students paying by mail may forward payment to the Office of the Bursar, Box 90035, Duke University, Durham, North Carolina 27708-0035. Students who fail to pay tuition and fees and/or otherwise fail to clear with the bursar by the end of the drop/add period may be withdrawn from their courses. These withdrawn students will be billed the health fee and an administrative withdrawal fee of $150 per course ($75 per half-course) for which they were registered. (See the section on Refunds and Administrative Withdrawal Charges concerning penalties in this chapter). Students who, subsequent to withdrawal, clear with the bursar may, with written permission of their academic dean, be reinstated in their classes as originally registered. The administrative withdrawal fee will stand and the student will be liable for full tuition and fees. Students who are unable to meet these deadlines should consult with the bursar and their academic dean prior to the deadline.

**Transcripts.** Requests for transcripts of academic records should be directed to the associate registrar. Ten days should be allowed for processing. Transcripts may be withheld for an individual whose student loan account is past due.

**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 or December 1 for the spring semester. No formal application is required for auditing. Half-time employees with one or more years of service who receive permission to take such courses will be charged one-half the tuition rate shown above for part-time students during the fall and spring and one-half of the summer tuition rate. 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 will be charged one-tenth the tuition rate for credit course work and will be permitted to audit at no charge. This benefit continues after degree candidacy has been
Living Expenses*

Housing for Fall and Spring. In residence halls for undergraduate students the housing fee for a single room ranges from $5,022 to $6,023 for the academic year; for a double room, the fee ranges from $3,788 to $4,542; for a triple room, the fee ranges from $3,382 to $4,055 per occupant. Apartment rates for upper-class students range from $3,070 to $3,837 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: Department of Housing Management, 218 Alexander Avenue, Apartment B, Durham, North Carolina 27705.

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

The first-year student dining program is a hybrid plan that 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, nine fast food locations, three restaurants, three coffee bars, three convenience stores, concessions at athletic events, sodas and snacks from vending machines, and late night pizza and sub delivery from ten local commercial vendors. The cost of the First Year Plan is $1,205 per semester for the twelve-meal plan plus one of three "points" plans (Plan G-I) which range from $435 to $550. Participation in the First Year Plan is required of all first-year students who reside on East Campus.

Upper-class students who live in the residence halls are required to participate in one of five dining plan debit accounts which allows access to all dining services. The five plan levels (Plan A - Plan E) range from $1,150 to $1,780 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 ($820 per semester).

Nonresident students are not required to participate in the dining plan; however, Plan F at a cost of $395 per semester is offered as an option.

An optional summer dining plan is provided in three plan levels ranging from $160 to $615 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.

* The figures contained in this section are projections and are subject to change prior to the beginning of the fall 1999 semester.
Fall and Spring Refunds

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

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

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

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

The registration deposit will be refunded to students whom the university does not permit to return, who graduate, or who request the refund prior to registration, thereby indicating their intention not to return for the following semester. The registration deposit will not be refunded to students who register for the following semester but fail to enter. Arrangements for refund of the $100 residential deposit are described in the housing contract.

The remaining balance is any registration deposit applicable to a graduated student who did not reside on campus in the semester preceding graduation will be refunded within four weeks following graduation. The remaining balance of both housing and registration deposits applicable to a graduated student who did reside on campus in the semester preceding graduation will be refunded within seven weeks following graduation.

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 (i.e., have scheduled a course through the telephone registration system) 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).

* This policy does not apply to foreign program students.
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 student. 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.

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. A copy of all pages, including schedules and attachments, of both parents' and student’s current federal income tax forms 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 packets 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. Limited financial aid is generally available for each summer session. 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 $3,700 to $6,400 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 these standards will be placed on probation for one semester during which they must maintain a 3.0 average or higher. Failure to maintain a 3.0 average or higher in subsequent semesters will lead to cancellation of the scholarship.

**Angier B. Duke Memorial Scholarships.** The Angier B. Duke Memorial Scholarships, competitively awarded on the basis of academic merit, have been established to encourage the intellectual achievement of men and women by recognizing those who possess outstanding academic and leadership abilities. Candidates are selected on the basis of intellectual performance, creative talent, and promise of being eventual leaders in whatever field of endeavor they choose. The scholarship is a four-year program (eight semesters), and a student’s continuation in the program is contingent upon good academic performance. All 1998-99 freshman scholarship holders received $20,520 if enrolled in Trinity College of Arts and Sciences, and $21,340 if enrolled in the 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 after the junior year. 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 between New York and London. 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.

**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
The Army ROTC Scholarship Program. A number of Army ROTC scholarships are available on a basis of demonstrated need to students who have demonstrated leadership in their local community. Scholarships are available to qualified students who major in most fields, primarily scientific or engineering.

Robert H. Pinnix Scholarships. The Robert H. Pinnix Scholarships are awarded annually to upperclassmen enrolled in the Duke School of Engineering. The awards are based on 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 School of Engineering. The awards are based on academic merit and demonstrated financial need.

The William O’Connor M emorial Scholarship. The William O’Connor Memorial Scholarship is an award of approximately $1,000 to a student of a string instrument or organ.

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 include tuition, fees, and textbook reimbursement, plus a $150 per month tax-free allowance.

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 75 percent of tuition are awarded each year. Scholarships are awarded without regard to academic major; these grants pay a portion of tuition, fees, and textbook/ equipment costs in addition to providing a tax-free monthly stipend of $150 for the balance of the student’s normal period to graduation. Commissioned service, following graduation, can be either on active duty or with the reserve forces as determined by the Secretary of the Army. Additional information concerning Army ROTC scholarships is available from the professor of military science.

Navy ROTC Scholarship Program. This program provides for up to four years’ tuition and textbooks, laboratory fees, and a $100 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.
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 qualifications and a strong interest in his or her Asian cultural heritage.

Emma A. Sheafer Drama Scholarships. These scholarships are awarded to talented prospective drama students who would not be able to attend Duke University without financial assistance. Awards shall be made to a single individual or to several qualified students in need, with first preference to students from the New York metropolitan area. 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 Scholarship Fund. Established by the Duke Endowment to honor Benjamin N. Duke, this fund is intended to encourage the enrollment of students from North Carolina and South Carolina.

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 $75 percent of tuition, are awarded annually.

The Benjamin N. Duke Scholarship Fund also provides a number of grants which replace up to $2,000 of what would normally be the loan portion of need-based awards received by students from North Carolina and South Carolina. This fund can allow need-based aid recipients from the Carolinas to graduate with a significantly reduced debt following the eight standard semesters of enrollment.

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

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 Scholarship. Recipients of these scholarships will receive $1,000 per year without reference to need. If demonstrated need exceeds $1,000, then the scholarship will be adjusted accordingly. 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.

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.

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 $1,600 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 Financial 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 Parent's 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.
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 Duke 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

Courses taught in 1997-98 or in 1998-99 or scheduled for 1999-2000 are included in this chapter with full descriptions. Additional courses, which were offered prior to 1997-98 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 1999-2000, consult the Official Schedule of Courses.

Introductory level courses are numbered below 100; advanced level courses 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.")

Double numbers separated by a hyphen indicate that credit is contingent upon completion of both courses. Double numbers separated by a comma indicate that although the course is a year-long course, credit may be received for either course or both courses.

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 listed.

The following symbols, suffixed course titles, identify the area of knowledge to which a particular course has been assigned in the curriculum; AL, arts and literatures; CZ, civilizations; FL, foreign languages; NS, natural sciences; QR, quantitative reasoning; SS, social sciences.

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.)

Trinity College of Arts and Sciences

Professor Chafe, Dean of the Faculty of Arts and Sciences and Dean of Trinity College; Professor Thompson, Dean of Undergraduate Affairs, Trinity College; Senior Associate Dean for Administration Wilson (Social Sciences); Associate Deans Bryant (Social Sciences), Nijhout (Natural Sciences), Willard (Academic Planning and Special Projects), and Wittig (Humanities); Assistant Deans Gilbert (Summer Sessions), Johns (Study Abroad), Keul (Pre-Majors), Lattimore (Social Sciences), and Singer (Natural Sciences)
Aerospace Studies Air Force ROTC (AS)

Professor Neubauer, Colonel, USAF, Chair; Visiting Assistant Professor Straffin, Captain, USAF, Director of Undergraduate Studies; Visiting Assistant Professor Lass, 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. In addition, each student must take at least one course in mathematical reasoning and English composition prior to graduation/commissioning. 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, officership 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.) Half course. Straffin

2L. Leadership Laboratory. Instruction in drill and ceremonies, wearing the uniform, giving commands, and other leadership activities. Mandatory for all Air Force ROTC cadets. Must be repeated each semester. Pass/fail grading only. Staff

Second Year

51. The Evolution of US Air and Space Power. 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 communication skills. Leadership Laboratory mandatory for AFROTC cadets. (May not be counted to satisfy graduation requirements.) Half course. Straffin

Professional Officer Courses

All students selected to continue in Aerospace Studies must pursue the following courses.

Third Year

105S, 106S. Air Force Leadership and Management. Leadership and management fundamentals, professional knowledge. Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. 105S: training philosophy, counseling/feedback, leadership vs. management, leadership principles and perspectives, effective delegation, and written and verbal communication skills. 106S: 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. One course each. Lass
Fourth Year

205S, 206S. Defense Studies. The national security process, regional studies, advanced leadership ethics, and Air Force doctrine. The military as a profession and current issues affecting military professionalism. 205S: 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. 206S: officership, ethics, military law, Air Force issues, roles and missions, Air Force and joint doctrines, preparation for active duty, and refining communication skills from 205S. Leadership Laboratory mandatory for AFROTC cadets. One course each. Neubauer

COURSES CURRENTLY UNSCHEDULED

49S. First-Year Seminar.

African and African-American Studies (AAS)

Professor Holloway, Director; Professors Gaspar and Payne; Research Professor Giddings; Associate Professors Lubiano and Powell; Assistant Professor Daniels and Piot; 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 courses are essential components of a liberal arts education. Ten courses (including a prerequisite course: Introduction to African and African-American Studies) are required for the major; five are required for the minor. The program encourages study abroad in Africa, available through the Office of Foreign Academic Programs.

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. One course. Staff

51. Introduction to African and African-American Studies. (CZ) A general interdisciplinary study providing 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. One course. Daniels, Lubiano, and Piot

55. Duke-Administered Study Abroad: Special Topics in African and African-American Studies. Topics differ by section. One course. Staff

70, 71. The Third World and the West. (CZ) See C-L: History 75, 76; also C-L: Comparative Area Studies, Latin American Studies, and Perspectives on Marxism and Society. One course each. Staff

74. Introduction to Jazz. (AL) See C-L: Music 74. One course. Jeffrey

90S. Identity in Fiction and Ethnography. (SS) See C-L: Cultural Anthropology 090S; also C-L: Women's Studies. One course. Daniels

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


101. Film and the African Diaspora. (AL, 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. C-L: Film and Video. One course. Daniels and Lubiano


115A. History of Africa: From Antiquity to Early Modern Times. (CZ) Not open to students who have taken the former African and Afro-American Studies 115. See C-L: History 115A; also C-L: Comparative Area Studies, and Women’s Studies. One course. El Hamel or Ewald

115B. History of Africa: From Early Modern Times to Independence. (CZ) Not open to students who have taken the former African and Afro-American Studies 115. See C-L: History 115B; also C-L: Comparative Area Studies, and Women’s Studies. One course. El Hamel or Ewald


117. Black Women and the Civil Rights Movement. (SS) An interdisciplinary examination of the role of African-American women in the modern civil rights movement, including an overview of the movement and its impact on the current political landscape; individual women who were agents of change; and the intersections of race, gender, and class that emerged during this important period of this reform. C-L: Women’s Studies 117. One course. Giddings

120. Egyptian Art and Archaeology. (AL) See C-L: Art History 120; also C-L: Classical Studies 118. One course. Staff

121. Introduction to Asian and African Literature. (AL) See C-L: Asian and African Languages and Literature 121; also C-L: Comparative Area Studies. One course. Staff

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

123. Modernity, Ethnicity, and Colonization. (AL, CZ) See C-L: Romance Studies 124; also C-L: Canadian Studies, Comparative Area Studies, and Cultural Anthropology 130. One course. Mignolo or staff

124S. Slave Society in Colonial Anglo-America: The West Indies, South Carolina, and Virginia. (CZ) See C-L: History 124S; also C-L: Comparative Area Studies. One course. Gaspar

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


133. History of African-American Social Dance Forms of the Twentieth Century. (AL) See C-L: Dance 133. One course. Sommer
135S. Diaspora Literacy: Black Women Novelists of the Third World. (AL)
Contemporary fiction of black women writers from West Africa, the Caribbean, and the United States. Representations of cultural and national identities, patterns of language, figurative representations, and the revisioned histories as structured and framed within imaginative literatures. Issues of colonialism and slavery as background. One course. Holloway

136. Black Intellectual History. (AL, CZ)
An interdisciplinary study examining the ways in which black intellectualism is constructed over the group's history in the United States; some examples of the written and oral output of specific black intellectuals; the terms (social, cultural, and political) under which such output comes into being and comes to be remembered against the larger United States intellectual background. One course. Lubiano

138S. Francophone Literature. (AL, FL)
Prerequisite: good knowledge of French. See C-L: French 168S; also C-L: Asian and African Languages and Literature 168S, Canadian Studies, Comparative Area Studies, and Latin American Studies. One course. Jonassaint

140. Jazz Saxophone Innovators. (AL)
Prerequisite: Music 74 or consent of instructor. See C-L: Music 140. One course. Jeffrey

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

142. African-American Music in the Twentieth Century. (AL)
See C-L: Music 142. One course. Brothers

143. Education, Culture, and Identity. (SS)
See C-L: Cultural Anthropology 143; also C-L: Education 143. One course. Luttrell

145A, 145B. African-American History. (CZ)
See C-L: History 145A, 145B. One course each. Gavins

147. Urban Education. (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. C-L: Education 147. One course. Payne

148A, S. Introduction to Urban Politics. (SS)
See C-L: Political Science 103A. One course. Orr

148B. Urban Poverty and the Urban Underclass. (SS)
See C-L: Political Science 103B. One course. Orr

149. Introduction to African-American Politics. (SS)
See C-L: Political Science 141. One course. Orr

150. Religion and Spirituality in the African Diaspora. (CZ, 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. C-L: Comparative Area Studies, Cultural Anthropology 150, and Religion 160. One course. Daniels

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

152. African-American Religion and Identity. (CZ)
See C-L: Religion 154. One course. Hart

154. Art and Philosophy from West Africa to the Black Americas. (AL)
See C-L: Art History 174; also C-L: Comparative Area Studies. One course. Powell

158A. New Perspectives on the Atlantic World. (CZ) See C-L: History 158A; also C-L: Comparative Area Studies. One course. Ewald


165. History of the Working Class in the United States. (CZ) Not open to students who have taken History 106. See C-L: History 165; also C-L: Perspectives on Marxism and Society. One course. Keyssar

166. History of the Sahara. (CZ) See C-L: History 166; also C-L: Comparative Area Studies. One course. El Hamel


169S. African-American Drama. (AL) Also taught as English 169S. One course. Staff

170. Afro-Brazilian Culture and History. (CZ) See C-L: History 170C; also C-L: Latin American Studies. One course. French

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

172S. Culture Heroes Across Cultures. (AL) See C-L: Distinguished Professor Courses 180S; also C-L: Classical Studies 174S. One course. Davis

173, 174. African-American Literature. (AL) Not open to students who have taken the former English 167, 168. See C-L: English 164A, 164B. One course each. Chandler, Clarke, Holloway, or Wallace

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


190, 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 to juniors and seniors. Consent of both instructor and director of undergraduate studies required. One course each. Holloway

192, 193. Honors Program Sequence. Research for the development of honors thesis. Open only to senior majors. Consent of both instructor and director of undergraduate studies required. One course each. Holloway

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

198S. Senior Seminar. Open to seniors majoring in African and African-American Studies and to others with consent of instructor. One course. Daniels, Lubiano, and Piot

199. Special Topics. Lecture version of African and African-American Studies 199S. One course. Staff
199S. Special Topics. Topics vary from semester to semester. One course. Staff


209S. Race, Class, and Gender in Modern British History. (CZ) See C-L: History 209S; also C-L: Study of Sexualities. One course. Thorne

216S. Gender, Race, and Class. (SS) Consent of instructor required. See C-L: Cultural Anthropology 216S; also C-L: Study of Sexualities, and Women's Studies. One course. Luttrell

235S. The Antebellum South. (CZ) See C-L: History 235S. One course. S. Nathans

241. Classical Islamic Theology and Ethics. (CZ) See C-L: Religion 241; also C-L: Medieval and Renaissance Studies 244. One course. Cornell


269S. Harlem Renaissance. (AL) See C-L: Art History 269S. One course. Powell

270S. Topics in African Art. (AL) Consent of instructor required. See C-L: Art History 270S; also C-L: Comparative Area Studies. One course. Powell

278S. Black Political Participation. (SS) See C-L: Political Science 278S. One course. Orr

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


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

299S. Special Topics. Seminar version of African and African-American Studies 299. One course. Staff

COURSES CURRENTLY UNSCHEDULED

103. North African Culture. (AL)
131S. Comparative Government and Politics: Africa. (SS)
157. Art, Architecture, and Masquerade in Africa. (AL)
161S. Economics of Slavery in the American South. (SS)
164. History and Religions of North Africa. (CZ)
176S. The Southern Plantation as Historical Laboratory: Research Seminar. (CZ)
179. History of South Africa, 1600-1960. (CZ)
195S. Fugitive Slave (Maroon) Communities in New World Slave Societies. (CZ)
196S. Issues in the History of Tropical Africa. (SS)
197S. The Destruction and Aftermath of Slavery in the Americas: A Comparative Perspective. (CZ)
206. Origins of Afro-America. (CZ)
233S. Slave Resistance and Social Control in New World Societies. (CZ)
261. Islam in the African-American Experience. (CZ)
264S. Poverty and Social Policy: Life Course Human Resource Development. (SS)
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
Prerequisite: African and African-American Studies 51.
Major Requirements:
1. Three courses focusing upon the Americas in each of the following areas:
   a. Arts or Literature
   b. History
   c. Social, Religious, Economic, or Political Institutions/ Processes.

B. Africa Focus
Prerequisite: African and African-American Studies 51.
Major Requirements:
1. Three courses focusing upon Africa 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 51, 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.
Arabic
For courses in Arabic, see Asian and African Languages and Literature.

Art and Art History (ARV/ ARH)
Professor Powell, Chair; Associate Professor Stiles, Director of Undergraduate Studies; Professors Bruzelius, Leighten, and Wharton; Associate Professors Antliff, Pratt, and Van Miegroet; Assistant Professors Abe, Rice, and Weisenfeld; Professor Emeritus Markman; Associate Professor of the Practice Shatzman; Assistant Professor of the Practice Noland; Adjunct Assistant Professor Schroth

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

HISTORY OF ART (ARH)
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 art-historical or art 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. Topics vary each semester offered. One course. Staff

52. FOCUS Program Topics in Art History. (AL) Open only to students in the FOCUS Program. One course. Staff

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

69, 70. Introduction to the History of Art. (AL) The history of western architecture, sculpture, and painting in a cultural context. 69: from prehistory to the Renaissance (c. 1400). 70: from the Renaissance to the present. One course each. Staff

69D, 70D. Introduction to the History of Art. (AL) Same as Art History 69, 70 except instruction provided in two lectures and one small discussion meeting each week. One course each. Staff

71. Introduction to Asian Art. (AL) 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. C-L: Comparative Area Studies. One course. Abe

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

97. Visual Culture Outside the United States. I. (AL) Course in the visual arts and/or architecture taught in Duke programs abroad. One course. Staff
98. Visual Culture Outside the United States, II. (AL) See Art History 97. One course.
Staff


120. Egyptian Art and Archaeology, (AL) 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. C-L: African and African-American Studies 120 and Classical Studies 118. One course. Staff


124. Greek Art and Archaeology II: Classical to Greco-Roman. (AL) See C-L: Classical Studies 124. One course. Younger


126B. Roman Architecture. (AL) 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). C-L: Classical Studies 144. One course. Staff

128. Art of the Roman Empire. (AL) Art in the Roman world from Augustus to Theodosius. Emphasis on portraiture, private arts, and triumphal monuments. C-L: Classical Studies 128. One course. Staff

129. The History of Prints and Printmaking. (AL) The art of printmaking from the fifteenth through the eighteenth centuries. The impact of the invention of printing; technical and artistic innovations; the contributions of individual artists from Mantegna to Tiepolo. Firsthand experience of basic printmaking techniques in the studio; study of original works of art on frequent trips to local museums and libraries. Consent of instructor required. C-L: Medieval and Renaissance Studies 129. One course. Rice

130. Late Antique Christian Art. (AL) Art and architecture of the Christian community from the third to the fifth century in the context of the Roman imperial state. C-L: Classical Studies 130, Medieval and Renaissance Studies 130, and Religion 130. One course. Wharton


132. Art of the Late Middle Ages. (AL) Romanesque and Gothic art and architecture from the eleventh to the fourteenth centuries. The artistic impact of monasticism, pilgrimage, the Crusades, and urbanization. The role of ecclesiastic, civic, and courtly patrons. C-L: Medieval and Renaissance Studies 131B. One course. Bruzelius or Wharton

133. Colonial Art of the Andean Region. (AL, FL) 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 ritual and festivals. The rich variety of Andean textiles and weaving techniques. (Taught in Spanish in the Duke in the Andes Program.) C-L: Latin American Studies. One course. Staff
134. Topics in Medieval Art and Architecture. (AL) Specific problems dealing with contextual and cultural issues in medieval art and architecture from c. 300 to 1400. C-L: Medieval and Renaissance Studies 131C. One course. Staff

135. Topics in Italian Art and Architecture. (AL) Topics vary from year to year. Consent of instructor required. (Taught in Italy.) One course. Staff

139. Aspects of Medieval Culture. (CZ) See C-L: Medieval and Renaissance Studies 114; also C-L: Classical Studies 139, and History 116. One course. Rasmussen, Solterer, or Witt

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


143. The Art of the Counter Reformation. (AL) 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. C-L: Medieval and Renaissance Studies 143. One course. Rice

144. Renaissance and Baroque Art History. (AL) Introduction to the development of painting, sculpture, and architecture in Rome from the fifteenth to the early seventeenth centuries, focusing on the patronage of the Popes and the Papal court. Consent required. Taught at the Intercollegiate Center for Classical Studies in Rome. C-L: Medieval and Renaissance Studies 144B. One course. Staff

145. Renaissance Art in Florence. (AL) Paintings, sculpture, and architecture from Giotto to Michelangelo based on the works of art preserved in Florence. Emphasis on individual artists and their creations and on the relation of the artists to the society of their times. (Taught in Italy.) C-L: Medieval and Renaissance Studies 145B. One course. Staff


148. Art of the Netherlands in the Fifteenth Century. (AL) 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. C-L: Medieval and Renaissance Studies 148A. One course. Van Miegroet

149. Aspects of Renaissance Culture. (AL, CZ) See C-L: Medieval and Renaissance Studies 115; also C-L: History 148A, and Italian 125. One course. Finucci, Rasmussen, Rice, Van Miegroet or Witt

150. Italian Baroque Architecture. (AL) Architecture in Italy in the seventeenth and eighteenth centuries. Emphasis on the contributions of Bernini, Borromini, Cortona, Guarini, and Juvarra. 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. C-L: Medieval and Renaissance Studies 150. One course. Rice

151. Art of Italy in the Seventeenth Century. (AL) Caravaggio, the Carracci, Guido Reni, Domenichino, Bernini, and Poussin. Modes of description and narration; the concern with the status of pictorial representation; and the attempts to define and retrieve the canonical achievements of the early sixteenth century. C-L: Comparative Area Studies and Medieval and Renaissance Studies 151C. One course. Rice

152. Art of the Netherlands in the Sixteenth Century. (AL) Painting in Antwerp and the Spanish Netherlands in a period of political turbulence (Reformation, Counter-Reformation); Pieter Bruegel, Frans Floris, Hendrick Goltzius; landscape painters and the exiles at Frankenthal; Flemish painters at the court of Rudolph II in Prague; art and politics in Flanders, Brabant, and Holland. C-L: Comparative Area Studies and Medieval and Renaissance Studies 152A. One course. Van Miegroet

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

154. German Art in the Fifteenth and Sixteenth Centuries. (AL) An examination of German art, including Stefan Lochner, Konrad Witz, Albrecht Dürer, and Hans Holbein the Younger; the significance of the Councils of Konstanz and Basel; the revolutionary impact of the printing press. New trends in sculpture, including the relatively unknown wood carvings created in Nuremberg between 1475 and 1515. C-L: Comparative Area Studies and Medieval and Renaissance Studies 154A. One course. Van Miegroet

155. Mercantile Culture and Art in the Netherlands. (CZ) The mercantile culture and its relationship with art and the occupation of artist in the Netherlands (fifteenth-seventeenth centuries). The economy of towns, the artist's social position, the place of art in the local economy, and the connections between economic well being and the emergence of art as asset. Commercial evolution: institutions (markets, banks, stock exchanges), instruments (for example, the bill of exchange), and attendant conditions (risk, speculations, panics). The peculiarities of picturing, the role of art as moveable product, liquidity and store of value. Prerequisites: Art History 70 and consent of instructor. C-L: Comparative Area Studies, Economics 152, and Medieval and Renaissance Studies 154B. One course. De Marchi and Van Miegroet

156. French Art and Visual Culture in the Early Modern Period. (AL) French culture, history, and art of the early modern within its intellectual, religious, and socioeconomic frame. Court cultures at Fontainebleau (sixteenth century) and Versailles (seventeenth-eighteenth centuries); urban culture, especially Paris, and its salon, academic, and theatrical culture. Detailed study of import and export of art, consumer behavior, art theories, and critical issues of ion and transformation after the founding of academies. Students proficient in French will be encouraged to do some of the reading in French. One course. Van Miegroet


160. Duke-Administered Study Abroad: Advanced Special Topics in Art History. (AL) Topics differ by section. One course. Staff
162. **American Art from Colonial Times to 1900. (AL)** The development of a national school of portraiture, history painting, landscape, genre scenes, and still-life. Major figures include Copley, Bingham, Cole, Church, Whistler, and Eakins. One course. Powell

163. **Twentieth-Century American Art: Nationality and Identity. (AL)** Survey of 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. One course. Powell

164. **Early Chinese Art. (AL)** Chinese art from the earliest times to the third century C.E. Emphasis on the cultural and historical contexts of ceramics, cast-bronze vessels, sculpture, and painting. Special attention to new archaeological discoveries in China. C-L: Comparative Area Studies. One course. Abe

165. **Introduction to Israeli Culture. (AL, CZ)** See C-L: Asian and African Languages and Literature 155; also C-L: Comparative Area Studies. One course. Zakim

166. **Nineteenth-Century Art after 1848: Early Modernism. (AL)** A survey of the second half of the nineteenth century in Europe with particular emphasis on realism, impressionism, postimpressionism, and symbolism. C-L: Comparative Area Studies. One course. Antliff or Leighten


168. **Art since 1945: Modernism and Postmodernism. (AL)** Major artistic movements and theory in Europe and the United States after World War II: abstract expressionism, color field, pop art, minimal art, Arte Povera, process, conceptual, and performance art, earthworks, photo-realism, neo-expressionism, and appropriation. C-L: Comparative Area Studies, Perspectives on Marxism and Society, and Women’s Studies. One course. Leighten or Stiles

169. **Documentary Photography and Social Activism in the Nuclear Age. (AL)** 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. C-L: Comparative Area Studies and Film and Video. One course. Stiles

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

172. **Topics in Asian Art. (AL)** Examples of the visual arts of China and Japan organized around a single theme or genre such as painting, Buddhist art, or cinema. C-L: Comparative Area Studies. One course. Abe

174. **Art and Philosophy from West Africa to the Black Americas. (AL)** A survey of several major cultural groups in West and Central Africa and their impact on the arts,

175. Art and Material Culture of the Southern United States. (AL) A survey of works of art created in the southern United States and made by artists from the South. Focus on probing of the idea of "southerness," as gleaned from European travelers/observers, northern United States commentators, and inhabitants of the southern United States themselves. Special attention given to material culture, vernacular art forms, site-specific creations, and works that address regional identity (inclusive of racial, ethnic, religious, and gendered notions of self). One course. Powell


179. The History of Performance Art. (AL) 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. C-L: Comparative Area Studies, Drama 179, and Women's Studies. One course. Stiles


180B. History of Japanese Art II: Early Modern to the Present. (AL) Survey of 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 as a nation of international stature. Painting, sculpture, architecture, ceramics, decorative arts, and print media. The relationship between artistic production and Japanese society; issues of religion, region, race, gender, class, and nationalism. C-L: Comparative Area Studies. One course. Weisenfeld


183. Etruscan Art and Architecture. (AL) 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. C-L: Classical Studies. One course. Staff


187. Surrealism. (AL) The origins, aims, literature, and politics of the international movement of surrealism, which flourished between the world wars, examined in the
context of surrealist theory. The psychoanalytic and metaphysical sources of surrealist poetry and visual representations as reflecting a utopian ideology of liberation. C-L: Women's Studies. One course. Leighten or Stiles

189. Modern and Postmodern Architecture. (AL) The history of architecture from nineteenth-century Beaux-Arts classicism through art nouveau and the modern movement to postmodernism. Political and ideological as well as the formal and technical aspects of building investigated through primary texts. C-L: Perspectives on Marxism and Society. One course. Wharton

190. Berlin: Architecture and the City, 1871-1990. (AL, CZ) 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 historicism to postmodernism. (Taught only in the Duke-in-Berlin Program.) C-L: Comparative Area Studies. One course. Neckenig

191, 192. Independent Study. Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to qualified students in the junior year, by consent of director of undergraduate studies. One course each. Staff

197. Gendering Modernism. (AL) 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. One course. Antliff

198. Cubism and Culture. (AL) 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 role of gender, the anarchist. Themes will be further contextualized in light of contemporary debates, encompassing Marxist, feminist, structuralist, and Bakhtinian approaches to the subject. One course. Antliff or Leighten

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

For Seniors and Graduates

201S. Topics in Greek Art. (AL) Specific aspects of the art or architecture in the Greek world from the late Geometric to the Hellenistic periods. Subject varies from year to year. Consent of instructor required. C-L: Classical Studies 220S. One course. Staff
2025. Topics in Roman Art. (AL) Selected topics in the art and architecture of late republican and imperial Rome. Subject varies from year to year. Consent of instructor required. C-L: Classical Studies 227S. One course. Staff

205S. Greek Architecture. (AL) See C-L: Classical Studies 233S. One course. Richardson or Younger

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

218S. Topics in Islamic Art and Architecture. (AL) Subject varies from year to year. Consent of instructor required. One course. Staff

227S. Roman Painting. (AL) See C-L: Classical Studies 236S. One course. Richardson

233S. Topics in Early Christian and Byzantine Art. (AL) Specific conceptual, institutional, or formal problems in the art of the late antique world or of the east Roman Empire. Subject varies from year to year. Consent of instructor required. C-L: Classical Studies 230S, Medieval and Renaissance Studies 233S, and Religion 275S. One course. Wharton

236S. Topics in Romanesque and Gothic Art and Architecture. (AL) Analysis of an individual topic. Subject varies from year to year. Consent of instructor required. C-L: Medieval and Renaissance Studies 237S. One course. Bruzelius

237S. Greek Painting. (AL) See C-L: Classical Studies 232S. One course. Stanley

238S. Greek Sculpture. (AL) See C-L: Classical Studies 231S. One course. Younger

241-242. History of Netherlandish Art and Visual Culture in a European Context. (AL) 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. C-L: Comparative Area Studies and Medieval and Renaissance Studies 241, 242. Two courses. Van Miegroet

243S. Topics in Netherlandish and German Art. (AL) 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. C-L: Comparative Area Studies and Medieval and Renaissance Studies 243S. One course. Van Miegroet

247S. Topics in Italian Renaissance Art. (AL) Specific problems dealing with iconography, style, or an individual master from c. 1300 to 1600. Subject varies from year to year. Consent of instructor required. C-L: Medieval and Renaissance Studies 248S. One course. Rice

257S. Topics in Pre-Columbian Art and Culture. (AL) 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. C-L: Comparative Area Studies. One course. Staff

260S. Topics in Italian Baroque Art. (AL) Problems in Italian art and architecture from c. 1580 to c. 1750. Topics vary from year to year. Consent of instructor required. C-L: Medieval and Renaissance Studies 261S. One course. Rice
2655. **Topics in Nineteenth-Century Art. (AL)** Focus on a major artist, movement, or trend in nineteenth-century art. Subject varies from year to year. Consent of instructor required. One course. Antliff or Leighten.

2685. **Black Visual Theory. (AL)** Approaches to studying and theorizing African diasporal arts and black subjectivity in art history, 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. One course. Powell.

2695. **Harlem Renaissance. (AL)** 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. C-L: African and African-American Studies 269S. One course. Powell.


2715. **Topics in the United States. (AL)** Selected topics from colonial times to 1945, with emphasis on major cultural issues, movements, works, and/or artists. Consent of instructor required. One course. Powell.

2725. **Topics in Chinese Art. (AL)** Problems and issues in a specific period or genre of Chinese art. Specific focus varies from year to year. C-L: Comparative Area Studies. One course. Abe.

2745. **Topics in Japanese Art. (AL)** Problems and issues in a specific period or genre of Japanese art. Specific focus varies from year to year. Consent of instructor required. C-L: Comparative Area Studies. One course. Weisenfeld.

2835. **Topics in Modern Art. (AL)** Selected themes in modern art before 1945, with emphasis on major movements or masters. Subject varies from year to year. Consent of instructor required. C-L: Comparative Area Studies. One course. Antliff, Leighten, or Stiles.

288. **Special Topics. (AL)** Subjects, areas, or themes that embrace a range of disciplines or art historical areas. One course. Staff.

291, 292. **Independent Study/Special Problems in Art History.** 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. One course each. Staff.

2965. **Methodology of Art History. (AL)** Approaches to the study and theory of art: historiography, connoisseurship, iconology, and criticism. Consent of instructor required. One course. Staff.

2975. **Topics in Art since 1945. (AL)** Historical and critical principles applied to present-day artists and/or movements in all media since World War II. Consent of instructor required. C-L: Comparative Area Studies. One course. Stiles.

2985. **Topics in Modern and Postmodern Architecture. (AL)** The study of particular architects, movements, or building genres in their conceptual and political contexts.
Subject varies from year to year. Consent of instructor required. C-L: Comparative Area Studies. One course. Wharton

299S. Critical Theory. (AL) 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. One course. Stiles or staff

Courses Currently Unscheduled

100. Art and Architecture of Vienna. (AL)
117. Pompeii. (CZ)
137. Roman and Non-Roman in Ancient Italy. (CZ)
147. Byzantine and Ottoman Art and Architecture in the City of Constantinople/Istanbul. (CZ)
171. Chinese Painting. (AL)
173. Art, Architecture, and Masquerade in Africa. (AL)
177. The History of Conceptual Art. (AL)
178. Pre-Columbian Art and Architecture. (AL)
186. Feminism in Twentieth-Century Art. (AL)
206S. Roman Architecture. (AL)
244A, S. International Expressionism. (AL)
244B, S. International Modernism. (AL)

VISUAL ARTS (ARV)

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. Topics vary each semester offered. One course. Staff

53. Drawing. (AL) 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 artist's work, and with frequent individual and group critiques. Consent of instructor required. One course. Staff

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

60. Duke-Administered Study Abroad: Special Projects in Visual Arts. (AL) Projects differ by section. One course. Staff

101. Book Illustration. (AL) Studio course examining all aspects of bookmaking, including theories of bookmaking, designing and planning, typography, computer design, illustration, and binding. Prerequisites: Visual Arts 53 and consent of instructor. One course. Shatzman
102. Figure Drawing. (AL) The human figure through different artistic media and from different visual perspectives. Prerequisites: Visual Arts 53 and 54, and consent of instructor based on portfolio. One course. Staff

103. Graphic Design: Community Projects. (AL) Application of principles of graphic design, color, typography, and layout to create products serving a promotional purpose. Students 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. One course. Shatzman

104. Introduction to Graphic Design: The Printed Page. (AL) Typesetting and page layout on the computer; study of the aesthetic principles of working with type and images on the printed page. One course. Staff

105. Intermediate Drawing. (AL) 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. One course. Pratt or staff

110. Sculpture. (AL) Sculptural principles, processes, and issues introduced through lectures, readings, studio assignments, individual projects, and field trips. Consent of instructor required. One course. Noland

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

116. Photography. (AL) 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. C-L: Film and Video. One course. Noland

118S. American Communities: A Photographic Approach. (AL, SS) Consent of instructor required. See C-L: Public Policy Studies 176S; also C-L: Film and Video. One course. Harris or Sartor

119S. Advanced Documentary Photography. (AL, SS) Prerequisite: Visual Arts 118S, Public Policy Studies 176S, or consent of instructor. See C-L: Public Policy Studies 177S; also C-L: Film and Video. One course. Harris

120. Painting. (AL) 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. One course. Pratt

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

130. Printmaking: Silkscreen. (AL) Investigation of the silkscreen medium and its stencil-making processes including paper stencils, blockouts crayon, and photographic methods. Prerequisites: Visual Arts 53, 54 and consent of instructor. One course. Shatzman

131. Printmaking: Lithography. (AL) Introduction to stonelithography and its drawing and printing methods. Includes both black and white and color printing. Prerequisites: Visual Arts 53, 54 and consent of instructor. One course. Shatzman

132. Printmaking: Relief and Monotype. (AL) Relief methods of woodcut and linoleum block printing and monotype techniques. Concentration on both the technical and historical aspects of the media and its expressive potentials. Prerequisites: Visual Arts 53, 54 and consent of instructor. One course. Shatzman
133. Printmaking: Intaglio. (AL) Directed problems in the intaglio medium including etching, aquatint, drypoint, black and white and color printing methods. Prerequisites: Visual Arts 53, 54 and consent of instructor. One course. Shatzman

143. Architecture. (AL) 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. One course. Staff

145. Public Art and Private Concerns. (AL) 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. One course. Pratt


165S. Film Animation Production. (AL) See C-L: Film and Video 102S. One course. Burns

178. Doing Documentary Work. (AL, SS) See C-L: Public Policy Studies 178; also C-L: English 171, and History 150C. One course. Coles and Harris

For Seniors and Graduates

200S. Theory of Design. (AL) 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. One course. Pratt

205. Advanced Drawing. (AL) 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. One course. Pratt

210. Advanced Sculpture. (AL) Studio practice in sculpture at the advanced level. Group and individual discussion and critique. Prerequisites: Visual Arts 110, and 111, or consent of instructor. One course. Noland

217, 218. Individual Project. (AL) Independent work open to highly qualified juniors and seniors on recommendation of instructor and invitation of department. One course each. Staff

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

230. Advanced Printmaking. (AL) Emphasis on the visual and conceptual development through experimentation and practice in printmaking in the student's medium of choice. Prerequisites: Visual Arts 53, 54, 130, 131, 133, and consent of instructor. One course. Shatzman

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, Oriental). 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 (ARH) 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 (ARH) 141, Fifteenth Century Italian Art, is a logical preparation for Art History (ARH) 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 (ARV) 53 and either Visual Arts (ARV) 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 (ARV) requires at least ten courses. These include: two lower level courses, Visual Arts (ARV) 53 (Drawing) and Visual Arts (ARV) 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 2005 (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 (ARV) 53 (Drawing) and Art History (ARH) 69, 70 or 71 (Survey 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 (ARV) 2005 (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 (AI)

A certificate, but not a major, is available in this program. The Institute of the Arts administers an undergraduate certificate program in the Integrated 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.

INTEGRATED ARTS CERTIFICATE

The Integrated Arts Certificate is designed to give students a meaningful relationship to art through a dual focus on theory and practice, emphasizing experience in the process of making creative decisions and an understanding of the traditions against which individual expression is played out. An interdisciplinary approach permits exploration of the elements that are present in all art creation and reception: the artist, artists' media, artwork, and audience. The certificate requires six courses, beginning with a foundation course (Institute of the Arts 100), team-taught by artist-faculty from three different disciplines, that combines master classes in lecture format with a studio component (lab) consisting of actual performance work in the different disciplines. Following the foundation course, students may elect three practical arts courses from a list of approved courses in Dance, Drama, English, Film and Video, Music, and Visual Art. Two capstone courses are required: a seminar in the history of aesthetics (Literature 182), and an interdisciplinary creative/ performance seminar (Institute of the Arts 130S).

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: two seminars, Institute of the Arts 101S and 103S; an arts internship, Institute of the Arts 102; and an elective course at New York University.

INSTITUTE OF THE ARTS (AI)

100. Art and Its Making. (AL) The foundational course of the Integrated Arts Program acquainting students with the common concerns in the arts (creative writing, dance, drama, film/ video, music, visual arts) utilizing the analytic paradigm of artist/ media/ artwork/ audience to understand the creative process. Three units, each devoted to one of the arts—creative writing, dance, drama, music, or visual arts—culminating in a final synthesis in which issues common to all the arts, and those separating them, can be meaningfully explored. Faculty includes Dickinson, Dunn, Lentricchia, McAuliffe, Moreno, Noland, Pérez-Firmat, Stiles, and Taliaferro. One course. Staff

1015. Arts Resources in New York. (AL) Investigation of a central theme through attendance at selected art events in the New York area supplemented by discussions, critical papers, and reports. Visiting Duke faculty members and New York practitioners in the arts provide guest lectures and lead discussions. Open only to those admitted to the Duke in New York Arts Program. One course. Staff
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. One course. Staff

103S. **Arts Production, Promotion, and Presentation in New York.** (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. One course. Staff

130S. **Interdisciplinary Arts: Performance Seminar.** (AL) Culmination of the experiences and study of the previous courses in the Integrated Arts Program. An interactive seminar taught by one faculty artist and one faculty advisor (from two different disciplines). Creation of a final presentation integrating creative writing, dance, drama, film/video, music, and visual art and examination of its design, direction, and production outside conventional institutional boundaries. The students work as an ensemble to create a mixed-media presentation, stimulated by an initial theme or artwork, and incorporating the talents and interests of participating students and faculty (including Dickinson, Dunn, McAuliffe, Noland, Pratt, Stiles, Storer, Raimi, Taliaferro, and E. Wilson). Prerequisites: Institute of the Arts 100 and two practical arts courses from two different disciplines. One course. Staff

150. **Managing the Arts—Theory and Practice.** (AL) Principles and practices of management in the nonprofit arts arena, including marketing, fundraising, budgeting, curating, and current issues and challenges in arts policy and arts education. Course includes a practicum with a local arts organization. Not open to first-year students. C-L: Dance 150. One course. Silbiger

180, 181. **Special Topics.** (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. Half course, one course, respectively. Variable credit. Staff

191, 192. **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. One course each. Staff

**COURSES CURRENTLY UNSCHEDULED**

122. **The Arts in Contemporary Culture.** (AL) Asian and African Languages and Literature (AAL)

Professor Cooke, Director; Associate Professor of the Practice Khanna, Director of Undergraduate Studies; Associate Professor Wang; Assistant Professors Ching, Yoda, and Zakim; Assistant Professors of the Practice Cornell, Endo, Lee and Kim; Lecturers Natavar and Yaol; Instructor Uno; Affiliated faculty: Professor Lawrence (religion); Associate Professor Cornell (religion); Assistant Professor Jonassaint (romance studies)
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 (AAL)**

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

**50. Duke-Administered Study Abroad: Special Topics in Asian and African Languages and Literature.** Topics differ by section. One course. Staff

**100. Duke-Administered Study Abroad: Advanced Special Topics in Asian and African Languages and Literature.** Topics differ by section. One course. Staff

**121. Introduction to Asian and African Literature. (AL)** An exploration of the ways in which different societies in Asia and Africa encourage particular constructions of self, sexuality, and purposeful life in literature and film. C-L: African and African-American Studies 121 and Comparative Area Studies. One course. Staff

**137. Contemporary Culture in South Asia. (AL, CZ)** Everyday life in Indian cities and villages as represented in popular and intellectual media. Perspectives on cinema, television, and radio along with more traditional media. The fiction of Mohan Rakesh, the poetry of Muktibodh, the cinema of Aravindan and Satyajit Ray, the great Indian epics on Indian television. Taught in English. C-L: Comparative Area Studies. One course. Khanna


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

**155. Introduction to Israeli Culture. (AL, CZ)** The examination of contemporary Israeli culture through art, film, architecture, and literature. Concentration on interdisciplinary critical approaches to culture; interconnections of culture and Zionist ideology in the Israeli projection of the nation. C-L: Art History 165 and Comparative Area Studies. One course. Zakim

**160, 161. Introduction to the Civilizations of Southern Asia. (CZ)** The literary, historic, linguistic, and ethnic diversity of South Asia presented through both readings and contemporary films. Not open to students who have taken Religion 160, 161. C-L: Comparative Area Studies, Cultural Anthropology 101, 102, History 193, 194, and Religion 144, 145. One course each. Staff

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

**163. Korean Literature in Translation. (AL)** 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. C-L: Comparative Area Studies. One course. Staff

167. **Asian Art and Theater. (AL)** See C-L: Drama 167. One course. Staff


171. **Japanese Cinema. (AL, CZ)** An introduction to the history of Japanese cinema focusing on issues including the relation between the tradition-modernity or Japan-West in the development of Japanese cinema, the influence of Japanese films on the theory and practice of cinema abroad, and the ways in which cinema has served as a reflection of and an active agent in the transformation of Japanese society. C-L: Film and Video. One course. Yoda

180S. **Intellectuals/Culture/History: Modern China in Transition. (AL, CZ)** 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, thereligion of neo-nationalism and new conservatism; and state sponsorship and the new meanings of "culture as leisure." C-L: Comparative Area Studies. One course. Staff

183S. **Modern Hebrew Literature in English Translation. (AL)** Topics in the critical study of Hebrew literature and Israeli culture. Emphasis on developing analytical skills within a broad range of critical theories. Close readings of cultural production tied to theoretical inquiries of nationalism, marginality, ideology, each year concentrating on a particular set of theoretical issues. C-L: Comparative Area Studies and Judaic Studies. One course. Zakim

188. **The Politics of Women's Liberation in the Arab World. (CZ)** A multidisciplinary study combining the sexual with the political, religion with history, economics with culture, women's health with ethics. Specific characteristics, tendencies; relations with the state and political parties; interests it shares with women in the South and North. The changes in the situation of Arab women resulting from the new world order. C-L: Comparative Area Studies and Women's Studies. One course. Staff

190. **Women in Islam: Fact and Fiction. (CZ)** 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. C-L: African and African-American Studies 160, Comparative Area Studies, Religion 139, and Women's Studies. One course. Cooke

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. One course. Staff

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

197S. **Studies in Asian and African Literature.** Topics vary each semester. One course. Staff

198. **Special Topics in Music and Culture. (AL, CZ)** Focus will be on historical developments, important instruments and genres, and cultural contents for musical performance, preservation, and adaptation. One course. Kramer or staff

200S. **Seminar in Asian and African Cultural Studies. (CZ)** Concentration on a theoretical problem or set of issues germane to the study of Asian and African cultures.

250S. Chinese Modernism in Post-Mao Era. (AL) 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.) One course. Wang

252. Special Topics in Asian and African Literature. (AL) Topics vary each semester. One course. Staff

253. East Asian Cultural Studies. (AL, CZ) 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.) C-L: Comparative Area Studies and Cultural Anthropology 254. One course.

259. The Bestseller: Cultural Populism in the 1990s China. (AL) The bestseller culture industry in post-Mao China. Topics include the classification of the high, low, and middle brow cultures of the bestseller, the publishing industry's response to the issues of subcultures, consumerism, and the post-Mao social imaginary, the consumption of politics, and tabooed subjects. C-L: Comparative Area Studies, Cultural Anthropology 263, and Literature 279. One course. Wang

262. Modern Japanese Literature and Culture. (AL, CZ) 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.) C-L: Comparative Area Studies and Cultural Anthropology 260. One course. Ching or Yoda

280S. Intellectuals/Culture/History: Modern China in Transition. (AL, CZ) 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." (Same as Asian and African Languages and Literature 180S but requires extra assignments.) One course.

288S. Seminar on Modern Chinese Cinema. (CZ, FL) 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.) Prerequisites: Chinese 184S or advanced oral and written proficiency in Mandarin Chinese. C-L: Comparative Area Studies. One course. Wang

Courses Currently Unscheduled

72. War, Gender, and Postcoloniality. (AL)
138. The Media in Modern India. (CZ, SS)
148S. Literature and Revolution: From the May Fourth to the Post-Mao Era. (AL)
149. Women and Modernity: Gender Issues in Twentieth-Century Chinese Literature and Film. (AL)
164. Premodern Japanese Literature. (AL)
172S. South Asia in Poetry. (AL)
173S. Women in Arab Literature. (AL)
177. South Asian Women's Literature. (AL)
199. Asian and African Languages and Literature Honors Seminar.  
203S. Gender and War. (CZ)  
207S. Against Textual Hegemony: Voicing Theory from the Margins. (AL)

ARABIC (ARB)

1, 2. Elementary Arabic. (FL) Understanding, speaking, reading, and writing modern standard Arabic. Language laboratory. One course each. Cornell

63, 64. Intermediate Arabic. (FL) Reading, composition, and conversation in modern standard Arabic. Readings include selections from the Qur'an, contemporary literature, and the Arabic press. One course each. Cornell

101. Duke-Administered Study Abroad: Advanced Special Topics in Arabic. Topics differ by section. One course. Staff

125, 126. Advanced Arabic. (AL, 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. C-L: Comparative Area Studies. One course each. Cooke

137. Qur'anic Studies. (AL, FL) Introduction to the reading, recitation, grammatical study, and exegesis of selected Qur'anic texts. Prerequisite: Arabic 63, 64 or consent of instructor. C-L: Comparative Area Studies. One course. Cornell

183, 184. Topics in Arabic. (AL, FL) Readings and other material, including films, television, and radio broadcasts. Exercises in composition. Prerequisite: Arabic 126 or consent of instructor. C-L: Comparative Area Studies. One course each. Cooke

191, 192. 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. One course each. Cooke or Cornell

Courses Currently Unscheduled

100. North African Culture. (AL)

CHINESE (CHN)

1, 2. Elementary Chinese. (FL) Introduction to speaking, understanding, reading, and writing modern standard Chinese (Mandarin, or putonghua, based on the Beijing dialect). One course each. Lee

1A. Abridged Elementary Chinese. (FL) Fundamentals of spoken and written modern standard Chinese (Mandarin). Intended for post-baccalaureate and summer session students. Consent of instructor required. One course. Staff

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

6, 7. Literacy in Chinese. (FL) An alternative to Chinese 1, 2 for fluent speakers of modern standard Chinese (Mandarin) with little or no reading and writing ability, who wish to make sufficient progress in two semesters to advance to Chinese 125 in the fall semester. One course each. Yao-Lahusen or staff

63, 64. Intermediate Chinese. (FL) Reading, oral practice, language laboratory. One and one-half courses. Lee and staff

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

125, 126. Advanced Chinese. (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, Taiwan, and Hong Kong. Prerequisite: Chinese 63, 64 or equivalent. C-L: Comparative Area Studies. One course each. Yao-Lahusen

181, 182. Readings in Modern Chinese. (FL) Readings of newspapers, short stories, and prose. Exercise in composition. Background in both complex and simplified forms of writing required. Prerequisite: Chinese 125, 126, 127, 129, or consent of instructor. One course each. Staff

183S. Topics in Modern Chinese. (FL) Readings and other material, including films, television, and radio broadcasts. Exercises in composition. Prerequisite: Chinese 125, 126, 127, 129, or consent of instructor. C-L: Comparative Area Studies. One course. Staff

184S. Topics in Modern Chinese. (AL, FL) Readings of modern short stories and essays on special topics of the cultural politics in modern and contemporary China. Additional materials such as films and television. C-L: Comparative Area Studies. One course. Staff

188S. Seminar on Modern Chinese Cinema. (CZ, FL) 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. Prerequisites: Chinese 184S or advanced oral and written proficiency in Mandarin Chinese. One course. Wang

191, 192. 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. One course each. Wang and staff

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

111A. Intensive Progress in Spoken Chinese—Intermediate Level. (FL) One course. Staff

111B. Intensive Progress in Reading Chinese—Intermediate Level. (FL) One course. Staff

112A. Intensive Progress in Spoken Chinese—Advanced Level. (FL) One course. Staff

112B. Intensive Progress in Reading Chinese—Advanced Level. (FL) One course. Staff

127A. Special Topics in Conversation and Composition—Intermediate Level. (FL) Discussion based on oral and written reports and topical readings. Aural comprehension practice. One course. Staff

127B. Special Topics in Reading—Intermediate Level. (FL) Reading and discussion of selections from modern Chinese literature, expository prose, and the Chinese press. One course. Staff

129A. Special Topics in Conversation and Composition—Advanced Level. (CZ, FL) Discussion based on oral and written reports and topical readings. Aural comprehension practice. One course. Staff

129B. Special Topics in Reading—Advanced Level. (CZ, FL) Reading and discussion of selections from modern Chinese literature, expository prose, and the Chinese press. One course. Staff

193. Directed Study on Contemporary China. (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. One course. Staff
Courses Currently Unscheduled

171. The Chinese Novel: Dream of the Red Chamber. (AL, FL)
185S, 186S. Seminar on Contemporary China. (CZ, FL)

HEBREW (HEB)

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

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

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

125S, 126S. Advanced Modern Hebrew. (AL, FL) Introduction to modern Hebrew literature and Israeli culture. Emphasis on critical reading of literary and cultural texts, including prose, poetry, drama, and film. Conducted in Hebrew. Prerequisite: Hebrew 64 or equivalent. C-L: Comparative Area Studies and Judaic Studies. One course each. Zakim

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

191, 192, 193, 194. 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. C-L: Judaic Studies. One course each. Staff

HINDI (HIN)

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

63, 64. Intermediate Hindi. (FL) Reading, composition, and conversation. Prerequisites: Hindi 1 and 2. One course each. Natavar

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

125, 126. Advanced Hindi. (AL, FL) Proficiency in reading, writing, and speaking. Prerequisite: Hindi 63, 64 or equivalent. One course each. Khanna

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

191, 192. 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 students with prior knowledge of Hindi. Consent of instructor and director of undergraduate studies required. One course each. Khanna

JAPANESE (JPN)

1, 2. Elementary Japanese. (FL) Introduction to speaking, listening, reading, and writing. One course each. Endo
**63, 64. Intermediate Japanese. (FL)** Practice on advanced grammar; speaking, reading, and writing. One course each. Endo

**101. Duke-Administered Study Abroad: Advanced Special Topics in Japanese.** Topics differ by section. One course. Staff

**125, 126. Advanced Japanese. (AL, FL)** Readings and other materials, including video. Exercises in composition and conversation. C-L: Comparative Area Studies. One course each. Uno


**191, 192. 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. One course each. Staff

**193, 194. 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. One course each. Staff

**205S, 206S. Seminar in Japanese. (AL, FL)** Topics vary each semester. Prerequisite: Japanese 184 or equivalent. One course each. Yoda


**KOREAN (KOR)**

**1, 2. Elementary Korean. (FL)** Introduction to speaking, understanding, reading, and writing Korean. One course each. Kim

**63, 64. Intermediate Korean. (FL)** Spoken and written Korean. One course each. Kim

**100. Duke-Administered Study Abroad: Advanced Special Topics in Korean.** Topics differ by section. One course. Staff

**125, 126. Advanced Korean. (CZ, FL)** Proficiency in speaking, aural comprehension, reading, and writing. Prerequisite: Korean 63, 64 or equivalent. C-L: Comparative Area Studies. One course each. Kim


**191, 192. 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. One course each. Staff
PERSIAN (PER)

Courses Currently Unscheduled
1, 2. Elementary Persian. (FL)
63, 64. Intermediate Persian. (FL)
101, 102. Introduction to Persian Literature. (AL, FL)

SWAHLILI (SWA)
1, 2. Elementary Swahili. (FL) Swahili language and culture with emphasis on conversation. Intensive work in language laboratory; drill sessions with native speakers. One course each. Sinamanye
63, 64. Intermediate Swahili. (FL) Continuation of Swahili 1 and 2. Emphasis on contemporary Swahili literature. One course each. Sinamanye
100. Duke-Administered Study Abroad: Advanced Special Topics in Swahili. Topics differ by section. One course. Staff
191, 192. 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. One course each. Staff

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 and examines 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 three following areas: Arabic, Chinese, or Japanese. Students wishing to concentrate in Hindi, 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:

1. Within the areas of concentration, the student will acquire advanced linguistic skills in Arabic, Chinese, or Japanese language and a comprehensive knowledge of a single culture related to each language. The major provides exposure to different methodologies for interpreting an indigenous literary and cultural tradition. Six (6) 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) two courses at or above the 100-level on the literature or culture of the target language, one of which may be taken from another department. Majors should consult with their Chinese, Japanese, or Arabic advisors using a list of suggested courses.
II. Within the larger framework of Asian and African Languages and Literature, the student is required to complete three (3) semester courses as follows: Introduction to Asian and African Literature and Culture (Asian and African Languages and Literature 121), the Senior Seminar (Asian and African Languages and Literature 200S), and one Asian and African Languages and Literature course outside the student's language of concentration (for example, the study of another AAL language or literature). Both Asian and African Languages and Literature 121 and 200S introduce a theoretical-perspective grounded in continual cross-cultural dialogues between the cultures of Asia and Africa. All three 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 program on literary and cultural theory, 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 Cartmill, Glander, Hylander, Simons, Terborgh, and van Schaik; Associate Professors Roth and Smith; Assistant Professors Bassett, Pope, and Schmitt; Assistant Research Professors Brockman, Digby, Lemelin, M. Spencer, Vinyard and Wel; Adjunct Professor Larsen; Adjunct Associate Professor Wright; Adjunct Assistant Professors Anderson, Berger, and Overdorff; Instructor Johnson; Research Scientists Crissey, L. Spencer, and Struhsaker; Research Associates Ankel-Simons, Bouvier, 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 centering on the origin and evolution of human beings and their close biological relatives. The department and its course offerings have three general focuses: primate behavior 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. One course. Staff

50S. Human Biological Evolution. (NS) An overview of the fossil and archaeological evidence for human biological evolution. The development over the last two centuries of the principles used to interpret biological evolution, with particular emphasis given to the role these principles played in interpreting the earliest finds of fossil humans. Review of the primate fossil record; detailed treatment of hominid fossil materials. Open only to students in the FOCUS Program, Evolution and Humankind. One course. Spencer

55. Duke-Administered Study Abroad: Special Topics in Biological Anthropology and Anatomy. Topics differ by section. One course. Staff
93. Introduction to Biological Anthropology. (NS) Origins and distribution; primate evolution; a survey of human paleontology and human biology, prehistory, and language; and the origins of human social organization and culture. One course. Staff

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

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

101L. Quaternary Prehistory of Southern Africa. (NS) 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 at the Florisbad Quaternary Research center in the South Africa summer program, with guest lectures by South African archeologists, palynologists, and geologists. Labs will emphasize work with recent and fossil faunal material and with Middle Stone Age artifacts. One course. Brink

102L. Paleoanthropological Field Methods. (NS) A hands-on program of instruction covering methods of maintaining archeological provenience (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 stonetoools. Taught in the field in South Africa during the summer. One course. Churchill

132. Human Evolution. (NS) Evolutionary biology of the primates. Anatomical and behavioral adaptations and phylogeny of fossils and living primates including Homo sapiens. Prerequisites: Biological Anthropology and Anatomy 93 or equivalent. One course. Cartmill, Glander, Simons, or staff

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

134L. Anthropology of the Skeleton. (NS) An introduction to the basics of human osteological analysis; identification and siding of all the bones of the human body and the major osteological landmarks on each bone; basics of bone histology, development and growth; and fundamentals of anthropological analysis of human skeletal remains (archeological treatment of burials; determination of gender, populational affinities, stature; paleopathological analysis; medicolegal applications). Prerequisites: Biological Anthropology and Anatomy 93 or Biology 25L. One course. Churchill

135. Human Functional Anatomy. (NS) Basics of functional morphology (including elementary biomechanics), an overview of connective tissue structure and mechanics, and a systematic overview (from head to toe) of human anatomy from a functional perspective. Emphasis on connective and other tissues involved in functioning of the musculoskeletal system (primarily bone, cartilage, tendons, ligaments, and muscle). Prerequisites: Biological Anthropology and Anatomy 93 and 133L or Biological Anthropology and Anatomy 134L. One course. Churchill

136. Human Biology. (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. Prerequisites: Biological Anthropology and Anatomy 93 or Biology 25L. One course. Churchill

137. Ecology and Adaptation of Hunters and Gatherers. (NS) The ecology of extant and extinct foraging societies; focus on human behavioral solutions to subsistence problems associated with different environments (tropical/neotropical forest, boreal forest, coastal, arctic, grassland/savannah, desert). Topics include edible resource distribution in varied environments and its relationship to mobility and subsistence strategies in modern hunter-gatherers; and the archaeological and fossil evidence for the evolution of human subsistence behavior. Prerequisites: Biological Anthropology and Anatomy 93 or Biology 25L. One course. Churchill

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

144L. Primate Field Biology. (NS) Survey of field methods used to document primate behavior. Laboratory includes observations of free-ranging primates at the Duke Primate Center. Prerequisites: Biological Anthropology and Anatomy 93 or Biology 25L. One course. Pope or staff

146. Sociobiology. (NS) Sociobiological theory reviewed and applied to the social behavior of nonhuman primates, hominids, and humans. Prerequisites: Biological Anthropology and Anatomy 93. C-L: Study of Sexualities. One course. van Schaik


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

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

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

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

183. Primate Social Complexity and Intelligence. (NS) Information on primate social behavior and cognition used to examine ideas on the origins and functions of primate intelligence. Topics include communication, “ape language,” alliances and reciprocity, deception and social manipulation, and the extent of awareness inferable from behavior in the wild and from experiments in captivity. Prerequisites: Biological Anthropology and Anatomy 93 or Biology 25L. One course. Staff

184. Primates and Tropical Forest Conservation. (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). One course. van Schaik

185. Current Issues in Primatology. (NS) Selected topics in primate behavior, ecology, and conservation. Consent of instructor required. One course. Staff

193. 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 or 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. One course. Staff

**195S, 196S. Senior Seminar.** Prerequisites: Biological Anthropology and Anatomy 93, a 100-level course in biological anthropology and anatomy, and consent of director of undergraduate studies. One course each. Staff

**For Seniors and Graduates**

**238S. Functional and Evolutionary Morphology of Primates. (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. Prerequisites: Biological Anthropology and Anatomy 172L or equivalent. One course. Cartmill, Kay, or staff

**240S. Hominid Socioecology. (NS)** 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 (includes language), culture, technology, life history, parental care, and social organization, as well as their mutual relationships. Prerequisites: Biological Anthropology and Anatomy 93(D) or 132. One course. van Schaik

**244L, S. Comparative Primate Ecology. (NS)** Comparisons of the evolutionary ecology of prosimians, monkeys, and apes. Field methods. Prerequisites: Biological Anthropology and Anatomy 93; Biological Anthropology and Anatomy 143 recommended. One course. Glander

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

**246. The Primate Fossil Record. (NS)** A survey of fossil primates including early humans. The diversity, anatomy, and behavior of primates as related to the origin and spread of past primates. The radiation of each major group of primates in the succession leading to humans illustrated with slides, casts, and fossils. Topics include geochronological dating, timing of molecular clocks, and various procedures for classifying primates. Prerequisites: Biological Anthropology and Anatomy 93 or consent of instructor. One course. Simons

**247. The Hominid Fossil Record. (NS)** Origin and successive stages of development of human ancestors. Detailed analysis of adaptive types and cultural developments. Personalities and current controversies in the study of hominid paleontology. Prerequisites: Biological Anthropology and Anatomy 93, 132, or consent of instructor. One course. Simons

**248S. Evolution of Mammals. (NS)** The origin, adaptive radiation, and phylogenetic relationships of mammals, as inferred from the fossil record. Consent of instructor required. One course. Staff

**249S. Microevolution and Sociobiology. (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. Prerequisites: Biological Anthropology and Anatomy 93 or Biology 25L; Biology 120 recommended. One course. Pope
250. Biometry. (QR) 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: Mathematics 136, Psychology 117, Sociology 133, Statistics 10D, 110, 112, 114, 213, or equivalent, and consent of instructor required. One course. Staff

280L, 281L. Special Topics Laboratory. (NS) Special topics in methodology, theory, or area. Consent of instructor required. One course each. Staff

280S, 281S. Seminar in Selected Topics. (NS) Special topics in methodology, theory, or area. Consent of instructor required. One course each. Staff

287S. Macroevolution. (NS) Evolutionary patterns and processes at and above the species level; species concepts, speciation, diversification, extinction, ontogeny and phylogeny, rates of evolution, and alternative explanations for adaptation and evolutionary trends. Prerequisite: Biology 25L, 31L, or 32L or other course in plant or animal diversity; recommended, Biology 120 or equivalent. C-L: Biology 287S, Botany 287S, and Zoology 287S. One course. Roth

289L. Comparative Mammalian Anatomy. (NS) A practical survey of anatomical diversity in mammals. An emphasis on dissections of a broad variety of mammals. A broader perspective on specific anatomical features provided in the lectures. One course. Staff

292S. Topics in Morphology and Evolution. (NS) Various aspects of vertebrate morphology and evolution, including major historical approaches to the interpretation of morphology; the evolution, development, and function of specific morphological structures; and patterns of vertebrate evolution. Consent of instructor required. One course. Smith

COURSES CURRENTLY UNSCHEDULED

290. Pattern and Process in Vertebrate Development. (NS)

293, 294. Evolutionary Theory. (NS)

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 the B.S. Degree

Prerequisite. Biological Anthropology and Anatomy 93 or 93D.

Corequisites. Biology 25L or equivalent; Chemistry 11L, 12L, 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 geology, 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 geology are strongly encouraged for students with interests in paleontology.

Departmental Graduation with Distinction

Qualified majors are encouraged to participate in special work leading to graduation with distinction in biological anthropology and anatomy. See the section on honors in this bulletin for general requirements. Any major with a B+ average (3.3 grade point average) in biological anthropology and anatomy courses and with a B average (3.0 grade point average) in all courses is eligible. Students who desire to undertake honors work should request a member of the biological anthropology and anatomy faculty to recommend their names to the director of undergraduate studies. To receive departmental honors a major must complete a paper involving significant independent research or scholarship and pass an oral examination on the paper conducted by an appointed committee of faculty members, at least two of whom should be in biological anthropology and anatomy. Normally, students will prepare their papers over the course of the senior year working in close collaboration with their committees and receiving on the average two course credits in independent study for the work.

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 two subfields.

Biology (BIO)

Faculty in Botany: Professor Stone, Chair; Professor White, Director of Undergraduate Studies in Biology: Professors Barber, Boynton, Christensen, Clark, Knoerr, Ramus, Reynolds, Schlesinger, Searies, Siedow, Terborgh, and Wilbur; Associate Professors B. Kohorn, Shaw, and Vilgalys; Assistant Professors Dong, Honma, Manos, and Sun; Professors Emeriti Anderson, W. Culberson, Helmers, Naylor, and Strain; Assistant Professor of the Practice Armaleo; Research Professor C. Culberson; Adjunct Professors Funk, Kress, Osmond, Rogers, Swofford, and Wagner; Adjunct Associate Professors Lacey and Zimmer; Adjunct Assistant Professor DePriest; Adjunct Professor of the Practice Hartshorn; Instructor L. Kohorn

Faculty in Zoology: Professor Rausher, Chair; Lecturer Grunwald, Associate Director of Undergraduate Studies in Biology: Professors Barber, Brandon, Forward, Gillham, Laurie, Livingstone, McClay, Nicklas, H. Nijhout, Simons, Staddon, Terborgh, Tucker, Uyenoyama, and Vogel; Associate Professors Nowicki, Rittschof, Roth, K. Smith, and Van Schaik; Assistant Professors Alberts, Crenshaw, Crowder, Cunningham, Fehon, McShea, Morris, and Wilson; Professors Emeriti Bookhout, Fluke, Gregg, Schmidt-Nielsen, Wainwright and Ward; Associate Professor of the Practice Motten; Assistant Professor of the Practice Mercer; Research Professor Klopfer; Assistant Research Professors Einstein and Smyth; Adjunct Professor Schmidt-Koenig; Adjunct Associate Professor M. Nijhout; Visiting Assistant Research Professor Roach; Lecturer Lincoln
A major is available in biology.

The biology courses and the biology major are cooperatively administered by the Department of Botany and the Department of Zoology. Additional courses in the bio-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 School of Engineering and the Nicholas School of the Environment.

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 nonmajors, 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.

10L. Marine Biology. (NS) Physical and chemical characteristics of marine ecosystems and the functional adaptations of marine organisms to these systems. Lectures, field trips, and laboratories. For students not majoring in a natural science. (Given at Beaufort.) C-L: Marine Sciences. One course. Kenney


20L. Introductory Biology. (NS) Credit for introductory biology by transfer of college-level work not corresponding to Biology 25L in content, but including laboratory work. May be counted toward Natural Sciences Area of Knowledge. Equivalent to Biology 25L as prerequisite. One course.

24L. Introduction to Biology. (NS) Introductory course for students planning to major in biology and for students in other majors intending to pursue a postgraduate degree in the life sciences. Covers basic principles in cell and molecular biology, energy transport, development, physiology, genetics, microevolution, macroevolution, and ecology. Offered only during summer. Equivalent to Biology 25L as prerequisite. Not open to students who have taken Biology 25L. One course. Staff

25L. Principles of Biology. (NS) Introductory course for students planning to major in biology and for students in other majors intending to pursue a postgraduate degree in the life sciences. Provides an integrated overview of biology, covering basic principles in cell and molecular biology, energy transport, development, physiology, genetics, microevolution, macroevolution, and ecology. One course. Nijhout and Nowicki

31L. Diversity of Life. (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 32L. One course. Motten

32L. Defining Moments in Organismal Evolution. (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 31L. One course. Cunningham and Manos

495. First-Year Seminar. Topics vary each semester offered. One course. Staff

52. Duke-Administered Study Abroad: Special Topics in Biology. Topics differ by section. One course. Staff

53. Introductory Oceanography. (NS) Basic principles of physical, chemical, biological, and geological oceanography. Fee for required field trip to the Marine Laboratory. C-L: Geology 53. One course. Corliss, Lozier, Pratson (geology), and Searles

93S. FOCUS Program Topics in Biology. (NS) Open only to students in the FOCUS Program; for first-year students with consent of instructor. One course. Staff

101. Biogeography in an Australian Context. (NS) 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. One course. Searles

102L. Trees and Shrubs of North Carolina. (NS) Identification and natural history of the trees, shrubs, and woody vines. Emphasis on those cultivated or occurring naturally in North Carolina. One course. Wilbur

103L. General Microbiology. (NS) Classical and modern principles of the structure, physiology, and genetics of microorganisms and their roles in human affairs. Prerequisite: one course in a biological science or consent of instructor. One course. Dong, Siedow, or Vilgalys

104. Duke-Administered Study Abroad: Advanced Special Topics in Biology. Topics differ by section. One course. Staff

108L. Developmental and Comparative Anatomy of Vertebrates. (NS) The embryology, anatomy, and evolutionary development of vertebrate organ systems. Prerequisite: Biology 25L. One course. Staff

109. Conservation Biology and Policy. (NS) 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. C-L: Marine Sciences. One course. Crowder (Beaufort) and Rubenstein (visiting summer faculty)

110L. Ecology. (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. One course. Livingstone, Reynolds, or Schlesinger

112. Population Biology. (NS) 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 conservation of threatened populations. Prerequisites: Biology 25L and Mathematics 31. One course. Morris

114L. Biological Oceanography. (NS) Physical, chemical, and biological processes of the oceans, emphasizing special adaptations for life in the sea and factors controlling distribution and abundance of organisms. One course (spring); one and one-half courses (summer). (Given at Beaufort and Bermuda) Prerequisite: Biology 25L. C-L: Marine Sciences. Variable credit. Ramus or staff (Beaufort); Nelson and Steinberg (Bermuda)

118. Principles of Genetics and Cell Biology I. (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; posttranslational control of protein function; manipulating protein expression and function through genetic engineering. Prerequisites: Biology 25L and Chemistry 12L. C-L: Genetics. One course. Grunwald or B. Kohorn

119. Principles of Genetics and Cell Biology II. (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. C-L: Genetics. One course. Fehon or M. McClay

120. Principles of Evolution. (NS) 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. One course. Rausher, Roth, or staff

121. Evolution of Animal Form. (NS) A survey of the history of animal life focusing on major revolutions in design such as the Cambrian explosion, the Mesozoic radiation of dinosaurs, and the Cenozoic radiation of mammals. The exploration of three views of form: the Darwinian view, which stresses function; the historicist view, which emphasizes historical accident; and the structuralist view that form is mainly the result of fixed mathematical relationships. The different ways in which each view applies the comparative method. Prerequisite: Biology 25L. One course. McShea

123. Analysis of Ocean Ecosystems. (NS) The history, utility, and heuristic value of the ecosystem; ocean systems in the context of Odum's ecosystem concept; structure and function of the earth's major ecosystems. (Given at Beaufort.) Prerequisite: one year of biology, one year of chemistry, or consent of instructor. C-L: Marine Sciences. One course. Barber

126. Marine Mammals. (NS) Ecology, social organization, behavior, acoustic communication, and management issues. Focus on marine mammals in the southeastern United States (for example, bottlenose dolphin, right whale, West Indian manatee). (Given at Beaufort.) Prerequisite: introductory biology. C-L: Marine Sciences. One course. Read or staff

126L. Marine Mammals. (NS) Laboratory version of Biology 126. Laboratory exercises consider social organization and acoustic communication in the local bottlenose dolphin population. (Given at Beaufort.) Prerequisite: introductory biology. C-L: Marine Sciences. One course. Read or staff

127L. Marine Microbial Ecology. (NS) Microbial physiology, diversity, and growth within the context of biogeochemical processes. How biological processes and the ecological structure control the cycling of carbon, nitrogen, and phosphorus in the ocean. Field trips and laboratories investigating microbial processes in the open ocean and coral reefs of Bermuda. (Given in Bermuda.) Prerequisites: introductory biology and chemistry. C-L: Marine Sciences. One course. Bates and Carlson (Bermuda)

128L. Estuarine Ecology. (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.) Prerequisites: introductory biology and chemistry. C-L: Marine Sciences. One course. Kirby-Smith

129L. Marine Ecology. (NS) 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 Zoology 203L. (Given at Beaufort fall and summer and at Bermuda, spring.) Prerequisite: introductory biology. C-L: Marine Sciences. One course. Crowder or Kirby-Smith (Beaufort); Lipschultz, and Smith (Bermuda)

132S. Marine Biodiversity. (NS) Marine biodiversity in a biological context. Topics include defining and measuring diversity, molecular methodologies, symbiotic organisms, relative diversities of major marine habitats, human impacts, and conservation practices. (Given at Bermuda.) Prerequisite: introductory biology. C-L: Marine Sciences. Half course. Barnes and Coates (Bermuda)


134. Fundamentals of Tropical Biology. (NS) Conceptual themes in ecology, emphasizing tropical organisms and ecosystems. Topics range from behavioral and physiological adaptation of individuals to processes and patterns in diverse assemblages, including: mutualism and parasitism in the tropics, competition and the structure of tropical guilds, pollination ecology, forest dynamics and gap-phase regeneration, island biogeography and the design of biological reserves, and evolutionary processes responsible for promoting high tropical biodiversity. (Taught in Las Cruces, Costa Rica.) Prerequisite: Biology 25L or equivalent. One course. Shelley

134L. Fundamentals of Tropical Biology. (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. C-L: Latin American Studies. One course. Shelley

135L. Research Methods in Tropical Biology. (NS) 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 macroclimatic variables; estimating population abundance and distribution; performing demographic and life history analyses; investigating mutualistic, competitive, and predator-prey coevolutionary processes; and measuring patterns of species diversity. Demonstrates different ecological zones. (Taught in Las Cruces, Costa Rica.) Prerequisite: Biology 25L or equivalent. C-L: Latin American Studies. One course. Staff

140L. Plant Diversity. (NS) Major groups of living plants, their evolutionary origins and phylogenetic relationships. Fee for field trip. Prerequisite: Biology 25L or equivalent. One course. Searles or Staff


144L. Plant Anatomy. (NS) 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. Prerequisite: one year of biology or consent of instructor. One course. White

149. Comparative Biomechanics. (NS) The structure and operation of organisms in relation to the mechanics of solids and fluids. Prerequisites: Mathematics 31 and Physics 51L or equivalents. One course. Vögel
150L. Physiology of Marine Animals. (NS) Environmental factors, biological rhythms, and behavioral adaptations in the comparative physiology of marine animals. One course (fall); one and one-half courses (summer). (Given at Beaufort.) Prerequisites: Biology 25L and Chemistry 12L. C-L: Marine Sciences. Variable credit. Forward


152. Molecular Basis of Plant Functioning. (NS) Principal physiological processes of plants, including respiration, photosynthesis, water relations, and factors associated with plant morphogenesis. Prerequisites: Biology 25L and Chemistry 12L; organic chemistry is desirable. One course. Siedow and Sun

154. Fundamentals of Neuroscience. (NS) Prerequisites: Biology 25L, and Chemistry 12L or equivalent. See C-L: Psychology 135; also C-L: Neurobiology 154, and Neurosciences. One course. Meck (psychology)

155L. Biochemistry of Marine Animals. (NS) Functional, structural, and evolutionary relationships of biochemical processes of importance to marine organisms. One course (fall and spring); one and one-half courses (summer). (Given at Beaufort.) Prerequisites: Biology 25L; and Chemistry 11L, 12L. C-L: Marine Sciences. Variable credit. McClellan-Green (spring); Rittschof (fall and summer)

158L. Introduction to Modern Microscopy. (NS) A hands-on approach to teach students how to use the new microscopy with an emphasis on the principles underlying their application. Prerequisite: Biology 25L. One course. Crenshaw

176L. Marine Invertebrate Zoology. (NS) 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 and summer or at Bermuda, spring.) Prerequisite: Biology 25L. C-L: Marine Sciences. Variable credit. Dimock (Beaufort) or Kirby-Smith (Beaufort); Barnes and Coates (Bermuda)

181L. Experimental and Applied Evolutionary Biology. (NS) Experimental approaches to contemporary questions and applications in evolutionary biology. Practical laboratory experience in concepts and techniques related to genetic change in populations, population divergence, speciation, and reconstructing evolutionary lineages. Experiments examine evolution of antibiotic resistance, reproductive isolation, DNA sequencing for phylogeny reconstruction, and epidemiological tracing of infectious disease. Prerequisite: Biology 120. One course. Motten, Roth, or Shaw

184L. Experimental Cell and Molecular Biology. (NS) 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. C-L: Genetics. One course. Armaleo, Boynton, Dong, B. Kohorn, Siedow, or Sun

185L. Experiments in Development and Molecular Genetics. (NS) 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 immunochemical localization, in situ hybridization, polymerase chain reaction genetic screening, embryo micromanipulation, microscopic imaging, and mutant analysis. Prerequisite: Biology 118; recommended, prior or concurrent registration in Biology 119. C-L: Genetics. One course. Fehon, Honma, Lincoln, or M CClay
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 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, 194T, and 197T may count toward the biology major. Half course. Staff

191, 192. Independent Study. Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to all qualified students with consent of supervising instructor and director of undergraduate studies. A maximum of three courses of 191, 192, 193T, and 194T may count toward the biology major. One course each. Staff

193T, 194T. Tutorial. For junior and senior majors with consent of director of undergraduate studies and supervising instructor. Three courses of 191, 192, 193T, and 194T, maximum. One course each. Staff

195S, 196S. Seminar in Biology. (NS) Variable credit. Staff

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, 194T, and 197T may count toward the major. Half course. Staff

For Seniors and Graduates

201L, S. Animal Behavior. (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. One course. Alberts or Klopfer

201S. Animal Behavior. (NS) Nonlaboratory version of Biology 201L,S. One course. Alberts or Klopfer

202. Evolution and Ecology of Animal Behavior. (NS) Study of animal behavior shaped by natural selection, historical factors, and ecological constraints, considered in the context of mating systems, parental care, foraging, and other current issues in behavior. Prerequisite: Biology 25L; suggested: Biology 120 or equivalent. One course. Alberts

206S. Controversies in Biology. (NS) 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. One course. Klopfer

210L. Bryology. (NS) Morphology, systematics, ecology, and evolution of mosses, liverworts, and hornworts. One course. Shaw

212L, S. Phycology. (NS) Morphological and ecological characteristics of common freshwater and marine algae and principles of their classification. One course. Searles


216L. Limnology. (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, Mathematics 32, and physics; or equivalents; or consent of instructor. One course. Livingstone
218L. **Barrier Island Ecology. (NS)** An integration of barrier island plant and animal ecology within the context of geomorphological change and human disturbance. Topics include: barrier island formation and migration, plant and animal adaptations, species interactions, dune succession, maritime forests, salt marshes, sea level rise, conservation policy, and restoration ecology. Field trips to many of the major North Carolina barrier islands. Strong emphasis on field observation and independent research. (Given at Beaufort.) Prerequisite: Biology 25L or equivalent; suggested: course in botany or ecology. C-L: Environment 218L and Marine Sciences. One course. Evans, Peterson, and Wells (visiting summer faculty)

220L. **Mycology. (NS)** Survey of the major groups of fungi with emphasis on life history and systematics. Field and laboratory exercises. One course. Vilgalys

222L. **Entomology. (NS)** The biology of insects: diversity, development, physiology, and ecology. Field trips. Prerequisite: Biology 25L or equivalent. One course. H. Nijhout

225T. **Special Problems. (NS)** Consent of instructor required. Half course. Staff

229L, S. **Paleoecology. (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. One course. Clark and Livingstone

232. **Microclimatology. (NS)** Introduction to the micrometeorological processes. Discussion of the integration of these processes and the resulting microclimates in the rural (forest, field, and water surface) and urban environments. Methods for modification of the microclimate. C-L: Environment 232. One course. Knoerr

234S. **Problems in the Philosophy of Biology. (NS)** Consent of instructor required. See C-L: Philosophy 234S. One course. Brandon or Cooper

237L. **Systematic Biology. (NS)** Theory and practice of identification, species discovery, phylogeny reconstruction, classification, and nomenclature. Prerequisite: Biology 25L or equivalent. One course. Manos, Swofford, and Vilgalys

241L. **Field Botany. (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. One course. Wilbur

242L. **Field Botany of North Carolina’s Wetlands. (NS)** A survey of the flora of North Carolina’s wetland habitats with emphasis on plant identification in the field. Field trips to mountain, piedmont, and coastal wetlands. Examination of all groups of plants including bryophytes, ferns, and seed plants. Wetland habitats include swamps, bogs, pocosins, and brackish sites. Information on the floristics of the southeastern United States botanical nomenclature, systematic relationships of wetland plants, and an overview of wetland vegetation. Prerequisite: one course in plant diversity or systematics, or consent of instructor. C-L: Environment 237L. One course. Shaw and Wilbur

243L. **Evolution and Classification of Angiosperms. (NS)** Characteristics and phylogenetic relationships of major flowering plant lineages. Emphasis on current literature, rigorous methods, modern controversies, and biological and biogeographic implications of relationships. Prerequisite: Biology 142L or equivalent. One course. Funk, Kress, and Manos

244. **Principles of Immunology. (NS)** An introduction to the molecular and cellular basis of the immune response. Topics include anatomy of the lymphoid system, lymphocyte biology, antigen-antibody interactions, humoral and cellular effector mechanisms, and control of immune responses. Prerequisites: Biology 119 and Chemistry 151L or equivalents. C-L: Immunology 244. One course. Kostyu (immunology), McClay, and staff
245L. Peat Mosses and Peatlands. (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. One course. Shaw

250L. Form, Function, and Adaptation of Plants. (NS) The structural and developmental basis for the major functions of the plant body including energy harvest, mechanical support, transport, and storage. Structural adaptations to important environmental stresses. Emphasis on underlying biomechanical/physical principles. Prerequisite: Biology 25L; suggested: either Biology 110L, 140L, 149, or 152. C-L: Environment 250L. One course. Staff

256L, S. Plant Biosystematics. (NS) Descriptive and experimental procedures used to assess systematic implications of plant evolution. Laboratory, discussion, and field-oriented problems. Prerequisites: basic courses in systematics and genetics. One course. Manos

257L. Molecular Systematics and Evolution. (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. One course. Vilgalys

265L. Physiological Plant Ecology. (NS) The physiological approach to interpreting adaptation in plants, with emphasis on terrestrial seed plants. Prerequisites: Biology 110L and 152 or equivalents. One course. Staff

267L. Community Ecology. (NS) Mechanisms that determine the distribution and abundance of plants and animals: geology, climate, physiography, soils, competition, predation, and history. Lectures focus on ecological principles. Seminars and weekend field trips. Prerequisite: an introductory ecology course. One course. Christensen or Clark

268. Ecological Theory and Data. (NS) 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. One course. Clark

272. Biogeochemistry. (NS) Processes controlling the circulation of carbon and biochemical elements in natural ecosystems and at the global level, with emphasis on soil and surficial processes. Prerequisite: Chemistry 12L or equivalent. C-L: Geology 272. One course. Schlesinger

281. DNA, Chromosomes, and History. (NS) 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. C-L: Genetics. One course. Nicklas

284. Molecular Population Genetics. (NS) 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. One course. Uyenoyama
285S. Ecological Genetics. (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. C-L: Genetics. One course. Staff

286. Evolutionary Mechanisms. (NS) 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. C-L: Genetics. One course. Rausher and Uyenoyama

287S. Macroevolution. (NS) Evolutionary patterns and processes at and above the species level; species concepts, speciation, diversification, extinction, ontogeny and phylogeny, rates of evolution, and alternative explanations for adaptation and evolutionary trends. Prerequisite: Biology 25L, 31L, or 32L or other course in plant or animal diversity; recommended, Biology 120 or equivalent. C-L: Biological Anthropology and Anatomy 287S. One course. Roth


289L. Methods in Morphometrics. (QR) 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. One course. Mercer


292. Population Ecology. (NS) Explores 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. One course. Morris and Wilson

293. Simulating Ecological and Evolutionary Systems. (NS) Computer programming using C within a UNIX environment applied to ecological and evolutionary problems. The relationship between simulation and analytic modeling. Knowledge of programming or work within the UNIX computer environment not expected. Consent of instructor required. One course. Wilson

294. Successes in Theoretical Ecology and Evolution. (NS) Case studies in theoretical ecology and evolution with direct application to empirical systems. Includes mating systems, life history strategies, population dynamics, and infectious diseases. Prerequisites: Biology 25L and 120 or equivalents. One course. Wilson

295S, 296S. Seminar. (NS) Variable credit. Staff

COURSES CURRENTLY UNSCHEDULED
90. Plants and Civilization. (NS)
100. Perspectives on Living Systems. (NS)
113L. Behavioral Ecology. (NS)
164D. Developmental Biology. (NS)
261. Photosynthesis. (NS)
The Bachelor of Arts and the Bachelor of Science degrees are offered with a major
in biology or in an individually designed interdepartmental concentration approved
by the director of undergraduate studies in biology. Information may be obtained in
the office of the director of undergraduate studies.

For the A.B. Degree

This degree program is the general liberal arts major program. Students
contemplating a career in biological or biomedical sciences should elect the program
leading to the B.S. degree. A minimum of sixteen courses is required for this major.

Prerequisites. Biology 25L, or equivalent.

Corequisites. Chemistry 11L, 12L; Mathematics 25, 26; plus three science-related
courses outside the biological sciences 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; one laboratory independent study course may be counted
toward the laboratory requirement. The eight courses must include one core course
from each of four areas: cell biology and genetics (Biology 118); diversity; organismal
structure and function; and ecology, evolution, and systematics. These courses are
prerequisites to many of the advanced courses in these subject areas. Six of these eight
courses must be in biology. 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. The elective courses acceptable for a
biology major with an area of concentration (see below) are defined by the
requirements for that concentration. At least one of these eight courses must be at the
200 level in biology or an approved alternate.

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, or equivalent.

Corequisites. Chemistry 11L, 12L, and 151L; Mathematics 31, 32; 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 nine full courses in at least nine 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 nine courses must include five core courses: a
two semester sequence in cell biology and genetics Biology 118 and 119; and one core
course from each of three areas: diversity; organismal structure and function; and
ecology, evolution, and systematics. These courses are prerequisites to many of the
advanced courses in these subject areas. Seven of these nine courses must be in
biology. 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. The elective courses acceptable for a biology major with an area of
concentration (see below) are defined by the requirements for that concentration. At
least one of these nine courses must be at the 200 level in biology or an approved alternate.

**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 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) 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.

**Botany (BOT)**

Professor Stone, Chair; Professor White, Director of Undergraduate Studies in Biology; Professors Barber, Boynton, Christensen, Clark, Knoerr, Ramus, Reynolds, Schlesinger, Searles, Siedow, Terborgh, and Wilbur; Associate Professors B. Kohorn, Shaw, and Vilgalys; Assistant Professors Dong, Honma, Manos, and Sun; Professors Emeriti Anderson, W. Culberson, Helmers, Naylor, and Strain; Assistant Professor of the Practice Armaleo; Research Professor C. Culberson; Adjunct Professors Funk, Kress, Osmond, Rogers, Swofford, and Wagner; Adjunct Associate Professors Lacey and Zimmer; Adjunct Assistant Professor DePriest; Adjunct Professor of the Practice Hartshorn; Instructor L. Kohorn

See Biology for a description of the major and the list of courses taught by the botany faculty.

**Canadian Studies (CAN)**

Professor Thompson (history), Director; Professors Gereffi (sociology), Goodwin (economics), Healy (environment), Kornberg (political science), O'Barr (cultural anthropology), Smith (sociology), Tiryakian (sociology), Tower (economics), Vidmar (law), Warren (community and family medicine), and Wood (history); Associate Professors French (history), and Mayer (public policy studies and political science);
Assistant Professors Clarke (English), Jonaissaint (romance studies), and Shanahan (sociology); Professors Emeriti Cahow (history) and Preston (history); Associate Research Professor Keineg (romance studies); Adjunct Professor Steen (environment); Instructor Wittman (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 (CAN)**

**50. Duke-Administered Study Abroad: Special Topics in Canadian Studies.** Topics differ by section. One course. Staff

**98. Introduction to Canada. (SS)** History, economy, society, politics, and institutions of Canada. C-L: Comparative Area Studies, Economics 98, History 98, Political Science 098, and Sociology 98. One course. Staff

**100. Duke-Administered Study Abroad: Advanced Special Topics in Canadian Studies.** Topics differ by section. One course. Staff

**184S. Canadian Issues. (SS)** Persistent and current issues facing the Canadian nation-state, among them: cultural and regional political divisions, Indian-Euro-Canadian relations, the development of the Canadian welfare state, Canada’s place in the international community and in the world economy. Prerequisite: Canadian Studies 98 or consent of instructor. C-L: Comparative Area Studies, Cultural Anthropology 184S, Economics 184S, History 184S, Political Science 184S, and Sociology 184S. One course. Staff

**185S. The Canadian Health Care System. (SS)** The Canadian health care system from its historical roots: social, political, legal, and economic aspects. An examination of how the system works from the point of view of society, the professional community, and the government. Comparative material included. C-L: Comparative Area Studies, Cultural Anthropology 185S, Economics 185S, History 108E, Political Science 185S, Public Policy Studies 187S, and Sociology 185S. One course. Warren

**282S. Canada. (SS)** A research seminar for advanced students familiar with Canada. Topics vary each semester; recent perspectives have included nationalism, Canadian-American relations, regionalism in the Maritimes and the West, and cross-border environmental issues, among others. C-L: Comparative Area Studies, Cultural Anthropology 282S, Economics 282S, History 282S, Political Science 282S, and Sociology 282S. One course. Staff

**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. (Cross-listed.) Mignolo or staff

138S. Francophone Literature. (Cross-listed.) Jonassaint

**Asian and African Languages and Literature**

168S. Francophone Literature. (Cross-listed.) Jonassaint

**Cultural Anthropology**

110. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O’Barr, or Wilson

130. Modernity, Ethnicity, and Colonization. (Cross-listed.) Mignolo or staff

184S. Canadian Issues. (Cross-listed.) Staff
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185S. The Canadian Health Care System. (Cross-listed.) Warren
282S. Canada. (Cross-listed.) Staff

Economics
98. Introduction to Canada. (Cross-listed.) Staff
184S. Canadian Issues. (Cross-listed.) Staff
185S. The Canadian Health Care System. (Cross-listed.) Warren
265S. International Trade. Tower
268S. Current Issues in International and Development Economics. Tower
282S. Canada. (Cross-listed.) Staff

English
120. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O’Barr, or Wilson
186A, S. Canadian Literature in English. (Cross-listed.) Staff

French
186S. Francophone Literature. (Cross-listed.) Jonassaint

History
98. Introduction to Canada. (Cross-listed.) Staff
180C. Canadian-American Relations. (Cross-listed.) Thompson
180D. A History of the United States and Canadian Wests in the Nineteenth and Twentieth Centuries. (Cross-listed.) Thompson
119A, 139B. Native American History. (Cross-listed.) Wood
121B. The United States as a World Power: 1861-1941. Staff
183S. Canada from the French Settlement. (Cross-listed.) Thompson
184S. Canadian Issues. (Cross-listed.) Staff
282S. Canada. (Cross-listed.) Staff

Political Science
98. Introduction to Canada (B). (Cross-listed.) Staff
180. Media in Comparative Perspective (B). (Cross-listed.) Staff
184S. Canadian Issues (B). (Cross-listed.) Staff
185S. The Canadian Health Care System (B). (Cross-listed.) Warren
203S. Issues in Politics and the Media in the United States (A). (Cross-listed.) Paletz
266. Comparative Social Policy (B). (Cross-listed.) Staff
277. Comparative Party Politics (B). (Cross-listed.) Lange
282S. Canada (B). (Cross-listed.) Staff

Public Policy Studies
187S. The Canadian Health Care System. (Cross-listed.) Warren
266. Comparative Social Policy. (Cross-listed.) Staff

Romance Studies
124. Modernity, Ethnicity, and Colonization. (Cross-listed.) Mignolo or staff

Sociology
98. Introduction to Canada. (Cross-listed.) Staff
160. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O’Barr, or Wilson
170. Mass Media. (Cross-listed.) Staff
171. Comparative Health Care Systems. (Cross-listed.) Staff
182. Media in Comparative Perspective. (Cross-listed.) Staff
184S. Canadian Issues. (Cross-listed.) Staff
185S. The Canadian Health Care System. (Cross-listed.) Warren
282S. Canada. (Cross-listed.) Staff

SPECIAL TOPICS COURSES

English
49S. Writing the Native in Canadian, U.S., Australia and New Zealand Fiction. Staff
131. Margaret Atwood. Staff

French
141S. Twentieth-Century Novel in French. Canada and Quebec. Keineg

History
196S. U.S. and Canadian Agrarian Movements. Thompson

North American Studies
283S. Seminar in North American Studies. Staff

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 or participation in summer program at L’Université du Québec à Trois Rivières.

For further information, contact the Director, 2016 Campus Drive.

Cell Biology

For courses in cell biology, see Biology and Medicine (School)—Graduate (School) Basic Science Courses Open to Undergraduates.

Chemistry (CHM)

Professor Baldwin, Chair; Professor Bonk, Director of Undergraduate Studies and Supervisor of First-year Instruction; Professors Crumbliss, Lohmüller, McGown, McPhail, Palmer, Pirrung, Shaw, Simon, and Wells; Associate Professors MacPhail, Oas (biochemistry) Toone, and Yang; Assistant Professors Fitzgerald, Grinstaff, König and Widenhoefer; Professors Emeriti Arnett, Bradsher, Chesnut, Hobbs, Poirier, Quin, Smith, Strobel, and Wilder; Adjunct Professors Kiserow and Porter; Adjunct Associate Professor Chao; Lecturers D’Silva and Woerner

A major or minor is available in this department. Courses with laboratories include fifty to sixty hours of laboratory work per term.

11L, 12L. Principles of Chemistry. (NS) The introductory course for students who intend to take additional chemistry courses other than Chemistry 83. 11L: emphasizes stoichiometry and atomic and molecular structures. 12L: emphasizes thermodynamics, chemical kinetics, synthesis, and analysis. Laboratory work includes both qualitative and quantitative analysis. Prerequisites: one year of high school chemistry or consent of instructor; Mathematics 19 or its equivalent; and for 12L: Chemistry 11L. One course each. Bonk and staff

19. General Chemistry. Credit for Advanced Placement on the basis of the College Board examination in chemistry. Equivalent to Chemistry 11L and 12L as prerequisite. One course.

23L. Advanced General Chemistry. (NS) An intensive introductory course for well-prepared students, covering in one semester the major topics of Chemistry 11L and 12L. Laboratory work includes both qualitative and quantitative analysis. Students may not receive credit for both Chemistry 23L and Chemistry 12L or Chemistry 31S. Prerequisites: Mathematics 19 or its equivalent; and two years of high school chemistry or consent of instructor. One course. Grinstaff and staff

26S. Introduction to Research in Chemistry. (NS) Active participation in chemistry (or chemistry related) research group, followed by seminar classes in which the research activities are discussed. Prerequisite: Chemistry 11L or 19. One course. Staff

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

50. Duke-Administered Study Abroad: Special Topics in Chemistry. Topics differ by section. One course. Staff
100. Duke-Administered Study Abroad: Advanced Special Topics in Chemistry. Topics differ by section. One course. Staff

117. Inorganic Chemistry. (NS) Bonding, structures, and reactions of inorganic compounds studied through physical chemical concepts. Prerequisite: Chemistry 161 or 162L. One course. Crumbliss, Grinstaff, McPhail, Palmer, or Wells

131. Analytical Chemistry. (NS) Fundamentals of qualitative and quantitative measurement with emphasis on chemometrics, quantitative spectrometry, electrochemical methods, and common separation techniques. Corequisite: Chemistry 133L. Prerequisite: Chemistry 163L. One course. Fitzgerald, Lochmüller, or McGown

133L. Analytical Chemistry Laboratory. (NS) Laboratory experiments designed to accompany Chemistry 131. Corequisite: Chemistry 131. Half course. Staff

151L, 152L. Organic Chemistry. (NS) The structures and reactions of the compounds of carbon. Laboratory techniques of separation, organic reactions and preparations, and systematic identification of compounds by their spectral and chemical properties. Prerequisite: Chemistry 12L, 23L, or 31S or consent of director of undergraduate studies; for 152L: Chemistry 151L. One course each. Baldwin, Pirrung, Toone, or Widenhoefer


158. Physical Organic Chemistry. (NS) Organic reaction mechanisms including fundamental techniques and specific mechanistic classes. Prerequisites: Chemistry 152L and one semester of physical chemistry. One course. Staff

161. Elements of Physical Chemistry. (NS) Survey of physical chemistry including quantum chemistry, molecular structure, molecular spectroscopy, thermodynamics, and kinetics. Chemistry 163L should be taken concurrently. Prerequisites: Chemistry 12L (or 23L or 19), Mathematics 32L, and Physics 52L (or 54L) or consent of instructor. One course. Staff

163L. Physical Chemistry Laboratory. (NS) Laboratory experiments designed to accompany Chemistry 161. Prerequisite: (or corequisite) Chemistry 161. Half course. Staff

165, 166. Physical Chemistry. (NS) Fundamentals of physical chemistry. 165: emphasizes quantum chemistry, molecular structure, and molecular spectroscopy. 166: emphasizes thermodynamics and kinetics. Chemistry 167L should be taken concurrently with Chemistry 165. Chemistry 168L should be taken concurrently with Chemistry 166. Prerequisites: Chemistry 12L (or 23L or 19), Mathematics 32L, and Physics 52L (or 54L) or consent of instructor; for 166: Chemistry 165 or consent of instructor. One course each. Staff

167L, 168L. Physical Chemistry Laboratory. (NS) Laboratory experiments designed to accompany Chemistry 165, 166; respectively. Prerequisites: (or corequisite) Chemistry 165 and for 168L: Chemistry 166 or consent of instructor. Half course each. Staff

176. Biophysical Chemistry. (NS) The physical chemical principles of and experimental methods employed in the study of biological macromolecules. Students may not receive credit for both Chemistry 176 and 196S. Prerequisite: Chemistry 161 or Biochemistry 227 or consent of instructor. One course. McPhail or Shaw

180L. Advanced Laboratory Techniques. (NS) Synthesis of less common substances by techniques such as high or low pressure, high or low temperature, and/or inert atmospheres. Characterization of products from measurements such as electrical conductance, optical rotation, ultraviolet-visible spectra, infrared spectra, and/or mass spectra. Prerequisite: (or corequisite) Chemistry 117. Half course. Staff
191, 192. 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. Half or one course. Variable credit. Staff

193, 194. 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. Prerequisites: Chemistry 191, 192, and consent of independent study coordinator. One course each. Staff

195S, 198S. Seminar. (NS) Half course or one course. Variable credit. Staff

196S. Seminar. (NS) 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. One course. Shaw

197S. Seminar. (NS) Special topics in biological chemistry (for example, immunoch- hemistry, molecular biology). Prerequisite: Chemistry 161 or 165; Chemistry 175 or Biochemistry 227 recommended. One course. Staff

For Seniors and Graduates

201. Molecular Spectroscopy. (NS) Selected spectroscopic methods in the study of molecular structure. Symmetry and group theoretical basis for selection rules, theories of magnetic and optical resonance, and interpretation of spectra; examples from both inorganic and organic chemistry. Three lectures. Open to especially well-prepared undergraduates by consent of director of undergraduate studies. One course. Baldwin, Grinstaff, Palmer, Pirrung, Shaw, Simon, and Widenhofer

203. Quantum Chemistry. (NS) Basic principles of quantum and group theoretical methods. Topics include symmetry and a review of the fundamentals and the mathematical foundations of quantum theory. Emphasis on the application of molecular orbital theory to organic and inorganic systems. Open to especially well-prepared undergraduates by consent of director of undergraduate studies. Prerequisite: Chemistry 166. One course. MacPhail, Pirrung, Toone, and Yang

205. Structure and Reaction Dynamics. (NS) Structure and mechanisms in organic and inorganic compounds, substitution reactions, linear free energy relations, and molecular rearrangements. Emphasis on the use of kinetic techniques to solve problems in reaction mechanisms. Three lectures. Open to especially well-prepared undergraduates by consent of director of undergraduate studies. One course. Crumbliss, Toone, and Wells


209. Advanced Chemistry. (NS) A combination of three one-third course segments from Chemistry 201, 203, 205, and 207. Interested students should consult the director of undergraduate studies for scheduling. Consent of director of undergraduate studies required. One course. Staff

275, 276. Advanced Studies. (NS) (1) Analytical chemistry, (2) inorganic chemistry, (3) organic chemistry, and (4) physical chemistry. Open to especially well-prepared undergraduates by consent of director of undergraduate studies. One course each. Staff

COURSES CURRENTLY UNSCHEDULED

31S. Advanced Chemical Fundamentals. (NS)
83. Chemistry and Society. (NS)
151M, 152M. Organic Chemistry. (NS)
152P. Preceptorial. (NS)
175. Molecular Basis of Biological Processes. (NS)
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). Of particular significance are the areas of emphasis (option three) including biology, mathematics, and physics. 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 11L, 12L (or 23L, 31S, 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 11L, 12L (or 23L, 31S, 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 option 1 or 2.

Option 1 (3 courses selected as follows)
One of the following: Chemistry 157, 158, 176, 195S, 196S, 209*, 275 or 276; Biochemistry 227.
Plus 2 courses of independent study: Chemistry 191, 192 or 2 approved independent study course in a science department in Trinity College, basic sciences of the Medical School, Nicholas School of the Environment, or the School of Engineering.

* Chemistry 201, 203, 205, and 207 are offered also in one-third semester segments; in some instances a student may wish to take some combination of three of these segments by registering for Chemistry 209. Additional details may be obtained from the director of undergraduate studies.
Option 2 (2 Chemistry courses plus 1 approved course in another department selected as follows)

At least 1 of the following: Chemistry 191 or 192
Plus 1 (or 0) of the following: Chemistry 157, 158, 176, 195, 196, 209*, 275 or 276; Biochemistry 227.
Plus 1 advanced lecture course in an approved science department in Trinity College, basic sciences of the Medical School, Nicholas School of the Environment, or in the School of Engineering.

Recommendations. Mathematics 103, 104 and Physics 100. Students planning graduate study in chemistry should consult with advisors regarding appropriate additional courses.

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
Prerequisite: Chemistry 11L, 12L (or 23L, 31S, 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, 195, 196, 198S; Biology 118, 184L, 191; or any advanced course in biochemistry.

For the B.S. Degree with Concentration in Biochemistry
Prerequisites: Chemistry 11L, 12L (or 23L, 31S, 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†), 227, 228; Biology 118, 119; plus one of the following: Chemistry 191, Biology 191, or Biochemistry 209 (or 210).

Recommendations. Mathematics 103; Chemistry 180L†, 192, 195, 196, 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 11L, 12L (or 23L or 31S 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).

†Chemistry 201, 203, 205, and 207 are offered also in one-third semester segments; in some instances a student may wish to take some combination of three of these segments by registering for Chemistry 209. Additional details may be obtained from the director of undergraduate 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 and 180L (half course).

§The independent study project must involve some aspect of pharmacology.
For the B.S. Degree with Concentration in Pharmacology

Prerequisites: Chemistry 11L, 12L (or 19, or 23L or 31S); Mathematics 31, 32 (or 31L, 32L or 41); Physics 51L, 52L (or 53L, 54L); 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).


The Concentration in Environmental Chemistry

In cooperation with the 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 11L, 12L (or 23L, 31S, or 19); Mathematics 31, 32 (or 31L, 32L or 41); Physics 51L, 52L (or 53L, 54L); plus two of the following: Biology 25L, Geology 41, Geology 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 Geology 272.

For the B.S. Degree in Chemistry with Concentration in Environmental Chemistry

Prerequisites: Chemistry 11L, 12L (or 23L, 31S, or 19); Mathematics 31, 32 (or 31L, 32L or 41); Physics 51L, 52L (or 53L, 54L); plus two of the following: Biology 25L, Geology 41, Geology 120.

Major Requirements: Chemistry 117, 131 and 133L, 151L, 152L, 161 (or 165*) and 163L (or 167L*), 176 (or 166*); two of the following: Environment 240, 241 or 242, plus one of the following: Chemistry 191‡, Environment 191.

Recommendations: Chemistry 180L*, 192, 195S, 198S; Mathematics 103, Biology 110L, Environment 192, 243, 298.02 or Geology 272.

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 School of Engineering, the Nicholas School for 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 11L, 23L, or 19; any four of the following courses: Chemistry 12L, any Chemistry courses at the 100 level or above, Biochemistry 227, Biochemistry 228, Biology 155L, Environment 240, 241, 242, Pharmacology 150, 160, 233.

* Majors who wish to earn a B.S. in chemistry that is certified by the American Chemical Society must include Chemistry 165, 166, 167L, and 180L (half course).
† The independent study project must involve some aspect of pharmacology
‡ The independent study project must involve some aspect of environmental chemistry.
Chinese

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

Classical Studies (CS)

Professor Boatwright, Chair; Professor Younger, Director of Undergraduate Studies; Professors Burian, Clay, Connor, Davis, Oates, Rigsby, and Stanley; Associate Professor Janan; Professors Emeriti Newton, Richardson, and Willis

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) and two majors (classical languages, classical studies). 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 studies 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, and perhaps especially for law and finance.

GREEK (GRK)

1-2. Elementary Greek. (FL) A study of grammar and an introduction to reading. Two courses. Staff

10. Accelerated First-Year Greek. (FL) First year of ancient Greek in one semester. One course. Burian

14S. Intensive Elementary Greek. (FL) Introduction to the grammar, offered only in the summer; combining the work of Greek 1 and 2 in one course. Two courses. Staff

15S. Intensive Intermediate Greek. (FL) Combining the work of Greek 63 and 64 in one course, offered only in the summer; selected readings in prose and poetry. Two courses. Staff

63, 64. Intermediate Greek. (FL) Introduction to Greek prose and poetry. 63: Plato's Republic, Apology, or Symposium. 64: Euripides and Homer. One course each. Staff


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

104A. Advanced Greek. (AL, FL) Readings vary. Consent required. Taught at the Intercollegiate Center for Classical Studies in Rome. One course. Staff

104S, 105S. Studies in Greek Literature. (AL, FL) 104S: Herodotus and Sophocles. 105S: Thucydides and Aristophanes. One course each. Staff

200. Readings in Greek Literature. (AL, FL) One course. Staff

201. Studies in Greek Literature I. (AL, FL) One course. Staff
203. Homer. (AL, FL) Problems of language and structure in the Iliad; present state of Homeric scholarship. One course. Burian or Stanley

207. The Dramatists. (AL, FL) Readings and studies of selected plays by the major playwrights Aeschylus, Sophocles, Euripides, and Aristophanes. One course. Burian

211. Greek Literature in the Roman Empire. (AL, FL) Readings in the Second Sophistic, the novel, history, philosophy, and poetry. One course. Rigsby


222. The Historians. (AL, FL) Readings and studies in the major Greek historians Herodotus, Thucydides, and Xenophon. One course. Connor or Oates

Courses offered each year on demand in consultation with the director of undergraduate studies:

191, 192. 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 required. Half or one course. Variable credit. Staff

217T. Greek Prose Composition. (FL) The course content is determined by the needs of the students enrolled. One course. Staff

Courses Currently Unscheduled

205. Greek Lyric Poets. (AL, FL)
209. Introduction to Hellenistic Literature. (AL, FL)
210. Alexandrian Poetry. (AL, FL)
226. The Orators. (AL, FL)

LATIN (LAT)

1-2. Elementary Latin. (FL) Study of the structure of the language (forms, vocabulary, syntax, and pronunciation); selected readings in prose and poetry. Two courses. Staff

14S. Intensive Elementary Latin. (FL) Introduction to the grammar, offered only in the summer; combining the work of Latin 1 and 2 in one course. Two courses. Staff

15S. Intensive Intermediate Latin. (FL) Combining the work of Latin 63 and 64 in one course, offered only in the summer; selected readings in prose and poetry. Two courses. Staff

63. Intermediate Latin: Prose. (FL) Review of grammar and reading of selected prose, including Caesar. One course. Staff

64. Intermediate Latin: Vergil. (FL) Selected books of Vergil’s Aeneid. One course. Staff


100. Introduction to Literature. This number represents course credit for a score of 4 or 5 on one or more of the College Board Advanced Placement tests in Latin. One course.

101. Duke-Administered Study Abroad: Advanced Special Topics in Latin. Topics differ by section. One course. Staff


105S. Ovid: The Metamorphoses. (AL, FL) The poem studied as representative of Ovid’s varied narrative art, as the largest-scale Roman treatment of classical myths, and as Ovid’s statement on Augustanism. One course. Davis, Janan, or Newton
108S. Lyric and Occasional Poetry. (AL, FL) Readings in the works of Catullus, Horace, and Martial. One course. Davis, Janan, or Newton

109S, 110S. Studies in Latin Literature. (AL, FL) 109S: the Late Republic, including Catullus and Cicero. 110S: the Age of Augustus, including Horace and Livy. One course each. Davis, Janan, or Stanley

111S. Elegiac Poets. (AL, FL) The traditions of Latin love elegy and its development in Propertius, Tibullus, and Ovid. One course. Davis or Janan

112S. Roman Comedy. (AL, FL) Representative plays of Plautus and Terence with lectures on the genre and its Greek forebears. One course. Richardson

170. Special Topics in Latin Literature. (AL, FL) Prerequisite: the completion of second-year or third-year Latin, depending on the topic. One course. Staff

200. Readings in Latin Literature. (AL, FL) One course. Staff

204. Epic of the Silver Age. (AL, FL) Lucan to Statius. One course. Richardson

207S. Vergil's Aeneid. (AL, FL) Intensive analysis of all of Vergil's Aeneid, focusing on text and historical context, complemented by research papers and reports. Not open to students who have taken Latin 107S. One course. Davis or Newton

208S. Lyric and Occasional Poetry. (AL, FL) Readings in the works of Catullus, Horace, and Martial. Same as 108S, except additional term paper required. One course. Davis, Janan, or Newton

221. Medieval Latin. (AL, FL) Selected works of the Latin Middle Ages from Prudentius to the humanists. Genres studied usually include the hymn, sequence, drama, lyric, saints' lives, chronicle, epic, and epistle. C-L: Medieval and Renaissance Studies 221C. One course. Newton

Courses offered each year on demand in consultation with the director of undergraduate studies:

191, 192. Independent Study. Individual research and reading in a field of special interest; under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to qualified juniors and seniors. Consent of instructor required. Half or one course. Variable credit. Staff

217T. Latin Prose Composition. (FL) The course content is determined by the needs of the students enrolled. One course. Staff

Courses Currently Unscheduled

104. Advanced Latin. (AL, FL)
106S. Roman Satire. (AL, FL)
107S. Vergil's Aeneid. (AL, FL)
116S. Lucretius. (AL, FL)
205. The Roman Novel. (AL, FL)
206S. Cicero. (AL, FL)
211S. Elegiac Poets. (AL, FL)
214S. The Historians. (AL, FL)

CLASSICAL STUDIES (CS)

11S. Greek Civilization. (CZ) The culture of the ancient Greeks from the Bronze Age to Alexander the Great: art, literature, history, philosophy, and religion. One course. Staff

12S. Roman Civilization. (CZ) The culture of the ancient Romans from their beginnings to Constantine: art, literature, history, philosophy, and religion. One course. Staff
415. The World of Aristophanes. (AL) The comedies of Aristophanes as a window on fifth-century Athens: the conventions and public context of comedy, humor as an indicator of social values and limits, the literary consciousness of author and audience. Open only to students in the FOCUS Program. One course. Burian

495. First-Year Seminar. Topics vary each semester offered. One course. Staff

50. Duke-Administered Study Abroad: Special Topics in Classical Studies. Topics differ by section. One course. Staff

53. Greek History. (CZ) The political and intellectual history of the Hellenes from earliest times to the death of Alexander the Great. C-L: History 53. One course. Oates or Staff

54. Roman History. (CZ) The Roman Republic and Empire to the Late Antique. C-L: History 54. One course. Boatwright or Oates

100. History of Ancient Philosophy. (CZ) Not open to students who have taken Classical Studies 93 or Philosophy 93. See C-L: Philosophy 100. One course. Ferejohn, Joy, or Mahoney


105. Ancient and Medieval Epic. (AL) Reading in translation of major epics from antiquity (Gilgamesh, Homer's Iliad and Odyssey, Vergil's Aeneid) and the European Middle Ages (Beowulf, Song of Roland, Dante's Inferno), with emphasis on definition and critique of changing conceptions of the hero. One course. Burian or Davis

106. Drama of Greece and Rome. (AL) Reading in translation of selected tragedies (Aeschylus, Sophocles, Euripides, Seneca) and comedies (Aristophanes, Menander, Plautus, Terence) with emphasis on contemporary theatrical practice, political, social, and cultural developments, and influence on later European drama. C-L: Drama 170. One course. Burian or Clay

107. The Ancient Family: Comparative Histories. (CZ) 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; comparisons with modern definitions of the family. One course. Staff

108. Duke-Administered Study Abroad: Advanced Special Topics in Classical Studies. Topics differ by section. One course. Staff


115. The Classical Tradition. (AL, CZ) 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. One course. Burian

116S. The Pagan World of the Divine Comedy. (AL) See C-L: Distinguished Professor Courses 190S; also C-L: Medieval and Renaissance Studies 116S. One course. Clay

118. Egyptian Art and Archaeology. (AL) See C-L: Art History 120; also C-L: African and African-American Studies 120. One course. Staff

120. Principles of Archaeology. (CZ) Introduction to the many disciplines of archaeology, using a survey of cultures and civilizations to explain archaeological techniques, methods, theory, results, and ethics. One course. Younger

123. Greek Art and Archaeology I: Geometric to Classical. (AL) Architecture, sculpture, and painting from the geometric period (tenth century B.C.E.) to the classical (fourth century B.C.E.). C-L: Art History 123. One course. Younger

124. Greek Art and Archaeology II: Classical to Greco-Roman. (AL) Architecture, sculpture, painting, and mosaics from the classical period (fourth century B.C.E.) to the Greco-Roman (first century C.E.). C-L: Art History 124. One course. Younger

128. Art of the Roman Empire. (AL) See C-L: Art History 128. One course. Staff

130. Late Antique Christian Art. (AL) See C-L: Art History 130; also C-L: Medieval and Renaissance Studies 130, and Religion 130. One course. Wharton

131. Art of the Early Middle Ages. (AL) See C-L: Art History 131; also C-L: Medieval and Renaissance Studies 131A. One course. Wharton

139. Aspects of Medieval Culture. (CZ) See C-L: Medieval and Renaissance Studies 114; also C-L: Art History 139, and History 116. One course. Rasmussen, Solterer, or Witt

144. Roman Architecture. (AL) See C-L: Art History 126B. One course. Staff

145. Rome: History of the City. (AL, CZ) The development of the 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. (Taught on site in Italy in summer.) C-L: Art History 126A. One course. Staff

147. Ancient Greece. (CZ) On-site study of the cultures in Greece from Neolithic to Medieval, concentrating on Athens, the Peloponese, Crete, and the Cyclades. Summer program in Greece. C-L: Art History 115. One course. Younger

148. The Ancient City. 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.

148A. Art and Archaeology. (AL) One course. Staff

148B. Political, Social, and Cultural Context. (CZ) One course. Staff

149. Venetian Civilization and Its Mediterranean Background. (AL, CZ) Formation and development against the background of earlier, dominant Mediterranean cultures. (Taught in Venice.) One course. Davis

151S. The Discovery of the Old World: Utopias, Ancient and Modern. (AL) See C-L: Distinguished Professor Courses 198S; also C-L: Medieval and Renaissance Studies 198S. One course. Clay

155. The Aegean Bronze Age. (CZ) Application of archaeological techniques and procedures to problems in the development of the Minoan and Mycenaean civilizations. C-L: Art History 114. One course. Younger


161. Athens. (CZ) The city from antiquity (c. 1500 B.C.) to the present, concentrating on its monuments, self-image, and influence. C-L: Art History 116. One course. Staff
174S. Culture Heroes Across Cultures. (AL)  See C-L: Distinguished Professor Courses 180S; also C-L: African and African-American Studies 172S. One course. Davis

177. Perspectives in Archaeology. (CZ)  May be offered abroad in Duke's Summer Program in Israel or Greece. Not open to students who have taken Religion 99 or Classical Studies 99. See C-L: Religion 177; also C-L: Judaic Studies. One course. C. M. eyers, E. M. eyers, Younger, and staff

180. Special Topics in Classical Studies.  Topics to be announced. One course. Staff

183. Etruscan Art and Architecture. (AL)  See C-L: Art History 183. One course. Staff

195S, 196S. Junior-Senior Seminars in Classical Studies. (CZ)  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. One course each. Staff

203. Ancient Political Philosophy. (SS)  See C-L: Political Science 223. One course. Gillespie or Grant

211S. Plato. (CZ)  Selected dialogues. C-L: Philosophy 211S. One course. Ferejohn

217S. Aristotle. (CZ)  Selected topics. C-L: Philosophy 217S. One course. Ferejohn

220S. Topics in Greek Art. (AL)  Consent of instructor required. See C-L: Art History 201S. One course. Staff

222. Fifth- and Fourth-Century Greece. (CZ)  From the Persian Wars to the dominance of Philip of Macedon. C-L: History 260. One course. Oates or Rigsby


224. The Roman Republic. (CZ)  The rise of Rome, to its mastery of the Mediterranean; the political, social, and intellectual consequences. C-L: History 263. One course. Boatwright or Rigsby

225. The Roman Empire. (CZ)  The foundation, consolidation, and transformation of Roman rule from Augustus to Diocletian. C-L: History 264. One course. Boatwright

226. Late Antiquity. (CZ)  The institutional, intellectual, religious, and social transformation of the late Roman Empire. C-L: History 266. One course. Rigsby

227S. Topics in Roman Art. (AL)  Consent of instructor required. See C-L: Art History 202S. One course. Staff

230S. Topics in Early Christian and Byzantine Art. (AL)  Consent of instructor required. See C-L: Art History 233S; also C-L: Medieval and Renaissance Studies 233S, and Religion 275S. One course. Wharton

231S. Greek Sculpture. (AL)  Free standing, relief, and architectural sculpture from the archaic period to the Hellenistic age, representing changing aesthetic, social, and political aims. C-L: Art History 238S. One course. Younger

232S. Greek Painting. (AL)  From the Late Bronze Age to the fourth century B.C., with emphasis on archaic and classical Athenian vase painters. C-L: Art History 237S. One course. Stanley

233S. Greek Architecture. (AL)  Development of form and function in the various religious, civic, and domestic building types, from the Bronze Age through the Hellenistic period. C-L: Art History 205S. One course. Richardson or Younger

236S. Roman Painting. (AL)  The techniques, iconography, and use in decoration. C-L: Art History 227S. One course. Richardson

Courses offered each year on demand in consultation with the director of undergraduate studies:

191, 192. 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 required. One course each. Staff

193, 194. Honors Research in Classical Studies. Research culminating in the writing of one longer or two shorter papers as partial fulfillment of the requirements for graduation with distinction. Open only to senior majors. One course each. Staff

Courses Currently Unscheduled

70. The Age of Augustus. (CZ)
102. History of Greek and Roman Civil Law. (CZ)
103. Religion in Greece and Rome. (CZ)
129. The Age of Justinian. (AL)
135. Alexander the Great. (CZ)
137. Roman and Non-Roman in Ancient Italy. (CZ)
162. Pompeii. (CZ)
171. Ancient Cosmology. (CZ)
221. Archaic Greece. (CZ)
235S. Roman Architecture. (AL)
258. The Hellenistic and Roman East. (CZ)

THE MAJOR

Students may major in classical languages and classical studies. 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. 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 Studies (Ancient History, Civilization, Literature, Archaeology)

Prerequisites. Classical Studies 11S or 53 and 12S or 54.

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 studies and classical languages, no more than two courses in Greek and/ or Latin may be counted toward both majors.

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
Comparative Area Studies (CST)  171

(Greek 64 and Latin 64 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 studies, no more than two courses in Greek and/or Latin may be counted toward both majors.

**Departmental Graduation with Distinction**

The department offers work leading toward graduation with distinction. See the section on honors in this bulletin and the departmental director of undergraduate studies.

**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 studies.

**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 (CST)**

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. Topics differ by section. One course. Staff

100. Duke-Administered Study Abroad: Advanced Special Topics in Comparative Area Studies. Topics differ by section. One course. Staff
110. Global Human Geography. (CZ, SS) World development and modernization through the lenses of geography. Patterns of adaptation by peoples and societies to different physical environments and the changing world economy. One course. Lewis

125. Comparative Approaches to Global Issues. (CZ, SS) Comparative 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. C-L: Cultural Anthropology 125, History 137, Perspectives on Marxism and Society, Political Science 125, Religion 183, and Sociology 125. One course. Staff

140. Selected Topics in Comparative Area Studies. Topics vary from semester to semester, focusing either on specific world regions or particular comparative/global issues. One course. Staff

150S. Comparative Area Studies Honors Seminar. (CZ) Open to seniors majoring in Comparative Area Studies. Consent of instructor required. One course. Staff

191, 192. 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. One course each. Staff

200S. Advanced Topics in Comparative Area Studies. Topics vary, focusing either on specific world regions or particular comparative/global issues. One course. Staff

INTRODUCTORY COURSES

African and African-American Studies
70, 71. The Third World and the West. (Cross-listed.) Staff

Cultural Anthropology
94. Introduction to Cultural Anthropology. Staff
145A. Music of the World’s Peoples. (Cross-listed.) Meintjes

History
25. Introduction to World History: To 1700. Staff
26. Introduction to World History: Since 1700. Staff
75, 76. The Third World and the West. (Cross-listed.) Staff

Literature
98. Introduction to the Study of Literature and Society. (Cross-listed.) Lentricchia or Willis

Music
136. Music of the World’s Peoples. (Cross-listed.) Meintjes

Political Science
92. Comparative Politics (B). Staff

Religion
45. Religions of Asia. Cornell, Lawrence, Nickerson, or staff

COMPARATIVE/GLOBAL ISSUES COURSES

African and African-American Studies
121. Introduction to Asian and African Literature. (Cross-listed.) Staff
158A. New Perspectives on the Atlantic World. (Cross-listed.) Ewald
160. Women in Islam: Fact and Fiction. (Cross-listed.) Co-ke
168S. The Atlantic Slave Trade. (Cross-listed.) Caspar

Art History
168. Art since 1945: Modernism and Postmodernism. (Cross-listed.) Leighton or Stiles
169. Documentary Photography and Social Activism in the Nuclear Age. (Cross-listed.) Stiles
179. The History of Performance Art. (Cross-listed.) Stiles
## Asian and African Languages and Literature
- 121. Introduction to Asian and African Literature. (Cross-listed.) Staff
- 120. Women in Islamic: Fact and Fiction. (Cross-listed.) Cooke

## Cultural Anthropology
- 108. Fantasy, Mass Media, and Popular Culture. Allison
- 110. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O'Barr, or Wilson
- 114. Languages of the World. (Cross-listed.) Andrews or Tetel
- 117. Global Culture. (Cross-listed.) Plot
- 119. Language, Culture, and Society. (Cross-listed.) Apte, O'Barr, or Strauss
- 126. Muslim World: Transformations and Continuities. (Cross-listed.) Ewing
- 137. Gender Inequality. (Cross-listed.) Allison, Luttrell, Quinn, or Silverblatt
- 139. Marxism and Society. (Cross-listed.) Staff
- 142. Sexuality in Global Perspective. (Cross-listed.) Luttrell
- 189S. Crossing Cultures. Staff
- 190. Theoretical Foundations of Cultural Anthropology. Staff
- 191A, S. Feminist Ethnography. (Cross-listed.) Luttrell
- 234S. Political Economy of Development: Theories of Change in the Third World. (Cross-listed.) Staff

## Drama
- 179. The History of Performance Art. (Cross-listed.) Stiles

## Economics
- 140. Comparative Economic Systems. Treml
- 148. History of Economic Thought. De Marchi or Goodwin
- 219S. Economic Problems of Underdeveloped Areas. Kelley or Wallace
- 240. Comparative Economic Systems. Treml
- 286S. Economic Policy-Making in Developing Countries. (Cross-listed.) Conrad

## Education
- 139. Marxism and Society. (Cross-listed.) Staff

## English
- 114. Languages of the World. (Cross-listed.) Andrews or Tetel
- 120. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O'Barr, or Wilson

## History
- 101C. Terrorism, 1848-1968. M. Miller
- 120. History of Socialism and Communism. Lerner
- 1235. Madness and Society in Historical Perspective. M. Miller
- 132. Modern World Environmental History, 1500 to the Present. Richards
- 158A. New Perspectives on the Atlantic World. (Cross-listed.) Ewald
- 168S. S. The Atlantic Slave Trade. (Cross-listed.) Gaspar
- 166. Marxism and Society. (Cross-listed.) Staff
- 207A, S. Geographic Perspectives in History I: Atlantic Worlds. Wigen
- 207B, S. Geographic Perspectives in History II: Asian and Pacific Worlds. Wigen
- 206A, S. Dectering the Cultural Map: Boundary Zones as Counter-Cores. Lewis and Wigen
- 234S. Political Economy of Development: Theories of Change in the Third World. (Cross-listed.) Staff
- 239. History of Socialism and Communism. Lerner

## Linguistics
- 102. Languages of the World. (Cross-listed.) Andrews or Tetel

## Literature
- 141. International Popular Culture. (Cross-listed.) Davidson, Gaines, Radway, or Willis
- 181. Marxism and Society. (Cross-listed.) Staff

## Music
- 119. The Humanities and Music. Bartlet or staff
- 158S. Music History III: After 1850. Gilliam or Todd
- 159S. Music History II: From 1650 to 1850. Bartlet or Silbiger

## Political Science
- 107. Environmental Politics and Policies in the Industrial World (B). (Cross-listed.) McKean
- 116S. Post-World War II Europe and East Asia: A Comparative Perspective (D). Grieco
- 147. Environmental Politics and Policies in the Developing World (B). (Cross-listed.) McKean or Miranda
148D. Environmental Politics Beyond Borders (D). (Cross-listed.) McKean
155. The Politics and Economics of Developing Areas (B). Staff
176. Perspectives on Food and Hunger (B). Johns
180. Media in Comparative Perspective (B). (Cross-listed.) Staff
206S. Political Participation: Comparative Perspectives (B). Shi
217. Comparative and Historical Methods (B). (Cross-listed.) Gerffii, Lin, or Tiryakian
231S. Crisis, Choice, and Change in Advanced Democratic States (B). Kitschelt
234S. Political Economy of Development: Theories of Change in the Third World (B). (Cross-listed.) Staff
266. Comparative Social Policy (B). (Cross-listed.) Staff
277. Comparative Party Politics (B). (Cross-listed.) Lange
284S. Public Policy Process in Developing Countries (B). (Cross-listed.) Ascher

Public Policy Studies
107. Environmental Politics and Policies in the Industrial World. (Cross-listed.) McKean
143D. Environmental Politics Beyond Borders (B). (Cross-listed.) McKean
147. Environmental Politics and Policies in the Developing World. (Cross-listed.) McKean or Miranda
284S. Public Policy Process in Developing Countries. (Cross-listed.) Ascher
286S. Economic Policy-Making in Developing Countries. (Cross-listed.) Conrad

Religion
103. Islam in East and Southeast Asia. Cornell
112. Muslim Minorities in Society: From Asia to America. Cornell and Lawrence
119. Muslim World: Transformations and Continuities. (Cross-listed.) Ewing
129. Women in Islam: Fact and Fiction. (Cross-listed.) Cooke
150. Mysticism. Staff

Russian
155. Special Topics in Russian and American Culture. Lahusen and Van Tuyl
159. Women's Autobiographies in European Contexts: Telling the Self in Russia, France, and Britain. (Cross-listed.) Ghetth

Sociology
118. Sex, Gender, and Society. (Cross-listed.) Bach, Buchmann, or O'Rand
126. Third World Development. (Cross-listed.) Buchmann or Gerffii
139. Marxism and Society. (Cross-listed.) Staff
142. Organizations and Global Competitiveness. (Cross-listed.) Buchmann or Gerffii
143. Management and Labor Relations. Gerffii or Thornton
145. Nations, Regions, and the Global Economy. (Cross-listed.) Buchmann, Gerffii, or Shanahan
160. Advertising and Society: Global Perspective. (Cross-listed.) Luttrel, O'Barr, or Wilson
170. Mass Media. (Cross-listed.) Staff
171. Comparative Health Care Systems. (Cross-listed.) Staff
182. Media in Comparative Perspective. (Cross-listed.) Staff
214. Comparative and Historical Methods. (Cross-listed.) Gerffii, Lin, or Tiryakian
234S. Political Economy of Development: Theories of Change in the Third World. (Cross-listed.) Staff

COMPARATIVE/GLOBAL ISSUES SPECIAL TOPICS COURSES

Political Science
100K.01 Anglo-American Constitutionalism, Law, and Legal Institutions. Staff
100LS.02 Law and Liability: Personal Injury in Britain and the United States. Staff

AREA COURSES: AFRICA

African and African-American Studies
114S. Islam in West Africa. (Cross-listed.) El Hamel
115A. History of Africa: From Antiquity to Early Modern Times. (Cross-listed.) El Hamel or Ewald
115B. History of Africa: From Early Modern Times to Independence. (Cross-listed.) El Hamel or Ewald
122. Culture and Politics in Africa. (Cross-listed.) Piot
150. Religion and Spirituality in the African Diaspora. (Cross-listed.) Daniels
154. Art and Philosophy from West Africa to the Black Americas. (Cross-listed.) Powel
168S. The Atlantic Slave Trade. (Cross-listed.) Gaspar
171. From Apartheid to Democracy in South Africa. (Cross-listed.) Johns
270S. Topics in African Art. (Cross-listed.) Powel
292S. Slavery and Freedom in Africa, to 1960. (Cross-listed.) Ewald

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Art History
174. Art and Philosophy from West Africa to the Black Americas. (Cross-listed.) Powell
270S. Topics in African Art. (Cross-listed.) Powell

Cultural Anthropology
122. Culture and Politics in Africa. (Cross-listed.) Piot
150. Religion and Spirituality in the African Diaspora. (Cross-listed.) Daniels

History
114A. S. Islam in West Africa. (Cross-listed.) El Hamel
115A. History of Africa: From Antiquity to Early Modern Times. (Cross-listed.) El Hamel or Ewald
115B. History of Africa: From Early Modern Times to Independence. (Cross-listed.) El Hamel or Ewald
168S. S. The Atlantic Slave Trade. (Cross-listed.) Gaspar
295S. Slavery and Freedom in Africa, to 1960. (Cross-listed.) Ewald

Political Science
171. From Apartheid to Democracy in South Africa (B). (Cross-listed.) Johns

Religion
160. Religion and Spirituality in the African Diaspora. (Cross-listed.) Daniels

AREA COURSES: EAST ASIA

Art History
164. Early Chinese Art. Abe
170. Chinese Buddhist Art. Abe
172. Topics in Asian Art. Abe
180A. History of Japanese Art I: Prehistoric to Early Modern. Weisenfeld
180B. History of Japanese Art II: Early Modern to the Present. Weisenfeld
181A. Japanese Print Culture. Weisenfeld
272S. Topics in Chinese Art. Abe
274S. Topics in Japanese Art. Weisenfeld

Asian and African Languages and Literature
150S. Chinese Modernism in Post-Mao Era. Wang
153. East Asian Cultural Studies. (Cross-listed.) Ching or Yoda
162. Modern Japanese Literature and Culture. Ching or Yoda
163. Korean Literature in Translation. Staff
180S. Modern Arabic Literature in Translation. Staff
1805. Intellectuals/ Culture/ History: Modern China in Transition. Staff
253. East Asian Cultural Studies. (Cross-listed.) Ching or Yoda
259. The Bestseller: Cultural Populism in the 1990s' China. (Cross-listed.) Wang
262. Modern Japanese Literature and Culture. (Cross-listed.) Ching or Yoda
288S. Seminar on Modern Chinese Cinema. Wang

Chinese
125, 126. Advanced Chinese. Yao-Lahusen
180S. Topics in Modern Chinese. Staff
1845. Topics in Modern Chinese. Staff

Cultural Anthropology
146. East Asian Cultural Studies. (Cross-listed.) Ching or Yoda
149. Modern China in Film and Literature. (Cross-listed.) Dirlik
163. Foundations of Chinese Civilization. Staff
254. East Asian Cultural Studies. (Cross-listed.) Ching or Yoda
260. Modern Japanese Literature and Culture. (Cross-listed.) Ching or Yoda
263. The Bestseller: Cultural Populism in the 1990s' China. (Cross-listed.) Wang

Economics
1425. Chinese Economy in Transition. (Cross-listed.) Yang
242S. Chinese Economy in Transition. (Cross-listed.) Yang

History
101K. Topics in Chinese Civilization. Dirlik
142A. China: Roots of Revolution. (Cross-listed.) Dirlik or Mazumdar
142C. Chinese Food in History. Mazumdar
142E. Modern China in Film and Literature. (Cross-listed.) Dirlik
Comparative Area Studies (CST)  177

143A. Ancient and Early Modern Japan. Wigen
143B. The Emergence of Modern Japan. Wigen
207B, S. Geographic Perspectives in History II: Asian and Pacific Worlds. Wigen

Japanese
183S, 184S. Topics in Japanese. Ching

Korean
183, 184. Topics in Korean. Kim

Literature
279. The Bestseller: Cultural Populism in the 1990s China. (Cross-listed.) Wang

Political Science
111. Contemporary Japanese Politics (B). McKean
133. Japan in World Politics (D). McKean
169. Chinese Politics (B). Shi
272. China and the World (D). Shi

Public Policy Studies
100A. East Asian Political Economy: Institutions, Networks, and Politics. (Cross-listed.) Staff
142S. Chinese Economy in Transition. (Cross-listed.) Staff
242S. Chinese Economy in Transition. (Cross-listed.) Staff

Sociology
183. East Asian Political Economy: Institutions, Networks, and Politics. (Cross-listed.) Staff

Sociology
110A. Comparative Sociology: Africa. Staff

EAST ASIA SPECIAL TOPICS COURSES

Political Science
100U. Duke Summer Program: Korea-Taiwan I. Comparative Analysis of Democratic Institutions in East Asia. Staff
100V. Duke Summer Program: Korea-Taiwan II. (Cross-listed).

Sociology
10B. Comparative Sociology: Asia. Staff

AREA COURSES: EASTERN EUROPE

History
110. History of Eastern Europe in Modern Times. Lerner
120. History of Socialism and Communism. Lerner
239. History of Socialism and Communism. Lerner

Political Science
105. The Politics of Democratization in Eastern Europe (B). Kitschelt

Russian
163. Literature of Former Soviet Republics. Staff

AREA COURSES: LATIN AMERICA

African and African-American Studies
123. Modernity, Ethnicity, and Colonization. (Cross-listed.) Mignolo or staff

Art History
257S. Topics in Pre-Columbian Art and Culture. Staff

Cultural Anthropology
130. Modernity, Ethnicity, and Colonization. (Cross-listed.) Mignolo or staff
140S. Cultural Diversity in the Andes. (Cross-listed.) Staff

History
136A. Introduction to Contemporary Latin American Reality. (Cross-listed.) James
136B. Biography and Politics in Latin America. (Cross-listed.) French
136C. Nineteenth-Century Latin America: Building Postcolonial Nations. (Cross-listed.) Staff
174B. Modern Latin America. (Cross-listed.) Staff

Latin American Studies
198. Special Topics in Latin American Studies. (Cross-listed.) Staff
Medieval and Renaissance Studies
210A. History of the Spanish Language. (Cross-listed.) Garci-Gómez

Political Science
151. Dictators and Democrats in Modern Latin America (B). Morgenstern
151A. Introduction to Latin American Politics (B). (Cross-listed.) Staff
151B. Presidents, Parties, and Legislatures: The Institutions of Modern Latin American Democracies (B). (Cross-listed.) Morgenstern
151D. Introduction to Latin American Politics (B). (Cross-listed.) Morgenstern
253S. Comparative Government and the Study of Latin America (B). (Cross-listed.) Morgenstern

Portuguese
111S. Research Seminar in Contemporary Lusophone Issues. (Cross-listed.) Damasceno

Romance Studies
124. Modernity, Ethnicity, and Colonization. (Cross-listed.) Mignolo or staff

Spanish
115, 116. Introduction to Spanish-American Literature. (Cross-listed.) Staff
121. Latin-American Literature in Translation. (Cross-listed.) Dorfman
124. Special Topics in Latin American Studies. (Cross-listed.) Staff
140C. S. Cultural Diversity in the Andes. (Cross-listed.) Staff
140S. Literature of the Discovery and Conquest of America. (Cross-listed.) Pérez-Firmat
144S. Spanish-American Literature of Identity. (Cross-listed.) Pérez-Firmat
146. The Spanish-American Novel. (Cross-listed.) Moreiras or staff
1475. Latin-American Women Writers. (Cross-listed.) Staff
1755. Hispanic Literature and Popular Culture. (Cross-listed.) Sieburth
210. History of the Spanish Language. (Cross-listed.) Garci-Gómez

LATIN AMERICA SPECIAL TOPICS COURSES

Sociology
110D. Comparative Sociology: Latin America. Staff

AREA COURSES: MIDDLE EAST

African and African-American Studies
151. Islamic Mysticism: Arabic (Western) Tradition. (Cross-listed.) Cornell
160. Women in Islam: Fact and Fiction. (Cross-listed.) Cooke
166. History of the Sahara. (Cross-listed.) El Hamel
254. Justice, Law, and Commerce in Islam. (Cross-listed.) Cornell

Arabic
125, 126. Advanced Arabic. Cooke
137. Qur’anic Studies. Cornell
183, 184. Topics in Arabic. Cooke

Art History
165. Introduction to Israeli Culture. (Cross-listed.) Zakim

Asian and African Languages and Literature
155. Introduction to Israeli Culture. (Cross-listed.) Zakim
165S. Modern Arabic Literature in Translation. Staff
1695. Modern Hebrew Literature in English Translation. (Cross-listed.) Zakim
190. Women in Islam: Fact and Fiction. (Cross-listed.) Cooke

Cultural Anthropology
126. Muslim World: Transformations and Continuities. (Cross-listed.) Ewing
147, 148. Introduction to Islamic Civilization. (Cross-listed.) Cornell, Lawrence or staff

Hebrew
1255, 1265. Advanced Modern Hebrew. (Cross-listed.) Zakim

History
101G, 102G. Introduction to Islamic Civilization. (Cross-listed.) Cornell, Lawrence or staff
141A. Crossroads of Eurasia: The History of Turkey. Neuscheid
152. The Modern Middle East. (Cross-listed.) Miller
166. History of the Sahara. (Cross-listed.) El Hamel
296. United States Policy in the Middle East. (Cross-listed.) Kuniholm

178 Courses and Academic Programs
Medieval and Renaissance Studies
134C. Jewish Mysticism. (Cross-listed.) Bland
146A, 147A. Introduction to Islamic Civilization. (Cross-listed.) Cornell, Lawrence or staff
153A. Islamic Mysticism: Arabic (Western) Tradition. (Cross-listed.) Cornell
254. Justice, Law, and Commerce in Islam. (Cross-listed.) Cornell

Public Policy Studies
257. United States Policy in the Middle East. (Cross-listed.) Kuniholm

Religion
119. Muslim World: Transformations and Continuities. (Cross-listed.) Ewing
134. Jewish Mysticism. (Cross-listed.) Bland
139. Women in Islam: Fact and Fiction. (Cross-listed.) Cooke
146, 147. Introduction to Islamic Civilization. (Cross-listed.) Cornell, Lawrence, or staff
152A. Islamic Mysticism: Arabic (Western) Tradition. (Cross-listed.) Cornell
152B. Islamic Mysticism: Perso-Indian (Eastern) Traditions. Lawrence
254. Justice, Law, and Commerce in Islam. (Cross-listed.) Cornell
284. The Religion and History of Islam. Cornell or Lawrence

Area Courses: North America

African and African-American Studies
124S. Slave Society in Colonial Anglo-America: The West Indies, South Carolina, and Virginia. (Cross-listed.) Gaspar
127A. The Caribbean, 1492-1700. (Cross-listed.) Gaspar
127B. The Caribbean in the Eighteenth Century. (Cross-listed.) Gaspar
154. Art and Philosophy from West Africa to the Black Americas. (Cross-listed.) Powell

Art and History
174. Art and Philosophy from West Africa to the Black Americas. (Cross-listed.) Powell

Canadian Studies
98. Introduction to Canada. (Cross-listed.) Staff
184S. Canadian Issues. (Cross-listed.) Staff
185S. The Canadian Health Care System. (Cross-listed.) Warren
282S. Canada. (Cross-listed.) Staff

Cultural Anthropology
124. American Indian Peoples. Staff
184S. Canadian Issues. (Cross-listed.) Staff
185S. The Canadian Health Care System. (Cross-listed.) Warren
282S. Canada. (Cross-listed.) Staff

Economics
98. Introduction to Canada. (Cross-listed.) Staff
184S. Canadian Issues. (Cross-listed.) Staff
185S. The Canadian Health Care System. (Cross-listed.) Warren
282S. Canada. (Cross-listed.) Staff

English
186A, S. Canadian Literature in English. (Cross-listed.) Staff

History
98. Introduction to Canada. (Cross-listed.) Staff
108C. Canadian-American Relations. (Cross-listed.) Thompson
108D. Across the Great Divides: The United States and Canadian Wests in the Nineteenth and Twentieth Centuries. (Cross-listed.) Thompson
108E. S. The Canadian Health Care System. (Cross-listed.) Warren
119A, 119B. Native American History. (Cross-listed.) Wood
124S. Slave Society in Colonial Anglo-America: The West Indies, South Carolina, and Virginia. (Cross-listed.) Gaspar
127A. The Caribbean, 1492-1700. (Cross-listed.) Gaspar
127B. The Caribbean in the Eighteenth Century. (Cross-listed.) Gaspar
131B. The Spanish Caribbean. (Cross-listed.) TePaske
145A, 145B. African-American History. (Cross-listed.) Gavins

Comparative Area Studies (CST) 179
183S. Canada from the French Settlement. (Cross-listed.) Thompson
184S. Canadian Issues. (Cross-listed.) Staff
276A. Asian-American Experience. Mazumdar
282S. Canada. (Cross-listed.) Staff

Political Science
98. Introduction to Canada (B). (Cross-listed.) Staff
184S. Canadian Issues (B). (Cross-listed.) Staff
185S. The Canadian Health Care System (B). (Cross-listed.) Warren
282S. Canada (B). (Cross-listed.) Staff

Public Policy Studies
187S. The Canadian Health Care System. (Cross-listed.) Warren

Sociology
98. Introduction to Canada. (Cross-listed.) Staff
184S. Canadian Issues. (Cross-listed.) Staff
185S. The Canadian Health Care System. (Cross-listed.) Warren
282S. Canada. (Cross-listed.) Staff

Spanish
143S. Literature of the Discovery and Conquest of America. (Cross-listed.) Staff
145S. Literature of the Hispanic Minorities of the United States. (Cross-listed.) Pérez-Firmat

AREA COURSES: RUSSIA

Drama
177S. Chekhov. (Cross-listed.) Flath and staff

Economics
293S. Russian Economic History. Treml
294S. Soviet Economy in Transition. Treml

History
146S. Introduction to Russian Civilization. (Cross-listed.) Pelech
161. History of Modern Russia. Miller
180. The Soviet Experience. Lerner
185A. Socialist Realism: Soviet Literature of the 1930s and 1940s. (Cross-listed.) Lahusen
201S. The Russian Intelligentsia and the Origins of the Revolution. Miller
202S. The Russian Revolution. Miller
262. The Soviet Experience. Lerner

Literature
214. Gender, Nationalities, and Russian Literary Traditions. (Cross-listed.) Gheith

Political Science
165. Politics and Foreign Policy of Russia (B). Hough
276S. Media and Democratization in Russia (B). (Cross-listed.) Mickiewicz

Public Policy Studies
131S. Law, Culture, and the Russian Legal Tradition. (Cross-listed.) Newcity
243S. Media and Democratization in Russia. (Cross-listed.) Mickiewicz

Russian
103S, 104S. Studies in the Russian Language and Culture. Staff
108S. Soviet Civilization: History and Its Mythologies. Staff
130. Soviet Cinema. (Cross-listed.) Gaines, Jameson, and Lahusen
135. Contemporary Russian Media. (Cross-listed.) Andrews
135A. Contemporary Russian Media. (Cross-listed.) Staff
149S. Russian Culture in the Era of Terror: A Reexamination. (Cross-listed.) Lahusen
157S. Law, Culture, and the Russian Legal Tradition. (Cross-listed.) Newcity
161. Masterpieces of Nineteenth-Century Russian Literature I. Staff
162. Masterpieces of Nineteenth-Century Russian Literature II. Staff
170. Russian Dissident and Emigré Literature. Lahusen
175. Tolstoy. Van Tuyl
176. Dostoevsky, Flath, Gheith, or Van Tuyl
177S. Chekhov. (Cross-listed.) Flath and staff
178A. Russian Short Fiction. Gheith

180 Courses and Academic Programs
178B. Russian Short Fiction in the Original. Gheith
182. Socialist Realism: Soviet Literature of the 1930s and 1940s. (Cross-listed.) Lahusen
190S. Introduction to Russian Civilization. (Cross-listed.) Pelech
195. Advanced Russian. Andrews or Maksimova
196. Advanced Russian: Readings, Translation, and Syntax. Andrews or Maksimova
214. Gender, Nationalities, and Russian Literary Traditions. (Cross-listed.) Gheith
261. Masterpieces of Nineteenth-Century Russian Literature I. Staff
262. Masterpieces of Nineteenth-Century Russian Literature II. Staff
269. Women and Russian Literature. (Cross-listed.) Gheith

AREA COURSES: SOUTH ASIA

Art History
217. Islam and Islamic Art in India. (Cross-listed.) Lawrence
Asian and African Languages and Literature
137. Contemporary Culture in South Asia. Khanna
160, 161. Introduction to the Civilizations of Southern Asia. (Cross-listed.) Staff
Cultural Anthropology
101, 102. Introduction to the Civilizations of Southern Asia. (Cross-listed.) Staff
120. South Asia: Institutions and Change. Apte or Ewing
147, 148. Introduction to Islamic Civilization. (Cross-listed.) Cornell, Lawrence, or staff
History
101G, 102G. Introduction to Islamic Civilization. (Cross-listed.) Cornell, Lawrence, or staff
139B. Modern South Asia. Kaiwar
193, 194. Introduction to the Civilizations of Southern Asia. (Cross-listed.) Staff
Medieval and Renaissance Studies
146A, 147A. Introduction to Islamic Civilization. (Cross-listed.) Cornell, Lawrence, or staff
Religion
144, 145. Introduction to the Civilizations of Southern Asia. (Cross-listed.) Staff
146, 147. Introduction to Islamic Civilization. (Cross-listed.) Cornell, Lawrence, or staff
152B. Islamic Mysticism: Perso-Indian (Eastern) Traditions. Lawrence
217. Islam and Islamic Art in India. (Cross-listed.) Lawrence

AREA COURSES: WESTERN EUROPE

Art History
151. Art of Italy in the Seventeenth Century. (Cross-listed.) Rice
152. Art of the Netherlands in the Sixteenth Century. (Cross-listed.) Van Miegroet
153. Netherlandish Art and Visual Culture in the Seventeenth and Eighteenth Centuries. (Cross-listed.) Van Miegroet
154. German Art in the Fifteenth and Sixteenth Centuries. (Cross-listed.) Van Miegroet
155. Mercantile Culture and Art in the Netherlands. (Cross-listed.) De Marchi and Van Miegroet
158-159. History of Netherlandish Art and Visual Culture in a European Context. (Cross-listed.) Van Miegroet
166. Nineteenth-Century Art after 1848: Early Modernism. Antliff or Leighton
167. Twentieth-Century Art, 1900-1945: The Avant-garde and Modernism. (Cross-listed.) Antliff, Leighton, or Stiles
Cultural Anthropology
182. Contemporary European Issues. (Cross-listed.) Staff
Distinguished Professor Courses
Drama
185S. Introduction to German Drama. (Cross-listed.) Risholm or Walther
Economics
60. Economics of a United Europe. Tolksdorf
146. Adam Smith and the System of Natural Liberty. De Marchi
152. Mercantile Culture and Art in the Netherlands. (Cross-listed.) De Marchi and Van Miegroet
French
104S. French for Current Affairs. Keineg or staff
117S. Contemporary Ideas. Staff
139. French Civilization. Keineg or Tetel
140. France in the Making: Language, Nation, and Literary Culture in Premodern Europe. (Cross-listed.) Solterer
145S. Topics in Renaissance Literature and Culture. (Cross-listed.) Tetel
152. The Early French Novel. Stewart
153. The French Enlightenment. Stewart
154S. Upheavals That Made Modern France. (Cross-listed.) Orr and Reddy
155. Insiders and Outsiders of Nineteenth-Century France. Orr
256. Modern Literature and History. (Cross-listed.) Kaplan, Orr, or staff

German
126S. Rilke, Kafka, Mann. Borchardt, Morton, or Rolleston
130S. From Enlightenment to Classicism. Morton
131S. The Novelle. Morton
133S. Introduction to German Drama. (Cross-listed.) Risholm or Walther
135S. Introduction to Twentieth-Century German Women Writers. (Cross-listed.) Rasmussen
152S. Berlin in Literature and Culture. Wohlfeil
153. Aspects of Contemporary German Culture. Staff
155. Advanced German Cultural Studies. Staff
245S. The Twentieth Century. Rolleston
247S. Postwar German Literature. Staff
270. Consciousness and Modern Society. (Cross-listed.) Rolleston

History
107A. Tudor/ Stuart Britain. (Cross-listed.) Herrup
107B. Modern Britain. (Cross-listed.) Thorne
117. Early Modern Europe. (Cross-listed.) Neuschel
135B. Weimar and Nazi Germany. Koonz
135C. Germany and the Cold War. Koonz
138. Renaissance and Reformation Germany. (Cross-listed.) Robisheaux
140A. France in the Making: Language, Nation, and Literary Culture in Premodern Europe. (Cross-listed.) Solterer
151C. Art of Italy in the Seventeenth Century. (Cross-listed.) Rice
152A. Art of the Netherlands in the Sixteenth Century. (Cross-listed.) Van Miegroet
152B. Dutch Art and Visual Culture in the Seventeenth and Eighteenth Centuries. (Cross-listed.) Van Miegroet
154A. German Art in the Fifteenth and Sixteenth Centuries. (Cross-listed.) Van Miegroet
154B. Mercantile Culture and Art in the Netherlands. (Cross-listed.) DeMarchi and Van Miegroet
158-159. History of Netherlandish Art and Visual Culture in a European Context. (Cross-listed.) Van Miegroet

Italian
115. Italian Women Writers. (Cross-listed.) Finucci
118S. Italian Literature and Popular Culture. Dainotto or Finucci
123. Aspects of Italian Literature. (Cross-listed.) Staff
131. Topics in Italian Civilization. Dainotto or Finucci
139. Modern Italy. Caserta
155S. Nineteenth-Century Italian Literature. Caserta
156S. Topics in Gender and Sexuality Studies. (Cross-listed.) Finucci or staff

Medieval and Renaissance Studies
107A. Tudor/ Stuart Britain. (Cross-listed.) Herrup
118. Early Modern Europe. (Cross-listed.) Neuschel
138. Renaissance and Reformation Germany. (Cross-listed.) Robisheaux
140A. France in the Making: Language, Nation, and Literary Culture in Premodern Europe. (Cross-listed.) Solterer
151C. Art of Italy in the Seventeenth Century. (Cross-listed.) Rice
152A. Art of the Netherlands in the Sixteenth Century. (Cross-listed.) Van Miegroet
152B. Dutch Art and Visual Culture in the Seventeenth and Eighteenth Centuries. (Cross-listed.) Van Miegroet
154A. German Art in the Fifteenth and Sixteenth Centuries. (Cross-listed.) Van Miegroet
154B. Mercantile Culture and Art in the Netherlands. (Cross-listed.) DeMarchi and Van Miegroet
158-159. History of Netherlandish Art and Visual Culture in a European Context. (Cross-listed.) Van Miegroet
160S. Topics in Renaissance Literature and Culture. (Cross-listed.) M. Tetel
210A. History of the Spanish Language. (Cross-listed.) Garci-Gómez
221A. Special Topics in the History of Europe, 1200-1700. (Cross-listed.) Neuschel or Robisheaux
251B. Topics in Intellectual History of Europe, 1450-1650. (Cross-listed.) Witt
268S. England in the Seventeenth Century. (Cross-listed.) Herrup

Music
143. Beethoven and His Time. Bartlet, Gilliam, Silbiger, or Todd
144. Bach and His Time. Silbiger
145. Mozart and His Time. Silbiger

Political Science
115. Politics and Society in Germany (B). Kitschelt
135. Political Development of Western Europe (B). Kitschelt or Lange
136. Comparative Government and Politics: Western Europe (B). Kitschelt or Lange
225. Topics in Comparative Government and Politics: Western Europe (B). Kitschelt or Lange
231S. Crisis, Choice, and Change in Advanced Democratic States (B). Kitschelt

Spanish
133. Contemporary European Issues. (Cross-listed.) Staff
137. Topics in Contemporary Spanish Culture. Garci-Gómez
171. Literature of Contemporary Spain. (Cross-listed.) Vilarós or staff
210. History of the Spanish Language. (Cross-listed.) Garci-Gómez
251S. Spanish Film. (Cross-listed.) Vilarós
280. The Cultures of Immigration in Spain. Vilarós

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 a language. The specific language courses are too numerous to list here. 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 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, but will also include guest lectures. 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 (CPS)

Professor Vitter, Chair; Associate Professor of the Practice Lucic, Associate Chair; Associate Professor of the Practice Ramm, Director of Undergraduate Studies; Associate Professor of the Practice Astrachan, Director of Undergraduate Studies for Teaching and Learning; Professors Agarwal, Behringer, Biermann, Edelsbrunner, Ellis, Loveland, Marinos, Palmer, Reif, Rose, Trivedi, and Utku; Associate Professors Board, Greenside, Kedem, and Wagner; Assistant Professors Arge, Chase, Littman, Vahdat, and Sun; Professors Emeriti Gallie, Patrick, and Starmer; Associate Professor of the Practice Rodger; Adjunct Professor Coughran; Adjunct Assistant Professors Chatterjee, Henriquez, Markas, Narten, and Yousi; 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 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 often 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)** 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. One course. Biermann and Ramm

4. **Introduction to Programming. (QR)** 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. One course. Staff

6. **Introduction to Program Design and Analysis I. (QR)** 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. One course. Astrachan, Ramm, or Rodger

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

90. **Duke-Administered Study Abroad: Special Topics in Computer Science.** Topics differ by section. One course. Staff

100. **Program Design and Analysis II. (QR)** A continuation of Computer Science 6. Overview of advanced data structures and analysis of algorithms, data abstraction and abstract data types, object-oriented programming, proofs of correctness, complexity, and computability. Prerequisite: Computer Science 6. One course. Astrachan, Ramm, or Rodger

100E. **Program Design and Analysis II. (QR)** Same as Computer Science 100, except designed for students with considerable programming background who have not taken Computer Science 6. Overview of advanced data structures and analysis of algorithms, data abstraction and abstract data types, object-oriented programming, proofs of correctness, complexity, and computability. One course. Astrachan, Ramm, or Rodger

104. **Computer Organization and Programming. (QR)** Computer structure, machine language, instruction execution, addressing techniques, and digital representation of data. Computer systems organization, logic design, microprogramming, and interpreters. Symbolic coding and assembly systems. Prerequisite: Computer Science 100 or consent of instructor. One course. Astrachan

106. **Programming Languages. (QR)** 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. One course. Wagner

108. **Software Design and Implementation. (QR)** 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. One course. Astrachan

109. **Program Design and Construction. (QR)** Substantial programs. Design specifications, choice of data structures, estimation of programming effort, stepwise development, and program-testing methodology. Programming teams and human factors in system implementation. Advanced topics in use of a procedural language and file management. Prerequisite: Computer Science 104. One course. Staff

110. **Introduction to Operating Systems. (QR)** 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. Prerequisites: Computer Science 100 and 104. C-L: Electrical Engineering 153. One course. Chase or Ellis

120L. Introduction to Switching Theory and Logic Design. (QR) See C-L: Electrical Engineering 151L. One course. Marinos or Strole

124. Computer Graphics. (QR) Overview, motivation, and history; OpenGL and Open InvenMon; 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. One course. Agarwal

130. Introduction to the Design and Analysis of Algorithms. (QR) 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. One course. Staff

140. Mathematical Foundations of Computer Science. (QR) An introduction to theoretical computer science including studies of abstract machines, the language hierarchy from regular sets to recursively enumerable sets, noncomputability, and complexity theory. Prerequisites: Computer Science 100 and Mathematics 103. One course. Loveland or Rodger

148. Logic and Its Applications. (QR) Prerequisite: a course in logic or consent of instructor. See C-L: Mathematics 188; also C-L: Philosophy 150. One course. Staff

149S. Problem Solving Seminar. (QR) Techniques for attacking, solving, and writing computer programs for challenging computational problems. Algorithmic and programming language tool kits. Course may be repeated. Consent of instructor required. Half course. Staff

150. Introduction to Numerical Methods and Analysis. (QR) 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. One course. Rose or Sun

170. Methodologies in Artificial Intelligence. (QR) Theories of representation and search in artificial intelligence. Logic, semantic networks, production rules, frames, distributed models, and procedural representations; algorithmic and heuristic search. One course. Biermann or Loveland

190. Duke-Administered Study Abroad: Advanced Special Topics in Computer Science. Topics differ by section. One course. Staff

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

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

196. **Topics in Computer Science. (QR)** Topics from various areas of computer science, changing each year. Prerequisite: Computer Science 100 or equivalent. One course. Staff

For Seniors and Graduates

206. **Programming Languages. (QR)** 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. One course. Wagner

208. **Programming Methodology. (QR)** 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. One course. Staff

210. **Operating Systems. (QR)** 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. One course. Chase or Ellis

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 (for example, the Internet). Topics include advanced distributed file systems, distributed programming environments, replication, caching and consistency, transactional concurrency control, reliable update and recovery, and issues of scale and security for Internet information services. Prerequisites: Computer Science 210, or Computer Science 110 and 214, or consent of instructor. One course. Chase

214. **Computer Networks and Distributed Systems. (QR)** Basic systems support for process-to-process communications across a computer network. The TCP/IP protocol suite and the Berkeley sockets application programs interface. Development of network application programs based on the client-server model. Remote procedure call and implementation of remote procedure call. Prerequisite: knowledge of the C programming language. One course. Staff

216. **Database Methodology. (QR)** Basic concepts and principles. Relational, hierarchical, and network approaches to data organization; data entry and query language support for database 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. One course. Staff

218. **Compiler Construction. (QR)** 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. One course. Wagner

220. **Advanced Computer Architecture I. (QR)** 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. One course. Kedem, Lebeck, or Wagner

221. Advanced Computer Architecture II. (QR) 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. One course. Lebeck

223. Application Specific VLSI Design. (QR) Introductory VLSI design course.
Modern design methods and technology for implementing application specific
integrated circuits (ASICs). Semicustom design methodology, semicustom VLSI
technologies such as gate arrays, standard cells, and FPGAs; the use of ASIC Computer
Aided Design (CAD) tools. Mapping algorithms into high performance silicone
implementation. Prerequisite: course in logic design. One course. Kedem

225. Fault-Tolerant and Testable Computer Systems. Not open to students who have
taken Computer Science 207. Prerequisite: Electrical Engineering 151L or equivalent.
See C-L: Electrical Engineering 254. One course. Marinos

226. Mathematical Methods for Systems Analysis I. (QR) Basic concepts and
techniques used in the stochastic modeling of systems. Elements of probability,
statistics, queuing theory, and simulation. Prerequisite: four semesters of college
mathematics. C-L: Electrical Engineering 255. One course. Trivedi

230. Design and Analysis of Algorithms. (QR) Design and analysis of efficient
algorithms. Algorithmic paradigms. Applications include sorting, searching, dynamic
structures, graph algorithms, randomized algorithms. Computationally hard problems.
NP completeness. Prerequisite: Computer Science 100 or equivalent. One course.
Agarwal, Arge, or Reif

232. Mathematical Analysis of Algorithms. (QR) Techniques for efficient implementa-
tion 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. One course.
Vitter

234. Computational Geometry. (QR) 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. One course. Agarwal or
Reif

235. Topics in Data Compression. (QR) 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. One course. Markas or staff
236. Parallel Algorithms. (QR) 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. One course. Reif

237. Randomized Algorithms. (QR) Models of computation, Las Vegas and Monte Carlo algorithms, linearity of expectation, Markov and Chebyshev inequalities and their applications, Chernoff bound and its applications, probabilistic methods, expanders, Markov chains and random walk, electric networks and random walks, rapidly mixing Markov chains, randomized data structures, randomized algorithms for graph problems, randomized geometric algorithms, number theoretic algorithms, RSA cryptosystem, derandomization. Prerequisite: Computer Science 230. One course. Agarwal and staff

240. Computational Complexity. (QR) Turing machines, undecidability, recursive function theory, complexity measures, reduction and completeness, NP, NP-Completeness, co-NP, beyond NP, relativized complexity, circuit complexity, alternation, polynomial time hierarchy, parallel and randomized computation, algebraic methods in complexity theory, communication complexity. Prerequisite: Computer Science 140 or equivalent. One course. Agarwal


252. Numerical Methods for Partial Differential Equations. (QR) Survey of theory, algorithms, and codes for the numerical solution of nonlinear partial differential equations of initial value and boundary value type. Topics include finite-difference, spectral, and finite-element representations; stability of time-discretization techniques; adaptive spatial meshes; multigrid and preconditioned conjugate gradient techniques; solution on parallel computers. Prerequisite: Computer Science 250. C-L: Mathematics 222. One course. Rose or Sun


260. Introduction to Computational Science. (QR) 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. One course. Greenside, Rose, or Sun


270. Artificial Intelligence. (QR) Heuristic versus algorithmic methods; programming of games such as chess; theorem proving and its relation to correctness of programs; readings in simulation of cognitive processes, problem solving, semantic memory, analogy, adaptive learning. Prerequisite: Computer Science 100 or consent of instructor. One course. Biermann or Loveland
271. Numeric Artificial Intelligence. (QR) 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. One course. Littman

274S. Computational Linguistics Seminar. (QR) 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. C-L: Linguistics. One course. Biermann

296. Advanced Topics in Computer Science. One course. Staff

COURSES CURRENTLY UNSCHEDULED

198S. Seminar in Research Practice and Methodology. (QR)

222. Introduction to VLSI Systems.

242. Logic for Computer Science. (QR)

256. Functional Analysis for Scientific Computing. (QR)

266. Communication, Computation, and Memory in Biological Systems. (QR)

291. Reading and Research in Systems. (QR)

292. Reading and Research in Algorithms and Complexity. (QR)

293. Reading and Research in Scientific Computing. (QR)

294. Reading and Research in Artificial Intelligence. (QR)

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 112. Suggested sequences to fill these elective slots would be a scientific computing sequence: Mathematics 104 and Computer Science 150, or the general symbolic computation sequence: Mathematics 187 and Computer Science 170 or 198. 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 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 112; 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 (CA)**

Professor O'Barr, Chair; Associate Professor Allison, Director of Undergraduate Studies; Professor Apte; Associate Professors Ewing, Quinn, Silverblatt, and Starn; Assistant Professors Baker, Daniels, Litzinger, Plot, and Strauss; Professor Emerita Friedl; Associate Professor of the Practice Luttrell; Adjunct Professors Andrews (Slavic languages), Conley, Mignolo (romance studies), Peacock, and Reddy (history); Adjunct Associate Professor Tetel (English).

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) Opportunities for first-year students to engage with a specific issue in cultural anthropology, with emphasis on student writing. Topics vary each semester offered. One course. Staff

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

50. Duke-Administered Study Abroad: Special Topics in Cultural Anthropology. Topics differ by section. One course. Staff

60S. Culture and the Brain. (SS) The interaction of culture and the human brain, focusing on how human brains are shaped by culture, the nature of meaning, connectionist models of cognition, different ways of knowing, and collective thought. Open only to students in the FOCUS Program, Exploring the Mind. One course. Strauss

62S. Culture and Politics in Contemporary Chinese Cinema. (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. One course. Litzinger

64S. Globalization and Latin America. (CZ, SS) Cultural and political questions at stake in the spread of mass media and entertainment to Latin America. The way the news media, television dramas, and Hollywood movies depict the peoples of Latin America; the emergence of new regional traditions of news coverage, film, and popular entertainment. Open to students in the FOCUS Program. C-L: Latin American Studies. One course. Starn

90S. Identity in Fiction and Ethnography. (SS) Relevance to culture and cultural experience as well as individual and group understandings. Special focus on difference and identity as course materials address race, ethnicity, class, gender, and sexuality. Not open to students who have taken this course as Cultural Anthropology 49S. C-L: African and African-American Studies 90S and Women's Studies. One course. Daniels

94. Introduction to Cultural Anthropology. (SS) Theoretical approaches to analyzing cultural beliefs and practices cross-culturally; application of specific approaches to case material from present and/or past cultures. C-L: Comparative Area Studies. One course. Staff

100. Duke-Administered Study Abroad: Advanced Special Topics in Cultural Anthropology. Topics differ by section. One course. Staff

101, 102. Introduction to the Civilizations of Southern Asia. (CZ) Not open to students who have taken Religion 160, 161. See C-L: Asian and African Languages and Literature 160, 161; also C-L: Comparative Area Studies, History 193, 194, and Religion 144, 145. One course each. Staff

103. Sexuality and Culture in America. (SS) The different cultural contexts that give meaning to and regulate sexuality in America. Topics include the rise of youth culture and its impact on sexual expression; the effects of popular culture and media on sexual beliefs and practices; how different campus cultures shape sexual behaviors and attitudes; and the rise of gay and lesbian culture and politics. C-L: Study of Sexualities, Sociology 103, and Women's Studies. One course. Luttrell
104. Anthropology and Film. (SS) The study of feature films and documentaries on issues of colonialism, imperialism, war and peace, and cultural interaction. An introduction to critical film theory and film production in non-Western countries. C-L: Film and Video and Perspectives on Marxism and Society. One course. Allison or Litzinger

105S. Theme Seminar. Topics vary. One course. Staff

106. The Anthropology of Everyday Life in America. (SS) Various popular cultural forms—the game of baseball, the cowboy and the western, the ritual cycle (from Halloween through Easter), the new children's video games (Nintendo, Sega Genesis)—are explored for the way in which they at once reproduce and subvert American ideology. One course. Piot

107. Introduction to Linguistics. (SS) See C-L: Linguistics 101; also C-L: Comparative Area Studies, and English 111. One course. Butters or Tetel

108. Fantasy, Mass Media, and Popular Culture. (SS) A cross-cultural study of how images and stories that are mass produced affect the world view, identities, and desires of their consumers. C-L: Comparative Area Studies. One course. Allison

110. Advertising and Society: Global Perspective. (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. C-L: Canadian Studies, Comparative Area Studies, English 120, Film and Video, Linguistics, Sociology 160, and Women's Studies. One course. Luttrell, O'Barr, or Wilson

111. Anthropology of Law. (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. One course. Conley or O'Barr


113. Gender and Culture. (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. C-L: Perspectives on Marxism and Society, Study of Sexualities, and Women's Studies. One course. Allison, Luttrell, Quinn, or Silverblatt

114. Languages of the World. (SS) See C-L: Linguistics 102; also C-L: Comparative Area Studies, and English 114. One course. Andrews or Tetel

115S. The Anthropology of Gender: Special Topics. (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. C-L: Women's Studies. One course. Allison, Luttrell, Quinn, Silverblatt, or Starn

116. Anthropology and Public Policy. (SS) The way public policies rest on widely held but unstated cultural assumptions, for example, about nature, gender, families, the economy, and the relation of individuals to society. Focus on cultural models affecting public policy in the United States now, with selected cases from other societies and historical periods for comparison. One course. Strauss

117. Global Culture. (SS) Globalization examined through some of its dominant cultural forms—the marketing of pop music, the dissemination to TV culture, the spread of markets and commodities, the export of political ideologies. Special attention
given to the implication of globalization for individual and group identity. C-L: Comparative Area Studies and Perspectives on Marxism and Society. One course. Piot

118. Language, Ethnicity, and New Nations. (SS) Examination of the issues involved in language policy and planning, and their impact on national integration in the newly independent multiethnic and multilingual nations of Asia and Africa. One course. Staff

119. Language, Culture, and Society. (SS) Analysis of language behavior within and across societies. Topics include the relation of language structures to cultural values, the role of speech in expressing and creating relations of power and intimacy, and the way social ideologies shape different kinds of discourse. C-L: Comparative Area Studies and Linguistics. One course. Apte, O'Barr, or Strauss

120. 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. C-L: Comparative Area Studies. One course. Apte or Ewing


124. American Indian Peoples. (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. C-L: Comparative Area Studies. One course. Staff

125. Comparative Approaches to Global Issues. (CZ, SS) Not open to students who have taken Religion 121. See C-L: Comparative Area Studies 125; also C-L: History 137, Perspectives on Marxism and Society, Political Science 125, Religion 183, and Sociology 125. One course. Staff

126. Muslim World: Transformations and Continuities. (SS) The diversity of social practices within the community of Islam. Particular emphasis on gender relations, religious movements, and social change. C-L: Comparative Area Studies, Religion 119, and Women's Studies. One course. Ewing


128. Culture and Politics in Latin America. (CZ) Key themes in Latin American societies, including art, literature, history, violence and human rights, economic development, and rebellion and revolution. C-L: Comparative Area Studies and Perspectives on Marxism and Society. One course. Starn


130. Modernity, Ethnicity, and Colonization. (AL, CZ) See C-L: Romance Studies 124; also C-L: African and African-American Studies 123, Canadian Studies, and Comparative Area Studies. One course. Mignolo or staff

131S. Documentary Film/Video Theory and Practice. (AL) Prerequisite: Drama 173, English 101A, Literature 110, or Literature 111S. See C-L: Film and Video 104S; also C-L: English 101C. One course. Staff
134S. American Communities: A Documentary Video Approach. (AL, SS) See C-L: Film and Video 105S; also C-L: History 150B, Political Science 156S, and Public Policy Studies 105S. One course. Staff

135. American Culture: Myths and Values. (SS) Examination of the major values said to characterize Americans—self-reliance, success, equality, and self-realization, among others—tracing their persistence and change; considering their force as cultural myths and the beliefs and conflicts they engender around such matters as race and gender, community and family life, parenting and individual conduct; and illuminating the American pattern by its comparison with other strategically selected cases. One course. Quinn or Strauss

137. Gender Inequality. (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. C-L: Comparative Area Studies and Women's Studies. One course. Allison, Luttrell, Quinn, or Silverblatt


139. Marxism and Society. (SS) A critical appraisal of Marxism as a scholarly methodology for understanding human societies. The basic concepts of historical materialism, as they have evolved and developed in historical contexts. Topics include sexual and social inequality, alienation, class formation, imperialism, and revolution. Core course for the program in Perspectives on Marxism and Society. C-L: Comparative Area Studies, Education 139, History 186, Literature 181, Perspectives on Marxism and Society, and Sociology 139. One course. Staff

140S. Cultural Diversity in the Andes. (CZ, FL) (Taught in Bolivia.) See C-L: Spanish 140C; also C-L: Comparative Area Studies, and Latin American Studies. One course. Staff

141. Self and Society. (SS) The nature of human social identities, the contexts in which they are shaped, and the processes by which they change. C-L: Psychology 113A and Women's Studies. One course. Apte, Ewing, or Luttrell

142. Sexuality in Global Perspective. (SS) Cross-cultural perspectives on the meaning, regulation, and politics of sexuality. Course materials drawn from historical-comparative and ethnographic sources with emphasis on variations in how masculinity and femininity are represented; what is considered erotic; how heterosexuality and homosexuality are defined; impact of Western notions about sexuality on the lives of people in Third World countries. C-L: Comparative Area Studies, Study of Sexualities, and Women's Studies. One course. Luttrell

143. Education, Culture, and Identity. (SS) How social divisions and inequalities are created and challenged through the schooling process. Primary emphasis on American education. C-L: African and African-American Studies 143 and Education 143. One course. Luttrell

145A. Music of the World's Peoples. (AL, CZ) See C-L: Music 136; also C-L: Comparative Area Studies. One course. Meintjes


146. East Asian Cultural Studies. (AL, CZ) See C-L: Asian and African Languages and Literature 153; also C-L: Comparative Area Studies. One course. Ching or Yoda

147. 148. Introduction to Islamic Civilization. (CZ) Not open to students who have taken Religion 162, 163. See C-L: Religion 146, 147; also C-L: Comparative Area Studies,
History 101G, 102G, and Medieval and Renaissance Studies 146A, 147A. One course each. Cornell, Lawrence, or staff

149. Modern China in Film and Literature. (AL, CZ) See C-L: History 142E; also C-L: Comparative Area Studies. One course. Dirlik


151. Culture and Thought. (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. C-L: Psychology 113C. One course. Quinn or Strauss


161. Anthropological Approaches to Religion. (SS) The social, cultural, and political forces that shape religious practices and individual religious experience in contemporary societies. C-L: Religion 118. One course. Ewing


165. Psychological Anthropology. (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." C-L: Psychology 113B. One course. Ewing or Strauss

166. Cross-Cultural Perspectives on Development: A View from Japan. (SS) See C-L: Psychology 132B. One course. Mazuka

167S. Anthropology and Folklore. (SS) Origins, conceptualizations and theoretical orientations, methodology, and subject matter of the discipline of folklore and exploration of its similarities with and differences from sociocultural anthropology. One course. Apte


180. Current Issues in Anthropology. (SS) Selected topics in methodology, theory, or area. One course. Staff

180S. Current Issues in Anthropology. (SS) Same as Cultural Anthropology 180 except instruction is provided in seminar format. One course. Staff

182. Contemporary European Issues. (CZ, FL) (Taught in Spain.) See C-L: Spanish 133; also C-L: Comparative Area Studies. One course. Staff

184S. Canadian Issues. (SS) Prerequisite: Canadian Studies 98 or consent of instructor. See C-L: Canadian Studies 184S; also C-L: Comparative Area Studies, Economics 184S, History 184S, Political Science 184S, and Sociology 184S. One course. Staff

185S. The Canadian Health Care System. (SS) See C-L: Canadian Studies 185S; also C-L: Comparative Area Studies, Economics 185S, History 108E, Political Science 185S, Public Policy Studies 187S, and Sociology 185S. One course. Warren

189S. Crossing Cultures. (SS) Exploration of students' cross-cultural experiences 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. C-L: Comparative Area Studies. One course. Staff


191A, S. Feminist Ethnography. (SS) The development of and debates within feminist ethnography focusing on issues of objectivity, truth, authority, ethnographic representation, and responsibility. C-L: Comparative Area Studies and Women's Studies. One course. Luttrell

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. One course. Starn

193. 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 seniors, with consent of director of undergraduate studies. One course. Staff

195S, 196S. Senior Seminar. Consent of director of undergraduate studies required. One course each. Staff

199A, S. The Articulation of Culture in the Bolivian Andes. (FL, SS) (Taught in Bolivia.) See C-L: Spanish 132A; also C-L: Latin American Studies. One course. Staff

199B. Bolivian Cultural Anthropology. (FL, SS) The diverse indigenous cultures of Bolivia, the organization of ethnic groups and indigenous communities, with emphasis on the Andean "ayllu." Focus on markets, rallies, community groups, states, and armies. The relationship between culture and power. (Taught in Bolivia.) C-L: Latin American Studies. One course. Staff

199C. Bolivian Culture. (CZ, FL) 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.) C-L: Latin American Studies. One course. Staff

199E, S. Colonialism, Ethnicity, and Gender in Postrevolutionary Bolivia. (CZ, FL) (Taught in Bolivia.) See C-L: Sociology 188B; also C-L: Latin American Studies, Spanish 132B, and Women's Studies. One course. Staff

For Seniors and Graduates

201S. Marxism and Anthropology. (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. One course. Staff


207S. Anthropology and History. (SS) Recent scholarship that combines anthropology and history, including culture history, ethnohistory, the study of mentalité, structural
history, and cultural biography. The value of the concept of culture to history and the concepts of duration and event for anthropology. Prerequisites: major in history, one of the social sciences, or comparative area studies; or graduate standing. C-L: History 210S. One course. Reddy


215S. The Anthropology of Gender: Theoretical Issues. (SS) Topics to be selected each semester from: feminist theory and anthropology; Marxism and feminism; gender, ideology, and culture; gender and colonialism; gender and the third world; and others. C-L: Women’s Studies. One course. Allison, Luttrell, Quinn, Silverblatt, or Starn

216S. Gender, Race, and Class. (SS) Gender, race, and class as theoretical concepts and lived experiences. Analytical frameworks include social history, discourse analysis, critical theory, cultural studies, and feminist theories. Consent of instructor required. C-L: African and African-American Studies 216S, Study of Sexualities, and Women’s Studies. One course. Luttrell


234S. Political Economy of Development: Theories of Change in the Third World. (SS) See C-L: Political Science 234S; also C-L: Comparative Area Studies, History 234S, and Sociology 234S. One course. Staff

249S. Anthropology and Psychology. (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. C-L: Psychology 249S. One course. Quinn or Strauss

250S. The Cultural Analysis of Discourse. (SS) Theoretical approach to culture and methods for the investigation of culture through analysis of discourse, especially interview texts. Application of this approach and these methods to the study of a domain of American culture. C-L: Linguistics. One course. Apte, Quinn, or Strauss

251. Cognitive Anthropology. (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. Not open to students who have taken Cultural Anthropology 151. One course. Quinn or Strauss

253S. Person-Centered Interviewing. (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. One course. Ewing

254. East Asian Cultural Studies. (AL, CZ) See C-L: Asian and African Languages and Literature 253; also C-L: Comparative Area Studies. One course. Ching or Yoda

255. Anthropology as Public Discourse. (SS) The historic role of science in general and
anthropology in particular in shaping U.S. 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. C-L: African and African-American Studies 255. One course. Baker or Strauss

260. Modern Japanese Literature and Culture. (AL, CZ) See C-L: Asian and African Languages and Literature 262; also C-L: Comparative Area Studies. One course. Ching or Yoda

263. The Bestseller: Cultural Populism in the 1990s' China. (AL) See C-L: Asian and African Languages and Literature 259; also C-L: Comparative Area Studies, and Literature 279. One course. Wang

265S. Anthropological Approaches to Life History. (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. One course. Apte

270S. Non-Western Indigenous Anthropology. (SS) An examination of the development of indigenous anthropology in non-Western societies with a focus on the theoretical, methodological, and ideological orientations of its practitioners in the context of nationalism, neo-colonialism, and globalization. One course. Apte

279S. Race, Racism, and Democracy. (SS) The paradox of racial inequality in societies that articulate principles of equality, democratic freedom, and justice for all. C-L: African and African-American Studies 279S. One course. Apte

280S, 281S. Seminar in Selected Topics. Special topics in methodology, theory, or area. Consent of instructor required. One course each. Staff

282S. Canada. (SS) See C-L: Canadian Studies 282S; also C-L: Comparative Area Studies, Economics 282S, History 282S, Political Science 282S, and Sociology 282S. One course. Staff

283S. Seminar in North American Studies. Topics vary each semester. One course. Staff


COURSES CURRENTLY UNSCHEDULED

94S. Introduction to Cultural Anthropology. (SS)
109. Contemporary Global Issues. (SS)
121. Culture and Politics in China. (CZ, SS)
123. Societies of Mediterranean Europe. (CZ)
132. Anthropology of Peace and War. (SS)
133S. Critical Perspectives on Ethnography. (SS)
144. The Anthropology of Race. (SS)
164. Peasantry and Peasant Movements. (SS)
173. Revolutions in Latin America. (CZ)
206S. Anthropological Controversies. (SS)
210S. Ideology and the Image in Ethnographic Film. (SS)
211S. Ethnography of Communication. (SS)
214. Postmodernism and the Problem of Representation. (SS)
219. Language and Social Theory. (SS)
Theoretical Bases of Social Interpretation. (SS)
Culture and Ideology. (SS)
Theories of Symbolism. (SS)
Religion: Tradition and Cultural Innovation. (SS)
Marxism and Feminism. (SS)

THE MAJOR

Major Requirements. A total of ten courses distributed in the following manner: Cultural Anthropology 94 and 190; four courses at the 100 level and above, taught by faculty with an appointment in the Cultural Anthropology Department; two courses at the 191 level and above, at least one taught by faculty with an appointment in the Cultural Anthropology Department; two courses in cultural anthropology (one of these two courses must be at the 100 level and above; both may be cross-listed from another department).

Suggested Work in Related Disciplines. Related courses in other departments are strongly advised. Each student's advisor will recommend a program of related work to complement the student's concentration and interests in cultural anthropology.

Departmental Graduation with Distinction

The department offers an intensive and personalized graduation with distinction program to qualified seniors, who research and write a senior thesis on a topic of their own choice in close collaboration with members of the cultural anthropology faculty. Admission to the program requires a 3.0 grade point average overall and a 3.3 grade point average in the major, both of which must be maintained to graduation for the student to be eligible for distinction. Qualified juniors will be notified each year by the director of undergraduate studies about their eligibility. To pursue distinction, students must then enroll in the senior seminar, Cultural Anthropology 195S and Cultural Anthropology 196S, in the fall and spring of their senior year, where they will learn about research methods and prepare a thesis. Credit for Cultural Anthropology 195S and Cultural Anthropology 196S is given for a passing grade whether or not the student is awarded distinction. The thesis can be based on original fieldwork on a topic of the student's choice, archival or library research, or some combination of various anthropological methods. Previous topics have ranged from studies of the influence of feminism in cultural anthropology to causes of revolution in Latin America 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 and above taught by faculty with an appointment in the Cultural Anthropology Department; and one additional course at any level taught by faculty with an appointment in the department (this may include courses taken in the FOCUS program).
Dance (DAN)

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 Sommer; Assistant Professor of the Practice Childs; Instructors Vinesett and Walters

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, and 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. 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: one year (equivalent of one course credit) of Dance 81 (Repertory), and five full-credit courses including 101 (Introduction to Dance); either 129S (Dance as a Western Theater Art before 1900) or 131S (Modern Dance: History and Theory I) or 133 (History of African American 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 or ballet technique.

Students are urged to enroll in at least one summer session with the American Dance Festival. If appropriate to the student's specific course of study, 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. Beginning Modern Dance I. A movement course exploring modern dance through technique, improvisation, and composition. No previous dance experience necessary. Half course. Staff
61. Beginning Modern Dance II. Prerequisite: Dance 60 or equivalent. Half course. Staff
62. Intermediate Modern Dance I. Increased complexity of movement sequences and greater emphasis on clarity of expression and quality of performance. Prerequisite: Dance 61 or equivalent. Half course. Staff
63. Intermediate Modern Dance II. Continuation of Dance 62. Prerequisite: Dance 62 or equivalent. Half course. Staff
64. Advanced Modern Dance. Prerequisite: Dance 63 or equivalent. Half course. Staff
68. Ballet Fundamentals. Fundamentals of classical ballet technique concentrating on correct placement and body alignment within the ballet vocabulary. No previous dance experience necessary. Half course. Dorrance or Walters

69. Elementary Jazz Dance. No previous dance experience required. Half course. Childs

70. Elementary/Intermediate Ballet. 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. Half course. Dorrance

71. Intermediate/Advanced Ballet. Greater complexity of barre and center sequences with increased emphasis on correctness of style and quality of performance. Prerequisite: Dance 70 or equivalent. Half course. Dorrance or Walters

72. Intermediate Jazz Dance. Prerequisite: Dance 69 or equivalent. Half course. Childs

73. Advanced Ballet. Progression of Dance 71 with increased emphasis on line, style, and performance-level quality and technique. Diverse battery, pirouettes, and tours included in allegro combinations. Prerequisite: Dance 71 or equivalent. Half course. Dorrance or Walters

76. Flamenco. Introductory course presenting one of the three basic genres of Spanish dance: flamenco. Style, posture, techniques, and footwork; some historical background of the genre. Half course. Staff


79. African Dance Technique II. Greater complexity of movement sequences, rhythm, gesture, and technique with a focus on clarity of expression and quality of performance. Prerequisite: Dance 78 or consent of instructor. Half course. Vinesett

80. Individual Dance Program: Special Topics. Half course. Staff

81. Repertory. 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. Variable credit. Staff

Theory Courses

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

75. Theater Production and Management. (AL) Not open to students who have taken Drama 71 or 186. See C-L: Drama 93. One course. Voss

101. Introduction to Dance. (AL) The many facets of dance, specifically dance as a theater art. Topics include movement analysis, anthropology of dance, modern dance and ballet traditions, choreographic process, critics and dance criticism, training and life of a dancer, and dance and the other arts. The course format includes lecture, discussion, video analysis, and movement sessions. One course. Dickinson or Sommer

129S. A History of Ballet before 1900. (AL) 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. One course. Dickinson

131S. Modern Dance: History and Theory I. (AL) Modern dance, through the philosophy and work of its major artists considered in relation to the other arts and the sociopolitical climate of the period 1890 to 1950. One course. Sommer

132S. Modern Dance: History and Theory II. (AL) See 131S, but from 1950 to the present. One course. Sommer

133. History of African-American Social Dance Forms of the Twentieth Century. (AL) 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. C-L: African and African-American Studies 133. One course. Sommer

135S. Dance Composition. (AL) 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. One course. Childs or Dickinson

136T. Advanced Dance Composition. (AL) 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. One course. Childs or Dickinson

146S. Dancing in the Movies. (AL) Dance styles as they have evolved in American cinema from the choreography of Charlie Chaplin to the geometric choruses 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. C-L: Film and Video. One course. Sommer

150. Managing the Arts—Theory and Practice. (AL) Not open to first-year students. See C-L: Institute of the Arts 150. One course. Silbiger

151. Functional Anatomy for Dancers. (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. One course. Staff

153S. The Art of Transformation: A Workshop in Movement and Theater. (AL) 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. C-L: Drama 153S. One course. Staff

169S. Design for the Theater. Not open to students who have taken the former Drama 169S. Prerequisite: Drama 93 or consent of instructor. See C-L: Drama 161S. One course. Staff

181. Special Topics. Content to be determined each semester. Consent of instructor required. One course. Staff

181S. Special Topics. Content to be determined each semester. Consent of instructor required. One course. Staff

182T. Choreography. (AL) Advanced study in dance composition designed to develop the student’s personal mode of expression. Prerequisites: Dance 135S, Dance 136T, and consent of instructor. One course. Childs, Dickinson, or Taliaferro

188S. The Diaghilev Ballet, 1909-1929. (AL) The Diaghilev Ballet as a focal point for modernist movements in the arts and a revitalizing force for ballet that brought together choreographers Fokine, Nijinsky, Massine, Nijinska; composers Stravinsky, Ravel,
Debussy, Satie; artists Bakst, Benois, Picasso, Braque. Prerequisites: junior or senior standing or consent of the instructor. One course. Dickinson and staff

1985. Dance Criticism: From Stage to Page. (AL) 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. One course. Sommer

191, 192. 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. Half or one course. Variable credit. Staff

200T. Senior Project. (AL) A research paper, project, or program (with appropriate written documentation) under dance faculty supervision. Open only to seniors earning a minor in dance. One course. Staff

COURSES CURRENTLY UNSCHEDULED

65. Beginning Improvisation.
67. Intermediate Tap Dance Technique.
134. Creative Movement for Children.
197. Aesthetics of Twentieth-Century Dance. (AL)
198. Sacred Dance. (AL)

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 distributional requirements as indicated.

1805. Culture Heroes Across Cultures. (AL) Myths and folk tales 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. C-L: African and African-American Studies 172S and Classical Studies 174S. One course. Davis

1855. Ethical Issues in Early Christianity. (CZ) 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. Also taught as Religion 185S. One course. Clark

1905. The Pagan World of the Divine Comedy. (AL) 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. C-L: Classical Studies 116S and Medieval and Renaissance Studies 116S. One course. Clay


1985. The Discovery of the Old World: Utopias, Ancient and Modern. (AL) An exploration of utopian literature as it has been generated by voyages of discovery, both

**2005. Democracy and American Foreign Policy. (SS)** 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. One course. Holsti

**207S. Topics in Psychobiology. (SS, NS)** The biological substrates of human behavior in health and disease. Drug abuse, alcoholism, depression, schizophrenia, and human aggression. Films and videotapes. Student presentations; patient interviews. Prerequisites: senior standing, Psychology 49S (Psychobiology), and consent of instructor. C-L: Psychology 207S. One course. Brodie

**COURSES CURRENTLY UNSCHEDULED**

**197S. The Family in Christian History. (CZ)**

**202S. What It Means to Be Human. (SS)**

**Documentary Studies**

See the chapter "Special Study Centers, Programs, and Opportunities" for information on courses in documentary studies.

**Drama Program (DRA)**

Professor of the Practice Riddell, Director of the Program; Professor of the Practice Clum, Director of Undergraduate Studies; Professor of the Practice Randall; Associate Professors of the Practice McAuliffe and Storer; Assistant Professors of the Practice Blackadder, Ma, Voss, and Wilson; Adjunct Assistant Professor of the Practice Catotti; Adjunct Professor Azenberg; Adjunct Lecturers Martelon and Webb; Instructors Froeber, Hemphill, Lopez-Barrantes, Morris, Schilling, and West

A major or a minor is available in this program.

The program in drama seeks to educate students in the historical and creative aspects of the theater. Drama 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. Emphasis is placed on classwork, studio projects, and production opportunities. To keep students abreast of the changing nature of theater, resident professionals and visiting artists regularly hold workshops, teach classes, and participate in the production program.

**INTRODUCTORY COURSES**

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

**50. Duke-Administered Study Abroad: Special Topics in Drama.** Topics differ by section. One course. Staff

**91. The Theater. (AL)** 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 four representative plays. Requires involvement with one Drama Program production. C-L: English 94. One course. Clum or Riddell

93. Theater Production and Management. (AL) Fundamentals of theater technology and production. Focus is on familiarity with theater spaces and the areas of production (scenery, costumes, lighting, sound, props, and stage management) as well as on a working knowledge of techniques and organizational methods specific to theater. Laboratory requirement. Not open to students who have taken Drama 71 or 186. C-L: Dance 75. One course. Voss

995. Introduction to Performance. (AL) 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 Drama Program productions. Course geared to the student with little or no experience in acting. One course. Froeber, Hemphill, Morris, Schilling, Storer, or West

OTHER UNDERGRADUATE COURSES

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


103. Toward and Beyond Realism. (AL) Development of British, European, and American drama and theater from the eighteenth century to the present. Key playwrights, genres, theories, and movements. C-L: English 174B. One course. Clum

104. American Drama: O'Neill to the Present. (AL) Representative plays by O'Neill, Odets, Miller, Williams, Albee, and leading contemporary playwrights. C-L: English 162. One course. Clum

105. British Drama: Wilde to the Present. (AL) Shaw, Pinter, Beckett, Stoppard, and others to the present. C-L: English 133. One course. Clum

106. European Drama: Ibsen to the Present. (AL) Ibsen, Strindberg, Chekhov, Pirandello, Beckett, and others to the present. One course. Staff

107S. Twentieth-Century Women Playwrights. (AL) Stein, Hellman, Terry, Wertmabaker, Egloff, Churchill, Fornes, and others. Not open to students who have taken Drama 125S. C-L: Women's Studies. One course. P. Randall


109S. The Tragedies of Shakespeare. (AL) See C-L: English 129B; also C-L: Medieval and Renaissance Studies 109S. One course. D. Randall


112. Contemporary International Theater. (AL) Developments in world theater since 1960. One course. Staff

117S. Theater in London: Text. (AL) (London summer program.) See C-L: English 176B. One course. Clum

118S. Special Topics in Dramatic Literature, History, Theory, or Criticism. (AL) May be repeated for credit. One course. Staff
121S. Dramatic Writing. (AL) Fundamentals of writing for stage and screen. Open to sophomores, juniors, and seniors; recommended for, but not limited to, students who have taken English 100B. Not open to students who have taken the former Drama 111S. Prerequisites: a practical theater course (for example, acting, directing, design, stagecraft) and consent of instructor. C-L: English 107S and Film and Video. One course. Clum or Wilson

122S. Advanced Dramatic Writing. (AL) Advanced projects in writing for production. Not open to students who have taken the former Drama 112S. Prerequisites: Drama 121S and consent of instructor. C-L: English 108S and Film and Video. One course. Wilson

123S. Screenwriting. (AL) Advanced writing projects for feature film. Study of existing scripts and videos, application of techniques. Consent of instructor required. Not open to students who have taken Drama 113S. C-L: English 102S and Film and Video. One course. Wilson

131S. Acting: Analysis and Performance. (AL) 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. One course. Storer and staff

132S. Advanced Acting: Classical Texts. (AL) Scansion, breath work, text analysis, arch, emphasis, the heroic character, style, period movement, and theatricality of choices which illuminate language. Selected texts from Shakespeare and seventeenth-century playwrights. Scene work. Not open to students who have taken Drama 102S. Prerequisites: Drama 131S and consent of instructor. One course. Staff

133S. Advanced Acting: Contemporary Texts. (AL) Scene study based on reading, analysis, and research. Examination and development of performance critical choices. Prerequisites: Drama 131S and consent of instructor. One course. McAuliffe and Storer

136S. Voice and Speech. (AL) Vocal production and articulation. Phonetics, control, emotional response, projection, placement, and awareness of regionalisms. Not open to students who have taken the former Drama 106S. Prerequisites: Drama 131S and consent of instructor. One course. Morris


140S. Directing. (AL) 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. Prerequisites: Drama 99S or 131S and consent of instructor. C-L: Film and Video. One course. McAuliffe or Storer

142S. Film and Video Theory and Practice. (AL) Prerequisite: Drama 173, English 101A, Literature 110, or Literature 114. See C-L: Film and Video 100S; also C-L: English 183S. One course. Burns

152A. Musical Theater Workshop: Writing. (AL) The writing of book, lyrics, and music for short original musicals. Culminates in a performance of the works created by the class. Prerequisite: Music 55 or playwriting. One course. Clum

152B. Musical Theater Workshop: Performance. (AL) Work on singing musical theater songs, movement, comedy techniques. Culminates in a performance of musicals written by the students in Drama 152A. Prerequisite Drama 99S. One course. Clum

153S. The Art of Transformation: A Workshop in Movement and Theater. (AL) Open only to students in the Arts in Contemporary Society FOCUS Program. See C-L: Dance 153S. One course. Staff
159S. Special Topics in Theatrical Collaboration. (AL) May be repeated for credit. One course. Staff

161S. Design for the Theater. (AL) 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 costumerendering. Laboratory requirement. Not open to students who have taken the former Drama 169S. Prerequisite: Drama 93 or consent of instructor. C-L: Dance 169S. One course. Staff

163S. Producing in America. (AL) 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 Drama Program productions. Not open to students who have taken Drama 185S. One course. Voss

165A. Production Internship. Supervised study working on a professional production or working with a professional theater company, including but not limited to study of playwriting, design, directing, theater administration, acting, and stage management. Culminates in a term paper analyzing and evaluating both the process and the product. Faculty supervision required. Consent of instructor required. Offered only on a pass/fail basis. Prerequisite: Drama 93. Half course. Staff

165B. Production Internship. Same as 165A, but for work that extends over a full term. Consent of instructor required. Offered only on a pass/fail basis. Prerequisite: Drama 93. One course. Staff


172. French Drama of the Twentieth Century. (AL, FL) See C-L: French 162. One course. Tufts

173. Introduction to Film. (AL) Not open to students who have taken Drama 132. See C-L: English 101A; also C-L: Film and Video 130, and Literature 110. One course. Gaines, Radway, Surin, Torgovnick, or Willis

174. Studies in Film History. (AL) See C-L: English 185; also C-L: Film and Video, and Literature 116. One course. Clum, Gaines, or Jameson

175S. The Italian Theater. (AL, FL) Taught in Italian. See C-L: Italian 151S. One course. Finucci

177S. Chekhov. (AL) Not open to students who have taken Drama 157S/Russian 174S (Chekhov). See C-L: Russian 177S; also C-L: Comparative Area Studies. One course. Flath and staff

178S. Special Topics in Film. (AL) Not open to students who have taken the former Drama 197S. Prerequisite: Drama 173 or English 101A. See C-L: English 189S; also C-L: Film and Video. One course. Clum, Gaines, or Moses

179. The History of Performance Art. (AL) See C-L: Art History 179; also C-L: Comparative Area Studies, and Women's Studies. One course. Stiles

182, 183. Shakespeare. (AL) Not open to students who have taken Drama 115, 116. See C-L: English 143, 144; also C-L: Medieval and Renaissance Studies 182, 183. One course each. DeNeef, Gopen, Jones, Porter, Randall, or Shannon
185S. Introduction to German Drama. (AL, FL) Taught in German. Prerequisite: four semesters college-level German, or equivalent. See C-L: German 133S; also C-L: Comparative Area Studies. One course. Risholm or Walther

189S. Senior Seminar: The Theater Today. (AL) Team-taught course on the current state of American drama and theater and its relation to American society. Theater as a vocation and avocation. Guest speakers and presentations. Open only to seniors. One course. Clum or Riddell

191, 192, 193, 194. 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. Half or one course. Variable credit. Staff

195, 196. Special Topics. Illustrative examples: specific writers or other theater artists, media studies, styles, mime, masks, clowns, stagefighting, newspaper criticism, studies of the profession, audition techniques, and theater periods. May be taken more than once. Half course each. Staff

195S, 196S. Special Topics. Seminar versions of Drama 195 and 196. May be taken more than once. Half course each. Staff

197-198. Senior Distinction Project. (AL) One course, half course, respectively. Consent of instructor required. Variable credit. Staff

220S. German Theater as Anti-Drama. (AL, FL) Taught in German. See C-L: German 233S. One course. Walther

COURSES CURRENTLY UNSCHEDULED

151S. Directors/Actors Workshop. (AL)
176. Melodrama and Soap Opera. (AL)
225. Renaissance Drama: 1500 to 1642. (AL)

THE MAJOR

The major in drama 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. Ten courses, including Drama 93, 102, 103, 121S, 131S, 140S, 161S, 189S, and two additional 100-level courses in dramatic literature, history, theory, or criticism.

Duke University Drama Program Criteria for Distinction

Students with at least a B average in their drama courses are eligible to apply for a project. They should acquire the Drama Program Guidelines for Distinction Projects and an application form from the Director of Undergraduate Studies or his assistant. The student's project needs the approval of the project supervisor and the Director of Undergraduate Studies. Final approval will be granted by the Drama Faculty Council. Projects involving a production component must be approved before the end of the fall semester of the year prior to the project so they can be included in the production schedule for the following year; other projects must be approved by the end of the spring pre-registration of the year prior to the project.

A student may pursue a project in writing, directing, design, acting, literature, history, or theory. All projects must have a research component and a substantial written project. They may also have a production component. Distinction projects
usually are granted one and a half course credits (one course credit in the fall [Drama 197] and one half course in the spring [Drama 198]).

The student’s written work and production project will be approved by a committee comprised of the project supervisor, the Director of Undergraduate Studies, and a third faculty member in drama or a related field approved by the Director of Undergraduate Studies. A conference with the student and the committee after the committee has evaluated the student’s written work and 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 the honors projects. See the Drama Guidelines for Distinction Projects for specific prerequisites.

THE MINOR

Drama 91, 102, 103 and two courses in production (93, 121-163).

Ecology

For courses in ecology, see Biology, Environment (Nicholas School), and Environmental Sciences and Policy Program.

Earth and Ocean Sciences (GEO)

Professor Karson, Chair; Professor Haff, Director of Undergraduate Studies; Professors Baker, Barber, Clark, Corliss, Kay, Livingstone, Perkins, Pilkey, and Schlesinger; Associate Professors Boudreau, Klein, Malin, and Rojstaczer; Assistant Professors Lozier, Murray and Pratson; Professor Emeritus Heron

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) Field interpretation of geologic features. Includes four field trips. Prerequisite: Geology 41 (may be taken concurrently). Half course. Boudreau or Karson

41. The Dynamic Earth. (NS) Dynamic systems studied include volcanoes, earthquakes, sea-floor spreading, plate tectonics; surficial processes such as floods, glaciers, landslides, and related phenomena; and the composition of the earth including rocks and minerals. One course. Karson, Klein, Murray, or Perkins

43S. Application of Geologic Principles. (NS) Mineral and rock classification, topographic and geologic map interpretation. Prerequisite: Geology 41 (may be taken concurrently). Half course. Staff

45. Global Land, Air, and Water Resources. (NS) An overview of the physical geography of the global environment with a focus on the atmosphere, water resources, and soils. One course. Rojstaczer

47S. Natural and Human-Induced Environmental Change. (NS) A comparative examination of the effects of natural and human influences on earth-surface environments. One course. Staff
495. First-Year Seminar. Topics vary each semester offered. One course. Staff

50. Duke-Administered Study Abroad: Special Topics in Earth and Ocean Sciences. Topics differ by section. One course. Staff

53. Introductory Oceanography. (NS) Basic principles of physical, chemical, biological, and geological oceanography. Fee for required field trip to the Marine Laboratory. C-L: Biology 53. One course. Corliss, Lozier, Pratson, and Searles (biology)

905. Fossils and Climate Change. (NS) Study of the use of animal and plant fossils including geochemical analyses of the 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. One course. Corliss

100. Duke-Administered Study Abroad: Advanced Special Topics in Earth and Ocean Sciences. Topics differ by section. One course. Staff

105L. Earth Materials. (NS) An introduction to minerals, rocks, and soils. Their genesis, identification, and classification. Includes laboratory. Prerequisite: Chemistry 12L (may be taken concurrently) or consent of instructor. One course. Boudreau or Klein

106L. Igneous and Metamorphic Rocks. (NS) Silicate mineralogy, theory of origin and classification of igneous and metamorphic rocks, and rock identification. Lectures and laboratory. Prerequisite: Geology 105L. One course. Boudreau

110L. Sedimentation and Stratigraphy. (NS) Discrimination and interpretation of vertical and lateral stratigraphic sequences utilizing both physical and biological attributes of stratigraphic units. Practical exercises include measuring and describing outcrop and subsurface sequences, mapping techniques in stratigraphic analysis, seismic stratigraphy, and environmental reconstruction. Prerequisites: Geology 41 and 105L. One course. Murray and Perkins

112. Tropical Marine Geology. (NS) Overview of interaction between marine organisms, sediment production and alteration, depositional processes, and environments of deposition. Application of modern analogs to interpreting the Pleistocene rock record of South Florida and the Caribbean. Prerequisite: Geology 41 or Biology 25L, or consent of instructor. One course. Perkins

115. Introductory Applied Coastal Geology. (NS) 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. How fluid motions interact with the shape of the beach and bed in the surf zone, giving rise to features such as beach cusp, bars, channels, and barrier islands. Various solutions to the global retreat of shorelines. One course. Murray

117S. Field Mapping. (NS) An introduction to the techniques used to produce a geologic map. Weekend field trips to map locations of interest. Prerequisite: Geology 41. Half course. Boudreau or Karson

120. Environmental Geology. (NS) A case history approach to the role of geological materials and processes in environmental assessment studies. The impact of rock type, faulting, folding, weathering, erosion, flooding, and underground fluid flow on the human environment. Cases taken from current and past geological studies of environmentally sensitive sites. One course. Malin

121S. The Surface of the Earth. (NS) Effects on the earth's surface of wind, water, ice, weathering, volcanism, tectonics, and human activity. Origin and nature of landforms. Prerequisite: Geology 41. One course. Haff
123S. Hydrology. (NS) An overview of the hydrologic cycle and its impact on global climate and local environmental problems. Prerequisites: Mathematics 32 and Chemistry 12L or consent of instructor. One course. Rojstaczer

126S. Field Methods in Earth and Environmental Sciences. (NS) 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. Through field studies employing various techniques, the student will learn how to design a field investigation, collect data to address a specific goal, and interpret and report the results. Visits to five local field sites. Open only to juniors and seniors. C-L: Environment 126S. One course. Klein

127. Environmental Controversies. (NS) Examination of key environmental problems that face society at local and global scales. Emphasis on how science is used to the advantage of both sides of environmental controversies. Includes presentations by environmentalists and industrialists. One course. Rojstaczer

130L. Principles of Earth Structure and Geophysics. (NS) Interpretation of geological deformation features and the geophysical expression of environmentally important features including active and near-surface tectonics and deep earth structures and processes. Lectures and laboratory. Prerequisites: Geology 106L and 110L. One course. Karson and Malin

145. Fossils and Their Applications. (NS) Animal and plant fossils; laboratory review of invertebrate marine fossils important to paleoenvironmental interpretations. The paleoecology, functional morphology, and geochemistry of different fossil organisms related to paleoenvironmental and paleoceanographic reconstructions. Lecture, laboratory, and field trip. Not open to students who have taken Geology 90S. One course. Corliss

151S. Global Change. (NS) Analysis of the causes and geological record of climatic change, emphasis on the Holocene. One course. Baker

152. Field Methods in Environmental Geophysics. (NS) A practical field methods class emphasizing the use of geophysical profiling equipment to study near surface geology. Includes field exercises in seismic refraction/reflection profiling, gravity and magnetic profiling, and electrical methods. Basic geological and quantitative relations for interpreting the field measurements. One course. Malin

160. Ocean and Atmosphere Dynamics. (NS) Introduction to the dynamics of ocean and atmospheric circulations, with particular emphasis on the global climate cycle. Prerequisites: Mathematics 31 and 32, or consent of instructor. One course. Lozier

172L. History of the Earth. (NS) Evolution of the earth and organisms through time. Weekend field trip to the Appalachian Mountains. Lectures and laboratory. Not open to students who have taken Geology 72L. One course. Corliss

181S. The American Southwest. (NS) Geomorphic and geologic features of arid terrain, including volcanism, tectonics, soils and weathering, palo-lakes, wind-blown sand and dust, landslides, and alluvial fans. Focus on the Mojave Desert region of California and Nevada. Includes week-long field trip. Prerequisites: Geology 41 and consent of instructor. One course. Haff

182S. Rivers of the Carolinas. (NS) The origin of rivers. Sediment and water transport by rivers. Droughts and floods and their relationship to global climate change. The role of rivers in regional history and economic development. The importance of rivers and estuaries to modern society. The course includes three field trips (via canoe) to typical rivers of the coastal plain, piedmont, and Appalachian Mountains regions. One course. Baker
183S. Hydrology and Geology of Yellowstone National Park. (NS) Hydrology and geology of Yellowstone National Park and vicinity. Includes field trip to Yellowstone National Park to examine volcanic and hydrothermal features of the region. Consent of instructor required. Prerequisites: Geology 41 and 123. One course. Rojstaczer

184S. The Andes of Bolivia: Geology, Geomorphology, and Modern Environments. (NS) Field studies of the Altiplano and Andean regions of Bolivia including examination of volcanoes and volcanic rocks; glaciers and glacial deposits; modern lakes and ancient lake deposits. Study of regional climate change and human cultural evolution. Consent of instructor required. One course.

185S. The Pacific Northwest. (NS) Geology and geomorphology of the Pacific Northwest, including volcanism, tsunamis, channeled scabland, Columbia River, Cascade Mountains, glaciers, and coastal features. Includes week-long field trip to Washington or Oregon. Prerequisites: Geology 41 and consent of instructor. One course. Murray and Pilkey

191, 192. 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 by consent of director of undergraduate studies and supervising instructor. One course each. Staff

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. One course. Staff

For Advanced Undergraduates and Graduates

200. Beach and Coastal Processes. (NS) The study of sedimentary processes and geomorphology of nearshore environments with emphasis on both developed and undeveloped barrier island systems. One course. Pilkey

201L. Physical Processes in Coastal Environments. (NS) The physical processes of beaches, the inner continental shelf, and in estuaries, in the context of their implications for the biological and geological environments. Topics drawn from the origin of waves, currents, tides, turbulence, and mixing transport of sand and larvae. Applications to biomechanics and coastal erosion, and to marine ecology, coastal zone management, and water quality. (Given at Beaufort.) Prerequisites: Mathematics 31 and 32. C-L: Environment 222L and Marine Sciences. One course. Staff

202. Beach and Island Geological Processes. (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. (Given at coast on two weekends.) C-L: Marine Sciences. Half course. Pilkey

203. Physical Oceanography. (NS) 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. Prerequisites: Mathematics 31 and 32 or consent of instructor. C-L: Environment 290 and Mechanical Engineering 290. One course. Lozier

204. Nearshore Processes and Geomorphology. (NS) 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. One course. Murray
205. Geological Oceanography. (NS) The geology of ocean basins, including origin, bottom physiography, sediment distribution, and sedimentary processes. Not open to students who have taken Geology 206S. (Given at Beaufort.) C-L: Environment 291 and Marine Sciences. One course. Staff

206S. Principles of Geological Oceanography. (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 Geology 205. Consent of instructor required. One course. Baker

207S. Analysis of Coastal Engineering Models. (NS) A critical evaluation of the assumptions and principles underlying coastal engineering mathematical models used to predict the behavior of beaches. Involves classroom discussion of both the geology and engineering modeling literature. Consent of instructor required. One course. Pilkey

209S. Climate Dynamics and the Paleoclimatic Record. (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. One course. Baker

210. Interpreting Earth History and Resources in Sedimentary Basins. (NS) Sedimentary basins as records of past climate, catastrophic events, and the evolution of life on earth. Groundwater, fossil fuels, and vital ores. Ways that sediment is delivered to and distributed within basins. Lab/computer demonstrations and field trips to see sediment dynamics and accumulation in action, then applied in interpreting the evolution of sedimentary basins. Interpretation, in the context of sequence stratigraphy, involving analysis of seismic data, well logs, and, potentially, outcrops in the Guadalupe Mountains (West Texas). One course. Pratson

211S. Beach, Barrier Island, and Shoreface Processes. (NS) Selected readings in nearshore oceanography and barrier island processes. Topics include mechanics of barrier island origins and evolution; fair weather and storm wave, current, and sediment transport processes on the shoreface; and critiques of coastal modeling. Consent of instructor required. One course. Murray and Pilkey

219S. Erosion. (NS) Empirical and process-based approaches to description and prediction of sediment transport and erosion. Includes study of USLE, landscape evolution models, overland flow, gully formation, debris flows, landsliding, bedload and suspended load transport in rivers, and aeolian transport. Principles illustrated through case studies. Prerequisite: Geology 41 or consent of instructor. One course. Haff

220S. Regional Geomorphology of the United States. (NS) Origin, nature, and significance of natural features of the earth's surface, with focus on regional studies within the United States. Four main geographical areas emphasized each year from among Great Plains, Rocky Mountains, Colorado Plateau, Basin and Range, Columbia and Snake River Plains, Pacific Coast and Mountain System, Interior Mountains and Plateaus, Appalachian Mountains and Plateaus, Atlantic and Gulf Coastal Province. Prerequisites: open to graduates and advanced undergraduates with consent of instructor. One course. Haff

211. Hydrogeology. (NS) Theory of groundwater flow and solute transport with application to geologic processes, water resources, and water quality. Prerequisites: Chemistry 12L, Mathematics 103, and Physics 42L or consent of instructor. One course. Rojstaczer

222. New Perspectives and Methods in the Earth Sciences. (NS) Nonlinear dynamics and related approaches to understanding, modeling, and analyzing physical systems,
with emphasis on applications in the earth sciences. Consent of instructor required. One course.


230S. **Advanced Structural Geology. (NS)** Stress and strain emphasizing geometric, kinematic, and dynamic analysis of micro structures and mesoscopic structures. Prerequisite: Geology 130L or consent of instructor. One course. Rojstaczer

233S. **Oceanic Crust and Ophiolites. (NS)** Structure, tectonics, petrology, and geochemistry of oceanic spreading environments and ophiolite complexes. Prerequisites: Geology 106L and 130L or consent of instructor. One course. Karson

236S. **Lithosphere Plate Boundaries. (NS)** Plate tectonics and the geological and geophysical expression of orogenic belts, spreading centers, transform faults, subduction zones. Prerequisite: Geology 130L or consent of instructor. One course. Karson

239S. **Advanced Topics in Structural Geology and Tectonics. (NS)** Selected topics related to deformation of rocks ranging from microstructure to plate tectonics. Prerequisite: Geology 130L or consent of instructor. One course. Karson

250. **Applied Mathematics for the Environmental and Earth Sciences. (QR)** Overview of quantitative methods used in modeling and data analysis of environmental and geologic problems. One course. Staff

252. **Geophysics and Crustal Dynamics. (NS)** A quantitative survey of the earth’s seismology, gravity, magnetism, heat flow, and internal dynamics. Derivation of the basic equations of geophysics and geodynamics. 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. Prerequisites: upper division or first-year graduate standing in science or engineering. One course. Malin

257S. **Practical Experience in Modern Seismic Profiling I: Data Acquisition. (NS)** First of a three-course sequence in the application of seismic profiling in geological investigations for research, resource, and environmental purposes; includes field trip to participate in a small scale (1/2 mile sq.) 3D seismic reflection profiling campaign in central Texas. Background topics including basic methods and theory of seismic data acquisition, samples of the field trip observations studied for quality and evidence of useful signals for subsurface imaging. Prerequisite: one 100-level course in geological sciences. One course. Malin

258S. **Practical Experience in Modern Seismic Profiling II: Data Processing. (NS)** Second of a three-course sequence in the application of seismic profiling in geological investigations for research, resource, and environmental purposes; signal processing step necessary to process portions of the 3D seismic reflection profiling from central Texas into interpretable images of the geology. Background topics include basic methods and theory of seismic data processing; focus on applying these methods to the field data. Prerequisite: Geology 257S. One course. Malin

259S. **Practical Experience in Modern Seismic Profiling III: Geological Interpretation. (NS)** Third of a three-course sequence in the application of seismic profiling in geological investigations for research, resource, and environmental purposes; the geological meaning and significance of the processed 3D seismic reflection profiles.
collected in central Texas as part of Geology 257S. Background topics including the basic methods of seismic data interpretation; focus on developing testable alternative hypotheses about the geology/hydrology/stratigraphy of the field site. Prerequisite: Geology 258S. One course. Malin

269. Thermodynamics of Geological Systems. (NS) Introductory thermodynamics applied to geologic problems through understanding of phase equilibrium. Prerequisites: Geology 105L (may be concurrent) and Mathematics 32. One course. Boudreau

270. Sedimentary Geochemistry. (NS) Chemistry of aqueous solutions and authigenic minerals in sedimentary systems. Prerequisites: Chemistry 12L and Mathematics 32. One course. Baker

271. Isotope Geochemistry. (NS) Theory and applications of stable and radioactive isotope distributions in nature. Prerequisites: Chemistry 12L and Mathematics 32. One course. Baker

272. Biogeochemistry. (NS) Processes controlling the circulation of carbon and biochemical elements in natural ecosystems and at the global level, with emphasis on soil and surficial processes. Prerequisite: Chemistry 12L or equivalent. C-L: Biology 272 and Botany 272. One course. Schlesinger

273S. Analytic Techniques. (NS) An introduction to advanced analytic procedures used in the earth sciences: such as electron microbeam techniques (scanning electron microscopy, electron microprobe analysis) and plasma emission/absorption spectroscopy. Consent of instructor required. One course. Boudreau and Klein

285S. Layered Intrusions. (NS) Survey of layered igneous intrusions and current theories on crystallization and other processes in mafic magmas. Offered alternate years. Prerequisites: Geology 105L and 106L or consent of instructor. One course. Boudreau

295S. Advanced Topics in Geology. (NS) Topics, instructors, and credits to be arranged each semester. Variable credit. Staff

COURSES CURRENTLY UNSCHEDULED

122. Models in Environmental Science. (NS)
208S. Paleoceanography. (NS)
237S. Structure and Evolution of the Appalachian Orogen. (NS)

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 Geology 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. Geology 41 and 53; Chemistry 11L and 12L; 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 8 Earth and Ocean Sciences courses, at least 7 of which must be at the 100-level or above, plus one field-oriented course (Geology 126S, 181S, 182S, 183S, 184S, 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 Geology 115, 120, 121, 122, 123, 151, 152, 160, 172, or from 200-level Earth and Ocean Sciences courses approved by the director of undergraduate studies, plus one field-oriented course (Geology 126L, 181S, 182S, 183S, 184S, 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 (Geology 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. Geology 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 (ECO)

Professor McElroy, Chair; Professor De Marchi, Director of Undergraduate Studies; Professors Bollerslev, Clofelter, Cook, Goodwin, Grabowski, Graham, Kelley, Kimbrough, Kramer, Ladd, Moulin, Sloan, Smith, Tauchen, Tower, Treml, Vernon, and Weintraub; Associate Professors Conrad, Mendoza, and Zhou; Assistant Professors An, Connolly, Coppejans, Crawford, Hamilton, Peretto, Quadrini, Sieg, and Yang; Professors Emeriti Blackburn, Davies, Kreps, Wallace, and Yohe; Research Professors Burmeister and Toniolo; Adjunct Professor Gallant; Adjunct Associate Professor Zarkin

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 31, 32, 103, 104, 131, 135, and 136.

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. National Income and Public Policy. (SS) Basic economic analysis emphasizing current public policy issues. Means of determining the level and rate of growth of aggregate national income and output. Causes of unemployment, inflation, and international payment problems. The effects of monetary policy (money supply and interest rates) and fiscal policy (government expenditures and taxes) on these problems. For freshmen; upperclassmen by consent of instructor. One course. Staff

1S. National Income and Public Policy. (SS) Seminar version of Economics 1D. Open only to freshmen. One course. Kelley

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.

2D. Competition, Monopoly, and Welfare. (SS) The composition of output and the distribution of income in a market economy. Role of government. Contemporary problems. Topics such as environmental economics, monopoly, unionism, international trade. Comparison of a market economy with other systems of economic organization. Economic problems of developing countries. Open only to freshmen. C-L: Health Policy. One course. Crawford
49S. First-Year Seminar. Topics vary each semester offered. One course. Staff

50. Duke-Administered Study Abroad: Special Topics in Economics. Topics differ by section. One course. Staff

51D. National Income and Public Policy. (SS) For description see Economics 1D. Open to all students. May be taken before or after Economics 2D or 52D. One course. De Marchi and Goodwin

52D. Competition, Monopoly, and Welfare. (SS) For description see Economics 2D. Open to all students. May be taken before or after Economics 1D or 51D. C-L: Health Policy. One course. Staff

53. Economics of Contemporary Issues. (SS) Modern economic problems, such as environmental deterioration and urban decay. The market as one of the interrelated subsystems of the social system, from institutionalist, Marxist, and other perspectives in the social sciences. One course. Staff


56. International Economics. (SS) Global trade, trade restrictions, monetary systems, exchange rates, and economic development. Applications to the European Union, the United States, and the developing world. (Taught only in the Duke-in-Madrid Program.) Prerequisite: Economics 1 or 51 or 2 or 52. One course. Allard


58. Financial Accounting and Decision Making. (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. One course. Staff

98. Introduction to Canada. (SS) Does not count for economics major or minor requirements. See C-L: Canadian Studies 98; also C-L: Comparative Area Studies, History 98, Political Science 098, and Sociology 98. One course. Staff

99S. Socialism, Enterprise, and Stability. (SS) The tensions within major ideational struggles that have shaped the European experience in the early and middle twentieth century. Focus on (1) command system in Russia and in eastern Europe; (2) experiences of market economies with agricultural and general depression, boom and bust in the stock market, price and exchange rate fluctuations, and unemployment in the 1920s and 1930s; (3) efforts to set up countervailing measures and institutions to address social security, jobs, international monetary stability. Recommended: AP credit in economics. Open only to students in the FOCUS Program on Twentieth-Century Europe. One course. De Marchi

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

100S. Duke-Administered Study Abroad: Advanced Special Topics in Economics. Seminar version of Economics 100. Topics differ by section. One course. Staff

115. Introduction to North America. (CZ, SS) Does not count toward the economics major or minor requirements. See C-L: North American Studies 110; also C-L: Cultural

**132. Introduction to Economic History.** (CZ, SS) A survey of Western economic history: population, production, exchange, and institutions; from antiquity to the present. Prerequisite: Economics 2 or 52. One course. Staff

**136. The International Economy Since 1800.** (CZ, SS) The history of the international monetary systems, the economic causes and effects of wars, the evolution of super-national economic institutions. Prerequisite: Economics 1D or 51D; recommended: Economics 154. One course. Toniolo

**139. Introduction to Econometrics.** (QR) Data collection, estimation, and hypothesis testing. Use of econometric models for analysis and policy. Prerequisites: Economics 2 or 52, Mathematics 32 or equivalent, and statistics. One course. Sieg, Tauchen, or Wallace

**140. Comparative Economic Systems.** (SS) A strategic analysis of the new economics of Russia, China, and Eastern Europe as well as the socioeconomic, political systems of the United States, Japan, Sweden, and other capitalistic countries. Prerequisites: Economics 1 or 51, and 2 or 52. C-L: Comparative Area Studies. One course. Treml

**141. Applied Econometrics.** (QR) 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. Prerequisites: Economics 139, Mathematics 104, and Statistics 110B or equivalent. One course. An

**142S. Chinese Economy in Transition.** (SS) Evolution of the Chinese economy since 1949. Exposition of alternative economic systems, the commune, incentive problems, and state enterprises. Analysis of recent reforms and their effects on economic efficiency: agricultural growth, changes in ownership structures, financial markets, reforms and inflation, privatization, gradualism, and shock treatment. Through a research project students develop expertise in one aspect of the Chinese economy. Prerequisites: Economics 1 or 51, and 2 or 52. C-L: Comparative Area Studies and Public Policy Studies 142S. One course. Yang

**143. The Art Market.** (SS) An historical and analytical study of the way art objects have been produced and marketed. Peculiarities of the product and the evolution of appropriate sales techniques, the roles of patrons and dealers, and the formation of and adaptation to preferences. Special attention paid to innovation, its reward and viability, to paintings as assets, and to the international traffic in paintings, protection, and import substitution. Prerequisite: Economics 2/52, Art History 70, or consent of instructor. One course. De Marchi

**146. Adam Smith and the System of Natural Liberty.** (SS) 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. Not open to students who have taken Economics 151. C-L: Comparative Area Studies. One course. De Marchi or Goodwin

**148. History of Economic Thought.** (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, Malthus, Ricardo, Marx, Walras, Veblen, and Keynes. Not open to students who have taken the course as Economics 150. Prerequisites: Economics 1 or 51 and 2 or 52. C-L: Comparative Area Studies. One course. De Marchi or Goodwin
149. Microeconomics. (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 open to students who have had Public Policy Studies 110. Prerequisites: Economics 2 or 52, and Mathematics 26L or 31 or 31L. One course. Graham, Treml, Vernon, or Zhou

152. Mercantile Culture and Art in the Netherlands. (CZ) See C-L: Art History 155; also C-L: Comparative Area Studies, and Medieval and Renaissance Studies 154B. One course. De Marchi and Van Miegroet

153. Money and Banking. (SS) 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 154. One course. Staff

154. Macroeconomics. (SS) Concepts and measurement of national income and expenditures, employment, interest rates, and price levels; the theoretical determination of these aggregates; applications of macroeconomic theory to business cycles and economic growth. Prerequisites: Economics 1 or 51, 2 or 52, and Mathematics 26L or 31 or 31L. One course. Connolly, Kimbrough, Mendoza, or Yohe

154L. Macroeconomics. (SS, QR) Same as Economics 154, except includes a weekly computer lab. Microsoft Excel used to estimate economic models using regression analysis and to simulate linearized economic models using matrix methods. Not open to students who have taken Economics 154. Prerequisites: Economics 1 or 51, 2 or 52, and Mathematics 26L or 31 or 31L. One course. Tower

155. Labor Economics: Analysis and Measurement. (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. Prerequisites: Economics 149, Mathematics 26L or 31 or 31L, and statistics. One course. McElroy or Yang

156. Health Economics. (SS) Economic aspects of the production, distribution, and organization of health care services, such as measuring output, structure of markets, demand for services, pricing of services, cost of care, financing mechanisms, and their impact on the relevant markets. Prerequisite: Economics 149 or Public Policy Studies 110. C-L: Health Policy and Public Policy Studies 156. One course. Sloan

157. Financial Markets and Investments. (QR) 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 149, 154, Statistics 110B or equivalent. One course. Bollerslev or Tauchen

158. Applied Financial Economics. (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 149, Economics 154, Statistics 110B or equivalent, or consent of instructor. One course. Bormester

163. Economics of the Environment. (SS) 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 52. One course. Smith

164. Formulating Macroeconomic Concerns, 1936-86. (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— 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 thought to be applicable. Prerequisite: (or corequisite) Economics 154. One course. De Marchi

165. American International Economic Policy. (SS) Topics include United States trade policies and protectionism, the North American Free Trade area, trade and economic relations with industrialized countries, policies toward developing countries and multilateral institutions, macroeconomic policy coordination, and relations with Europe. Prerequisites: Economics 1 or 51 and 2 or 52. C-L: Public Policy Studies 165. One course. Staff

167. Multinational Management. (SS) Economic, political, and legal variables which influence the form of organization. Multinational enterprise and foreign direct investment. Prerequisite: Economics 149. One course. Staff

171S. Behavioral and Experimental Economics. (SS) The relationship between actual behavior and economic models. Topics include individual decision-making behavior, game theory, and the role of market institutions. The interaction of economic and psychological theory. Students have the opportunity to participate in, and conduct, economic experiments. Prerequisite: Economics 149 or consent of instructor. One course. Staff

173. Economics of Organization and Management. (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 149. One course. Staff

175. Economics of Modern Latin America. (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. Prerequisites: Economics 1 or 51 and 2 or 52; or consent of instructor. C-L: Comparative Area Studies and Latin American Studies. One course. Staff

180. Law and Economics. (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 149. One course. Staff

181. Corporate Finance. (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. Prerequisites: Economics 1 or 51, 2 or 52, 149, and Statistics 110B or equivalent. One course. Coppejans
183. Agency and Accounting. (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 149 or 181. One course. Staff

184S. Canadian Issues. (SS) Does not count as one of the courses at the 100-level or higher for either of the economics major or minor. Prerequisite: Canadian Studies 98 or consent of instructor. See C-L: Canadian Studies 184S; also C-L: Comparative Area Studies, Cultural Anthropology 184S, History 184S, Political Science 184S, and Sociology 184S. One course. Staff

185S. The Canadian Health Care System. (SS) Does not count as one of the courses at the 100-level or higher for either of the economics major or minor. See C-L: Canadian Studies 185S; also C-L: Comparative Area Studies, Cultural Anthropology 185S, History 185S, Political Science 185S, Public Policy Studies 187S, and Sociology 185S. One course. Warren

187. Public Finance. (SS) Economic aspects of the allocative and distributive role of government in the economy, the incidence and efficiency of taxation, the effects on behavior, and analysis of major government spending programs. Prerequisite: Economics 149. One course. Staff

188. Industrial Organization. (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. Prerequisites: Economics 149 and statistics, or consent of instructor. One course. Staff

189. Business and Government. (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. Prerequisites: Economics 149 and Statistics 110B, or consent of instructor. One course. Grabowski or Vernon

190. The Development of Modern Economic Thought. (SS) Selective survey of the development of economic thinking in the twentieth century, with emphasis on the construction of economics as a science. Prerequisites: Economics 1D or 51D, and Economics 2D or 52D. One course. De Marchi or Weintraub

191, 192. 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. One course each. Staff

193, 194. Independent Study. Same as Economics 191, 192, but for seniors. One course each. Staff

195, 196. Selected Topics in Economics. One course each. Staff

For Advanced Undergraduates and Graduates


207. Models of Conflict and Cooperation. (SS) Cooperative and noncooperative game theory with applications to trading, imperfect competition, cost allocation, and voting. Prerequisites: Economics 149 and Mathematics 26L or 31 or 31L. One course. Zhou

207S. Models of Conflict and Cooperation. (SS) Seminar version of 207. Prerequisites: Economics 149 and Mathematics 26L or 31 or 31L. One course. Zhou

208S. Economics of the Family. (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. Prerequisites: Economics 149 and Statistics 110B. One course. McElroy

216S. Economics of Education. (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 149 or Public Policy Studies 110. C-L: Public Policy Studies 216S. One course. Clotfelter

218. Macroeconomic Policy. (SS) Does not count for undergraduate economics major requirements. See C-L: Public Policy Studies 218. One course. Lapp

219S. Economic Problems of Underdeveloped Areas. (SS) 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. Prerequisites: Economics 139, 149, and 154. C-L: Comparative Area Studies. One course. Kelley or Wallace

220S. Computer Modeling for Policy Analysis. (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. Prerequisites: Economics 149 and Economics 154. One course. Tower

236. The International Economy Since 1800. (CZ, SS) Same as Economics 136, but requires an additional paper; not open to students who have taken Economics 136. Prerequisite: Economics 1D or 51D; recommended: Economics 154. One course. Toniolo

239. Introduction to Econometrics. (QR) 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.) Prerequisites: Economics 2 or 52 and Mathematics 32 or equivalent and Statistics 110B. One course. Sieg, Tauchen, or Wallace

240. Comparative Economic Systems. (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. Prerequisites: Economics 1 or 51, and 2 or 52. C-L: Comparative Area Studies. One course. Treml

241. Applied Econometrics. (QR) 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.) Prerequisites: Economics 139, Mathematics 104, and Statistics 110B or equivalent. One course. An

242S. Chinese Economy in Transition. (SS) Evolution of the Chinese economy since 1949. Exposition of alternative economic systems, the commune, incentive problems and state enterprises. Analysis of recent reforms and their effects on economic efficiency: agricultural growth, changes in ownership structures, financial markets, reforms and inflation, privatization, gradualism and shock treatment. Through a research project students develop expertise in one aspect of the Chinese economy. (Same as Economics 142S but requires additional paper; not open to students who have taken Economics 142 or 142S.) Prerequisites: Economics 1 or 51, and 2 or 52. C-L: Comparative Area Studies and Public Policy Studies 242S. One course. An

246. Adam Smith and the System of Natural Liberty. (SS) Same as Economics 146, but requires an additional paper; not open to students who have taken Economics 146 or 151. One course. De Marchi

249. Microeconomics. (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.) One course. Graham, Treml, Vernon, or Zhou

252. Mercantile Culture and Art in the Netherlands. (CZ) Same as Economics 152, but requires additional assignments; not open to students who have taken Economics 152 or Art History 155. One course. De Marchi and Van Miegroet

254. Macroeconomics. (SS) Concepts and measurement of national income and expenditures, employment, interest rates, and price levels; the theoretical determination of these aggregates; applications of macroeconomic theory to business cycles and economic growth. (Similar to Economics 154 but at a more advanced level; not open to students who have taken Economics 154.) One course. Connolly, Kimbrough, Mendoza, or Yohe

254L. Macroeconomics. (SS, QR) Same as Economics 254, except includes a weekly computer lab. Microsoft Excel used to estimate economic models using regression analysis and to simulate linearized economic models using matrix methods. Similar to Economics 154L but at a more advanced level; not open to students who have taken Economics 154, 154L, or 254. One course. Tower

255S. Labor Economics: Analysis and Measurement. (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.) Prerequisites: Economics 149, Mathematics 31, and Statistics 210B or equivalent. One course. McElroy or Yang

257. Financial Markets and Investments. (QR) Same as Economics 157, but requires an additional paper. Not open to students who have had Economics 158/258 before Fall
1998. Prerequisite: Economics 149, Economics 154, or Statistics 110B or equivalent. One course. Bollerslev or Tauchen

258. Applied Financial Economics. (SS) Same as Economics 158, but requires additional work. Not open to students who have had Economics 158/258. Prerequisite: Economics 149, Economics 154, Statistics 110B or equivalent. One course. Bollerslev or Tauchen

259S. State and Local Public Finance. (SS) Prerequisite: Public Policy Studies 217 or equivalent. See C-L: Public Policy Studies 259S. One course. Ladd

261. Evaluation of Public Expenditures. (SS) Not open to students who have taken Economics 265. See C-L: Public Policy Studies 261; also C-L: Environment 272, and Health Policy. One course. Conrad


263. Environmental Economics: Quantitative Methods and Applications. (SS) Uses envirometrics (mathematical programming, multivariate statistics, and simulation techniques) to address externalities problems developed with programming models; regression and maximum likelihood techniques used in nonmarket valuation; and simulation in applied benefit and cost analysis. Prerequisite: Economics 149. C-L: Environment 263. One course. Smith

264. Formulating Macroeconomic Concerns, 1936-86. (SS) Same as Economics 164, but requires an additional paper; not open to students who have taken Economics 164. Prerequisite: (or corequisite) Economics 154. C-L: Canadian Studies. One course. De Marchi


266S. International Monetary Economics. (SS) Financial aspects of growth and income determination, and macroeconomic policy in open economies. Applications to exchange rate determination, capital markets, the history of international monetary regimes, international policy coordination, currency crises, and monetary reform. Prerequisite: Economics 149, 154. One course. Kimbrough

267. Multinational Management. (SS) Economic, political, and legal variables which influence the form of organization. Multinational enterprise and foreign direct investment. (Same as Economics 167, but requires an additional paper; not open to students who have taken Economics 167.) Prerequisite: Economics 149. One course. Staff

268S. Current Issues in International and Development Economics. (SS) Emphasis on individual research projects. Prerequisite: Economics 149, 154. C-L: Canadian Studies. One course. Tower

269. Microeconomic Analysis. (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). One course. Yang


272. Economic Analysis of Resource and Environmental Policies. (SS) Prerequisite: Environment 270 or equivalent; Economics 149 recommended. See C-L: Environment 271. One course. Mansfield
275. Economics of Modern Latin America. (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.) Prerequisites: Economics 1 or 51 and 2 or 52; or consent of instructor. C-L: Comparative Area Studies and Latin American Studies. One course. Staff

281. Corporate Finance. (SS) Same as Economics 181, but requires an additional paper; not open to students who have taken Economics 181. One course. Staff

2825. Canada. (SS) See C-L: Canadian Studies 282S; also C-L: Comparative Area Studies, Cultural Anthropology 2825, History 2825, Political Science 2825, and Sociology 2825. One course. Staff

283. Agency and Accounting. (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. (Same as Economics 183, but requires additional paper. Not open to students who have taken Economics 183.) Prerequisite: Economics 149/249 or 181. One course. Staff

2845. American Financial Development and History. (SS) Development of American financial institutions and markets from the colonial period to the present. The political, economic, and institutional factors which influenced that evolution and the theoretical implications for contemporary emerging markets. Prerequisite: Economics 181 or consent of instructor. One course. Staff


287. Public Finance. (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 149. One course. Sieg

291. Issues in European Economic History. (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. One course. Toniolo


2945. Soviet Economy in Transition. (SS) Economic planning and administration in the Soviet Union. Theoretical and applied problems of resource allocation, economic development, and optimal micro decision making in a nonmarket economy.
Gorbachev's perestroika, search for a new model, and the collapse of the Soviet system.
C-L: Comparative Area Studies. One course. Treml

295, 296. Selected Topics in Economics. (SS) One course each. Staff


Senior Seminars

200. Senior Capstones. (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 A-F. Consent of individual instructor may be required. One course each. Variable credit.

200A, S. Economics and the Bloomsbury Group. (SS) 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. One course. Goodwin

200B, S. Innovation and Entrepreneurial Activity. (SS) 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. One course. Grabowski

200C, S. Economy, Society, and Morality in Eighteenth-Century Thought. (SS) Explorations of eighteenth-century topics with a modern counterpart, chiefly (a) self-interest, liberal society, and economic incentive; and (b) the passions, sociality, civic virtue, common moral sensibilities, and the formation of taste and opinion. Original texts: for example, Bacon, Newton, Shaftesbury, Mandeville, Hutcheson, Hume, Smith, Hogarth, Burke, Cato's Letters, Federalist Papers, Jane Austen. Stress on integrating economic and political science perspectives. Open only to seniors majoring in either economics or political science. Not open to students who have had Economics 146. C-L: Political Science 214S. One course. De Marchi and Grant

200E, S. Financial Derivatives and Financial Engineering. (SS) 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. Prerequisites: Economics 158 and Statistics 110B or equivalent. Additional courses in computer science and mathematics are helpful. One course. Tauchen

200F, S. Current Issues in Economics. (SS) Economic analysis of such issues as the health care system, crime and punishment, pollution and the environment, the performing arts, welfare, and the energy crisis. Prerequisites: Economics 149 and Statistics 110B or an equivalent. One course. Wantraub

These courses are also open to juniors by consent of instructor.

206S. Regulation and Industrial Economics. (SS) Analysis of industrial competition and performance in industries such as automobiles, telephones, cable TV, airlines,
pharmaceuticals, tobacco, and health care services. Analysis of the efficiency of regulation and other public policy programs. Prerequisites: Economics 149 and statistics. One course. Grabowski

209S. Global Issues in Population and Development. (SS) 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. Prerequisites: Economics 149 and 154. One course. Kelley

212S. Economic Science and Economic Policy. (SS) 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 in the policy process. Prerequisites: Economics 149, 154, and consent of instructor. One course. Goodwin

COURSES CURRENTLY UNSCHEDULED
25. Competition, Monopoly, and Welfare. (SS)
65. Japanese Business Management. (SS)
69. Australia and the Asia-Pacific Economies. (SS)
108. Economics of War. (SS)
130. The Changing Role of the Market in the Social System. (SS)
144. Education, Development, and Growth. (SS)
145. Soviet System and the Emerging Russian Economy. (SS)
161S. Economics of Slavery in the American South. (SS)
169, 170. Microeconomic Analysis I and II. (SS)
198S. Economics of Regulation. (SS)
203S. Mathematical Economics. (SS)
215S. Applied Cost Benefit Analysis. (SS)
224S. Economics of the Law. (SS)
225S. Games and Information. (SS)
231S. Economic Development in Latin America. (SS)
235. The Economics of Crime. (SS)
244. Education, Development, and Growth. (SS)
248. History of Economic Thought. (SS)
251S. Regulation of Vice and Substance Abuse. (SS)
253. Econometric Methods. (QR)
260. Economic Policy Analysis of Nonrenewable Resources. (SS)
271S. Behavioral and Experimental Economics. (SS)
273. Economics of Organization and Management. (SS)
280S. Fundamentals of Political Economy. (SS)

THE ECONOMICS MAJORS AND MINOR

The Department of Economics publishes a handbook to guide economics majors and minors. A copy may be obtained from the assistant to the director of undergraduate studies. 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. Introductory macroeconomics: Economics 1 (A, D or S) or 51D. Introductory microeconomics: Economics 2 (A, D, or S) or 52D. Mathematics 25L and 26L, or 31 or 31L or advanced placement credit for Mathematics 31. A course in statistical methods at the 100 level or above (the best statistics course for most economics majors is Statistics 110B). Statistics courses currently acceptable include Mathematics 136, Psychology 117, Public Policy Studies 112, Sociology 133, and any course at or above the 100 level in the Institute of Statistics and Decision Sciences.
Requirements. Economics 149 or 249 and Economics 154, 154L, 254, or 254L and any five additional economics courses at the 100 level or above. Students who have taken Public Policy Studies 110 instead of Economics 149 must take an additional economics course at the 100 level or above.

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 or government agencies where these skills would be valuable. Students who contemplate graduate study in economics are urged to develop skills in multivariate calculus (Mathematics 103), linear algebra (Mathematics 104), differential equations (Mathematics 111) 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. Introductory macroeconomics: Economics 1 (A, D or S) or 51D. Introductory microeconomics: Economics 2 (A, D, or S) or 52D. A course in statistical methods at the 100 level or above (the best statistics course for most economic majors is Statistics 110B). Statistics courses currently acceptable include Mathematics 136, Psychology 117, Public Policy Studies 112, Sociology 133, and any course at or above 100 level in the Institute of Statistics and Decision Sciences. Mathematics 103.

Requirements. Economics 139 or 239; Economics 149 or 249; and Economics 154, 154L, 254, 254L. Any four additional economics courses at the 100 level or above, plus any two additional courses drawn from the following: computer science at any level, 100 level or above courses in mathematics, 100 level or above courses in Statistics, the following quantitatively oriented economics courses: 158 or 258, 171S or 271S, 181 or 281, 203S, 207, 220S, 225S, 257S. Students who take Public Policy Sciences 110 instead of Economics 149 must take an additional economics course at the 100 level or above.

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 of three members. 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 letter of invitation will be sent to qualifying juniors and seniors. A seminar at the 200-level has often proved a path to fruitful topics.

THE MINOR

Requirements. Five courses in economics including introductory macroeconomics: Economics 1 (A or D) or 51D; introductory microeconomics: Economics 2(A, D, or S) or 52D; and three courses at the 100 level or above including at least one intermediate level economic theory course: Economics 149, 249, 154, 154L, 254, or 254L. Students with Advanced Placement credit for either or both Economics 1A and 2A must substitute the same number of additional economics courses. Such courses may be drawn from all courses taught in the Economics Department, including freshman seminars and economics courses in the Duke study abroad programs. Students who have taken Public Policy Studies 110 instead of Economics 149 must take an additional economics course at the 100 level or above.

Education (EDU)

Research Professor Goldstein, Director; Assistant Professor of the Practice Malone, Director of Undergraduate Studies; Associate Professor Di Bona; Professor of the Practice
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. Selected courses in education may 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.

495. First-Year Seminar. Topics vary each semester offered. One course. Staff

50. Duke-Administered Study Abroad: Special Topics in Education. Topics differ by section. One course. Staff

100. Social and Philosophical Foundations of Education. (SS) Basic features and assumptions, viewpoints, and issues of education in contemporary America. C-L: Perspectives on Marxism and Society. One course. Di Bona or staff

101. Duke-Administered Study Abroad: Advanced Special Topics in Education. Topics differ by section. One course. Staff

108S. Teaching Practices in Elementary Language Arts and Content Areas. (SS) Research, theories, and practices of language arts, social studies, science, and mathematics instruction in the elementary school. Introduction to appropriate strategies and methodologies that reflect proven educational practices and research. A planned, sequential field-based experience in a model public school is provided. One course. Riggsbee

109S. Elementary Curriculum. Seminar in curriculum development. Principles, practices, and problems of instruction. For student teachers only. One course. Bryant or staff

117S. Psychology of Personal and Social Adjustment. (SS) Principles of mental health affecting individual and social adjustments. One course. M alone

118. Educational Psychology. (SS) Emotional and cognitive learning in children, youth, and adults. One course. M alone or staff

120. Elementary Education: Internship. Supervised internship in a teaching center in an elementary school, involving full-time teaching. For student teachers only. Two courses. Riggsbee

121. Infancy, Early Childhood, and Educational Programs. (SS) Developmental theories and their practical application in education. Emphasis on parenting and teaching. One course. Staff

139. Marxism and Society. (SS) See C-L: Cultural Anthropology 139; also C-L: Comparative Area Studies, History 186, Literature 181, Perspectives on Marxism and Society, and Sociology 139. One course. Staff

140. The Psychology of Work. (SS) Factors affecting career choice and change. One course. Staff

143. Education, Culture, and Identity. (SS) See C-L: Cultural Anthropology 143; also C-L: African and African-American Studies 143. One course. Luttrell


149S. Exceptional Children. (SS) Etiology and assessment of major types of exceptions, including intellectual abilities, physical or emotional handicaps, and sensorially impaired. Family relationships and treatment programs. One course. Staff

160S. **Early Childhood Internship.** Internship in early childhood programs, involving supervised experience and a reflective seminar. For Early Childhood Education Studies Certificate students only. One course. Chafe or staff

170, A-O. **Selected Topics.** One course. Staff

178S. **The Psychology of Exceptional Ability. (SS)** The Duke University Talent Identification Program (TIP) will be a focus as well as a resource. Prerequisites: courses in either developmental or cognitive psychology and statistics recommended. See C-L: Psychology 178S. One course. Goldstein


190. **Trends, Techniques, and Innovative Technologies for the Twenty-first Century. (SS)** 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. One course. Staff

191, 192. **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. For juniors. Consent of instructor and director of undergraduate studies required. One course each. Staff

193, 194. **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. For seniors. Consent of instructor and director of undergraduate studies required. One course each. Staff

For Seniors and Graduates

205, 206. **Selected Topics.** One course each. Staff

209. **Global Education. (SS)** A comparative survey of 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. One course. Di Bona

211. **Education and the Mass Media. (SS)** Impact of mass media on behavior, particularly of children. One course. Di Bona

215S. **Seminar in Secondary School Teaching.** Principles, practices, and problems in secondary school instruction. One course. Staff

216. **Secondary Education: Internship.** Supervised internship in a teaching center in a senior high school involving some full-time teaching. For student teachers only. Two courses. Staff

232. **Learning and Living in Families.** Role and function of the family as related to the development and behavior of its members, to gender identification, to parenting, and to interactions among family members. One course. Staff
242T. Group Interactions. Examination of theoretical issues and processes involved in the dynamics of, and learning in, small groups of children, adolescents, parents, other adults, with attention to problem-oriented groups. One course. Staff

COURSES CURRENTLY UNSCHEDULED

103S. American Educational Theory. (SS)
168S. Contemporary Education Criticism. (SS)
171T, 172T. Junior-Senior Tutorials.
210S. Higher Education in Latin America. (SS)
212S. Pedagogy and Political Economy: A World View. (SS)
227. Contemporary Theories of Counseling and Psychotherapy. (SS)
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 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 internship semester, and upon completion of the four-year Trinity College undergraduate degree, students may apply for licensure.
Elementary 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 should apply to the elementary program in the fall of the junior 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. Duke student interns begin their teaching internship during preservice days before Duke classes begin.

Upon completion of the senior year fall semester internship and the four-year Trinity College undergraduate degree, students may apply for elementary teaching 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. Entry into the MAT Program is targeted for the second semester of the student’s senior year. 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 Office of the Dean of the Graduate School. This program is approved for teacher certification 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 by pursuing studies in psychology, sociology, cultural anthropology, 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 Education 160. 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 child care center 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 provide leadership in child care centers, to raise standards in communities for improved early childhood programs, or 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. Riggsbee
Education 160. Early Childhood Internship. Chafe or staff

*Two courses in the program, Education 121 or Psychology 97 and one other, have to be completed prior to enrolling in Education 160.
II. Four (4) elective courses, two in each area:

A. Development of the Child:
- Psychology 97. Developmental Psychology: Introduction and Survey. Goldstein, Hill, Mazuka, Needham, Putallaz, or staff
- Psychology 119B. Child Clinical Psychology. Gustafson
- Psychology 124. Human Development. Gustafson, M axon, or staff
- Psychology 130. Psychosocial Aspects of Human Development. Gold
- Psychology 131. Early Social Development. Hill or Putallaz
- Psychology 136. Developmental Psychobiology. Eckerman
- Psychology 138. Language Development.
- Psychology 183A, S. Research Methods in Developmental Psychology. Eckerman
- Psychology 183B, S. Child Observation. Putallaz
- Psychology 153S. Issues in Language Development. Mazuka
- Psychology 165S. Psychological Anthropology. Ewing or Strauss
- Education 118. Educational Psychology. Staff
- Public Policy Studies. (special topic courses on approval)
- Sociology 111. Social Inequality: An International Perspective. DiPrete or O’Rand
- Sociology 117. Childhood in Social Perspective. Simpson
- Sociology 118. Sex, Gender, and Society. Bach, Buchmann, or O’Rand
- Sociology 123. Social Aspects of Mental Illness. George or Jackson
- Sociology 150. The Changing American Family. Simpson
- Sociology 169. Psychosocial Aspects of Human Development. Gold

B. Conditions of Childhood:
- Cultural Anthropology 115S. The Anthropology of Gender (gender, work and family). Allison, Luttrell, Quinn, Silverblatt, or Stern
- Cultural Anthropology 119. Language, Culture and Society. Apte, O’Barr, or Strauss
- Cultural Anthropology 143. Education, Culture, and Identity. Luttrell
- Cultural Anthropology 165S. Psychological Anthropology. Ewing or Strauss
- Education 232. Learning and Living in Families. Staff
- Public Policy Studies. (special topic courses on approval)
- English (ENG)
- Professor Torgovnick, Chair; Professor Butters, Director of Undergraduate Studies; Professors Aers, Appelwhite, Clum, Davidson, DeNeef, Gleckner, Holloway, Jackson, Pope, Porter, Price, Randall, B. H. Smith, Strandberg, and Williams; Associate Professors Beckwith, Ferraro, Gaines, Jones, Moses, Pfau, Tetel, and Willis; Assistant Professors Baucom, Chandler, Clarke, Shannon, Thorn, Tucker, and Wallace; Associate Professors of the Practice Cox and Malouf; Assistant Professor of the Practice Hillard; Adjunct Professor of the Practice of Rhetoric Gopen; Adjunct Associate Professors Ruderman and Wittig; Adjunct Assistant Professors Kennedy and Sasson

A major or minor is available in this department.

WRITING AND LANGUAGE

27S. Studies in Nonliterary Topics. May be taken twice. One course. Staff
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. One course. Staff

*Of the four elective courses, only one may be an education course; additionally, a limit of three courses may be taken from any one of the remaining departments.
49A, S. First-Year Seminar on Writing or Language. Topics vary each semester offered. One course. Staff

63S. Introduction to Creative Writing. (AL) One course. Staff

100A, S. Writing: Fiction. (AL) 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. One course. Staff

100B, S. Writing: Drama. (AL) Instruction in the writing and study of drama. Recommended for students before they take English 102S or 107S. Consent of instructor required. One course. Staff

100C, S. Writing: Poetry. (AL) Instruction in the writing and study of poetry. Recommended for students before they take English 105S or 106S. Consent of instructor required. One course. Staff

102S. Screenwriting. (AL) Consent of instructor required. Not open to students who have taken Drama 113S. See C-L: Drama 123S; also C-L: Film and Video. One course. Wilson

103S, 104S. Writing: Short Stories. (AL) Class discussion of students' manuscripts, individual conferences with the instructor. Open to sophomores, juniors, and seniors; recommended for, but not limited to, students who have taken English 100A. Consent of instructor required. One course each. Applewhite, Cox, Malouf, Pope, Porter, or Price

105S, 106S. The Writing of Poetry. (AL) 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. One course each. Applewhite, Clarke, or Pope

107S. Dramatic Writing. (AL) Open to sophomores, juniors, and seniors; recommended for, but not limited to, students who have taken English 100B. Not open to students who have taken the former Drama 111S. Prerequisites: a practical theater course (for example, acting, directing, design, stagecraft) and consent of instructor. See C-L: Drama 121S; also C-L: Film and Video. One course. Clum or Wilson

108S. Advanced Dramatic Writing. (AL) Not open to students who have taken the former Drama 112S. Prerequisites: Drama 121S and consent of instructor. See C-L: Drama 122S; also C-L: Film and Video. One course. Wilson

109S. Special Topics in Writing. (AL) Consent of instructor required. One course. Staff

111. Introduction to Linguistics. (SS) See C-L: Linguistics 101; also C-L: Comparative Area Studies, and Cultural Anthropology 107. One course. Butters or Tetel

112. English Historical Linguistics. (SS) Introduction to methods and principles of historical linguistics, as exemplified by the history of the English language from Proto-Indo-European to the present. Not open to students who have taken English 208. C-L: Linguistics. One course. Butters or Tetel

114. Languages of the World. (SS) See C-L: Linguistics 102; also C-L: Comparative Area Studies, and Cultural Anthropology 114. One course. Andrews or Tetel


116A, S. Scientific Writing. Prerequisite: University Writing Course 5, 7, or 12. See C-L: University Writing Course 112S. One course. Staff

117A, S. Advanced Composition I. See C-L: University Writing Course 117S. One course. Staff
117B, S. Advanced Composition II. Prerequisite: successful completion of English 117A. See C-L: University Writing Course 118S. One course. Staff

119. Current Topics in Linguistics. (SS) See C-L: Cultural Anthropology 112; also C-L: Linguistics. One course. Staff

For Juniors, Seniors, and Graduates

202S. Narrative Writing. (AL) The writing of short stories, memoirs, tales, and other narrations. Readings from ancient and modern narrative. Close discussion of frequent submissions by class members. Consent of instructor required. One course. Porter or Price

203S. Advanced Narrative Writing. (AL) 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. One course. Porter or Price


208. History of the English Language. (SS) Introductory survey of the changes in sounds, forms, and vocabulary of the English language from its beginning to the present, with emphasis on the evolution of the language as a medium of literary expression. Not open to students who have taken English 112. C-L: Linguistics and Medieval and Renaissance Studies 208. One course. Butters or Tetel


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.

265. Studies in Literary Topics. (AL) May be taken twice. One course. Staff

48B, S. Focus Program Seminar on Literature. (AL) Topics vary each semester offered. One course. Staff

49B, S. First-Year Seminar on Literature. (AL) Topics vary each semester offered. One course. Staff

51, 52. Representative American Writers. (AL) Selections and complete works. 51: Poe, Emerson or Thoreau, Hawthorne, Melville, Whitman, Dickinson, and Twain; not open to students who have taken English 152 or 153. 52: James, Frost or Robinson, Crane or Dreiser, O’Neill, Faulkner, Hemingway, and others. Not open to students who have taken English 153 or 154. One course each. Staff

53. Duke-Administered Study Abroad: Special Topics in English. Topics differ by section. One course. Staff

90. Reading Critically: Poetry, Fiction, Drama. (AL) An introduction to the skills of critical reading and the vocabulary of critical analysis by close examination of poetry, fiction, and drama from a range of historical periods. A handbook or comparable guide to critical terms will be assigned. One course. Staff

90S. Reading Critically: Poetry, Fiction, Drama. (AL) A seminar version of English 90. One course. Staff

91. Reading Critically: Chaucer, Shakespeare, Milton, Pope. (AL) 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. One course. Staff

94. The Theater. (AL) See C-L: Drama 91. One course. Clum or Riddell

BRITISH LITERATURE

121A. Medieval English Literature to 1500. (AL) The principal forms and examples of English prose, poetry, and drama of the Anglo-Saxon and Middle English periods (excluding Chaucer). In translation. C-L: Medieval and Renaissance Studies 121A. One course. Aers

121B. Sixteenth-Century English Literature. (AL) Emphasis in poetry on Wyatt, Sidney, Spenser, Raleigh, and Shakespeare; in prose on Sidney and Sir Thomas More; in drama on Marlowe. C-L: Medieval and Renaissance Studies 121B. One course. DeNeef, Randall, or Shannon

123A. English Literature: 1600 to 1660. (AL) 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. C-L: Medieval and Renaissance Studies 123A. One course. DeNeef or Randall

123B. English Literature: 1660 to 1800. (AL) Major genres and authors such as Dryden, Congreve, Addison, Swift, Pope, Gray, Johnson, Blake, and Defoe or Fielding. One course. Jackson or Thorn

125. English Literature of the Romantic Period. (AL) Wordsworth, Coleridge, Byron, Shelley, Keats. One course. Applewhite, Gleckner, Jackson, or Pfau

126. English Literature: 1832 to 1900. (AL) Major writers and genres, with special emphasis on the Brontës, Dickens, Hardy, Tennyson, Carlyle, Browning, Arnold, and Ruskin. One course. Tucker

127. British Literature: 1900 to 1945. (AL) Principal writers of fiction, drama, and poetry such as Yeats, Conrad, Shaw, Joyce, Lawrence, Woolf, Eliot, Auden, and others. One course. Baucom, Moses, Pope, or Torgovnick

128. Special Topics in British Literature since 1945. (AL) One course. Staff


131. Studies in a Single British Author. (AL) One course. Staff

132C, S. Topics in Renaissance British Literature. (AL) (Taught in the Oxford Summer Program.) C-L: Medieval and Renaissance Studies 132A. Two courses. Staff

132E, S. Topics in Nineteenth-Century British Literature. (AL) (Taught in the Oxford Summer Program.) Two courses. Staff

132G, S. Topics in Twentieth-Century British Literature. (AL) (Taught in the Oxford Summer Program.) Two courses. Staff

133. British Drama: Wilde to the Present. (AL) See C-L: Drama 105. One course. Clum


137. Nineteenth-Century British Novel. (AL) Scott, Austen, Dickens, Thackeray, Trollope, the Brontës, George Eliot, Meredith, Butler, Hardy, and others. Not open to students who have taken English 132A. One course. Moses or Torgovnick

139A, S. Special Topics in British Literature I. (AL) Can be counted as a pre-1800 British literature course for the English major requirements. C-L: Medieval and Renaissance Studies 139A. One course. Staff

139B, S. Special Topics in British Literature II. (AL) Can be counted as a pre-1900 British literature course for the English major requirements but not as a pre-1800 British literature course. One course. Staff

139C, S. Special Topics in British Literature III. (AL) Does not count toward the pre-1800 or pre-1900 British literature English major requirements. One course. Staff

Major Authors

140, 141. Chaucer. (AL) 140: first two-thirds of his career, especially Troilus and Criseyde. 141: The Canterbury Tales. C-L: Medieval and Renaissance Studies 140B, 141B. One course each. Aers, Beckwith, DeNeef, or Gopen

143, 144. Shakespeare. (AL) 143: twelve plays before 1600. 144: usually ten plays after 1600. Not open to students who have taken Drama 115, 116. C-L: Drama 182, 183 and Medieval and Renaissance Studies 182, 183. One course each. DeNeef, Gopen, Jones, Porter, Randall, or Shannon


For Juniors, Seniors, and Graduates

212. Middle English Literature: 1100 to 1500. (AL) Selected topics. C-L: Medieval and Renaissance Studies 209. One course. Aers or Beckwith


221. Renaissance Prose and Poetry: 1500 to 1660. (AL) Selected topics. C-L: Medieval and Renaissance Studies 221B. One course. DeNeef, Randall, or Shannon

235. Restoration and Eighteenth-Century Literature: 1660 to 1800. (AL) Selected topics. One course. Jackson or Thorn

241. Romantic Literature: 1790 to 1830. (AL) Selected topics. One course. Applewhite, Gleckner, Jackson, or Pfau

245. Victorian Literature: 1830 to 1900. (AL) Selected topics. One course. Tucker

251. British Literature since 1900. (AL) Selected topics. One course. Baucom, Moses, or Torgovnick

AMERICAN LITERATURE

152. American Literature: 1820 to 1860. (AL) Prose and poetry of American romanticism: Emerson, Thoreau, Hawthorne, Poe, Melville, and Whitman. Not open to students who have taken English 51. One course. Davidson, Jones, Strandberg, or Williams

153. American Literature: 1860 to 1915. (AL) Dickinson, Twain, James, the social and philosophical essayists, Crane, Dreiser, Robinson, and Frost. Not open to students who have taken English 52. One course. Davidson, Jones, Wallace, or Williams

155. Contemporary American Writers. (AL) Novelists and poets prominent since 1960. One course. Clum, Davidson, Ferraro, Moses, Strandberg, Torgovnick, or Wallace


161. Studies in a Single American Author. (AL) One course. Staff

162. American Drama: O'Neill to the Present. (AL) See C-L: Drama 104. One course. Clum

164A, 164B. African-American Literature. (AL) 164A: oral and literary traditions from the American colonial period into the nineteenth century, including spiritual as lyric poetry and the slave narrative as autobiography. 164B: the late nineteenth century to contemporary writers. Not open to students who have taken the former English 167, 168. C-L: African and African-American Studies 173, 174. One course each. Chandler, Clarke, Holloway, or Wallace


167. Special Topics in Contemporary Black Literatures. (AL) One course. Chandler, Clarke, Holloway, Wallace, or Willis

168S. Seminar in African-American Literary Studies. (AL) Topics may change each semester. Prerequisite: English 164A or 164B. One course. Chandler, Clarke, Holloway, Wallace, or Willis

169S. Special Topics in American Literature. (AL) One course. Staff

For Juniors, Seniors, and Graduates

263. American Literature to 1865. (AL) Selected topics. One course. Davidson or Jones

267. American Literature: 1865 to 1915. (AL) Selected topics. One course. Davidson or Williams


275. American Literature since 1915. (AL) Selected topics. One course. Ferraro, Pope, Strandberg, or Torgovnick

GENRE, CRITICISM, AND WORLD LITERATURE

142. Duke-Administered Study Abroad: Advanced Special Topics in English. Topics differ by section. One course. Staff

170. Special Topics in Genre. (AL) One course. Staff

172. Literary Theory. (AL) Major works and theoretical issues in the history of literary criticism. One course. Staff

174A. Classical to Neoclassical. (AL) See C-L: Drama 102. One course. Clum

174B. Toward and Beyond Realism. (AL) See C-L: Drama 103. One course. Clum

175. Literary Approaches to the Bible. (AL) Selected books of both Testaments, emphasizing narrative strategies, literary contexts, and Biblical genres: primeval myth, patriarchal history, prophecy, and apocalyptic. One course. Staff
176B, S. Theater in London: Text. (AL) 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.) C-L: Drama 117S. One course. Clum

176C, S. Theater in London: Performance. (AL) 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 scenic work, discussions, and workshops with British theater practitioners, observation of theater at work, and supervised projects. (London summer program.) C-L: Drama 138S. One course. Clum

177. Third World and Postcolonial Fiction. (AL) 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. One course. Moses, Torgovnick, or Wallace

178. Literature and the Other Arts. (AL) Selected topics in the study of the interrelation of literature and other art forms, such as music and painting. One course. Staff

179S. Special Topics in a Literary Genre. (AL) One course. Staff

184. Literature and Sexualities. (AL) 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. C-L: Study of Sexualities. One course. Clum

186A, S. Canadian Literature in English. (AL) 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. C-L: Canadian Studies and Comparative Area Studies. One course. Staff

For Juniors, Seniors, and Graduates

281. Studies in Genre. (AL) History, criticism, and theory of literary genres such as the novel, pastoral, epic, and drama. One course. Staff

288. Special Topics. (AL) Subjects, areas, or themes that cut across historical eras, several national literatures, or genres. One course. Staff

CULTURAL STUDIES

285. Studies in Film and Video. (AL) May be taken twice. C-L: Film and Video. One course. Staff

101A. Introduction to Film. (AL) Basic film theory and history of motion picture technology. Introduction to experimental, documentary, and narrative forms of Third World, European, and United States cinemas. Economics and aesthetics. Not open to students who have taken Drama 132. C-L: Drama 173, Film and Video 130, and Literature 110. One course. Gaines, Radway, Surin, Torgovnick, or Willis

101B. Introduction to Cultural Studies. (AL) 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. C-L: Film and Video, Literature 100, and Perspectives on Marxism and Society. One course. Gaines, Radway, Surin, Torgovnick, or Willis

101C, S. Documentary Film/Video Theory and Practice. (AL) Prerequisite: Drama 173, English 101A, Literature 110, or Literature 111S. See C-L: Film and Video 104S; also C-L: Cultural Anthropology 131S. One course. Staff
242 Courses and Academic Programs

101S. Perspectives in Gay, Lesbian, and Bisexual Studies. (CZ) See C-L: Study of Sexualities 115S. One course. Younger

120. Advertising and Society: Global Perspective. (SS) See C-L: Cultural Anthropology 110; also C-L: Canadian Studies, Comparative Area Studies, Film and Video, Linguistics, Sociology 160, and Women's Studies. One course. Luttrell, O'Barr, or Wilson

122. Studies in Comparative World Cinema. (AL) See C-L: Literature 113; also C-L: Film and Video, German 113, and Russian 113. One course. Staff

124. Sexualities in Film and Video. (AL) See C-L: Literature 115; also C-L: Film and Video. One course. Staff

156. History of Mass Culture in the United States. (AL) The formation of American popular culture in different historical periods. Cultural forms including music, movies, fashion, and leisure. C-L: Film and Video and Literature 140. One course. Gaines, Radway, Torgovnick, or Willis

157, 158. American Literature and Culture. (AL) Relationship of literature to the other arts, American intellectual history, religion, science, technology, and architecture. 157: to the Civil War. 158: from the Civil War to 1960. One course. Williams

171. Doing Documentary Work. (AL, SS) See C-L: Public Policy Studies 178; also C-L: Visual Arts 178, and History 150C. One course. Coles and Harris

183S. Film and Video Theory and Practice. (AL) Prerequisite: Drama 173, English 101A, Literature 110, or Literature 114. See C-L: Film and Video 100S; also C-L: Drama 142S. One course. Burns

185. Studies in Film History. (AL) Close examination of a particular issue, period, national cinema, or technological development. C-L: Film and Video, and Literature 116. One course. Staff

189S. Special Topics in Film. (AL) A major genre, period, or director. Not open to students who have taken the former Drama 197S. Prerequisite: Drama 173 or English 101A. C-L: Drama 178S and Film and Video. One course. Staff


For Juniors, Seniors, and Graduates


INDEPENDENT STUDY

191, 192, 193, 194. 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 both the instructor and the director of undergraduate studies required. Half or one course each. Variable credit. Staff

195T. Tutorial. Directed reading and research. Students should consult the director of undergraduate studies as early as possible in the preceding term. One course. Staff
DISTINCTION SEMINARS

197A, 198A, S. Distinction Program Sequence. Open to those whose thesis will be a critical paper or piece of other research (for example, in linguistics). Consent of instructor required. One course each. Staff

197B, 198B, S. Distinction Program Sequence. Open to those whose thesis will be in the field of creative writing. Consent of instructor required. One course each. Staff

COURSES CURRENTLY UNSCHEDULED

505. American Literature Walkabout.
92. British Literature 1750-1950. (AL)
110S. Writing: Longer Prose Narrative. (AL)
113A. Introduction to Old English. (AL)
113B. Old English Literature. (AL)
130. Shakespeare and the Theater. (AL)
132B. Atmosphere and Mystery in Twentieth-Century English Fiction. (AL)
135. British Poetry of the Twentieth Century. (AL)
151. American Literature to 1820. (AL)
163. Twentieth-Century American Poetry. (AL)
182. American Film Genres. (AL)
186B, S. Canadian Theater. (AL)
187. Melodrama and Soap Opera. (AL)
188. Narrative Film and the Novel. (AL)
209. Present-Day English. (SS)
207A. Introduction to Old English. (AL)
207B. Old English Literature. (AL)
225. Renaissance Drama: 1500 to 1642. (AL)
285. Major Texts in the History of Literary Criticism. (AL)
289. The Theory of the Novel. (AL)

THE MAJOR

Basic Requirement. One course from the following list of introductory courses: English 90, 90S, or 91. 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, tutorials, and distinction seminars) 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 (140, 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 Distinction Program. 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 90, 90S, 91, or 92, 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 304H Allen Building. Applicants must have completed—by the beginning of the senior year—at least five 100-level courses in English and must have a minimum 3.5 average in their English courses. In addition, they must submit a writing sample and two recommendations from members of the faculty. Applicants will be interviewed by the program director.

Environment (Nicholas School)

The professional school courses listed below are described fully in the Bulletin of Duke University: Nicholas School of the Environment. They are open to undergraduates by consent of the instructor; they do not count for area of knowledge distribution requirements.

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 in this bulletin.

200. **Integrated Case Studies.** Variable credit. Staff

201. **Forest Resources Field Skills.** Half course. Richter

202. **Microbial Ecology.** Prerequisites: university-level general chemistry and biology. One course. Ahmann

203. **Conservation Biology: Theory and Practice.** Prerequisite: one ecology course or consent of instructor. One course. Snook

205L. **Ecological Management of Forest Systems (Silviculture).** One course.

206. **Forest Vegetation Sampling.** One course. Staff

207. **Forest Pest Management.** One course. Stambaugh

207L. **Forest Pest Management.** One course. Stambaugh

212. **Environmental Toxicology.** Prerequisites: organic chemistry and vertebrate physiology or consent of instructor. One course. Di Giulio

213. **Forest Ecosystems.** One course. Richter

215. **Environmental Plant Physiology.** One course. Richter

216. **Applied Population Ecology.** Prerequisites: introductory statistics, calculus, and computer programming or consent of instructor. One course. Staff


218L. **Barrier Island Ecology.** Prerequisite: Biology 25L or equivalent; suggested: course in botany or ecology. C-L: Biology 218L, Botany 218L, and Marine Sciences. One course. Evans, Peterson, and Wells (visiting summer faculty)

221. **Soil Resources.** One course. Richter

222L. **Physical Processes in Coastal Environments.** Prerequisites: Mathematics 31 and 32. C-L: Geology 201L and Marine Sciences. One course. Staff

225L. **Coastal Ecotoxicology and Pollution.** Prerequisites: introductory chemistry and biology. C-L: Marine Sciences. One course. Kenney

230L. **Weather and Climate.** One course. Knoerr

Environment (Nicholas School) 245
231. Ecological Theory and Data. Prerequisites: one year each of calculus and statistics. C-L: Botany 268 and Zoology 268. One course. Clark


234L. Watershed Hydrology. One course. Katul

235. Air Quality Management. One course. Vandenberg

236. Water Quality Management. One course. Stow

237L. Field Botany of North Carolina's Wetlands. Prerequisite: one course in plant diversity or systematics, or consent of instructor. C-L: Biology 242L and Botany 242L. One course. Shaw and Wilbur

239. Human Health and Ecological Risk Assessment. One course. Mihaich and Vandenberg

240. Chemical Fate of Organic Compounds. Prerequisites: university-level general chemistry and organic chemistry within last four years. C-L: Civil Engineering 240. One course. Dubay and Vasudevan

241. Atmospheric Chemistry and Air Pollution. Prerequisites: university-level general chemistry and organic chemistry within last four years. C-L: Civil Engineering 241. One course. Staff

242. Environmental Aquatic Chemistry. Prerequisite: university-level general chemistry within last four years. C-L: Civil Engineering 242. One course. Ahmann


244L. Molecular and Cellular Processes in Marine Organisms. Prerequisite: organic chemistry. C-L: Cell Biology 244L and Marine Sciences. One course. C. Bonaventura and McClellan-Green

246. Survey of Occupational Health and Safety. One course. Staff

247. Survey of Environmental Health and Safety. One course. Staff

248. Solid Waste Engineering. Prerequisite: Civil Engineering 124L or consent of instructor. C-L: Civil Engineering 248. One course. Vesilind

249. Environmental Molecular Biology. Prerequisite: introductory biology. One course. Freedman

250L. Form, Function, and Adaptation of Plants. Prerequisite: Biology 25L; suggested: either Biology 110L, 140L, 149, or 152. C-L: Biology 250L and Botany 250L. One course. Staff

251. Statistics and Data Analysis in Biological Science. C-L: Statistics 210B. One course. Staff


256S. Seminar in Ocean Sciences. C-L: Marine Sciences. Half course. Staff


264. Applied Differential Equations in Environmental Sciences. Prerequisite: Mathematics 31 or equivalent or consent of instructor. Half course. Katul
269S. Advanced Topics in Marine Ecology.  C-L: Marine Sciences and Zoology 264S. Half course. Crowder


271. Economic Analysis of Resource and Environmental Policies.  Prerequisite: Environment 270 or equivalent; Economics 149 recommended. C-L: Economics 272. One course. Mansfield


274. Resource and Environmental Policy.  C-L: Public Policy Studies 274. One course. Staff

275S. Protected Areas, Tourism, and Local Development.  C-L: Latin American Studies. One course. Healy


279. Atmospheric Chemistry: Principles and Processes.  Prerequisites: one college-level course each in chemistry and calculus. One course. Kasibhatla

280. Social Science Surveys for Environmental Management.  Prerequisite: Environment 251 or equivalent. One course. Kramer

282S. Environmental Ethics.  C-L: Philosophy 289S. One course. Cooper


290. Physical Oceanography.  Prerequisites: Mathematics 31 and 32 or consent of instructor. C-L: Geology 203 and Mechanical Engineering 290. One course. Lozier

291. Geological Oceanography.  C-L: Geology 205 and Marine Sciences. One course. Staff

298. Special Topics.  Variable credit. Staff

COURSES CURRENTLY UNSCHEDULED

245. Ecology of Microorganisms.
252L. Statistics and Data Analysis in Earth and Ocean Science.
267S. Conservation Biology of Marine Mammals.
268. Advanced Topics in Nearshore Processes.

Environmental Sciences and Policy Program

Assistant Professor of the Practice Miranda, Director of Undergraduate Programs

A major is available in this program.

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 traditional disciplinary boundaries.

The major is housed within and administered by the Nicholas School of the Environment. Elective courses for the major are taught by more than one hundred Duke professors in twenty cooperating departments and schools. The prerequisites for this major 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, an upper-level seminar, 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. The program is administered by its director and an advisory committee representing the various areas and cooperating departments.

Advising. Advisors are assigned based on students' general areas of interest. Students present a proposed plan of study to their advisors that emphasizes the connections among their courses. The program encourages close relationships between faculty and students with convergent interests.

Independent Study, Internship, or Field Experience. All students in the program 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, a participation in field-oriented study abroad programs, or studies at over thirty approved field laboratories.

**ENVIRONMENTAL SCIENCES AND POLICY COURSES (ENV)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Description</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>49S</td>
<td>First-Year Seminar</td>
<td>Topics vary each semester offered. One course.</td>
<td>Staff</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Duke-Administered Study Abroad: Special Topics in Environmental Sciences and Policy</td>
<td>Topics differ by section. One course.</td>
<td>Staff</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>Duke-Administered Study Abroad: Advanced Special Topics in Environmental Sciences and Policy</td>
<td>Topics differ by section. One course.</td>
<td>Staff</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>Introduction to Environmental Sciences and Policy. (SS)</td>
<td>Application of basic principles of natural science, environmental economics and policy, engineering, and ethics to local, regional, and global environmental issues. Not open to first-year students. One course. Kramer or Miranda</td>
<td>Staff</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>Global Environmental Geography. (NS)</td>
<td>Global spatial patterns of natural phenomena and the human modification of those patterns. Introduction to earth/sun relations, climatology, biogeography, and geomorphology. One course. Staff</td>
<td>Staff</td>
<td></td>
</tr>
<tr>
<td>121</td>
<td>Climate Change: A Global Perspective. (NS)</td>
<td>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. (Given at Bermuda.) Prerequisite: one year of chemistry. C-L: Marine Sciences. One course. Malmquist and Murnane</td>
<td>Staff</td>
<td></td>
</tr>
<tr>
<td>122S</td>
<td>Climate-Related Hazards and Humanity. (NS)</td>
<td>The roles of science, politics, and business in quantifying and managing risks associated with climate-related hazards such as hurricanes. (Given at Bermuda.) C-L: Marine Sciences. Half course. Malmquist (Bermuda)</td>
<td>Staff</td>
<td></td>
</tr>
<tr>
<td>126S</td>
<td>Field Methods in Earth and Environmental Sciences. (NS)</td>
<td>Open only to juniors and seniors. See C-L: Geology. One course. Klein</td>
<td>Staff</td>
<td></td>
</tr>
</tbody>
</table>

248 Courses and Academic Programs
129. Environmental Science and Policy of the Tropics. (SS, NS) 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. One course. Shelly

1325. Current Topics in Oceanography and Marine Biology. (N S) Topics such as the Iron Hypothesis, toxic algal blooms, and UV light considered through readings in the primary literature and student presentations. (Given at Bermuda.) Prerequisite: introductory biology. C-L: Marine Sciences. Half course. Staff (Bermuda)


140. A Scientist’s Perspective on Environmental Principles, Policy, and Legislation. (SS, NS) 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.) C-L: Marine Sciences. One course. Bates and Connelly (Bermuda)

149. United States Environmental Policy. (SS) See C-L: Public Policy Studies 149. One course. Emison or Miranda

181, 182. Special Topics in Environmental Sciences and Policy. Content to be determined each semester. Consent of instructor required. One course each. Staff

191, 192. Independent Study. Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to qualified juniors and seniors with consent of instructor and director of undergraduate studies. One course each. Staff

191A, 192A. Independent Study. Individual research and reading in a field of special interest, under the supervision of a faculty member, resulting in a substantive paper or written report containing significant analysis and interpretation of a previously approved topic. Open to qualified juniors and seniors with consent of instructor and director of undergraduate studies. Half course each. Staff

COURSES CURRENTLY UNSCHEDULED


134L. Biological Cycles in the Ocean. (NS)

THE MAJOR

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 31 or 32. Diversity of Life, or 140. Plant Diversity, or 176. Marine Invertebrate Zoology
- Chemistry 11L and 12L. Principles of Chemistry
- Economics 2D or 52D. Competition, Monopoly, and Welfare
- Geology 41. Introduction to Geology
- Mathematics 31 and 32. Introductory Calculus I and II
Major Requirements.

1. Introductory 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/Public Policy Studies 149. United States Environmental Policy
   - Public Policy 147/Political Science 147. Environmental Politics and Policies in the Developing World
   - Political Science 149/Public Policy Studies 143. 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 110A. Statistics and Data Analysis in the Social Sciences
   - Statistics 110B. Statistics and Data Analysis in Economics
   - Statistics 110C. Statistics and Data Analysis in Public Policy and Sociology
   - Statistics 110E. Statistics and Data Analysis in Psychology and Biological Sciences
   - Statistics 112. Introduction to Applied Statistics

4. Focused Study. Six 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. These lists are available from the director of undergraduate studies of the program. One course must be an upper-level seminar or small-group learning experience.

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.

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 curriculum. Students may not use more than six professional school course credits toward the Bachelor of Arts degree. This six-course restriction applies to all courses offered through the Business School, the Divinity School, the Law School, the Medical School, the School of Engineering, and any courses at or above the 200-level in the Nicholas School of the Environment.

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 end of their junior year. Participants write a 25-50 page paper describing their completed research; they are supervised by a faculty committee with a primary advisor and two additional faculty members. Students must also
Film and Video Program

A certificate, but not a major, is available in this program. The Program in Film and Video 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 and Video 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 (Introduction to Film) is a prerequisite for all Film and Video 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 and Video Program. Literature majors on the Film/TV Studies track may count no more than two Film/TV Studies courses toward their Film and Video certificate. (See Literature Program for major requirements.)

DUKE IN LOS ANGELES PROGRAM IN ARTS AND MEDIA

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 and Video 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 and Video 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

FILM AND VIDEO PROGRAM COURSES

305. Special Topics in TV Theory/TV Production. (AL) A combination of television theory and video production exercises designed to think through the politics and
aesthetics of new technologies. Prerequisite: Drama 173, English 101A, or Literature 110. One course. Staff

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

100S. Film and Video Theory and Practice. (AL) Film and video production in conjunction with comparative history and theory of these technologies. Students produce works in basic Super 8 mm, 16 mm, and small format video production. Prerequisite: Drama 173, English 101A, Literature 110, or Literature 114. C-L: Drama 142S and English 183S. One course. Burns

101S. Special Topics in Advanced Film, Video, or Audio Production. (AL) 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. Also offered as Literature 111S. Prerequisite: Drama 173, English 101A, or Literature 110. One course. Staff

102S. Film Animation Production. (AL) 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. C-L: Visual Arts 165S. One course. Burns

103S. Theory and Practice of Sound Technology. (AL) 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. Prerequisites: Drama 173, English 101A, Film and Video 101S, Literature 110, or Literature 111S. One course. Staff

104S. Documentary Film/Video Theory and Practice. (AL) The politics and aesthetics of realism. History of styles from Griersonian "propaganda" to cinema verite to "reality TV." Practical exercises in location sound, camera to subject relationship, and camera movement. Prerequisite: Drama 173, English 101A, Literature 110, or Literature 111S. C-L: Cultural Anthropology 131S and English 101C. One course. Staff

105S. American Communities: A Documentary Video Approach. (AL, 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 will complete an edited video as their final project. C-L: Cultural Anthropology 134S, History 150B, Political Science 156S, and Public Policy Studies 105S. One course. Staff

106. Duke-Administered Study Abroad: Advanced Special Topics in Film and Video. Topics differ by section. One course. Staff

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

111T. Tutorial. (AL) One course. Staff

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. One course. Staff

130. Introduction to Film. (AL) Not open to students who have taken Drama 132. See C-L: English 101A; also C-L: Drama 173, and Literature 110. One course. Gaines, Radway, Surin, Torgovnick, or Willis

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. (Cross-listed.)
English 185. Studies in Film History. (Cross-listed.)
English 190. Television, Technology and Culture
German 161. European Cinema in Conflict
Literature 113. Studies in Comparative World Cinema. (Cross-listed.)
Literature 114. Film Theory
Literature 115. Sexualities in Film and Video. (Cross-listed.)
Literature 117. Documentary Film History (Cross-listed.)
Literature 118. Experimental Film and Video (Cross-listed.)
Literature 120A. Special Topics in Television Genres (Cross-listed.)
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. Daniels and Lubano

Art History
169. Documentary Photography and Social Activism in the Nuclear Age. (Cross-listed.) Stiles
199. History of Photography, 1839 to the Present. Leighten

Asian and African Languages and Literature
170. Indian Cinema. Khanna

Cultural Anthropology
104. Anthropology and Film. (Cross-listed.) Allison or Litzinger
110. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O’Barr, or Wilson
131S. Documentary Film/Video Theory and Practice. (Cross-listed.) Staff
134S. American Communities: A Documentary Video Approach. (Cross-listed.) Staff

Dance
146S. Dancing in the Movies. Sommer

Drama
121S. Dramatic Writing. (Cross-listed.) Clum or Wilson
122S. Advanced Dramatic Writing. (Cross-listed.) Wilson
123S. Screenwriting. (Cross-listed.) Wilson
140S. Directing. Mauliffe or Storer
142S. Film and Video Theory and Practice. (Cross-listed.) Burns
173. Introduction to Film. (Cross-listed.) Gaines, Radway, Surin, Torgovnick, or Willis
174. Studies in Film History. (Cross-listed.) Clum, Gaines, or Jameson
178S. Special Topics in Film. (Cross-listed.) Clum, Gaines, or Moses

English
285. Studies in Film and Video. Staff
101A. Introduction to Film. (Cross-listed.) Gaines, Radway, Surin, Torgovnick, or Willis
101B. Introduction to Cultural Studies. (Cross-listed.) Gaines, Radway, Surin, Torgovnick, or Willis
101C. S. Documentary Film/Video Theory and Practice. (Cross-listed.) Staff
102S. Screenwriting. (Cross-listed.) Wilson
107S. Dramatic Writing. (Cross-listed.) Clum or Wilson
108S. Advanced Dramatic Writing. (Cross-listed.) Wilson
120. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O’Barr, or Wilson
122. Studies in Comparative World Cinema. (Cross-listed.) Staff
124. Sexualities in Film and Video. (Cross-listed.) Clum or Gaines
156. History of Mass Culture in the United States. (Cross-listed.) Gaines, Radway, Torgovnick, or Willis
163S. Film and Video Theory and Practice. (Cross-listed.) Burns
185. Studies in Film History. (Cross-listed.) Clum, Gaines, or Jameson
189S. Special Topics in Film. (Cross-listed.) Clum, Gaines, or Moses
190. Television, Technology, and Culture. (Cross-listed.) Gaines
284. Contemporary Film Theory. Gaines

French
164. French Cinema. Bell

German
113. Studies in Comparative World Cinema. (Cross-listed.) Staff

History
150A. Documentary Film History. (Cross-listed.) Gaines, Paletz, or Wood
150B. American Communities: A Documentary Video Approach. (Cross-listed.) Staff

Italian
170S. Film and the Italian Novel. Finucci

Literature
100. Introduction to Cultural Studies. (Cross-listed.) Gaines, Radway, Surin, Torgovnick, or Willis
110. Introduction to Film. (Cross-listed.) Gaines, Radway, Surin, Torgovnick, or Willis
112. Special Topics in National Cinema. Staff
113. Studies in Comparative World Cinema. (Cross-listed.) Staff
114. Film Theory. (Cross-listed.) Gaines
115. Sexualities in Film and Video. (Cross-listed.) Clum or Gaines
116. Studies in Film History. (Cross-listed.) Clum, Gaines, or Jameson
117. Documentary Film History. (Cross-listed.) Gaines, Paletz, or Wood
118. Experimental Film and Video. Staff
119. Television, Technology, and Culture. (Cross-listed.) Gaines
120A. Special Topics in Television Genres. Staff
120B. Special Topics in Film. Staff
140. History of Mass Culture in the United States. (Cross-listed.) Gaines, Radway, Torgovnick, or Willis
141. International Popular Culture. (Cross-listed.) Davidson, Gaines, Radway, or Willis
197S. Special Topics in the United States Culture Industries. Staff

Music
169. Hollywood Film Music. Gilliam

Political Science
156S. American Communities: A Documentary Video Approach. (Cross-listed.) Staff
160. Media in Comparative Perspective (B). (Cross-listed.) Staff
190S. Documentary Film History (B). (Cross-listed.) Gaines, Paletz, or Wood
203S. Issues in Politics and the Media in the United States (A). (Cross-listed.) Paletz
219S. Film and Politics (A). Paletz
227S. Issues in International Communications (B). Paletz

Public Policy Studies
108S. American Communities: A Documentary Video Approach. (Cross-listed.) Staff
154S. Free Press and Public Policy. Stevens
163S. Telecommunications Policy and Regulation. Prak
176S. American Communities: A Photographic Approach. (Cross-listed.) Harris or Sartor
177S. Advanced Documentary Photography. (Cross-listed.) Harris
180S. Writing for the Media. Dancy or Red
181S. Advanced News Reporting. Staff

Religion
194. Religion and Film. Hillerbrand

Russian
113. Studies in Comparative World Cinema. (Cross-listed.) Staff
130. Soviet Cinema. (Cross-listed.) Gaines, Jameson, and Lahusen
135. Contemporary Russian Media. (Cross-listed.) Andrews
135A. Contemporary Russian Media. (Cross-listed.) Staff

Sociology
160. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O'Barr, or Wilson
170. Mass Media. (Cross-listed.) Staff
182. Media in Comparative Perspective. (Cross-listed.) Staff

Visual Arts
116. Photography. Noland
118S. American Communities: A Photographic Approach. (Cross-listed.) Harris or Sartor
RELATED SPECIAL TOPICS COURSES

Art History
172. Topics in Asian Art: East Asian Cinema. (Cross-listed.) Abe or Ching

Canadian Studies
282S. Canada: Media and Identity. (Cross-listed.) Staff

French
141S, 142S. French Literature: World War II and French Film. Orr

German
123S. Undergraduate Seminars: German Film History to 1945. Risholm

Literature

Portuguese
200S. Seminar in Portuguese Literature: Literatura e Cinema Os Classicos Brasilieros. Damasceno

Public Policy Studies
195, 196. Selected Public Policy Topics. Staff
195S. Selected Public Policy Topics: Community Service and the Documentary Tradition. (Cross-listed.) Coles or Kelley
195S. Selected Public Policy Topics: Entertainment Industry: Policy and Practice. Staff
195S. Selected Public Policy Topics: Communications Frontier Technology: Media, Democracy. Fulton

Spanish
169. Topics in Nineteenth- and Twentieth-Century Spanish Literature: Spanish Cinema. Sieburth or Villaros

FOCUS Program Courses (FOC)

For more information see the section on FOCUS Programs in the chapter "Special Study Centers, Programs, and Opportunities."

75S. Genetics and Society in the Twentieth Century. (NS) The historical evolution of genetics and molecular biology in the twentieth century, examined within a social framework. Intended to enable students to place current issues such as the human genome project in historical perspective. From the eugenic and racial hygiene movements of America and Germany to the molecular biology revolution of the past half-century; the scientific principles underlying modern biotechnology. Open only to students in the FOCUS Program. One course. Baker

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. Half course. Staff

French

For courses in French, see Romance Studies.

Genetics (GEN)

Professor Boynton, Coordinator of the Certificate Program

Faculty in University Program in Genetics: Associate Professor Kiehart, Director (cell biology); Professor Nevins, Co-Director (microbiology and genetics); Professors Bastia (microbiology), Boynton (botany), Cullen (genetics and microbiology), Endow (microbiology), Gillham (zoology), Greenleaf (biochemistry), Hsieh (biochemistry), Keene (microbiology), Kredich (medicine and biochemistry), Linney (microbiology), Modrich (biochemistry), Nicklas (zoology), Nijhout (zoology), Pericak-Vance (medicine), Raetz (biochemistry), Rausher (zoology), Shaw (chemistry), Steege
(biochemistry), Uyenoyama (zoology), Ward (immunology), and Webster (biochemistry); Associate Professors Been (biochemistry), Burdett (microbiology), García-Blanco (pharmacology and cancer biology), Greene (biochemistry), Heltman (genetics), Kaufman (biochemistry), Kohorn (botany), Kreuzer (microbiology), Pickup (microbiology), Schachat (cell biology), Vance (genetics), and Vilgalys (botany); Associate Professors Capel (cell biology), Cunningham (zoology), Dong (botany), Fehon (zoology), Hershfield (biochemistry), Honma (botany), Klingensmith (cell biology), Kornbluth (pharmacology and cancer biology), Kuehn (biochemistry), Lew (pharmacology and cancer biology), Lin (cell biology), Marchuk (genetics), Markert (immunology), McCusker (microbiology), McHeyzer-Williams (microbiology), O’Halloran (cell biology), Peterson (genetics), Riggins (pathology), Sullenger (genetics), Sun (botany), Wharton (genetics and microbiology), York (pharmacology and cancer biology), and Zhuang (immunology); Assistant Research Professor Speer (medicine); Adjunct Professors Drake (National Institute of Environmental Health Sciences), Kunkel (National Institute of Environmental Health Sciences), and Resnick (National Institute of Environmental Health Sciences)

A certificate for non-biology majors, or a concentration in the biology major,* is available in this program.

The Certificate Program in Genetics is sponsored by and uses the extensive resources of the interdepartmental University Program in Genetics, established in 1968 to provide integrated graduate study in all facets of genetics at Duke University. The certificate program provides undergraduates with opportunities to learn about genetics and thereby to gain expertise in modern genetics with a view to its application in biology, medicine, public policy, law, or engineering.

**CERTIFICATE IN GENETICS**

Non-biology majors may obtain a certificate in genetics by applying to the coordinator of the program and fulfilling the curricular requirements. To obtain a genetics certificate, students must complete Chemistry 11L and 12L, Biology 25L, Biology 118 and Biology 119, Biology 184L or 185L, Genetics 191 and 192 (capstone independent research in genetics).

**GENETICS PROGRAM COURSES**

191, 192. 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 the instructor and of the coordinator of the Certificate Program in Genetics required. One course each. Staff (Genetics Program)

**OTHER COURSES IN GENETICS**

Biology 118, 119. Principles of Genetics and Cell Biology I, II. One course. Staff

Biology 184L. Experimental Cell and Molecular Biology. One course. Armaleo, Boynton, Dong, Kohorn, Siedow, or Sun

Biology 185L. Experiments in Developmental and Molecular Genetics. Fehon, Lincoln, or McClay

Biology 191 and 192. Independent Study. Prerequisite: consent of instructor, coordinator of the Certificate Program, and the appropriate director of undergraduate studies prior to registration.

Biology 281. DNA, Chromosomes, and Evolution. Nicklas

Biology 283. Molecular Genetics of Organisms. One course. Boynton and Gillham

Biology 285S. Ecological Genetics. One course. Staff

Biology 286. Evolutionary Mechanisms. One course. Rausher and Uyenoyama


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*See the bulletin entry for biology for information on the genetics concentration in that major.
Undergraduates who have taken the necessary prerequisite courses may enroll in upper division (graduate level) courses offered by the faculty in the University Program in Genetics.

Further details may be obtained from Dr. John E. Boynton, B330G LSRC Building or from the Genetics Program Office, 406 Nanaline H. Duke Building.

**Germanic Languages and Literature**

Professor Rolleston, Chair; Assistant Professor of the Practice Walther, Director of Undergraduate Studies and Director of Language Program; Professor Borchardt; Associate Professors Morton, Pfau, and Rasmussen; Assistant Professor Risholm; Professors Emeriti Alt and Phelps; Assistant Professor Emerita Bessent; Adjunct Assistant Professor Keul; Lecturers Dowell and Johns

A major or minor is available in this department.

**GERMAN (GER)**

**Language**

**1-2. First-Year German: Introduction to German Language and Culture. (FL)**
Four-skill (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. Two courses. Walther and staff

Accelerated introduction to German, combining in one semester the work of German 1-2. Classroom theory and practice with extended exposure to language laboratory and computer programmed instruction. Consent of director of undergraduate studies required. Two courses. Staff

**15. German for Reading Knowledge. (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. One course. Staff

**German 66 and 69 are usually followed by 100S or 117S**

**65-66. Intermediate German. (FL)**
Comprehensive review of German grammar, vocabulary building, reading, and writing skills through topic-oriented syllabus. Literary and nonliterary texts from a variety of media (books, newspapers, audio, video, film, internet) provide basis for discussion and cultural knowledge. Increased focus on reading, speaking, essay writing. Prerequisite: German 1-2, 14 or equivalent; for German 66 alone, appropriate placement test score or consent of instructor. Two courses. Walther and staff

**69. Intensive Intermediate German. (FL)**
Intensive grammar review and further development of reading, listening, speaking, and writing skills through topic-oriented syllabus. Combines in one semester the work of one year of intermediate German, that is, German 65-66. Prerequisite: German 1-2, 14 or equivalent. Two courses. Dowell

**98, 99. Introduction to German.** One or two course credits for Advanced Placement in German. One course each.

**100S. Business German. (FL)**
Introduction to the language of commerce and industry; modes of expression for technology and marketing. Consent of instructor required. One course. Dowell

**117S, 118S. German Conversation and Composition. (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. Required for German majors; other students by consent of instructor. One course each. Dowell, Johns, or Walther

204S. Advanced Business German. (FL) Topics include contract negotiations, management goals and strategies, banking and financial instruments, environmental issues. Prerequisite: German 100S or consent of instructor. One course. Dowell

Literature and Culture

121S, 122S. Introduction to German Literature. (AL, FL) Principal authors, genres, concepts, and works of German literature. 121S: Middle Ages to the Baroque. 122S: Enlightenment to the present. One course each. Staff

123S, 124S. Undergraduate Seminars. (AL, FL) Topics vary. One course each. Staff

126S. Rilke, Kafka, Mann. (AL, FL) The shaping of twentieth-century thought by those literary figures whose writing has become world literature. C-L: Comparative Area Studies. One course. Borchardt, Morton, or Rolleston


132S. The Märchen. (AL, FL) Fairy tales as literary genre; historic relevance, function, types of Märchen from Volksmärchen (brothers Grimm) to Kunstmärchen (Goethe, Brecht, Bichsel) to the anti-Märchen (Karunke, Gilbert). One course. Borchardt

133S. Introduction to German Drama. (AL, FL) The German theater from Lessing to Brecht, focusing on dramatic form and historical context. Topics may include: the Tragödie, Sturm und Drang, expressionism, epic theater, documentary drama. C-L: Comparative Area Studies and Drama 185S. One course. Risholm or Walther

137S. Introduction to Twentieth-Century German Women Writers. (AL, FL) 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, Morgen, H. Müller, Rinser, Struck. C-L: Comparative Area Studies and Women’s Studies. One course. Rasmussen

Courses Taught Overseas

67. Intensive Intermediate German. (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. Two courses. Staff

101. Duke-Administered Study Abroad: Advanced Special Topics in German. Topics differ by section. One course. Staff

119S. Advanced German Language and Culture. (CZ, FL) Advanced grammar review with emphasis on phonetics and conversation, literature, films, museums, and theater performances. Taught only in the Berlin program. Fulfills requirements for German 117S and 118S. Prerequisite: German 65-66, or German 67 or 69. Two courses. Wohlfeil

150. Advanced Grammar, Composition, and Current Issues. (FL) Advanced grammar review with emphasis on German expository style. Discussion of current events based on newspaper articles, videos, and television programs. Offered as a part of the summer program at the University of Erlangen. One course. Koeppel
151S. Advanced Intensive German. (FL) For advanced students to increase all four language skills: comprehension, speaking, reading, and writing. Discussion of current events 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. One course. Staff

152S. Berlin in Literature and Culture. (AL, FL) Literary works of modern German writers, focus on the city of Berlin and its unique cultural and political heritage due to Germany's division from 1945-1989. 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. C-L: Comparative Area Studies. One course. Wohlfeil

153. Aspects of Contemporary German Culture. (CZ, FL) Site visits, lecture, and discussion. Offered as part of the summer program at the University of Erlangen. C-L: Comparative Area Studies. One course.

155. Advanced German Cultural Studies. (CZ, FL) Topics vary. Taught in the Berlin Semester Program. Prerequisite: P.N.d.S. (successful completion of German Language exam administered by the Free University). C-L: Comparative Area Studies. One course. Staff

Courses Taught in English

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

113. Studies in Comparative World Cinema. (AL) See C-L: Literature 113; also C-L: English 122, Film and Video, and Russian 113. One course. Staff

114S. Literary Imaginings of the Good Life. (AL) 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. One course. Rasmussen

123A, S. Special Topics. Taught in English by visiting faculty. One course. Staff

161. European Cinema in Conflict: The Metropolis, War, Globalization, and the Everyday. (AL) 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. Open only to students in the FOCUS Program, Twentieth-Century Europe. C-L: Film and Video. One course. Risholm


165S. The Vikings and Their Literature. (AL) Old Norse culture and literature. Texts include the older and younger Edda, Njal's Saga, Valsungasaga, Vinlandssaga. Taught in English. C-L: Medieval and Renaissance Studies 165S. One course. Keul

Independent Study and Honors Seminar

191, 192. 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 students in the junior year, by consent of the director of undergraduate studies. One course each. Borchardt, Morton, Rasmussen, Risholm, Rolleston, or Walther

193, 194. 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 students in the junior year, by consent of the director of undergraduate studies. One course each. Borchardt, Morton, Rasmussen, Risholm, Rolleston, or Walther
approved topic. Open only to qualified students in the senior year, by consent of the director of undergraduate studies. One course each. Borchardt, Morton, Rasmussen, Risholm, Rolleston, or Walther

197S, 198S. Honors Program Sequence. (AL, FL) 197S: Senior Colloquium; team taught. 198S: Preparation and writing of research paper. See section on Honors under description of the major. One course each. Staff

For Graduates and Advanced Undergraduates

201S. Introduction to Medieval German: The Language of the German Middle Ages and Its Literature. (AL, FL) Fundamentals of medieval German language acquired through readings in the original Middle High German of Arthurian romance, heroic epic, and courtly poetry. C-L: Medieval and Renaissance Studies 203S. One course. Rasmussen

203S. Sex, Gender, and Love in Medieval German Literature. (AL, FL) Historical contexts for emergence of courtly love and the role of desire and interpretation in Gottfried von Strassburg's Tristan und Isolde, courtly love lyric, "maere." C-L: Medieval and Renaissance Studies 203S. One course. Rasmussen

215S. German Baroque Literature. (AL, FL) German literature of the grand gesture, of performance, of public posture; poetry of rhetoric; prose of the scoundrel, adventurer, and ne'er-do-well. C-L: Medieval and Renaissance Studies 215S. One course. Borchardt

225S. Introduction to Goethe. (AL, FL) Major works of lyric, narrative, drama, and theory, throughout Goethe's career. One course. Morton

226S. Goethe's Faust. (AL, FL) Goethe's masterpiece and life's work, conceived as a summation of Western literature and mythology for the modern age. One course. Borchardt or Morton

229S. Schiller: Aesthetic Theory and Practice. (AL, FL) The nature and function of the artist and the work of art, in Schiller's essays, poetry, and dramas. One course. Borchardt, Morton, or Rolleston

230S. German Romanticism. (AL, FL) 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. One course. Rolleston

233S. German Theater as Anti-Drama. (AL, FL) The story of modern and postmodern drama with emphasis on Lenz, Büchner, Grabbe, Schnitzler, Brecht, Frisch, Dürrenmatt, Handke, expressionist drama, and Piscator's political theater. C-L: Drama 220S. One course. Walther

235S. Nineteenth-Century German Literature. (AL, FL) Topics vary: poetry, prose, drama; Kleist, Heine, Büchner, Keller, Meyer, Gotthelf, Grillparzer, Mörike, Storm, Freytag, Hebbel, Fontane. One course. Staff

245S. The Twentieth Century. (AL, FL) 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. C-L: Comparative Area Studies. One course. Rolleston

247S. Postwar German Literature. (AL, FL) 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. C-L: Comparative Area Studies. One course. Staff

254S. Literature by Women. (AL, FL) Topics may include: the beginnings of women's writing; gender, history, and literary representation in the work of twentieth-century
women writers; women writers from World War II to the present. Bachmann, Fleisser, Keun, Kolmar, Langgässer, Lasker-Schüler, Leutenegger, Rinser, Sachs, Seghers, and Wolf. Not open to students who have taken German 137S. C-L: Women’s Studies. One course. Rasmussen

Linguistics

260. History of the German Language. (FL) Phonology, morphology, and syntax of German from the beginnings to the present. C-L: Linguistics and Medieval and Renaissance Studies 260B. One course. Rasmussen

261. Second Language Acquisition Theory and Practice. (FL) Overview of current research in the fields of second language acquisition and foreign language pedagogy, theories of language acquisition and learning, implications for the teaching of the German language, literature, and culture at all levels. Readings and discussions on theoretical and professional issues, training in contemporary teaching techniques, approaches, and methods. C-L: Linguistics. One course. Walther

Courses Taught in English

248S. German Film from Weimar to Fascism. (AL, CZ) German film from its inception through the Nazi period. Emphasis on the social, political, and cultural background of the period as well as specifics of film form and analysis. Focus on areas such as expressionist cinema, the realist film, Nazi propaganda and entertainment films. Taught in English. One course. Risholm

270. Consciousness and Modern Society. (CZ) The blend of philosophy, literature, and sociology in German thinking about actual and possible societies. The idea of consciousness as producing involvement, detachment, or transformation. Marx, Nietzsche, Lukacs, Freud, Marcuse, Benjamin, Adorno, and Habermas. Taught in English. C-L: Comparative Area Studies and Perspectives on Marxism and Society. One course. Rolleston

271S. Contemporary Theory and the German Tradition. (AL) The reorientation of Western thought toward theories of knowledge and of language, from the eighteenth century to the present, and the significance of that paradigm shift for contemporary theory of literature and literary criticism. Readings in Kant, Herder, Mauthner, Wittgenstein, Heidegger, Habermas, and Apel. Taught in English. C-L: Comparative Area Studies and Perspectives on Marxism and Society. One course. Morton

298S. Special Topics. (AL, CZ) One course. Staff

299S. Seminar in German Studies. (CZ) 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. One course. Morton or Rolleston and staff

Courses Currently Unscheduled

125S. Literature of Tolerance. (AL, FL)
135. German Literature and the Media. (AL, FL)
136S. Contemporary Germany. (AL, FL)
154. Deutsche Kulturgeschichte. (CZ, FL)
160. German Life and Thought. (CZ)
170S. The German Enlightenment and the Invention of Modernity. (AL)
174S. In Search of the Self: The German Bildungsroman. (AL)
180. Faust and the Faust Tradition. (AL)
185S. The Golden 'Twenties. (AL)
200S. Proseminar: Introduction to Literary Criticism. (AL, FL)
2025. Medieval Seminar. (AL, FL)
210S. Renaissance and Reformation. (AL, FL)

Germanic Languages and Literature 261
2205. Reason and Imagination: The German Eighteenth Century. (AL, FL)
2275. Goethe Seminar. (AL, FL)
2315. Romantic Outsiders. (AL, FL)
2325. The Lyric: Goethe to the Present. (AL, FL)
2365. Empires of the Mind: Nineteenth-Century German Ideas. (AL, FL)
2405. Naturalism and Beyond: The Turn of the Century. (AL, FL)
2415. Nietzsche. (AL, FL)
2425. Expressionism. (AL, FL)
2445. A, S. International Expressionism. (AL)
2448. S. International Modernism. (AL)
2465. German Letters in the Third Reich and in Exile. (AL, FL)
2495. S. New German Cinema. (AL, CZ)
2505. S. German Literature and Classical Antiquity. (AL, FL)
2515. Germanic Mythology and Its Critics. (AL, FL)
2525. The Mystical Tradition. (AL, FL)
2535. The Image of America in German Literature. (AL, FL)
2555. Paradigmatic Issues in Literary Theory. (AL, FL)
2625. Applied Linguistics. (FL)
2725. S. The German Literature of Fantasy. (AL)
2735. S. Franz Kafka and Thomas Mann. (AL)
2745. S. The Image of America in German Literature. (AL)
2755. S. German Women Writers. (AL)

YIDDISH (YDH)

1, 2. Elementary Yiddish. (FL) A thorough study of elementary Yiddish grammar with reading, composition, and oral practice. No previous knowledge of German or Hebrew required. C-L: Judaic Studies. One course each. Staff

Courses Currently Unscheduled

171. Yiddish Fiction in Translation. (AL)
191, 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 conversation and composition 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 (PE)**

Professor Buehler, Chair; Associate Professor LeBar, Director of Undergraduate Studies; Associate Professors Harvey, Raynor, and Skinner; Assistant Professor of the Practice Ogilvie; Instructors Alberici, Alleva, Beguinet, Bowen, Burk, Daffron, Doughty, Falcone, Forbes, Garcia, Hardy, Jindra, McMullan, N. Ogilvie, Orr, Rollins, Spector, Valentino, Weatherington, Welsh, and Yakola

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, with the exception of Physical Education 15, Weight Training.

10. **Bowling.** History of bowling; complete fundamentals and techniques; types of games; basic rules and scoring. Half course. Bowen

11. **Cardiorespiratory Conditioning.** Individualized programs in walking, jogging, running, cycling, and swimming. Half course. Buehler

12. **Aerobic Dance.** Dancing for cardiovascular and physical conditioning. Half course. Jindra


15. **Weight Training.** Progressive, cumulative, and measurable physical conditioning. Half course. Harvey

16. **Endurance Swimming.** Individualized programs to improve skills and fitness. Half course. Forbes or J. Ogilvie
17. **Mountain Biking.** Individualized programs in mountain biking including bike maintenance, safety tips, single- and multi-track riding. Half course. Hardy or Yakola

19. **Beginning Swimming.** Propulsion techniques, water safety, introduction to the five basic strokes. Half course. Forbes

20. **Intermediate Swimming.** Development of the five basic strokes, overarm side trudgen, and trudgen crawl. Half course. Forbes

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. Half course. Forbes

23. **Water Aerobics.** Aerobic and anaerobic exercise performed in water, designed to promote physical conditioning. Half course. J. Ogilvie


27. **Kayaking.** Basic skills for kayaking in whitewater. Open to juniors and seniors only. Half course. Harvey

30. **Beginning Golf.** Half course. Garcia

31. **Intermediate Golf.** Stroke development and use of all clubs. Half course. Garcia

32. **Advanced Golf.** Use of all clubs; course strategy. Emphasis on playing. Half course. Garcia

40. **Beginning Tennis.** Half course. Forbes or Raynor

41. **Intermediate Tennis.** Strategy of the game and stroke development. Half course. LeBar or Raynor

42. **Advanced Tennis.** Stroke development with emphasis on strategy. Half course. LeBar

50. **Mixed Competitive Tennis.** Half course. LeBar

52. **Fencing.** Foils, épée, and saber. Half course. Beguinet


56. **Intermediate Karate.** Continued practice of basic technique. Introduction to round kick, back kick, free sparring, four Pinan Katas of the Wadoryu System. Half course. Bowen


60. **Volleyball.** Half course. Weatherington

63. **Cardio-Kickboxing.** A noncontact activity designed to teach self-defense techniques while building the muscular and cardiovascular systems. Half course. Bowen

65. **Yoga.** Traditional hatha yoga combined with balanced structural alignment to develop strength, flexibility, and mental concentration. Half course. Orr or Spector

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. Half course. Spector
72. **Social Dancing.** Waltz, foxtrot, tango, cha-cha, rumba, jitterbug, rock, disco, and others. Half course. Daffron


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. Half course. Daffron

79. **Beginning Equitation.** Introduction to horseback riding: basic horsemanship; walk, trot, and canter. Half course. Rollins

80. **Intermediate Equitation.** Skills in hunt seat riding. Emphasis on balance seat and focus on improving skills in walk, trot, canter, and jumping. Half course. Rollins


90. **Advanced First Aid and Cardiopulmonary Resuscitation.** Certification in advanced first aid and CPR. Half course. Raynor

96. **Basketball.** Development of individual and team skills. Half course. Alberici or Welsh

**THEORY COURSES**

49S. **First-Year Seminar.** Topics vary each semester offered. One course. Buehler

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. One course. Welsh

150. **Health, Fitness and Wellness.** Relationships among health, wellness, exercise, nutrition and fitness. Scientific evidence pertaining to diet and nutrition, weight control, cardiovascular and strength fitness, stress management, tension control, and drugs and alcohol. Development of a personal lifetime fitness program. One course. LeBar

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. One course. Buehler

172. **Administration in Sports Management.** Philosophy, financial structure, administrative structure, fund-raising, NCAA legislation, personnel decisions, and scheduling events. One course. Alleva or Buehler

174. **Sports Marketing of Collegiate Athletic Events.** Philosophy, marketing strategies, planning, and problem solving in promoting collegiate athletic events. One course. Yakola

**COURSES CURRENTLY UNSCHEDULED**

13. **Weight Control.**

24. **Basic Rescue and Emergency Water Safety.**

26. **Scuba Diving.**

28. **Canoeing.**

29. **Water Polo.**

35. **Beginning Racquetball.**

36. **Intermediate Racquetball.**

37. **Advanced Racquetball.**

48. **Men's Competitive Tennis.**

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.
110. Diet and Nutrition.
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 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.

*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.*
Capstone Course (required)
Public Policy Studies 255S. Health Policy Analysis. A group project designed for candidates seeking the undergraduate certificate. Consent of instructor required. Conover or Taylor

Methods Courses (any one course):
Economics 2D, 52D, 261
Public Policy Studies 55D, 261

Core Courses (any two courses):
Economics 156
Public Policy Studies 156, 157
Sociology 171

Regularly Scheduled Courses
Economics
2D. Competition, Monopoly, and Welfare. Crawford
52D. Competition, Monopoly, and Welfare. Staff
156. Health Economics. (Cross-listed.) Sloan
261. Evaluation of Public Expenditures. (Cross-listed.) Conrad

Public Policy Studies
55D. Introduction to Policy Analysis. Hamilton, Lipscomb, Mayer, or Timmer
156. Health Economics. (Cross-listed.) Sloan
157. Health Policy. McGinnis
261. Evaluation of Public Expenditures. (Cross-listed.) Conrad

Sociology
171. Comparative Health Care Systems. (Cross-listed.) Staff

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. Lipscomb
264S.70. Social Policy Implementation. Lin
264S.72. Managed Care. Lin

Sociology
227S. A-D. Proseminars in Medical Sociology. Selected topics in medical sociology. One course.
George, Gold, Jackson, Lin, or Thornton.
A. Social Structure and Health
B. Social Behavior and Health
C. Organization and Financing of Health Care (May not be counted toward certificate if Sociology 227C is counted)
D. Special Topics in Medical Sociology (for example, social epidemiology, stress and coping, health and aging)

Elective Courses (any 2 courses)
Regularly Scheduled Courses
Cultural Anthropology 185S. The Canadian Health Care System. Warren
Economics 163. Economics of the Environment. Prerequisite: Economics 52. One course. Smith
Environment 270. Resource and Environmental Economics. Kramer
Environment 272. Evaluation of Public Expenditures. Staff
History 105S.05 History of Medical Ethics. Staff
History 189B. History of Public Health in America. Staff
History 279, 280. Health, Healing, and History. English
History 294S. Women and Medicine in the U.S. Humphries

Law 347. Health Care Law and Policy. Open to limited undergraduate enrollment with consent of instructor. Havighurst (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.)

Philosophy 118. Philosophical Issues in Medical Ethics. Prerequisites: for freshman, previous philosophy course and consent of instructor. One course. Brandon or Golding

Political Science 107. Environmental Politics and Policies in the Industrial World. McKean
Political Science 147. Environmental Politics and Policies in the Developing World. McKean or Miranda
Political Science 148D. Environmental Politics Beyond Borders. McKean
Political Science 176A, B. Perspectives on Food and Hunger. Johnson
Psychology 108A. Health Psychology. Not open to students who have taken Psychology 98. One course. Anderson or Keefe
Psychology 129. Psychology and the Law. Prerequisite: Psychology 99 or 108 or Psychology 116. Fischer
Public Policy Studies 149. United States Environmental Policy. Consent of instructor required. Besse or Miranda
Public Policy Studies 266. Comparative Social Policy. Staff
Public Policy Studies 274. Resource and Environmental Policy. Prerequisite: Environment 270L
Public Policy Studies 272, or consent of instructor. Ascher
Religion 182. Medicine and Religion in American Society. Not open to students who have taken Religion 159. Joyce
Sociology 112. American Demographics. Land, Myers, or Parnell
Sociology 123. Social Aspects of Mental Illness. George or Jackson
Sociology 162. Health and Illness in Society. Lin
Sociology 163. Aging and Health. George or Gold

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 (HST)

Professor Roland, Chair; Professor Thompson, Associate Chair; Associate Professor French, Director of Undergraduate Studies; Professors Cell, Chafe, Dirlik, Gaspar, Gavins, Goodwyn, Herrup, Keyssar, Koonz, Kuniholm, Lerner, Mauskopf, M. Miller, Payne, Petroski, Reddy, Richards, Shatzmiller, Witt, and Wood; Associate Professors English, Ewald, Green, James, Nathans, Neuschel, Robisheaux, Thorne and Wigen; Assistant Professors Balléisen, Biddle, Hacohen, Humphreys, Mazumdar, Partner, and Peyroux; Professors Emeriti Cahow, Colton, Davis, Durden, Ferguson, Franklin, Holley, Parker, Preston, Ropp, A. Scott, TePaske, Watson, and Young; Assistant Professor of the Practice El Hamel; Adjunct Professor Roberts; Adjunct Associate Professors Pelech and Wilson; Adjunct Assistant Professors Little and Y. Miller, Visiting Assistant Professors Kaiwar and Wall

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 interconnectedness. 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, 102G. Introduction to Islamic Civilization. (CZ) Not open to students who have taken Religion 162, 163. See C-L: Religion 146, 147; also C-L: Comparative Area Studies, Cultural Anthropology 147, 148, and Medieval and Renaissance Studies 146A, 147A. One course each. Cornell, Lawrence, or staff

101K. Topics in Chinese Civilization. (CZ) C-L: Comparative Area Studies. One course. Dirlik

115A. History of Africa: From Antiquity to Early Modern Times. (CZ) Beginning with 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. Not open to students who have taken the former History 115. C-L: African and African-American Studies 115A, Comparative Area Studies, and Women's Studies. One course. El Hamel or Ewald

115B. History of Africa: From Early Modern Times to Independence. (CZ) 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. C-L: African and African-American Studies 115B, Comparative Area Studies, and Women's Studies. One course. El Hamel or Ewald

122A. The Economic History of Japan, 1850 to the Present. (CZ) The economic achievements and problems of Japan in their historical context. The prewar and wartime economy; postwar and current issues. How economic development has transformed ordinary people's lives. One course. Partner

139B. Modern South Asia. (CZ) 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. C-L: Comparative Area Studies. One course. Kaiwar

142A. China: Roots of Revolution. (CZ) A survey of modern Chinese history with special emphasis on the nineteenth and twentieth centuries. Not open to students who have taken History 142. C-L: Comparative Area Studies and Perspectives on Marxism and Society. One course. Dirlik or Mazumdar

142C. Chinese Food in History. (CZ) Food and food crops in historical perspective. Using literary sources and art, the course reconstructs the culture of food. C-L: Comparative Area Studies. One course. Mazumdar

142E. Modern China in Film and Literature. (AL, CZ) Focus on the contributions to historical understanding of nonhistorical texts. Differences in Chinese and non-Chinese representations; the effect of different media in representations; study of film versions of literary works. C-L: Comparative Area Studies and Cultural Anthropology 149. One course. Dirlik

143A. Ancient and Early Modern Japan. (CZ) Japan from earliest settlement to 1868: the Heian Court, rise of the samurai, feudal society and culture, the Tokugawa age, and the Meiji Restoration. Not open to students who have taken the former History 143. C-L: Comparative Area Studies. One course. Wigen

143B. The Emergence of Modern Japan. (CZ) Japan from Meiji to microchips. The Meiji settlement, industrialization and urban growth; political parties, social movements, and foreign policy in the imperial era; World War II and the American occupation; economic recovery. Not open to students who have taken the former History 144. C-L: Comparative Area Studies. One course. Wigen

152. The Modern Middle East. (CZ) The historical development of the Middle East in the nineteenth and twentieth centuries. The emergence of nation-states in the region
following World War I. C-L: Comparative Area Studies and Judaic Studies. One course.

Y. Miller

166. History of the Sahara. (CZ) Focus on topics such as the ecological transformation of
the Sahara, the role of Saharans in the rise of ancient Egypt, the introduction of the camel
and caravan organization, the life of the nomads, the spread of Islam, Berber dynasties,
Ibn Khaldun's theory of Saharan society, the Saharan golden age, Sudanese kingdoms,
the states of the great Nile Valley, economics and the spreading Sahara, European
penetration, Napoleon in Egypt, the French orientalist, the trans-Saharan slave trade,
and women in the Sahara. C-L: African and African-American Studies 166 and
Comparative Area Studies. One course. El Hamel

172B. China and the West. (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. One course.
Mazumdar

172C. China from Antiquity to 1400. (CZ) Beginning with the early neolithic cultures,
focus on the evolution of Han civilization, the formation of the imperial state system
in China, ecological adaptations and foundations of the agrarian economy, the coming
of Buddhism to China, and China's contacts with other peoples and regions of Asia up to
A.D. 1400. One course. Mazumdar

193, 194. Introduction to the Civilizations of Southern Asia. (CZ) Not open to students
who have taken Religion 160, 161. See C-L: Asian and African Languages and Literature
160, 161; also C-L: Comparative Area Studies, Cultural Anthropology 101, 102, and
Religion 144, 145. One course each. Staff

292. Research Methods in Japanese. (SS) Consent of instructor required. See C-L:
Japanese 291; also C-L: Cultural Anthropology 290, Political Science 291, and Sociology
291. One course. Staff

295S. Slavery and Freedom in Africa, to 1960. (CZ) 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. C-L: African and African-American Studies 292S
and Comparative Area Studies. One course. Ewald

Europe -- Western and Eastern (E)

21D. Europe to the Eighteenth Century. (CZ) Development and world impact of
European civilization, critical evaluation of historical interpretations, and investigation
of history from primary sources. One course. Staff

22D. Europe from the Eighteenth Century. (CZ) Development and world impact of
European civilization, critical evaluation of historical interpretations, and investigation
of history from primary sources. One course. Staff

22X. Culture and Politics in Modern Europe. (CZ) A survey of major themes in the
political and cultural history of modern Europe. Intended for students who participated
in the fall semester FOCUS program or who have Advanced Placement credit in
European History. Specific topics may change from year to year. Readings in primary
sources and historiography. One course. Hacohen

101C. Terrorism, 1848-1968. (CZ) A comparative analysis of the origins and development of modern terrorism in the West (Europe, Russia, and the United States). C-L: Comparative Area Studies. One course. M. Miller

101E. Nationalism and Exile. (CZ) 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. One course. M. Miller

107A. Tudor/Stuart Britain. (CZ) C-L: Comparative Area Studies and Medieval and Renaissance Studies 107A. One course. Herrup

107B. Modern Britain. (CZ) C-L: Comparative Area Studies and Medieval and Renaissance Studies. One course. Thorne

110. History of Eastern Europe in Modern Times. (CZ) The development of the nations and nationalities of Eastern Europe since the early eighteenth century. C-L: Comparative Area Studies. One course. Lerner

113B. Europe's Colonial Encounter, 1492-1992. (CZ) Surveys the impact of colonial expansion on European economic development, political culture, and popular identity from the "age of discovery" through the present. C-L: African and African-American Studies 113B. One course. Thorne

116. Aspects of Medieval Culture. (CZ) See C-L: Medieval and Renaissance Studies 114; also C-L: Art History 139, and Classical Studies 139. One course. Rasmussen, Søltér, or Witt


120. History of Socialism and Communism. (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 239. One course. Lerner

123S. Madness and Society in Historical Perspective. (SS) Mental illness and psychiatric treatment from antiquity to the present with special concentration on the nineteenth and twentieth centuries in Europe, America, and Russia. C-L: Comparative Area Studies. One course. M. Miller

126S. Women in the Ancient World. (CZ) See C-L: Classical Studies 104S; also C-L: Women's Studies. One course. Boatwright

130A. Modern Ireland. (CZ) A comparison of Irish history with British imperial history. Survey of Irish history from the Elizabethan conquest to the present. One course. Cell

133A. The Birth of Europe: Society and Culture, 200-900. (CZ) Europe in the transition from the world of late antiquity to the varied civilizations of the Middle Ages; social, cultural, and political frameworks in the time of the Emperor Constantine and St. Augustine. The barbarian invasion: practices and communities. The small-scale politics of dark-age Ireland, Spain, and the growth, consolidation, and demise of the Carolingian empire. Not open to students who have taken History 133. C-L: Medieval and Renaissance Studies 133A. One course. Peyroux

133C. British Isles in the Middle Ages. (CZ) From the fifth through the fourteenth centuries. Not open to students who have taken History 134. C-L: Medieval and Renaissance Studies 133B. One course. Peyroux

134B. History of Jews in the Late Middle Ages. (CZ) 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. C-L: Medieval and Renaissance Studies 134B. One course. Shatzmiller

135B. Weimar and Nazi Germany. (CZ) 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. C-L: Comparative Area Studies. One course. Koonz

135C. Germany and the Cold War. (CZ) 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. C-L: Comparative Area Studies. One course. Koonz

138. Renaissance and Reformation Germany. (CZ) The interplay of social, economic, and political developments in Central Europe from the eve of the Reformation to the end of the Thirty Years' War, with particular attention to the links between religion, gender, and the social order. C-L: Comparative Area Studies and Medieval and Renaissance Studies 138. One course. Robisheaux

144A. The Crusades to the Holy Land. (CZ) 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. One course. Shatzmiller

146S. Introduction to Russian Civilization. (CZ) See C-L: Russian 190S; also C-L: Comparative Area Studies. One course. Pelech

148A. Aspects of Renaissance Culture. (AL, CZ) See C-L: Medieval and Renaissance Studies 115; also C-L: Art History 149, and Italian 125. One course. Finucci, Rasmussen, Rice, Van Miegroet, or Witt

148B. History of Medieval and Renaissance Italy. (AL, CZ) The history and literature of the first early modern European culture and society. C-L: Medieval and Renaissance Studies 148B. One course. Witt

150E. Russian Revolutionary Cinema. (CZ) The origins and development of the revolutionary and experimental cinema in Russia during the last years of the Empire and after the seizure of power by the Bolsheviks in 1917. Films include the classics of the silent Soviet cinema directed by Eisenstein as well as other films by other influential directors. The transition into the Stalinist cinema of the 1930s and comparisons with Hollywood films of that era. One course. M. Miller

151A. The Intellectual Life of Europe, 1250-1600. (CZ) Not open to students who have taken History 104. C-L: Comparative Area Studies and Medieval and Renaissance Studies 151A. One course. Witt

151E. European Intellectual History, 1848-1918. (CZ) Contextual study of some major works in European social and political thought from the revolution of 1848 to the First
World War. Readings in Mill, Taylor, Marx, Nietzsche, Freud, Durkheim, Weber, Lenin, Kollontai, and Gramsci, as well as in secondary interpretations and historical works. One course. Hacohen


156A. The Reformation of the Sixteenth Century. (CZ) Not open to students who have taken Religion 167. See C-L: Religion 158; also C-L: Medieval and Renaissance Studies 156A. One course. Hillerbrand

156B. History of the Christian Church. (CZ) See C-L: Religion 120. One course. Hillerbrand

157A. Rise of Modern Science: Early Science through Newton. (CZ) The development of science and medicine with attention to cultural and social influences upon science. Not open to students who have taken the former History 118. One course. Mauskopf

161. History of Modern Russia. (CZ) Following a brief introduction to the medieval origins of the Imperial Russian state, the course will concentrate 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. Not open to students who have taken both History 161A and 161B. C-L: Comparative Area Studies. One course. Miller

171A. History of Women in Early Modern Europe. (CZ) Women in Europe from medieval times to 1800 with attention to economic, social, and intellectual experience. C-L: Comparative Area Studies and Women’s Studies. One course. Neuschel

178A. Science and Technology in the Ancient World. (CZ) See C-L: Classical Studies 101. One course. Riggsby

180. The Soviet Experience. (CZ) 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. C-L: Comparative Area Studies. One course. Lerner

185A. Socialist Realism: Soviet Literature of the 1930s and 1940s. (AL) See C-L: Russian 182; also C-L: Comparative Area Studies, and Perspectives on Marxism and Society. One course. Lahusen

186. Marxism and Society. (SS) See C-L: Cultural Anthropology 139; also C-L: Comparative Area Studies, Education 139, Literature 181, Perspectives on Marxism and Society, and Sociology 139. One course. Staff


2025. The Russian Revolution. (CZ) An analysis of the Bolshevik seizure of power in 1917 and the establishment of a revolutionary society and state during the 1920s. C-L: Comparative Area Studies. One course. Miller

2095. Race, Class, and Gender in Modern British History. (CZ) The intersection between gender, race, and class identities in British history since the eighteenth century. The parallels and overlaps as well as the disjunctures and distinctions between these different modes of power in a period of tremendous economic, social, and political
change resulting from industrialization and imperial expansion. Questions and issues include the impact of industrialization on gender as well as class consciousness, the role of women, the middle classes and the working classes in the campaign against slavery, British workers' reactions to the "scramble" for colonies, the attitudes and activities of British women in the empire, and sexuality and the evolution of racialist discourse. C-L: African and African-American Studies 209S and Study of Sexualities. One course. Thorne


218. Problems in British Imperialism. (CZ) Selected readings on significant aspects of the history of the British Empire-Commonwealth: for example, Ireland, South Africa, and India. One course. Cell

221. Special Topics in the History of Europe, 1200-1700. (CZ) Investigation of selected aspects of the economic, social, and cultural history of premodern Europe. Topics have included the social history of religion, gender and society, and traditional society and the origins of capitalism. C-L: Comparative Area Studies and Medieval and Renaissance Studies 221A. One course. Nuschel or Robischeux

222A. The Humanist as Reformer: Petrarch, Machiavelli, and Erasmus. (CZ) Humanism as a movement dedicated to moral, political, and ecclesiastical reform. Prerequisites: History 151A and reading knowledge of German, French, or Italian. C-L: Medieval and Renaissance Studies 222A. One course. Witt

222B. Florence: Renaissance City. (CZ) C-L: Medieval and Renaissance Studies 222B. One course. Witt


236A. Topics in the History of Monasticism. (CZ) 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. C-L: Medieval and Renaissance Studies 235. One course. Peyroux

238S. Europe in the High Middle Ages. (CZ) Western Europe; the agricultural revolution, the re-emergence of city civilization, and the strengthening central governments and bureaucracies. Not open to students who have taken History 133B. C-L: Medieval and Renaissance Studies 238S. One course. Shatzmiller

239. History of Socialism and Communism. (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. C-L: Comparative Area Studies. One course. Lerner

240A. Multinationalism and Multiculturalism: Eastern Europe Example. (CZ) One course. Lerner

242B. The Soviet 1920s: The Road to a New Synthesis. (AL) See C-L: Russian 281. One course. Lahusen
251A. Topics in Intellectual History of Europe, 1250-1450. (CZ) C-L: Medieval and Renaissance Studies 251A. One course. Witt

251B. Topics in Intellectual History of Europe, 1450-1650. (CZ) C-L: Comparative Area Studies and Medieval and Renaissance Studies 251B. One course. Witt

256. Modern Literature and History. (AL, CZ) See C-L: French 256; also C-L: Comparative Area Studies. One course. Kaplan, Orr, or staff


262. The Soviet Experience. (CZ) 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 180. C-L: Comparative Area Studies. One course. Lerner

263. The Roman Republic. (CZ) See C-L: Classical Studies 224. One course. Boatwright or Rigsby


265. Late Antiquity. (CZ) See C-L: Classical Studies 226. One course. Rigsby


268S. England in the Seventeenth Century. (CZ) C-L: Comparative Area Studies and Medieval and Renaissance Studies 268S. One course. Herrup

293. French Liberalism: An Intellectual History, 1815-1981. (CZ) Historical study of major French liberal thinkers in their political, social, and intellectual contexts. Readings in De Staël, Constant, Guizot, Tocqueville, Durkheim, Halévy, and Aron and historiography. Major themes: revolution, restoration, and liberalism's origins; liberals, the July Monarchy, and 1848; Durkheim, the Third Republic, and the new liberalism; World War I, totalitarianism, and contemporary French liberalism. One course. Hacohen

Latin America and Caribbean (LAC)


131B. The Spanish Caribbean. (CZ) Cuba, the Dominican Republic, and Puerto Rico from the encounter in 1492 to the present with special emphasis on the early days of colonization, intercolonial rivalry, comparative economic and social developments, and the Cuban revolution. C-L: Comparative Area Studies and Latin American Studies. One course. TePaske

136A. Introduction to Contemporary Latin American Reality. (CZ) The complexity and diversity of factors which help to define the daily experience of Latin American reality for contemporary Latin Americans. Through cultural, academic, and government documents, issues ranging from ecology and energy policy in Brazil to
human rights abuses and the experience of women in modern Latin America will be studied. Not open to students who have taken History 136. C-L: Comparative Area Studies and Latin American Studies. One course. James

**136B. Biography and Politics in Latin America. (CZ)** Key individuals who have shaped Latin American society and politics from Hernán Cortés to Fidel Castro. C-L: Comparative Area Studies and Latin American Studies. One course. French

**136C. Nineteenth-Century Latin America: Building Postcolonial Nations. (CZ, 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. C-L: Comparative Area Studies and Latin American Studies. One course. Staff

**170C. Afro-Brazilian Culture and History. (CZ)** 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. C-L: African and African-American Studies 170 and Latin American Studies. One course. French

**174B. Modern Latin America. (CZ)** A survey of nineteenth- and twentieth-century economic, social, and cultural change. Not open to students who have taken History 177. C-L: Comparative Area Studies and Latin American Studies. One course. Staff

**United States and Canada (USC)**

**91D. The Development of American Democracy to 1865. (CZ)** 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. One course. Staff

**92D. America from 1877 to the Present. (CZ)** American history from the end of Reconstruction to the present. The impact of industrialization, immigration, urbanization, and the rise of mass culture in the United States; the effect of depressions and wars on American society and politics; and the roots and results of reform movements ranging from populism and progressivism to the civil rights, women's, and environmental movements. Ongoing debates about the government's proper economic and social role; changing views of ethnicity, race, and gender in America, and the determinants of United States foreign policy. One course. Wall

**92X. Issues in United States History. (CZ)** Major crises in America: from the Great Depression to the 1960s. Intended for students who participated in the fall semester FOCUS program or have Advanced Placement credit in United States History. One course. Gaspar

**98. Introduction to Canada. (SS)** Does not count for introductory course requirements. See C-L: Canadian Studies 98; also C-L: Comparative Area Studies, Economics 98, Political Science 098, and Sociology 98. One course. Staff

**108C. Canadian-American Relations. (CZ)** The Canadian-United States relationship in its diplomatic, military, economic, and cultural aspects from the American Revolution to the present, with emphasis on the twentieth century. C-L: Canadian Studies and Comparative Area Studies. One course. Thompson

**108D. Across the Great Divides: The United States and Canadian Wests in the Nineteenth and Twentieth Centuries. (CZ)** 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. C-L: Canadian Studies and Comparative Area Studies. One course. Thompson

108E. S. The Canadian Health Care System. (SS) See C-L: Canadian Studies 185S; also C-L: Comparative Area Studies, Cultural Anthropology 185S, Economics 185S, Political Science 185S, Public Policy Studies 187S, and Sociology 185S. One course. Warren


111B. Era of the American Revolution, 1760-1815. (CZ) Origins, evolution, and consequences. Attention to economic, social, and geographical questions, as well as military and political. Not open to students who have taken the former History 112. One course. Wood

111C. The Emergence of Modern America: The United States from the 1890s to the Cold War. (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. C-L: Perspectives on Marxism and Society. One course. Keyssar

118A. American National Security Policy from 1945 to 1975. (CZ) Evolution of American defense policy, nuclear and conventional, within the political context of the Cold War. Not open to students who have taken the former History 157, American National Security Policy from 1945 to 1975. One course. Biddle

119A, 119B. Native American History. (CZ) A survey of conditions and events from precolonial times to the present. C-L: Canadian Studies and Comparative Area Studies. One course each. Wood

121B. The United States as a World Power: 1861-1941. (CZ) American diplomacy from the beginning of the Civil War to entry into World War II. C-L: Canadian Studies. One course. Staff


129A. Experiment in Republicanism: The United States, 1787-1860. (CZ) Not open to students who have taken the former History 129. One course. Nathans

129B. From Victorian to Corporate America, 1820-1900. (CZ) Not open to students who have taken History 130. One course. Nathans


150A. Documentary Film History. (AL, CZ) 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 rehabilita-

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tion of documentary. Technological changes and the use of documentary as a political organizing tool. C-L: Film and Video, Literature 117, Perspectives on Marxism and Society, and Political Science 198. One course. Gaines, Paletz, or Wood

150B. S. American Communities: A Documentary Video Approach. (AL, SS) See C-L: Film and Video 105S; also C-L: Cultural Anthropology 134S, Political Science 156S, and Public Policy Studies 105S. One course. Staff

150C. Doing Documentary Work. (AL, SS) See C-L: Public Policy Studies 178; also C-L: Visual Arts 178, and English 171. One course. Coles and Harris

153S. The Insurgent South. (CZ) C-L: Perspectives on Marxism and Society. One course. Goodwyn

150. The United States from the New Deal to the Present. (CZ) C-L: Women’s Studies. One course. Chafe

163A. Sectional Conflict, Civil War, and Reconstruction: The United States, 1840-1880. (CZ) 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. One course. Balliesen

163B. The United States’ Civil War and its Aftermath, 1861-1900. (CZ) Emphasis on the political and social aspects of the war; only slight treatment of battles. Political, racial, and economic themes of the Reconstruction and Populist eras. One course. Durden

163C. The American Civil War. (CZ) C-L: Perspectives on Marxism and Society. One course. Goodwyn


165. History of the Working Class in the United States. (CZ) 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. C-L: African and African-American Studies 165 and Perspectives on Marxism and Society. One course. Keyssar


169A. American Women, 1600-1877. (CZ) C-L: Study of Sexualities and Women’s Studies. One course. Staff

169B. American Women, 1877 to the Present. (CZ) C-L: Study of Sexualities and Women’s Studies. One course. Staff

170A. American Cultural History, 1750-1860. (CZ) 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. One course. Balliesen

175S. The Southern Plantation as Historical Laboratory: Odyssey in Black and White, 1770-1970. (CZ) 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. C-L: African and African-American Studies 175S. One course. Nathans

177A. American Constitutional Development I. (SS) See C-L: Political Science 177. One course. Fish


184S. Canadian Issues. (SS) Prerequisite: Canadian Studies 98 or consent of instructor. See C-L: Canadian Studies 184S; also C-L: Comparative Area Studies, Cultural Anthropology 184S, Economics 184S, Political Science 184S, and Sociology 184S. One course. Staff

189B. History of Public Health in America. (CZ) 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. One course. Humphreys

226. Topics in the Labor History of the United States. (SS) One course. Keyssar


255A, S. Development of United States Courts in the Mid-Atlantic South: Wars and Legacies of Wars (A). (SS) Consent of instructor required. See C-L: Political Science 236S; also C-L: Law 548S. One course. Fish

255B. War and the National State. (SS) No prerequisite, but Political Science 93 recommended. See C-L: Political Science 288. One course. Goemans

255C. The Culture of American Capitalism, 1750-1860. (CZ) 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." One course. Balleisen

276A. Asian-American Experience. (CZ) 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. C-L: Comparative Area Studies. One course. Mazumdar

278S. The Civil War in the United States and Its Aftermath, 1861-1900. (CZ) One course. Staff

282S. History of Public Health in America. (CZ) 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. One course. Humphreys
286. United States Policy in the Middle East. (SS) See C-L: Public Policy Studies 257; also C-L: Comparative Area Studies. One course. Kuniholm

GLOBAL AND COMPARATIVE COURSES

25. Introduction to World History: To 1700. (CZ) 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. C-L: Comparative Area Studies. One course. Staff

26. Introduction to World History: Since 1700. (CZ) Establishment of European political, economic, and cultural hegemony; non-Western responses; the decline of Western hegemony. C-L: Comparative Area Studies. One course. Staff


75, 76. The Third World and the West. (CZ) Economic, social, political, and cultural relationships, 1500 to the present. C-L: African and African-American Studies 70, 71, Comparative Area Studies, Latin American Studies, and Perspectives on Marxism and Society. One course each. Staff

112A, 112B. The World in the Twentieth Century. (CZ) Imperialism and decolonization, war, revolution, international capitalism and depression, science and technology. 112A: 1900 to 1945; 112B: 1945 to the present. C-L: Comparative Area Studies. One course each. Cell

118B. Warfare in the Twentieth Century. (CZ) 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). One course. Biddle

118C. History of the World Wars. (CZ) An examination of the origins, course, and consequences of the world wars of this century. One course. Biddle


137. Comparative Approaches to Global Issues. (CZ, SS) Not open to students who have taken Religion 121. See C-L: Comparative Area Studies 125; also C-L: Cultural Anthropology 125, Perspectives on Marxism and Society, Political Science 125, Religion 183, and Sociology 125. One course. Staff

141A. Crossroads of Eurasia: The History of Turkey. (CZ) A study of the land which became modern Turkey as a crossroads of civilization, from ancient times to the present day. C-L: Comparative Area Studies. One course. Neuschel

147. Magic, Religion, and Science since 1400. (CZ) 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. C-L: Medieval and Renaissance Studies 147B. One course. Robisheaux
149. World Military History. (CZ) 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. One course. Roland

154C. The History of Emotions. (CZ) 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 notions 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. C-L: Cultural Anthropology 154. One course. Reddy

157C. Rise of Modern Science: Twentieth Century. (CZ) See History 157A. Not open to students who have taken the former History 118. One course. Mauskopf

158A. New Perspectives on the Atlantic World. (CZ) Reorients the histories of four continents. An exploration of how an Atlantic world arose because of the interactions among Africa, North America, South America, and Europe. How this Atlantic world originated in the fifteenth century; how people emigrated, by force or free will, from one continent to another (and often back again); how plants, animals, trade goods, and diseases crossed the ocean; how ideas—especially revolutionary ideas—arose from intercontinental contact and spread throughout the Atlantic world. Concludes that people of each of the Atlantic continents possess a heritage including the three other continents, and that this heritage was ocean-borne. C-L: African and African-American Studies 158A and Comparative Area Studies. One course. Ewald

168A. The Emergence of the Atlantic Basin to 1713. (CZ) The forces unleashed by the expansion of European influence into the Atlantic Islands along the west and southwest coast of Africa, and across the Atlantic Ocean into the Americas. C-L: Latin American Studies. One course. Gaspar


180A. Genocide in the Twentieth Century. (CZ) 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. One course. Koonz

190. The History of Women in Science and Medicine. (CZ) The history of scientific and medical theories about women and an analysis of women as participants in the evolution of science and medicine. C-L: Women’s Studies. One course. Green

203S. Topics in Modern World Environmental History. (CZ) Human effects upon the natural environment; case studies and a synthetic global perspective. One course. Richards

204S. Technology, Economic Development, and Social Change, 1750 to the Present. (CZ) 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. One course. Partner

207A, S. Geographic Perspectives in History I: Atlantic Worlds. (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. C-L: Comparative Area Studies. One course. Wigen

207B, S. Geographic Perspectives in History II: Asian and Pacific Worlds. (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." C-L: Comparative Area Studies. One course. Wigen

208A, S. Decentering the Cultural Map: Boundary Zones as Counter-Cores. (CZ, SS) Focus on those parts of the globe most often overlooked in conventional area-studies courses: the boundary zones between major world regions. 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. C-L: Comparative Area Studies. One course. Lewis and Wigen

210S. Anthropology and History. (SS) Prerequisites: major in history, one of the social sciences, or comparative area studies; or graduate standing. See C-L: Cultural Anthropology 207S. One course. Reddy

223S, 224S. The World Wars. (CZ) The causes, course, and consequences of World Wars I and II, from military, political, 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 whole societies. One course each. Biddle


234S. Political Economy of Development: Theories of Change in the Third World. (SS) See C-L: Political Science 234S; also C-L: Comparative Area Studies, Cultural Anthropology 234S, and Sociology 234S. One course. Staff

255E, S. Topics in Cold War History. (CZ) A study of key Cold War issues from the atomic bomb to the collapse of the Soviet Union. One course. Biddle

273S, 274S. Topics in the History of Science. (CZ) Critical stages in the evolution of scientific thought. One course each. Mauskopf

279, 280. Health, Healing, and History. (CZ) The development of medicine within the broader cultural context from prehistory to the twentieth century. One course each. English


COURSES TAUGHT IN DUKE STUDY ABROAD PROGRAMS

99. Duke-Administered Study Abroad: Special Topics in History. (CZ) Topics differ by section. One course. Staff

100, A-R, U-V. Duke-Administered Study Abroad: Advanced Special Topics in History. 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. One course. Staff
100A. Duke in Madrid: Special Topics on History. (CZ) One course. Staff
100B. Duke in Spain: Special Topics on History. (CZ) One course. Staff
100C. Duke in Britain: Special Topics on History. (CZ) One course. Staff
100E. Duke in China: Special Topics on History. (CZ) One course. Staff
100F. Duke in France: Special Topics on History. (CZ, FL) One course. Staff
100H. Duke in Andes: Special Topics on History. (CZ) One course. Staff
100I. Duke in Italy: Special Topics on History. (CZ) One course. Staff
100J. Duke in Russia: Special Topics on History. (CZ) One course. Staff
100K. Duke in Australia: Special Topics on History. (CZ) One course. Staff
100L. Duke in Germany: Special Topics on History. (CZ) One course. Staff
100M. Duke in Oxford: Special Topics on History. (CZ) One course. Staff
100N. Duke in Japan: Special Topics on History. (CZ) One course. Staff
100O. Duke in Vienna: Special Topics on History. (CZ) One course. Staff
100Q. Duke in India: Special Topics on History. (CZ) One course. Staff
100R. Duke in Venice: Special Topics on History. (CZ) One course. Staff
100U. Duke in Rome: Special Topics on History. (CZ) One course. Staff
100V. Duke in Greece: Special Topics on History. (CZ) One course. Staff

Study Abroad Seminar

100S. Study Abroad: Seminar on Historical Topics. (CZ) Register for country by the section designated in the Official Schedule of Courses. One course. Staff

COURSES ON SPECIAL TOPICS

Lower-Level Small Group Learning Experience

20S. Studies in Special Topics. (CZ) Opportunities for freshmen to engage with a specific historical issue, with emphasis on student writing. Topics vary each semester offered. One course. Staff
49S. First-Year Seminar. Topics vary each semester offered. One course. Staff

Lectures

103, 104. Lectures in Special Topics. (CZ) Individual courses in this series may be taught more than once or on a one-time basis only. One course each. Staff

Intermediate-Level Seminars

105S. Special Topics in FOCUS. (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. One course. Staff
106S. Seminar in Selected Topics. (CZ) One course. Staff

Upper-Level Small Group Learning Experience

191, 192. Independent Study. Independent Study is usually undertaken by students concurrently with the Honors Seminar or with an instructor with whom they have had a course. A proposal for directed reading and research must include a detailed description and a list of the proposed readings, and must result in a substantive paper or report. Consent of instructor and director of undergraduate studies required. One course each. Staff
195S, 196S. Junior-Senior Seminars in Special Topics. (CZ) Opportunities for juniors and seniors to research and write about 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. One course each.

197S-198S. Senior Thesis Seminar. (CZ) Designed to introduce qualified students to advanced methods of historical research and writing, and to the appraisal of critical historical issues. Open only to seniors, but not restricted to candidates for graduation with distinction. This course, when taken by a history major, is accompanied by either a year-long 195S-196S seminar, two courses at the 200 level, or 191-192 independent study, supervised by an instructor. Two courses.

299. Lectures in Special Topics. (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. One course.

299S. Special Topics. (CZ) Seminars in advanced topics, designed for seniors and graduate students. Some semesters open to seniors and graduate students; some semesters limited to graduate students only. One course.

COURSES CURRENTLY UNSCHEDULED

94. The Age of Augustus. (CZ)
101H. Structures, Science, and Society. (CZ)
101M. Asian-Pacific Region in Historical Perspective. (CZ)
101N. The Social History of Alcohol. (CZ)
109. Contemporary Global Issues. (SS)
111A. Early America to 1760. (CZ)
114B. Immigration, Migration, and Mobility of Labor: United States and the World. (CZ)
112A. America in International Affairs, 1607-1861. (CZ)
121C. American Diplomacy since 1941. (CZ)
122B. Japan: Population, Resources, and Development, 1600-1940. (CZ)
128. Comparative Social Movements. (CZ)
131A. History of Mexico and the Caribbean in the Nineteenth and Twentieth Centuries. (CZ)
135A. Germany from the Thirty Years' War to Unification in 1871. (CZ)
139A. Radical Movements in Modern Asia. (CZ)
142B. China since 1949: The People's Republic. (CZ)
151C. European Intellectual History, 1789-1848. (CZ)
151F. European Intellectual History, 1918-1968. (CZ)
154A. Society and the State in France, 1700 to the Present. (CZ)
154D. The French Revolution at 200 Years. (CZ)
155. Mexico From Pre-Columbian Times to the Present. (CZ)
157B. Rise of Modern Science: Eighteenth to the Twentieth Century. (CZ)
159S. The Palestine Problem and United States Public Policy. (CZ)
162A. Diplomatic Relations in the Western Hemisphere. (CZ)
164. India, Pakistan, and Bangladesh: 1750 to the Present. (CZ)
171B. History of Women in Modern Europe. (CZ)
172A. Comparative Perspectives on Women in Asia, Africa, and the Middle East. (CZ)
173. History of Spain from Late Medieval Times to the Present. (CZ)
174A. History of Colonial Hispanic America from Pre-Columbian Times to the Wars of Independence. (CZ)
1765. The Southern Plantation as Historical Laboratory: Research Seminar. (CZ)
179. History of South Africa, 1600-1960. (CZ)
181. Alexander the Great. (CZ)
182C. History of Greek and Roman Civil Law. (CZ)
187. History and Religions of North Africa. (CZ)
189A. Medicine in the West. (CZ) 205S. Gender and War. (CZ)
206. Origins of Afro-America. (CZ)
211A. History of Medicine in the Southern United States. (CZ)
212. The American Indian in the Revolutionary Era, 1760-1800. (CZ)
213S. Early Modern France. (CZ)
215S. The United States in International Relations: The Eighteenth and Nineteenth Centuries. (CZ)
216S. United States Diplomacy, 1890-1945. (CZ)
217. Problems in American Colonial History. (CZ)
219S. History of Science and Technology. (CZ)
220S. Problems in Comparative Labor History. (SS)
227-228. Recent United States History: Major Political and Social Movements. (CZ)
230S. Populism in Latin America. (CZ)
231S. Readings in Latin American Colonial History. (CZ)
233S. Slave Resistance and Social Control in New World Societies. (CZ)
235. Europe in the Early Middle Ages. (CZ)
237S. The Origins of Totalitarianism, 1924-1954. (CZ)
243-244. Marxism and History. (SS)
245, 246. Social and Intellectual History of China. (CZ)
247. Mughal India. (CZ)
248. History of Modern India and Pakistan, 1857 to the Present. (CZ)
249-250. Social and Intellectual History of the United States. (CZ)
252A. Construction of China in European and American Literature. (CZ)
252B. Culture and Society in Contemporary China. (CZ)
253S. European Diplomatic History, 1871-1945. (CZ)
258S. Social Conflict in Weimar and Nazi Germany. (CZ)
259. Archaic Greece. (CZ)
265S. Problems in Modern Latin American History. (SS)
269S-270S. British History, Seventeenth Century to the Present. (CZ)
271S. The Law of War. (CZ)
272S. Fin-de-siècle and Interwar Vienna: Politics, Society, and Culture. (CZ)
275S. Asian and Asian-American Women in Comparative Perspective. (CZ)
277S. The Coming of the Civil War in the United States, 1820-1861. (CZ)
281S. United States' Diplomacy since 1945. (CZ)
285S. Oral History. (SS)
288S. Germany and Japan in World War II. (CZ)
289S. War, Revolution, and Society in the Caribbean, 1700-1815. (CZ)
290S. Theoretical Bases of Social Interpretation. (SS)

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 three 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, two at the introductory level (that is, 21D, 22D; 22X, 25, 26, 53, 54, 75, 76, 91D, 92D; 92X, 93S) and eight at the 100 level or above. The ten courses are to be distributed as follows:

1. At least two courses in each of three out of the four geographic areas listed below.
2. At least four courses in the student's primary field of history. One introductory course may be counted toward the student's primary field,
and others toward the geographic distribution requirement. One course must be an upper level research seminar.

The eight 100-level and above courses are to be distributed as follows:

1. At least two upper-level pre-modern history courses (pre-1800).
2. 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 instructor.

Geographic Areas are (1) United States and Canada; (2) Europe (including Britain and Russia); (3) Latin America and Caribbean; (4) Africa, Middle East, Asia. In cases of global or comparative courses, consult the history major's handbook or contact the Office of Undergraduate Studies.


The primary field is defined as any one of the four geographic areas. In addition, a thematic area can serve as a primary field. Examples of thematic areas are (1) history of the African diaspora, (2) history of medicine, science, and technology, (3) history of women, (4) military history. Students may define other thematic areas, with approval of the director of undergraduate studies and the student's advisor. See undergraduate History Handbook for a list of courses.

Double counting: Courses can fulfill two or more requirements. For example, History 21D would count as "introductory," as "European," and for a student with primary focus on Europe, would count toward the primary area requirement. However, introductory courses outside of the FOCUS program do not count toward the pre-1800 requirement.

Advanced Placement: A student may receive course credit toward graduation for Advanced Placement history courses but the history department does not count Advanced Placement credits toward the requirements 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 1955-1965 or 1975-1985 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 (HC)

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 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 in fall semester. Information about specific offerings each term available in 04 Allen Building. Pass/fail grading only. Half course. Staff

80. House Course. Special topics course in spring semester. Information about specific offerings available each term in 04 Allen Building. Pass/fail grading only. Half course. Staff

Human Development (HDV)

Professor Gold, Director

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. One course. Staff

100. Duke-Administered Study Abroad: Advanced Special Topics in Human Development. Topics differ by section. One course. Staff


180. Psychosocial Aspects of Human Development (SS) Traces biological, cultural, behavioral, and social components of normal development throughout the human life span, with society as the context in which individuals develop over time. Introductory work in anthropology, psychology, or sociology recommended. C-L: Psychology 130 and Sociology 169. One course. Golden

190. Research Apprenticeship in Human Development. Part of the Undergraduate Program in Human Development. Supervised work may be in a laboratory, project, or organizational setting. Consent of instructor required. One course. Golden

191S. Senior Seminar in Human Development (SS) Part of the Undergraduate Program in Human Development. Consent of instructor required. One course. Gustafson or staff

192S. Special Topics in Human Development (SS) Part of the Human Development Program. Selected theoretical and methodological topics with emphasis on social change and public leadership in aging societies. One course. Staff

OTHER COURSES

Psychology

159S. Biological Psychology of Human Development (B, D, P).

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 (JUD)

Professor Shatzmiller (history), Director; Associate Professor Bland (religion), Director of Undergraduate Studies; Professors Golding (philosophy), Lerner (history), C. Meyers (religion), E. Meyers (religion), and Sanders (religion); Assistant Professors Haohen (history), Tucker (English), and 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, 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. 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 and one in the other; one additional course drawn from the list below or approved by the director of the program.

**Asian and African Languages and Literature**

188S. Modern Hebrew Literature in English Translation. (Cross-listed.) Zakim

**Classical Studies**

177. Perspectives in Archaeology. (Cross-listed.) C. Meyers, E. Meyers, Younger, and staff

**Hebrew**

1. Elementary Modern Hebrew. Zakim
63, 64. Intermediate Modern Hebrew. Zakim
1255, 1265. Advanced Modern Hebrew. (Cross-listed.) Zakim
191, 192, 193, 194. Independent Study. Staff

**History**

134A. History of Jews in the Early Middle Ages. (Cross-listed.) Shatzmiller
152. The Modern Middle East. (Cross-listed.) Y. Miller

**Medieval and Renaissance Studies**

134A. History of Jews in the Early Middle Ages. (Cross-listed.) Shatzmiller
134C. Jewish Mysticism. (Cross-listed.) Bland
135. Jewish Religious Thought. (Cross-listed.) Bland

**Religion**

40. Judaism. (Cross-listed.) Staff
100. The Old Testament/Hebrew Bible. C. Meyers, E. Meyers, or Peters
101A. Selected Studies in the Bible: Pentateuch. Staff
101B. Selected Studies in the Bible: Prophets. Staff
101C. Selected Studies in the Bible: Writings. Staff
115-116. Introduction to Biblical Hebrew. Staff
133. The Foundations of Post-Biblical Judaism. E. Meyers
134. Jewish Mysticism. (Cross-listed.) Bland
135. Jewish Religious Thought. (Cross-listed.) Bland
136. Contemporary Jewish Thought. Bland or E. Meyers
175. Archaeology and Art of the Biblical World. (Cross-listed.) C. Meyers or E. Meyers
176. Principles of Archaeological Investigation. C. Meyers or E. Meyers
177. Perspectives in Archaeology. (Cross-listed.) C. Meyers, E. Meyers, Younger, and staff
207. Hebrew Prose Narrative. (Cross-listed.) Crenshaw or LaRocca-Pitts
208. Classical Hebrew Poetry: An Introduction. (Cross-listed.) Crenshaw or LaRocca-Pitts
220. Rabbinic Hebrew. E. Meyers or staff
244. Archaeology of Palestine in Hellenistic-Roman Times. E. Meyers

**Yiddish**

1. 2. Elementary Yiddish. Staff

**SPECIAL TOPICS COURSES**

**History**

1955. The Palestine Problem. Kuniholm

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, please contact the director of the center for Judaic Studies and director of the certificate program in 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 (LST)
Associate Professor James, Chair, Council on Latin American Studies

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

The program in Latin American Studies, which is administered by the Council on Latin American 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 Council on Latin American Studies also sponsors lectures, conferences, and film festivals. Moreover, the Council and the Institute of Latin American Studies at Chapel Hill sponsor the Duke-UNC Program 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 Duke-UNC Program 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.

For further information consult the chair of the Council on Latin American Studies or the Assistant Program Coordinator 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 Duke-UNC Program 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% of course content on a Latin American topic and with term papers or other major projects focusing on a Latin American subject. To determine if specific
courses meet requirements for the certificate, students should consult the Assistant Program 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 STUDIES PROGRAM COURSES (LST)

50. Duke-Administered Study Abroad: Special Topics in Latin American Studies. Topics differ by section. One course. Staff

100. Duke-Administered Study Abroad: Advanced Special Topics in Latin American Studies. Topics differ by section. One course. Staff

198. Special Topics in Latin American Studies. (AL, 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. C-L: Comparative Area Studies and Spanish 124. One course. Staff

200S. Seminar in Latin American Studies. Interdisciplinary study of geographical, historical, economic, governmental, political, and cultural aspects of modern Latin America and the current issues facing the region. Specific topics will vary from year to year. For seniors and graduate students. One course. Staff

202S. Research Methods and Bibliographic Instruction in Latin American Studies. 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. One course. Calvo

LATIN AMERICAN AREA COURSES

Regularly Scheduled Courses

African and African-American Studies
70, 71. The Third World and the West. (Cross-listed.) Staff
127A. The Caribbean, 1492-1700. (Cross-listed.) Gaspar
127B. The Caribbean in the Eighteenth Century. (Cross-listed.) Gaspar
138S. Francophone Literature. (Cross-listed.) Jonassaint
168S. The Atlantic Slave Trade. (Cross-listed.) Gaspar
170. Afro-Brazilian Culture and History. (Cross-listed.) French

Art History
133. Colonial Art of the Andean Region. Staff

Asian and African Languages and Literature
168S. Francophone Literature. (Cross-listed.) Jonassaint

Biology
134L. Fundamentals of Tropical Biology, Shelley
135L. Research Methods in Tropical Biology. Staff
215. Tropical Ecology. (Cross-listed.) Terborgh

Cultural Anthropology
64S. Globalization and Latin America. Starn
129. Introduction to North America. (Cross-listed.) Thompson and Vega
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Instructor(s)</th>
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<tbody>
<tr>
<td>140S</td>
<td>Cultural Diversity in the Andes. (Cross-listed.) Staff</td>
<td>Staff</td>
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<tr>
<td>199A, S</td>
<td>The Articulation of Culture in the Bolivian Andes. (Cross-listed.) Staff</td>
<td>Staff</td>
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<tr>
<td>199B</td>
<td>Bolivian Cultural Anthropology. Staff</td>
<td>Staff</td>
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<tr>
<td>199C</td>
<td>Bolivian Culture. Staff</td>
<td>Staff</td>
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<tr>
<td>199E, S</td>
<td>Colonialism, Ethnicity, and Gender in Postrevolutionary Bolivia. (Cross-listed.) Staff</td>
<td>Staff</td>
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<tr>
<td>208S</td>
<td>Postcolonial Anthropology. Ewing, Litzinger, Silverblatt, or Starn</td>
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<tr>
<td>Economics</td>
<td>115. Introduction to North America. (Cross-listed.) Thompson and Vega</td>
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<td></td>
<td>175. Economics of Modern Latin America. (Cross-listed.) Staff</td>
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<td>275. Economics of Modern Latin America. (Cross-listed.) Staff</td>
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<td></td>
<td>286S. Economic Policy-Making in Developing Countries. (Cross-listed.) Conrad</td>
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<td>Environment</td>
<td>217. Tropical Ecology. (Cross-listed.) Terborgh</td>
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<td>275S. Protected Areas, Tourism, and Local Development. Healy</td>
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<td></td>
<td>277. Conservation and Sustainable Development I: Concepts and Methods. Staff</td>
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<td>278. Conservation and Sustainable Development II: Integrated Problem Solving. Staff</td>
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<tr>
<td>French</td>
<td>168S. Francophone Literature. (Cross-listed.) Jonassaint</td>
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<tr>
<td>History</td>
<td>75, 76. The Third World and the West. (Cross-listed.) Staff</td>
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<td>108F. Introduction to North America. (Cross-listed.) Thompson and Vega</td>
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<td></td>
<td>127A. The Caribbean, 1492-1700. (Cross-listed.) Gaspar</td>
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<td>127B. The Caribbean in the Eighteenth Century. (Cross-listed.) Gaspar</td>
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<td>131B. The Spanish Caribbean. (Cross-listed.) TePaske</td>
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<td></td>
<td>136A. Introduction to Contemporary Latin American Reality. (Cross-listed.) James</td>
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<td>136B. Biography and Politics in Latin America. (Cross-listed.) French</td>
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<td></td>
<td>136C. Nineteenth-Century Latin America: Building Postcolonial Nations. (Cross-listed.) Staff</td>
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<td>168A. The Emergence of the Atlantic Basin to 1713. Gaspar</td>
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<td>168B. S. The Atlantic Slave Trade. (Cross-listed.) Gaspar</td>
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<td></td>
<td>170C. Afro-Brazilian Culture and History. (Cross-listed.) French</td>
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<td>174B. Modern Latin America. (Cross-listed.) Staff</td>
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<tr>
<td>Literature</td>
<td>141. International Popular Culture. (Cross-listed.) Davidson, Gaines, Radway, or Willis</td>
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<td>North American Studies</td>
<td>97. Introduction to Mexico. Staff</td>
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<td></td>
<td>110. Introduction to North America. (Cross-listed.) Thompson and Vega</td>
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<tr>
<td>Political Science</td>
<td>119. Introduction to North America (B). (Cross-listed.) Thompson and Vega</td>
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<td></td>
<td>145. Political Analysis for Public Policy-Making (A). (Cross-listed.) Ascher, Frank, Hamilton, M ayer, or M ickiewicz</td>
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<td></td>
<td>151A. Introduction to Latin American Politics (B). (Cross-listed.) Staff</td>
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<td></td>
<td>151B. Presidents, Parties, and Legislatures: The Institutions of Modern Latin American Democracies (B). (Cross-listed.) M organstern</td>
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<td></td>
<td>151D. Introduction to Latin American Politics (B). (Cross-listed.) M organstern</td>
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<td></td>
<td>253S. Comparative Government and the Study of Latin America (B). (Cross-listed.) M organstern</td>
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<td>284S. Public Policy Process in Developing Countries (B). (Cross-listed.) Ascher</td>
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<tr>
<td>Portuguese</td>
<td>111S. Research Seminar in Contemporary Lusophone Issues. (Cross-listed.) Damasceno</td>
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Public Policy Studies
114. Political Analysis for Public Policy-Making. (Cross-listed.) Ascher, Frank, Hamilton, Mayer, or Mickiewicz
115. Introduction to North America. (Cross-listed.) Thompson and Vega
284S. Public Policy Process in Developing Countries. (Cross-listed.) Ascher
286S. Economic Policy-Making in Developing Countries. (Cross-listed.) Conrad

Romance Studies
125. Introduction to North America. (Cross-listed.) Thompson and Vega

Sociology
109. Introduction to North America. (Cross-listed.) Thompson and Vega
126. Third World Development. (Cross-listed.) Buchmann or Gereffi
188S, S. Colonialism, Ethnicity, and Gender in Postrevolutionary Bolivia. (Cross-listed.) Staff

Spanish
115, 116. Introduction to Spanish-American Literature. (Cross-listed.) Staff
117S. Spanish-American Short Fiction. Pérez-Firmat or staff
121. Latin-American Literature in Translation. (Cross-listed.) Dorfman
132A, S. The Articulation of Culture in the Bolivian Andes. (Cross-listed.) Staff
132B, S. Colonialism, Ethnicity, and Gender in Postrevolutionary Bolivia. (Cross-listed.) Staff
1340A, S. Bolivian Contemporary Short Fiction. Staff
140C, S. Cultural Diversity in the Andes. (Cross-listed.) Staff
140E. Film and Political Culture in Contemporary Bolivia. Staff
143S. Literature of the Discovery and Conquest of America. (Cross-listed.) Pérez-Firmat
144S. Spanish-American Literature of Identity. (Cross-listed.) Pérez-Firmat
145S. Literature of the Hispanic Minorities of the United States. (Cross-listed.) Pérez-Firmat
146. The Spanish-American Novel. (Cross-listed.) Moreiras or staff
147S. Latin-American Women Writers. (Cross-listed.) Staff
148S. Colonial and Postcolonial Studies in Latin America and the Caribbean. (Cross-listed.) Mignolo
175S. Hispanic Literature and Popular Culture. (Cross-listed.) Sieburth

Special Topics Courses, Offered Periodically

Cultural Anthropology
280S. Culture, Power and History. Starn
280S. Ethnohistorical Methods: Colonial Encounters. Silverblatt

History
195S. Seminar in Latin American History. Staff

Literature
151S. Caribbean Poetry. Davis

North American Studies
283S. Seminar in North American Studies. Staff

Political Science
2998. Political Economy of Development in Latin America and Asia. Staff

Portuguese
200S. Seminar in Luso-Brazilian Literature. Damasceno
202S. Topics in Portuguese and Brazilian Literature and Culture. Damasceno

Romance Studies
124. Modernity, Ethnicity and Colonization. Mignolo
Sociology
110D. Comparative Sociology: Latin America. Gereffi

Spanish
122S. Topics in Latin American Literatures and Cultures. Staff
131. Special Topics in Latin American Studies. Staff
248. Studies in Spanish-American Literature. Staff

Linguistics (LIN)
Core faculty: Professor Andrews, Chair; Associate Professor Tetel, Director of Undergraduate Studies; Professors Apte (cultural anthropology), Butters (English), Holloway (English), O’Barr (cultural anthropology), Thomas (romance studies); Associate Professors Day (psychology), Mazuka (psychology), Posey (philosophy), Quinn (cultural anthropology), Rasmussen (German); Assistant Professor Walther (German); Adjunct Assistant Professor Keul (German). Affiliated faculty: Professors Biermann (computer science), Borchardt (German), Cooke (Asian and African languages and literature), Flanagan (philosophy), Garcia-Gomez (romance studies), Hasher (psychology), Rubin (psychology), Herrnstein Smith (English and literature); Professor of the Practice Gopen (English)

A major is available in this program.

From the earliest philosophers to modern neuroscientists, researchers from a wide range of disciplines have explored a diverse range of issues concerning the human capacity for language and the diversity of the world’s languages. Linguists work at the intersection of these issues and define linguistics as the science of language and languages. During the last 150 years, linguists have developed a variety of theoretical paradigms to describe and explain language history, dialect variation, cross-cultural similarities and differences, the neurological processing and production of language, and the evolutionary emergence of language.

The linguistics major at Duke is unusual in its range of theoretical approaches coupled to the study of languages of the world. The required courses for the major stress empirical methods and the global data base; the theory courses expose the student to the perspectives offered by historical and comparative linguistics, structural linguistics, generative linguistics, sociolinguistics, semiotics, discourse analysis, philosophy, cognitive linguistics and psycholinguistics. The major maintains the traditional and mainstream body of linguistic inquiry and, at the same time, encourages exploration of the most recent developments in language study that issue from cultural and literary theory and the biological sciences.

LINGUISTICS PROGRAM COURSES
50. Duke-Administered Study Abroad: Special Topics in Linguistics. Topics differ by section. One course. Staff
100. Duke-Administered Study Abroad: Advanced Special Topics in Linguistics. Topics differ by section. One course. Staff
101. Introduction to Linguistics. (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. C-L: Comparative Area Studies, Cultural Anthropology 107, and English 111. One course. Butters or Tetel
102. Languages of the World. (SS) The major languages of the world viewed in the context of the communicative and significant 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. 


199. Special Topics. (SS) Topics to be announced. One course. Staff


299. Special Topics. (SS) Topics to be announced. One course. Staff

LINGUISTICS COURSES LISTED BY DEPARTMENT

Regularly Scheduled Courses

Cultural Anthropology
107. Introduction to Linguistics. (Cross-listed.) Butters or Tetel
110. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O'Barr, or Wilson
112. Current Topics in Linguistics. (Cross-listed.) Staff
114. Languages of the World. (Cross-listed.) Andrews or Tetel
119. Language, Culture, and Society. (Cross-listed.) Apte, O'Barr, or Strauss
174. Gender and Language. (Cross-listed.) Andrews
250S. The Cultural Analysis of Discourse. Apte, Quinn, or Strauss

Computer Science
274S. Computational Linguistics Seminar. Biermann

English
111. Introduction to Linguistics. (Cross-listed.) Butters or Tetel
112. English Historical Linguistics. Butters or Tetel
114. Languages of the World. (Cross-listed.) Andrews or Tetel
115. Gender and Language. (Cross-listed.) Andrews
119. Current Topics in Linguistics. (Cross-listed.) Staff
120. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O'Barr, or Wilson
208. History of the English Language. (Cross-listed.) Butters or Tetel

French
108. Advanced Translation and Stylistics. Thomas or staff
211. History of the French Language. (Cross-listed.) Thomas
212. Structure of French. Thomas

German
260. History of the German Language. (Cross-listed.) Rasmussen
261. Second Language Acquisition Theory and Practice. Walther

*Coursework in language acquisition is given under individual departments.
Medieval and Renaissance Studies
208. History of the English Language. (Cross-listed.) Butters or J. Tetel
210A. History of the Spanish Language. (Cross-listed.) Garci-Gómez
210B. History of the French Language. (Cross-listed.) Thomas
260B. History of the German Language. (Cross-listed.) Rasmussen

Philosophy
103. Symbolic Logic. Brandon, Güzeldere, or Posy
109. Philosophy of Language. Posy
112. Philosophy of Mind. Flanagan, Güzeldere, or Sanford
228S. Recent and Contemporary Philosophy. Posy

Psychology
*92. Cognitive Psychology: Introduction and Survey (C). Day, Hasher, Rubin, or Serra
125. Memory and the Brain (B). Swartzwelder
134. Psychology of Language (C). (Cross-listed.) Day
143S. Mind, Brain, and Computers (B, C). Schmajuk
†153S. Issues in Language Development (C, D). Mazuka
*220S. Psycholinguistics (C). Day or Mazuka

Religion
229S. Old Church Slavonic. (Cross-listed.) Staff

Russian
174. Gender and Language. (Cross-listed.) Andrews
185S. Introduction to Slavic Linguistics. Andrews
186S. History of the Russian Language. Andrews
201S. Topics in Comparative Slavic Linguistics. Andrews
203S. Old Church Slavonic. (Cross-listed.) Staff
207S. Semantics. Andrews

Sociology
160. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O’Barr, or Wilson

Spanish
109S. Structure of Spanish. Staff
210. History of the Spanish Language. (Cross-listed.) Garci-Gómez

Women’s Studies
174. Gender and Language. (Cross-listed.) Andrews

Special Topics Courses, offered periodically:

Cultural Anthropology
112. Current Topics in Linguistics. Linguistics Law (Cross-listed.) Staff

English
*48A. Focus Program on Writing or Language: Language, Mind, and Human Behavior. Tetel
119. Current Topics in Linguistics. Linguistics and Pragmatics or Language and Law (Cross-listed.) Staff

Romance Studies
*210S. Topics in Linguistics. Staff

Slavic Languages and Literature
Russian
119S. Topics in Slavic and Northern European Languages. Staff

*Coursework in cognitive science is given under individual departments
†Coursework in language acquisition is given under individual departments
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.

MAJOR REQUIREMENTS

Introductory Courses (2):
- Introduction to Linguistics (Cross-listed.)
- Languages of the World (Cross-listed.)

Theory: Three (3) courses in the study of theoretical linguistics. Courses to be chosen from the following list:

Regularly Scheduled Courses:
- Computer Science
  274S. Computational Linguistics Seminar
- Cultural Anthropology
  119. Language, Culture, and Society
  250S. Culture and Discourse
- English
  112. English Historical Linguistics
  205. Semiotics and Linguistics (Cross-listed.)
- Philosophy
  103. Symbolic Logic
  109. Philosophy of Language
- Psychology
  134. Psychology of Language
  *2205. Psycholinguistics
- Slavic Languages and Literature
  Russian
  174. Gender and Language (Cross-listed.)
  205. Semiotics and Linguistics
  207. Semantics

Special Topics Courses, offered periodically:
- Cultural Anthropology
  112. Current Topics in Linguistics (Cross-listed.)
- English
  119. Current Topics in Linguistics (Cross-listed.)

Disciplinary Concentration. 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

* Coursework in cognitive science is given under individual departments
requirement. Qualifying courses are listed below following the complete description of major requirements.

* Cognitive Science
  Cultural Anthropology
  English
  Germanic
  † Language Acquisition
  Philosophy
  Psychology
  Romance Studies
  Slavic

Senior Seminar in Linguistics. (Linguistics 215S). The capstone course for the major, usually taken in the senior year.

Language Requirement. Two (2) semester courses in a single language 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; Professor Kaplan, Director of Undergraduate Studies; Professors Lentricchia, Mignolo, Moi, Radway, Rolleston, B. H. Smith, Stewart, Surin, and Thomas; Associate Professors Gaines, Lahusen, Lubiano, Moreiras, and Willis; Assistant Professors Fischer and Hardt; Research Professors Dorfman and Mudimbe. Affiliated faculty: Professors Burrian (classical studies), Clum (English), Cooke (Asian and African languages and literature), Davidson (English), Davis (classical studies), Orr (romance studies), Torgovnick (English), and Wharton (art history); Associate Professors Morton (Germanic languages and literature), Moses (English), Powell (art history), Stiles (art history), and Wang (Asian and African languages and literature); Assistant Professors Gheth (Slavic languages and literatures) and Risholm (Germanic languages and literature); Associate Professor of the Practice Khanna (Asian and African languages and literature)

A major is available in this program.

INTRODUCTORY

205. Special Topics: Introduction to Literature. (AL) Introduction to the study of literature and other forms of cultural expression, such as film. Different introductory

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*Coursework in cognitive science is given under individual departments
†Coursework in language acquisition is given under individual departments
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. One course. Staff

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

50S. Special Topics in the FOCUS Program. (AL) Designed especially for first-year
students interested in world literature, culture, and critical theory. Topics vary each
semester offered. One course. Staff

FUNDAMENTALS

90. Perspectives on Literary and Cultural Study. (AL) An introduction to four areas of
investigation vital to the Literature Program: film and video, cultural studies, literary
studies, and theory. May be team-taught by several members of the program with
expertise in one of these areas. Focus on a centralizing theme, for example, the family,
the trial, or celebrity. Required for majors; open to nonmajors. One course. Staff

95. Special Topics in Language. (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. One course. Staff

96. Contemporary Literary and Cultural Theory: An Introduction. (AL) The major
concepts and principles of contemporary literary theory. "Poststructural" approaches
to language and textual history, the invention of "postmodernism," and theories of history
and literature. Vocabulary and tools necessary for reading and understanding
contemporary critical and theoretical texts. One course.

98. Introduction to the Study of Literature and Society. (AL) 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. C-L:
Comparative Area Studies and Perspectives on Marxism and Society. One course.
Lentricchia or Willis

99. Great Books in the Western Tradition. (AL) 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. One course.
Burian,
Janan, or Morton

FILM/TV STUDIES

100. Introduction to Cultural Studies. (AL) See C-L: English 101B; also C-L: Film and
Video, and Perspectives on Marxism and Society. One course. Gaines, Radway, Surin,
Torgovnick, or Willis

110. Introduction to Film. (AL) Not open to students who have taken Drama 132. See
C-L: English 101A; also C-L: Drama 173, and Film and Video 130. One course. Gaines,
Radway, Surin, Torgovnick, or Willis

111S. Special Topics in Advanced Film, Video, or Audio Production. (AL) Also offered
as Film and Video 101S. Prerequisite: Drama 173, English 101A, or Literature 110. One
course. Staff
112. Special Topics in National Cinema. (AL) Understanding nationhood through film culture, industrial base, reception history, and critical context for development of national cinemas. Exemplary films from a range of periods. C-L: Film and Video. One course. Staff

113. Studies in Comparative World Cinema. (AL) 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. C-L: English 122, Film and Video, German 113, and Russian 113. One course. Staff

114. Film Theory. (AL) Recent critical developments in Marxist aesthetics, structuralism, semiotics of the image, feminist film theory. Both experimental and Hollywood narrative films. C-L: Film and Video and Women's Studies. One course. Staff

115. Sexualities in Film and Video. (AL) 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 as well as related literary and critical texts. C-L: English 124 and Film and Video. One course. Clum or Gaines

116. Studies in Film History. (AL) See C-L: English 185; also C-L: Drama 174, and Film and Video. One course. Clum, Gaines, or Jameson

117. Documentary Film History. (AL, CZ) See C-L: History 150A; also C-L: Film and Video, Perspectives on Marxism and Society, and Political Science 198. One course. Gaines, Paletz, or Wood

118. Experimental Film and Video. (AL) Historical overview of European and American movements from surrealism and Dada to the present; parallels between cinema and significant schools in the other arts. Special attention to the relationship between form and technological changes in the camera; the conditions of reception, from public film exhibition to home video intimacy. C-L: Film and Video. One course. Staff

119. Television, Technology, and Culture. (AL) Prerequisite: Drama 173, English 101A, or Literature 114. See C-L: English 190; also C-L: Film and Video. One course. Gaines

120A. Special Topics in Television Genres. (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. C-L: Film and Video. One course. Staff

120B. Special Topics in Film. (AL) Close study of a major genre, period, or director. C-L: Film and Video. One course. Staff

GENDER STUDIES

121. Special Topics in Women in Literature. (AL) Literary and/or theoretical approaches to questions concerning the representation of women and/or femininity in literature. C-L: Women's Studies. One course. Staff

123. Special Topics in Women Writers. (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. C-L: Women's Studies. One course. Staff

125. Special Topics in Gender and Sexuality. (AL) Different literary and/or theoretical approaches to questions of sex, gender, and sexuality. C-L: Women's Studies. One course. Staff
STUDIES IN CULTURE

131. Special Topics in Culture and the Arts. (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. One course. Staff

132. Special Topics in the Study of Literature in Relation to Other Disciplines. (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. One course. Staff

140. History of Mass Culture in the United States. (AL) See C-L: English 156; also C-L: Film and Video. One course. Gaines, Radway, Torgovnick, or Willis

141. International Popular Culture. (AL) Basic concepts in critical theory; folk vs. mass culture, appropriation, resistance, hegemony, as studied through Japanese, Chinese, Australian, British, East Indian, and Latin American popular forms. American imperialism and the exportation of mass forms juxtaposed with international reception of popular fiction, characters, music, and television programs. C-L: Comparative Area Studies, Film and Video, and Latin American Studies. One course. Davidson, Gaines, Radway, or Willis

143. Problems in Global Culture. (AL) The study of cultural production from across the world, with a special emphasis on mass media, fiction, and literature. A basically comparatist, multigenre approach. One course. Dorfman

144S. Special Topics in Literature and Revolution. (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. One course. Staff

145. Special Topics in Science and Culture. (AL) Approaches to the question of science and technology in a cultural context. Readings by scientists and scholars of science and society. One course. Staff

LITERARY STUDIES

150. Special Topics in Literary Movements. (AL) Historical, theoretical, and/or formal approaches to literary movements in different periods and cultures. One course. Staff

151. Special Topics in Literary Genres. (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. One course. Staff

154. Special Topics in Individual Authors. (AL) Biographic, historical, and/or stylistic approaches to one or two individual authors, as well as critical debates concerning their work. One course. Staff

AREA STUDIES

161. Special Topics in Third World or Postcolonial Literature and Cultures. (AL) 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. C-L: Comparative Area Studies. One course. Ferraro, Moses, or Willis

162. Special Topics in Literature and National Cultures, Ethnicity, Race. (AL) 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? C-L: Comparative Area Studies and Perspectives on Marxism and Society. One course. Staff

ADVANCED UNDERGRADUATE STUDIES

181. Marxism and Society. (SS) See C-L: Cultural Anthropology 139; also C-L: Comparative Area Studies, Education 139, History 186, Perspectives on Marxism and Society, and Sociology 139. One course. Staff

182. Special Topics in Theory. (AL) An advanced investigation of major concepts and principles in literary and/or cultural theory. Contents and methods vary with instructors. One course. Staff

190S. Senior Seminar. (AL) Topics vary each semester offered. One course. Staff

STUDY AWAY FROM DUKE

52. Duke-Administered Study Abroad: Special Topics in Literature. Topics differ by section. One course. Staff

101. Duke-Administered Study Abroad: Advanced Special Topics in Literature. Topics differ by section. One course. Staff

195. Special Topics in World Media. (AL) Studies in the media and society in a national or international setting; offered only in a Duke study abroad program. One course. Staff

196. Special Topics in World Literature and Culture. (AL) Studies in literature and culture in a national or comparatist mode; offered only in a Duke study abroad program. One course. Staff

197S. Special Topics in the United States Culture Industries. (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. C-L: Film and Video. One course. Staff

INDEPENDENT STUDY AND SENIOR/GRADUATE COURSES

199. 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. One course. Staff


212. Studies in Narrative. (AL) Topics to vary. One course. Staff

214. Gender, Nationalities, and Russian Literary Traditions. (AL, CZ) See C-L: Russian 214; also C-L: Comparative Area Studies, and Women's Studies. One course. Gheith

251. History of Criticism. (AL, CZ) A historical survey of critical and philosophical concepts affecting the definition and evaluation of literature from Plato through the nineteenth century. One course. Hardt, Jameson, Lentricchia, Moreiras, or Stewart

252. Criticism and Literary Theory in the Twentieth Century. (AL) 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. One course. Jameson or Rolleston, with guest lecturers
260. Twentieth-Century Reconceptions of Knowledge and Science. (AL)
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. C-L: English 280. One course. Herrnstein Smith

279. The Bestseller: Cultural Populism in the 1990s' China. (AL)
See C-L: Asian and African Languages and Literature 259; also C-L: Comparative Area Studies, and Cultural Anthropology 263. One course. Wang

280. Semiotics for Literature. (AL)
See C-L: French 223. One course. Thomas

281. Paradigms of Modern Thought. (AL, CZ)
Specialized study of the work of individual thinkers who have modified our conceptions of human reality and social and cultural history, with special emphasis on the form and linguistic structures of their texts considered as "language experiments." Topics will vary from year to year, including: Marx and Freud; J.-P. Sartre; Walter Benjamin; etc. One course. Jameson, Moi, U dimbe, or Surin

284. The Intellectual as Writer. (AL, CZ)
History and theory of the literary role of the intellectual in society (e.g., in Augustan Rome, the late middle ages, the Renaissance, America, Latin America). One course. Jameson, Lentricchia, Moi, Udimbe, or Surin

285. Literature and Ideology. (AL, CZ)
The theoretical problem of the relationship between literature and ideology, explored through the cultural history of genres, major writers, or aesthetic movements. One course. Jameson, Lentricchia, or Udimbe

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). One course. Fish

289. Topics in Feminist Theory.
One course. Moi, Radway, or Tompkins

291. Topics in Popular Culture and the Media. (AL)
One course. Radway, Tompkins, or Willis

292. Topics in Non-Western Literature and Culture. (AL, CZ)
One course. Udimbe

293. Special Topics in Literature and History. (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. One course. Jameson, Kaplan, or Orr

294. Theories of the Image. (AL)
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. One course. Davidson, Gaines, or Jameson

295. Representation in a Global Perspective. (AL)
Problems of representation approached in ways that cross and question the conventional boundaries between First and Third World. Interdisciplinary format, open to exploration of historical, philosophical, archeological, and anthropological texts as well as literary and visual forms of representation. One course. Dorfman, Jameson, or Mignolo

297. Topics in Cultural Studies. (AL)
One course. Gaines, Radway, Surin, and staff
298. Topics in Philosophy and Literature. (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. One course. Flanagan, Jameson, Mudimbe, and Surin

299. Universalism in Twentieth-Century Thought. (AL, CZ) The Enlightenment tradition and its critical reception in the twentieth century. Readings range from classic Enlightenment texts to contemporary texts. One course. Staff

COURSES CURRENTLY UNSCHEDULED

122. Feminism in Twentieth-Century Art. (AL)
163. The Canadian Image: Cultural Production in French and English Canada. (AL)
211. Theory and Practice of Literary Translation. (AL)
254. Introduction to Feminism. (AL)

THE MAJOR

All students must be able to demonstrate reading knowledge of at least one foreign language either through advanced placement or completion of the appropriate coursework. In addition, literature students will be asked to fulfill the requirements in one of two tracks. When students declare the literature major, they will be asked to inform the director of undergraduate studies of the track selected and to work out a tentative course of study.

(1) Literature and Cultural Theory
This track enables students to emphasize a theoretical and comparative perspective in the study of literature. Students should develop a coherent rationale for the kind of comparisons they are undertaking (for example, of specific national literatures, within a particular historical period), and take an appropriate number of more theoretical courses as well. Students must take a total of ten courses, eight of which must be at the 100-level or above, distributed in the following manner:

Literature 90; one (1) introductory course appropriate to the student’s particular interests (from among courses numbered 90 through 100, inclusive); five (5) courses at the level of 100 or above in the Undergraduate Program in Literature, to be approved by the advisor; two (2) courses in literature taught in a foreign language, also to be approved by the advisor (the topics, periods, and foci of these courses to intersect in some way with the courses elected from within the Literature Program); Literature 190S (Senior Seminar)

(2) Literature and Film/TV Studies
This course has been designed to meet the needs of the many students who wish to elect a literature major, but who want to concentrate more specifically upon Film/TV studies. Literature majors electing this track may also pursue the Film and Video Certificate, but they may count only two courses taken to satisfy the requirements of the Literature and Film/TV Studies track toward the certificate. (See Film and Video Certificate entry in this bulletin.)

Students seeking to satisfy the requirements of this track must take a total of ten courses, eight of which must be at the 100-level or above, distributed in the following manner:

Literature 90, 100, 110, 190S (Senior Seminar); three (3) courses in the Undergraduate Program in Literature approved by the advisor; two (2) courses from among those listed in the Film and Video Program Core Courses or one (1) 100-level Film/TV Studies course and one (1) 100-level FV (Film and Video) production course; one (1) literature course in a foreign language at the 100-level or above.
Departmental Graduation with Distinction

Students wishing to graduate with distinction in Literature will take the Senior Seminar, Literature 190, in both the fall and spring semesters to complete a year-long thesis project. Students must apply for this Distinction sequence by February 15 of the junior year. Applicants must have completed at least two Literature Program courses and one course in the literature of a foreign language and have a minimum B+ average in those courses. Applicants should apply to the director of undergraduate studies and must include a writing sample, a letter from one of their instructors, and the name of a thesis advisor. The Literature Program's Distinction Committee, composed of three faculty members—the thesis advisor, the instructor of the senior seminar, and the director of undergraduate studies—will evaluate the applications and the final theses themselves. Students not awarded distinction will receive graded credit for Literature 190.

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; Professor Forward (environment and zoology), Assistant Director and Director of Undergraduate Studies; Professors Barber (botany, earth and ocean sciences, environment, and zoology), C. Bonaventura (cell biology and environment), J. Bonaventura (cell biology and environment), Crowder (environment and zoology), and Ramsus (botany and environment); Associate Professor Rittschof (environment and zoology); Professor Emeritus Bookhout (zoology); Associate Professor of the Practice Kirby-Smith (environment); Assistant Professor of the Practice of Marine Conservation Ecology Read (environment); Assistant Research Professor McClellan-Green (environment)

The interdisciplinary program in marine sciences provides students with a unique opportunity to live and study at the Duke University Nicholas School of the Environment 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.

The fall and spring semesters are designed for juniors and seniors. Participation in either the fall or spring semester is possible for all majors with appropriate preparation. Before attending a semester program, it is advised that students have completed introductory college courses in biology, chemistry, and mathematics. Students wishing to apply to the fall or the spring semester must submit a completed application to the Admissions Office, Duke University Nicholas School of the Environment, Marine Laboratory, 135 Duke Marine Lab Road, Beaufort, North Carolina 28516-9721. Most applications are received prior to Duke's registration period for 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 introductory course in marine biology (Biology 10L), designed specifically for students not majoring in a natural science. Applications for summer courses must be accompanied by a current academic transcript and sent to the address indicated above. Most applications are submitted by
the end of March; however, those students applying for a summer tuition scholarship should submit their application by March 1.

A number of summer tuition scholarships are available on a competitive basis. Please consult the 1999-2000 Bulletin of the Duke University Marine Laboratory for specific requirements or contact the admissions office of the Marine Laboratory.

THE BEAUFORT TO BERMUDA 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 in environmental science and policy at two distinctive locations: Beaufort on the North Carolina coastal plain with its marshlands, estuaries, continental shelf, and the Gulf Stream; Bermuda with its intertidal 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 in their third or fourth year of study and only for those with adequate preparation in the natural and social sciences. Students will reside at each campus for one-half semester. During the compressed seven-week session, they will take two intensive courses selected from among five courses offered at each campus. One group will begin the program in Beaufort; the other in Bermuda. At mid-semester, the groups will trade campuses. Enrollment is limited. Early application is recommended. Further information may be obtained from the admissions office at Beaufort (252-504-7502).

FALL SPRING, OR SUMMER COURSES AT BEAUFORT

The courses below are described in the bulletin listings of the specified departments. See also the 1999-00 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. Kenney
109. Conservation Biology and Policy. Prerequisites: introductory biology; suggested: a policy and/or introductory ecology course. Crowder (Beaufort) and Rubenstein (visiting summer faculty)
114L. Biological Oceanography. Prerequisite: Biology 25L. Ramus or staff (Beaufort); Nelson and Steinberg (Bermuda)
123. Analysis of Ocean Ecosystems. Prerequisite: one year of biology, one year of chemistry, or consent of instructor. Barber
126. Marine Mammals. Prerequisite: introductory biology. Read or staff
126L. Marine Mammals. Prerequisite: introductory biology. Read or staff
127L. Marine Microbial Ecology. Prerequisites: introductory biology and chemistry. Bates and Carlson (Bermuda)
128L. Estuarine Ecology. Prerequisites: introductory biology and chemistry. Kirby-Smith
129L. Marine Ecology. Prerequisite: introductory biology. Crowder or Kirby-Smith (Beaufort); Lipschultz; and Smith (Bermuda)
132L. Marine Biodiversity. Prerequisite: introductory biology. Barnes and Coates (Bermuda)
133S. Molecular Approaches to Questions of Physiology, Ecology, and Evolution in the Marine Environment. Prerequisite: introductory biology. Trapido-Rosenthal (Bermuda)
150L. Physiology of Marine Animals. Prerequisites: Biology 25L and Chemistry 12L. Forward
155L. Biochemistry of Marine Animals. Prerequisites: Biology 25L; and Chemistry 11L, 12L. McClellan-Green (spring); Rittschof (fall and summer)

176L. Marine Invertebrate Zoology. Prerequisite: Biology 25L. Dimock (Beaufort) or Kirby-Smith (Beaufort); Barnes and Coates (Bermuda)

218L. Barrier Island Ecology. Prerequisite: Biology 25L or equivalent; suggested: course in botany or ecology. (Cross-listed.) Evans, Peterson, and Wells (visiting summer faculty)

**Cell Biology**

243. Environmental Biochemistry. Prerequisite: organic chemistry. (Cross-listed.) C. Bonaventura

244L. Molecular and Cellular Processes in Marine Organisms. Prerequisite: organic chemistry. (Cross-listed.) C. Bonaventura and M. McClellan-Green

**Earth and Ocean Sciences (GEO)**

201L. Physical Processes in Coastal Environments. Prerequisites: Mathematics 31 and 32. (Cross-listed.) Staff

202. Beach and Island Geological Processes. Pilkey

205. Geological Oceanography. (Cross-listed.) Staff

**Environment**

121. Climate Change: A Global Perspective. Prerequisite: one year of chemistry. Malmquist and Murnane (Bermuda)

122S. Climate-Related Hazards and Humanity. Malmquist (Bermuda)

132S. Current Topics in Oceanography and Marine Biology. Prerequisite: introductory biology. Staff (Bermuda)

133. Molecular Approaches to Questions of Physiology, Ecology, and Evolution in the Marine Environment. Prerequisite: introductory biology. (Cross-listed.) Trapido-Rosenthal (Bermuda)

140. A Scientist's Perspective on Environmental Principles, Policy, and Legislation. Bates and Connolly (Bermuda)

218L. Barrier Island Ecology. Prerequisite: Biology 25L or equivalent; suggested: course in botany or ecology. (Cross-listed.) Evans, Peterson, and Wells (visiting summer faculty)

222L. Physical Processes in Coastal Environments. Prerequisites: Mathematics 31 and 32. (Cross-listed.) Staff

225L. Coastal Ecotoxicology and Pollution. Prerequisites: introductory chemistry and biology. Kenney

243. Environmental Biochemistry. Prerequisite: organic chemistry. (Cross-listed.) C. Bonaventura

244L. Molecular and Cellular Processes in Marine Organisms. Prerequisite: organic chemistry. (Cross-listed.) C. Bonaventura and M. McClellan-Green

256S. Seminar in Ocean Sciences. Staff

269S. Advanced Topics in Marine Ecology. (Cross-listed.) Crowder

273. Marine Fisheries Policy. Orbach

276. Marine Policy. (Cross-listed.) Orbach

291. Geological Oceanography. (Cross-listed.) Staff

**Public Policy Studies**

197. Marine Policy. (Cross-listed.) Orbach

**Special Topics Courses**

Biology 191, 192. Independent Study. One course each. Staff

Biology 193T, 194T. Tutorial. One course each. Staff


Cell Biology 210. Independent Study. Staff

Environment 191, 192. Independent Study. One course each. Staff

Geology 191, 192. Independent Study. One course each. Staff

Geology 195. Independent Study for Nonmajors. One course. Staff
Markets and Management Studies

Professor Gereffi, Director

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

The program offers students the opportunity to take a cluster of courses dealing with problems of how organizations are formed and managed, how transactions between people and organizations are structured in markets, how and why patterns of consumption change, what distinguishes good from bad management in both the practical and ethical sense, how approaches to management and marketing have changed over time, and how these approaches vary from one country or one sector of the economy to another. The program is designed to meet the needs of Duke undergraduates who wish to combine their current course of study with preparation for careers in business and management, or related graduate study.

In addition to offering courses and a certificate on completion of the requirements, the Markets and Management Studies Program also sponsors lectures, career events, films, discussions and internships. Students are invited to make use of a resource room (Room 256 in the Sociology-Psychology Building) for meetings with faculty and other students in the program, and to consult relevant journals and newspapers. Additional information may be obtained from Professor Gereffi or the program coordinator in the Markets and Management Studies Program office.

**COURSE OF STUDY**

The course of study for program participants is interdisciplinary. The core of the program consists mostly of sociology courses, with numerous electives available from a variety of other departments. The certificate requires six courses, two of which must be drawn from the core curriculum. The third core course is the capstone course (Markets and Management Studies 190), an integrative course taken in the senior year. The rest of the courses are electives. For students who matriculated at Duke before fall 1998, at least two of the elective courses must be taken in departments other than sociology. For students entering Duke in the fall 1998 or thereafter, no more than three courses may originate in a single department.

**PROGRAM ENROLLMENT**

Only sophomores and juniors who have officially declared their major may enroll in the program. This must be done via the Markets and Management Studies web page: http://www.soc.duke.edu/dept/mms/index.html

**MARKETS AND MANAGEMENT STUDIES COURSES (MMS)**

**Core Courses**

190. Markets and Management Capstone. (SS) Capstone course for students in the Markets and Management Studies Program and open only to them. Includes review of major perspectives and concepts from the program's core courses, a group project, and a case study research paper. One course. Gereffi, Simpson, Spenner, or Thornton

**Electives**

120. Managerial Effectiveness. (SS) Introduction to study of behavior of individuals and groups within organized settings. Examine relationship of organizations to their environments. Emphasis given to managerial strategies which enhance organizational effectiveness. Topics include leadership, motivation and reward systems, decision making, power and politics, conflict management, and organization structure and design. One course. Staff

161. Marketing Management. (SS) The role of the marketing function in business; new product development, price, promotion, and distribution as elements of a total
marketing mix. Examine elements of the company, customers, and competitors in the environment. One course. Staff

191-192. Markets and Management Studies Internship. 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, students must successfully complete both 191 and 192. Counts as an approved elective toward the certificate. Consent of director of Markets and Management Studies Program required. One course. Staff

Independent Studies and Special Topics

50. Duke-Administered Study Abroad: Special Topics in Markets and Management Studies. Topics differ by section. One course. Staff

100. Duke-Administered Study Abroad: Advanced Special Topics in Markets and Management Studies. Topics differ by section. One course. Staff

193, 194. 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 with consent of instructor and director of Markets and Management Studies Program. One course each. Staff

195. Special Topics in Markets and Management Studies. Topics vary each semester. One course. Staff

195S. Special Topics Seminar in Markets and Management Studies. Topics vary each semester. One course. Staff

PROGRAM COURSES

Core Courses

Public Policy Studies
146. Leadership, Development, and Organizations.

Sociology
142. Organizations and Global Competitiveness.
144. Organizations and Their Environments.
155. Organizations and Management.
158. Markets and Marketing.
159. The Sociology of Entrepreneurship.

Elective Courses

Cultural Anthropology
110. Advertising and Society: Global Perspective

Economics
134. Japanese Economy and Its History
140. Comparative Economic Systems
142S. Chinese Economy in Transition
165. American International Economic Policy
167. Multinational Management
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
Engineering
171. Total Quality Systems

History
143B. The Emergence of Modern Japan

Institute of the Arts
150. Managing the Arts

Political Science
113A. Issues of International Political Economy I: International Trade
113B. Issues of International Political Economy II: Money and Finance
158. Transnational Relations and International Public Policy
164. Political Organizations
167. International Institutions and International Law

Public Policy Studies
139S. Public-Private Leadership
139T. Business Leadership, Social Responsibility, and Public Policy

Religion
181. Ethical Issues in Social Change and Public Policy

Science, Technology and Human Values
112S, 113S. Special Topics in Science, Technology, and Human Values

Sociology
110B.01. Comparative Sociology: Asia
112. American Demographics
126. Third World Development
141. Consuming Passions
143. Management and Labor Relations
146. Organizational and Occupational Deviance
156. Global Contexts of Science and Technology
165. Occupations, Professions, and Careers

Mathematics (MTH)
Professor Harer, Chair; Professor Pardon, Associate Chair; Professor Beale, Director of Undergraduate Studies; Assistant Professor of the Practice Blake, Supervisor of First-year Instruction; Professors Allard, Bryant, Hain, Lawler, Morrison, Reed, Rose, Schaeffer, Schoen, Stern, Trangenstein, and Venakides; Associate Professors Bertozzi, Burdick, R. Hodel, Kitchen, Layton, Moore, Petters, Smith, and Zhou; Assistant Professors Aspinwall, Plesser and Witelski; Professors Emeriti Carlitz, Scoville, Shoenfield, Warner, and Weisfeld; Associate Professor of the Practice Bookman; Research Assistant Professors Carmack, Constantinescu, Shipman, and Sreekantan; Adjunct Professors Shearer and Wahl; Lecturers M. Hodel, Tomberg, and Winter

A major or minor is available in this department.

19. Precalculus Mathematics. (QR) 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. One course. Staff

25L. Laboratory Calculus and Functions I. (QR) 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 31L. One course. Staff
26L. **Laboratory Calculus and Functions II. (QR)** 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. One course. Staff

31. **Introductory Calculus I. (QR)** Functions, limits, continuity, trigonometric functions, techniques and applications of differentiation, indefinite and definite integrals, the fundamental theorem. One course. Staff

31L. **Laboratory Calculus I. (QR)** 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. One course. Staff

32. **Introductory Calculus II. (QR)** 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. One course. Staff

32L. **Laboratory Calculus II. (QR)** 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. One course. Staff

32X. **Introductory Honors Calculus II. (QR)** Similar to Mathematics 32, but faster paced and more challenging. Open to students who score at least 750 on the SAT Mathematics Aptitude Test. One course. Staff

41. **One Variable Calculus. (QR)** 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. One course. Staff

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

50. **Duke-Administered Study Abroad: Special Topics in Mathematics.** Topics differ by section. One course. Staff

100. **Duke-Administered Study Abroad: Advanced Special Topics in Mathematics.** Topics differ by section. One course. Staff

103. **Intermediate Calculus. (QR)** 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. One course. Staff

103L. **Laboratory Calculus III. (QR)** 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. One course. Staff

103X, 104X. Honors Intermediate Calculus and Linear Algebra. (QR) Similar to Mathematics 103, 104, but more theoretical. Students who have taken 32X are encouraged to enroll. Students continuing from 103X should take 104X rather than 104. One course each. Staff

104. Linear Algebra and Applications. (QR) 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. One course. Staff

104C. Linear Algebra with Scientific Computation. (QR) 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. One course. Staff

111. Applied Mathematical Analysis I. (QR) 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. One course. Staff

114. Applied Mathematical Analysis II. (QR) 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. Prerequisites: Mathematics 111 or 131, or 103 and consent of instructor. One course. Staff

120S. Introduction to Theoretical Mathematics. (QR) 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 111 or 131, or consent of instructor. Half course. Staff

121. Introduction to Abstract Algebra. (QR) 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. One course. Staff

123S. Geometry. (QR) Euclidean geometry, inverse and projective geometries, topology (Möbius strips, Klein bottle, projective space), and non-Euclidean geometries in two and three dimensions; contributions of Euclid, Gauss, Lobachevsky, Bolyai, Riemann, and Hilbert. Prerequisite: Mathematics 32, 32L, or 41, or consent of instructor. One course. Staff

124. Combinatorics. (QR) 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 104 or consent of instructor. One course. Staff

126. Introduction to Linear Programming and Game Theory. (QR) Fundamental properties of linear programs; linear inequalities and convex sets; primal simplex method, duality; integer programming; two-person and matrix games. Prerequisite: Mathematics 104. One course. Staff
128. **Number Theory. (QR)** 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. One course. Staff

128S. **Number Theory. (QR)** Same as Mathematics 128, but offered as a seminar. One course. Staff

131. **Elementary Differential Equations. (QR)** 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. One course. Staff

132S. **Nonlinear Ordinary Differential Equations. (QR)** 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. Prerequisite: Mathematics 111 or 131 or consent of instructor. One course. Staff

133. **Introduction to Partial Differential Equations. (QR)** 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. One course. Staff


139. **Advanced Calculus I. (QR)** 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. One course. Staff

149S. **Problem Solving Seminar. (QR)** Techniques for attacking and solving challenging mathematics problems and writing mathematical proofs. Course may be repeated. Consent of instructor required. Half course. Staff

150. **Topics in Mathematics from a Historical Perspective. (QR)** Content of course determined by instructor. Prerequisite: Mathematics 139 or 203 or consent of instructor. One course. Staff

150S. **Topics in Mathematics from a Historical Perspective. (QR)** Same as Mathematics 150, but offered as a seminar. One course. Staff

160. **Mathematical Numerical Analysis. (QR)** Zeros of functions; polynomial interpolation and splines; numerical integration and differentiation; applications to ordinary differential equations; numerical linear algebra; error analysis; extrapolation and acceleration. Not open to students who have had Computer Science 150 or 250. Prerequisites: Mathematics 103 and 104 and knowledge of an algorithmic programming language, or consent of instructor. One course. Staff
181. Complex Analysis. (QR) 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. One course. Staff

187. Introduction to Mathematical Logic. (QR) 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. Prerequisites: Mathematics 103 and 104 or Philosophy 103. One course. Staff

188. Logic and Its Applications. (QR) 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. C-L: Computer Science 148 and Philosophy 150. One course. Staff

191, 192. 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. Admission by consent of instructor and director of undergraduate studies. One course each. Staff

193, 194. Independent Study. Same as 191, 192, but for seniors. One course each. Staff

196S. Seminar in Mathematical Modeling. (QR) 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. One course. Staff

197S. Seminar in Mathematics. (QR) Intended primarily for juniors and seniors majoring in mathematics. Topics vary. Prerequisites: Mathematics 103 and 104. One course. Staff

198S, 199S. Honors Seminar in Mathematics. (QR) Topics vary. Consent of instructor and director of undergraduate studies required. One course each. Staff

For Seniors and Graduates

200. Introduction to Algebraic Structures I. (QR) 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. One course. Staff

201. Introduction to Algebraic Structures II. (QR) Fields and field extensions, modules over rings, further topics in groups, rings, fields, and their applications. Prerequisites: Mathematics 200, or 121 and consent of instructor. One course. Staff

203. Basic Analysis I. (QR) 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. One course. Staff

204. Basic Analysis II. (QR) Differential and integral calculus in \( \mathbb{R}^n \). Inverse and implicit function theorems. Further topics in multivariable analysis. Prerequisites: Mathematics 104; Mathematics 203, or 139 and consent of instructor. One course. Staff

205. Topology. (QR) Elementary topology, surfaces, covering spaces, Euler characteristic, fundamental group, homology theory, exact sequences. Prerequisite: Mathematics 104. One course. Staff

314 Courses and Academic Programs
206. Differential Geometry. (QR) 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. One course. Staff

211. Mathematical Methods in Physics and Engineering I. (QR) 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. One course. Staff

212. Mathematical Methods in Physics and Engineering II. (QR) Green's functions, partial differential equations in several space dimensions. Complex variables, analytic functions, Cauchy's theorem, residues, contour integrals. Other topics may include method of characteristics, perturbation theory, calculus of variations, or stability of equilibria. Not open to students who have taken the former Mathematics 231. Prerequisite: Mathematics 114, 133, or 211. One course. Staff


217. Linear Models. (QR) Corequisite: Statistics 213 or equivalent. See C-L: Statistics 244. One course. Staff

218. Introduction to Multivariate Statistics. (QR) Not open to students who have taken the former Mathematics 242. Prerequisite: Statistics 244 or equivalent. See C-L: Statistics 245. One course. Burdick

221. Numerical Analysis. (QR) Prerequisites: knowledge of an algorithmic programming language, intermediate calculus including some differential equations, and Mathematics 104. See C-L: Computer Science 250; also C-L: Statistics 273. One course. Rose or Sun


223. Numerical Linear Algebra. (QR) Prerequisite: Computer Science 250 or equivalent. See C-L: Computer Science 254. One course. Rose or Sun


226. Topics in Numerical Analysis. (QR) Numerical solution of ordinary or partial differential equations, unconstrained and constrained nonlinear optimization; finite element methods, computational methods for hyperbolic conservation laws. Prerequisite: Mathematics 221 or consent of instructor. One course. Staff

228. Mathematical Fluid Dynamics. (QR) 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. One course. Staff
229. Mathematical Modeling. (QR) Formulation and analysis of mathematical models in science and engineering. Emphasis on case studies; may include individual or team research projects. One course. Staff

231. Ordinary Differential Equations. (QR) 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. Prerequisites: Mathematics 104, 111 or 131, and 203 or 139. One course. Staff

232. Partial Differential Equations I. (QR) Fundamental solutions of linear partial differential equations, hyperbolic equations, characteristics, Cauchy-Kowalevski theorem, propagation of singularities. Not open to students who have taken the former Mathematics 297. Prerequisite: Mathematics 204 or equivalent. One course. Staff


238, 239. Topics in Applied Mathematics. (QR) Conceptual basis of applied mathematics, graph theory, game theory, mathematical programming, numerical analysis, or problems drawn from industry or from academic science or engineering. Prerequisites: Mathematics 103 and 104 or equivalents. One course each. Staff

241. Real Analysis I. (QR) 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. One course. Staff

242. Real Analysis II. (QR) 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. One course. Staff

245. Complex Analysis. (QR) Complex calculus, conformal mapping, Riemann mapping theorem, Riemann surfaces. Not open to students who have taken Mathematics 285. Prerequisite: Mathematics 204 or equivalent. One course. Staff

251. Groups, Rings, and Fields. (QR) 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 the former Mathematics 260. Prerequisite: Mathematics 201 or equivalent. One course. Staff

252. Commutative Algebra. (QR) 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. One course. Staff

254. Topics in Algebra. (QR) Algebraic number theory, algebraic K-theory, homological algebra, or other topics. Prerequisite: Mathematics 251. One course. Staff

257. Mathematical Logic. (QR) First-order logic, completeness theorem, compactness theorem, introduction to recursive functions, incompleteness theorem. Not open to students who have taken Mathematics 250. Prerequisite: Mathematics 187 or 200 or equivalent. One course. Staff

261. Algebraic Topology I. (QR) 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. Prerequisites: Mathematics 200 and 205 or consent of instructor. One course. Staff

262. Algebraic Topology II. (QR) 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. One course. Staff

263, 264. Topics in Topology. (QR) Algebraic, geometric, or differential topology. Consent of instructor required. One course each. Staff

267. Differential Geometry. (QR) 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. One course. Staff

268. Topics in Differential Geometry. (QR) 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. One course. Staff

273. Algebraic Geometry. (QR) Affine varieties, projective varieties, Riemann surfaces, algebraic curves, algebraic groups, sheaf cohomology, singularities, Hodge theory, or computational algebraic geometry. Prerequisites: Mathematics 251 or equivalent and consent of instructor. One course. Staff

277. Topics in Algebraic Geometry. (QR) 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. One course. Staff

281. Partial Differential Equations II. (QR) 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. One course. Staff

282. Partial Differential Equations III. (QR) Fourier transforms, distributions, elliptic equations, singular integrals, layer potentials, Sobolev spaces, regularity of elliptic boundary value problems. Prerequisites: Mathematics 232 and 241 or equivalent. One course. Staff

283, 284. Topics in Partial Differential Equations. (QR) Hyperbolic conservation laws, pseudo-differential operators, variational inequalities, theoretical continuum mechanics. Prerequisite: Mathematics 281 or equivalent. One course each. Staff

287. Probability. (QR) 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. C-L: Statistics 207. One course. Staff

288. Topics in Probability Theory. (QR) Brownian motion, diffusion processes, random walks, and applications to differential equations and mathematical physics. Prerequisite: Mathematics 287 or consent of instructor. C-L: Statistics 297. One course. Staff
295, 296. Special Topics. (QR) One course each. Staff
297, 298. Special Readings. (QR) One course each. Staff

COURSES CURRENTLY UNSCHEDULED
318. Probability. (QR)
140. Advanced Calculus II. (QR)
140S. Advanced Calculus II. (QR)
160S. Mathematical Numerical Analysis. (QR)
171S. Elementary Topology. (QR)
248. Topics in Analysis. (QR)
249. Topics in Functional Analysis. (QR)

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; nor do the courses count toward area of knowledge requirements. For permission to register for these courses and for further information, see Professors Oas (biochemistry), Padilla (cell biology), Dawson (immunology), Pickup (microbiology), Richardson (molecular biophysics), W. C. Hall (neurobiology), Hale (pathology), or Schwartz-Bloom (pharmacology and cancer biology). The 200-level courses below are described in the Bulletin of Duke University: Graduate School.

BIOCHEMISTRY (BCH)

209, 210. Independent Study. One course each. Staff
227. Introductory Biochemistry I: Intermediary Metabolism. Prerequisite: two semesters of organic chemistry. One course. Hill and staff
228. Introductory Biochemistry II. Prerequisites: organic chemistry and Biochemistry 227. One course. Hellinga and staff
259. Molecular Biology I: Proteins and Enzymes. Prerequisites: biochemistry, organic chemistry, and physical chemistry. C-L: Cell Biology 259, Immunology 259, Microbiology 259, and Molecular Biophysics 259. Half course. Richardson and staff
265S, 266S. Seminar. Variable credit. Staff
268. Nucleic Acids. Prerequisites: introductory biochemistry and equivalents of Biochemistry 259 and Cell and Molecular Biology 247, 277, and 278. C-L: Cell Biology 268, Immunology 268, Microbiology 268, and University Program in Genetics 268. One course. Stege and staff
291. Physical Biochemistry. Prerequisites: undergraduate physical chemistry and one year of calculus. C-L: Molecular Biophysics 291. One course. Oas and staff

CELL BIOLOGY (CBI)

All courses require the consent of the director of undergraduate studies.

203. Introduction to Physiology. Prerequisite: elementary biology. One course. Staff
204. Cell and Molecular Physiology. Prerequisite: Cell Biology 203 or cell biology. One course. Wright and staff
210. Independent Study. One course. Staff
212. Topics in Reproductive Biology. Prerequisite: Cell Biology 269 or equivalent. One course. N. Anderson, Saling, Schomberg, or Tyrey


244L. Molecular and Cellular Processes in Marine Organisms. Prerequisite: organic chemistry. C-L: Environment 244L and Marine Sciences. One course. Bonaventura and McClellan-Green

259. Molecular Biology I: Proteins and Enzymes. Prerequisites: biochemistry, organic chemistry, and physical chemistry. See C-L: Biochemistry 259; also C-L: Immunology 259, Microbiology 259, and Molecular Biophysics 259. Half course. Richardson and staff

268. Nucleic Acids. Prerequisites: introductory biochemistry and equivalents of Biochemistry 259 and Cell and Molecular Biology 247, 277, and 278. See C-L: Biochemistry 268; also C-L: Immunology 268, Microbiology 268, and University Program in Genetics 268. One course. Stege and staff

Courses Currently Unscheduled

205. Design and Analysis of Biological Experiments. Lobaugh

213. Oxygen and Physiological Function. Jöbsis

217. Selected Membrane Transport. Staff

223. Cellular and Integrative Cardiovascular Physiology and Biophysics. Benjamin and staff

232. Extracellular Matrix and Cell Adhesion. Bennett and Erickson

237. Analytical Imaging in Biomedical Research. LeFurgey

269. Advanced Cell Biology. Siedow and staff

IMMUNOLOGY (IMM)

209, 210. Independent Study. One course each. Staff

219. Molecular and Cellular Bases of Differentiation. See C-L: Cell Biology 219; also C-L: Neurobiology 219, and Pathology 219. One course. Staff

244. Principles of Immunology. Prerequisites: Biology 119 and Chemistry 151L or equivalents. C-L: Biology 244 and Zoology 244. One course. Kostyu, McClay, and staff

252. General Virology and Viral Oncology. See C-L: Immunology 252. One course. Keene and staff

259. Molecular Biology I: Proteins and Enzymes. Prerequisites: biochemistry, organic chemistry, and physical chemistry. See C-L: Biochemistry 259; also C-L: Cell Biology 259, Microbiology 259, and Molecular Biophysics 259. Half course. Richardson and staff

268. Nucleic Acids. Prerequisites: introductory biochemistry and equivalents of Biochemistry 259 and Cell and Molecular Biology 247, 277, and 278. See C-L: Biochemistry 268; also C-L: Cell Biology 268, Microbiology 268, and University Program in Genetics 268. One course. Stege and staff

MICROBIOLOGY (MIC)

209, 210. Independent Study. One course each. Staff

221. Medical Microbiology. One course. Mitchell and staff

252. General Virology and Viral Oncology. C-L: Immunology 252. One course. Keene and staff

259. Molecular Biology I: Proteins and Enzymes. Prerequisites: biochemistry, organic chemistry, and physical chemistry. See C-L: Biochemistry 259; also C-L: Cell Biology 259, Immunology 259, and Molecular Biophysics 259. Half course. Richardson and staff

268. Nucleic Acids. Prerequisites: introductory biochemistry and equivalents of Biochemistry 259 and Cell and Molecular Biology 247, 277, and 278. See C-L: Biochemistry 268; also C-L: Cell Biology 268, Immunology 268, and University Program in Genetics 268. One course. Stege and staff

282. Microbial Pathogenesis. One course. Hanna and staff

Courses Currently Unscheduled


MOLECULAR BIOPHYSICS (MBP)


259. Molecular Biology I: Proteins and Enzymes. Prerequisites: biochemistry, organic chemistry, and physical chemistry. See C-L: Biochemistry 259; also C-L: Cell Biology 259, Immunology 259, and Microbiology 259. Half course. Richardson and staff
NEUROBIOLOGY (NBI)

93S. The Neurobiology of Mind. One course. Einstein


154. Fundamentals of Neuroscience. Prerequisites: Biology 25L, and Chemistry 12L or equivalent. See C-L: Psychology 135; also C-L: Biology 154, and Neurosciences. One course. Meck

195S, 196S. Special Topics in Neurobiology. One course each. Staff

219. Molecular and Cellular Bases of Differentiation. See C-L: Cell Biology 219; also C-L: Immunology 219, and Pathology 219. One course. Staff

COURSES CURRENTLY UNSCHEDULED

49S. First-Year (Undergraduate) Seminar.

PATHOLOGY (PTH)

209, 210. Independent Study. Prerequisites: senior standing. One course each. Staff

219. Molecular and Cellular Bases of Differentiation. See C-L: Cell Biology 219; also C-L: Immunology 219, and Neurobiology 219. One course. Staff

225. Introduction to Systemic Histology. Half course. Hale and staff

258. Cellular and Subcellular Pathology. Half course. Lefurgey, Roggli, and Shelburne

275. Fundamentals of Electron Microscopy and Biological Microanalysis. One course. Ingram, Lefurgey, Roggli, and Shelburne

PHARMACOLOGY AND CANCER BIOLOGY (PHR)

150. Pharmacology: Drug Actions and Reactions. Prerequisites: introductory biology (Biology 25L) and chemistry (Chemistry 11L, 12L). One course. Schwartz-Bloom

160. Drugs, Brain, and Behavior. Prerequisites: introductory biology (Biology 25L) and chemistry (Chemistry 11L, 12L). C-L: Psychology 127. One course. Kuhn

191, 192. Independent Study. One course each. Staff

233. Essentials of Pharmacology and Toxicology. Prerequisites: introductory biology; Chemistry 151L; Mathematics 31 and 32. One course. Slotkin and staff

254. Mammalian Toxicology. Prerequisites: introductory biology, and Chemistry 151L, or consent of instructor. One course. Abou-Donia and staff

Medieval and Renaissance Studies (MED)

Professor Aers, Director; Professor Witt, Director of Undergraduate Studies; Professors Borchardt, Bruzelius, Caserta, Clark, Clay, DeNeef, Garci-Gómez, Herrup, Hillerbrand, Joy, Mahoney, Mignolo, Porter, Price, Randall, Rigsby, Shatzmiller, Silbiger, Steinmetz, M. Tetel, and Wharton; Associate Professors Bartlet, Beckwith, Bland, Brothers, Cornell, Finucc, Green, Greer, Keefe, Longino, Neuschel, Rasmussen, Robisheaux, Silverblatt, Solterer, and Van Miegroet; Assistant Professors Peyroux, Rice, and Shannon; Professor Emeritus Newton; 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. One course. Staff
225. First-Year Seminar: Topics in Renaissance Studies. Topics vary according to instructor: perspectives from history, literature, religion, philosophy, and the arts. One course. Staff

495. First-Year Seminar. Topics vary each semester offered. One course. Staff

114. Aspects of Medieval Culture. (CZ) A study of historical, literary, philosophical, and art historical materials introducing medieval culture and the methods developed for its study. C-L: Art History 139, Classical Studies 139, and History 116. One course. Rasmussen, Solterer, or Witt


195, 196. 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. One course each. Staff

OTHER MEDIEVAL AND RENAISSANCE COURSES

For descriptions of most of these courses, consult the cross-listings under the specified department in this bulletin.

50. Duke-Administered Study Abroad: Special Topics in Medieval and Renaissance Studies. Topics differ by section. One course. Staff

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. One course. Staff

100S. Seminar in Medieval and Renaissance Studies. Seminar version of Medieval and Renaissance Studies 100. One course. Staff

107A. Tudor/Stuart Britain. (CZ) See C-L: History 107A; also C-L: Comparative Area Studies. One course. Herrup

108S. The Comedies of Shakespeare. (AL) See C-L: English 129A; also C-L: Drama 108S. One course. D. Randall

109S. The Tragedies of Shakespeare. (AL) See C-L: English 129B; also C-L: Drama 109S. One course. D. Randall

110. Duke-Administered Study Abroad: Advanced Special Topics in Medieval and Renaissance Studies. Topics differ by section. One course. Staff

111A. Introduction to Italian Literature I. (AL, FL) Conducted in Italian. Not open to students who have taken the course as Italian 101. See C-L: Italian 111. One course. Caserta or Finucci

111B. Introduction to Spanish Literature I. (AL, FL) See C-L: Spanish 111. One course. Garcia-Gomez, Vilaros, or staff

111C. Introduction to French Literature I. (AL, FL) Conducted in French. Not open to students who have taken the course as French 101. See C-L: French 111. One course. Staff

116S. The Pagan World of the Divine Comedy. (AL) See C-L: Distinguished Professor Courses 190S; also C-L: Classical Studies 116S. One course. Clay

117A. Ancient Myth in Literature. (AL) See C-L: Classical Studies 117. One course. Davis or Newton
118. Early Modern Europe. (CZ)  See C-L: History 117; also C-L: Comparative Area Studies, and Women's Studies. One course. Neuschel


120. Late Medieval and Renaissance Philosophy. (CZ)  See C-L: Philosophy 120. One course. Mahoney

121A. Medieval English Literature to 1500. (AL)  See C-L: English 121A. One course. Aers

121B. Sixteenth-Century English Literature. (AL)  See C-L: English 121B. One course. DeNeef, Randall, or Shannon

123A. English Literature: 1600 to 1660. (AL)  See C-L: English 123A. One course. DeNeef or Randall

129. The History of Prints and Printmaking. (AL)  Consent of instructor required. See C-L: Art History 129. One course. Rice

130. Late Antique Christian Art. (AL)  See C-L: Art History 130; also C-L: Classical Studies 130, and Religion 130. One course. Wharton

131A. Art of the Early Middle Ages. (AL)  See C-L: Art History 131; also C-L: Classical Studies 131. One course. Wharton

131B. Art of the Late Middle Ages. (AL)  See C-L: Art History 132. One course. Bruzelius or Wharton

131C. Topics in Medieval Art and Architecture. (AL)  See C-L: Art History 134. One course. Staff

132A, S. Topics in Renaissance British Literature. (AL)  (Taught in the Oxford Summer Program.) See C-L: English 132C. Two courses. Staff

133A. The Birth of Europe: Society and Culture, 200-900. (CZ)  Not open to students who have taken History 133. See C-L: History 133A. One course. Peyroux

133B. British Isles in the Middle Ages. (CZ)  Not open to students who have taken History 134. See C-L: History 133C. One course. Peyroux

134A. History of Jews in the Early Middle Ages. (CZ)  See C-L: History 134A; also C-L: Judaic Studies. One course. Shatzmiller

134B. History of Jews in the Late Middle Ages. (CZ)  See C-L: History 134B. One course. Shatzmiller

134C. Jewish Mysticism. (CZ)  See C-L: Religion 134; also C-L: Comparative Area Studies, and Judaic Studies. One course. Bland


138. Renaissance and Reformation Germany. (CZ)  See C-L: History 138; also C-L: Comparative Area Studies. One course. Robisheaux

139A, S. Special Topics in British Literature I. (AL)  Premodern topics. See C-L: English 139A. One course. Staff

140A. France in the Making: Language, Nation, and Literary Culture in Premodern Europe. (CZ, FL)  See C-L: French 140; also C-L: Comparative Area Studies. One course. Solterer

140B, 141B. Chaucer. (AL)  See C-L: English 140, 141. One course each. Aers, Beckwith, DeNeef, or Gopen

140C. Topics in Renaissance Art. (AL)  See C-L: Art History 140. One course. Rice
141. Fifteenth-Century Italian Art. (AL) See C-L: Art History 141. One course. Rice
142. Sixteenth-Century Italian Art. (AL) See C-L: Art History 142. One course. Rice
143. The Art of the Counter Reformation. (AL) See C-L: Art History 143. One course. Rice
144A. Medieval Fictions. (AL, FL) See C-L: French 144. One course. Solterer
144B. Renaissance and Baroque Art History. (AL) Consent required. Taught at the Intercollegiate Center for Classical Studies in Rome. See C-L: Art History 144. One course. Staff
145B. Renaissance Art in Florence. (AL) (Taught in Italy.) See C-L: Art History 145. One course. Staff
146. Italian Renaissance Architecture. (AL) See C-L: Art History 146. One course. Rice
146A, 147A. Introduction to Islamic Civilization. (CZ) Not open to students who have taken Religion 162, 163. See C-L: Religion 146, 147; also C-L: Comparative Area Studies, Cultural Anthropology 147, 148, and History 101G, 102G. One course each. Cornell, Lawrence, or staff
147C. Seventeenth-Century Fictions of Women. (AL, FL) See C-L: French 147; also C-L: Women's Studies. One course. Longino
148A. Art of the Netherlands in the Fifteenth Century. (AL) See C-L: Art History 148. One course. Van Miegroet
148B. History of Medieval and Renaissance Italy. (AL, CZ) See C-L: History 148B. One course. Witt
150. Italian Baroque Architecture. (AL) See C-L: Art History 150. One course. Rice
151A. The Intellectual Life of Europe, 1250-1600. (CZ) Not open to students who have taken History 104. See C-L: History 151A; also C-L: Comparative Area Studies. One course. Witt
151B. Spanish Literature of the Renaissance and the Baroque. (AL, FL) See C-L: Spanish 151. One course. Greer
151C. Art of Italy in the Seventeenth Century. (AL) See C-L: Art History 151; also C-L: Comparative Area Studies. One course. Rice
152A. Art of the Netherlands in the Sixteenth Century. (AL) See C-L: Art History 152; also C-L: Comparative Area Studies. One course. Van Miegroet
152B. Netherlandish Art and Visual Culture in the Seventeenth and Eighteenth Centuries. (AL) See C-L: Art History 153; also C-L: Comparative Area Studies. One course. Van Miegroet
154A. German Art in the Fifteenth and Sixteenth Centuries. (AL) See C-L: Art History 154; also C-L: Comparative Area Studies. One course. Van Miegroet
1548. **Mercantile Culture and Art in the Netherlands. (CZ)** See C-L: Art History 155; also C-L: Comparative Area Studies, and Economics 152. One course. De Marchi and Van Miegroet

1555. **Music History I: To 1650. (AL, CZ)** Prerequisite: Music 65 or consent of instructor. See C-L: Music 155S. One course. Brothers

156A. **The Reformation of the Sixteenth Century. (CZ)** Not open to students who have taken Religion 167. See C-L: Religion 158; also C-L: History 156A. One course. Hillerbrand

158-159. **History of Netherlandish Art and Visual Culture in a European Context. (AL)** (Taught in the Netherlands.) Not open to students who have taken 241-242. See C-L: Art History 158, 159; also C-L: Comparative Area Studies. Two courses. Van Miegroet

160S. **Topics in Renaissance Literature and Culture. (AL, FL)** See C-L: French 145S; also C-L: Comparative Area Studies. One course. M. Tetel

161S. **Topics in Renaissance Literature and Culture. (AL, FL)** See C-L: Italian 145S. One course. Dainotto or Finucci

162S. **Montaigne and Self-Portraiture. (AL, FL)** See C-L: French 146S. One course. M. Tetel

164S. **Medieval German Literature. (AL)** Taught in English. See C-L: German 164S. One course. Rasmussen

165S. **The Vikings and Their Literature. (AL)** Taught in English. See C-L: German 165S. One course. Keul

166, 167. **Dante. (AL, FL)** Prerequisites: for 167, Medieval and Renaissance Studies 166 or equivalent. See C-L: Italian 164, 165. One course each. Caserta

171. **Topics in Seventeenth-Century French Theater. (AL, FL)** See C-L: French 148; also C-L: Comparative Area Studies. One course. Longino

182, 183. **Shakespeare. (AL)** Not open to students who have taken Drama 115, 116. See C-L: English 143, 144; also C-L: Drama 182, 183. One course each. DeNeef, Gopen, Jones, Porter, Randall, or Shannon

198S. **The Discovery of the Old World: Utopias, Ancient and Modern. (AL)** See C-L: Distinguished Professor Courses 198S; also C-L: Classical Studies 151S. One course. Clay

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. One course. Staff

2005. **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. One course. Staff

2015. **Introduction to Medieval German: The Language of the German Middle Ages and Its Literature. (AL, FL)** See C-L: German 201S. One course. Rasmussen

202A. **Christian Thought in the Middle Ages. (CZ)** A survey of the history of Christian theology from St. Augustine to the young Martin Luther. Also offered as a Divinity School course. Open to juniors and seniors only. One course. Steinmetz

202B. **Early and Medieval Christianity. (CZ)** A survey of the history of Christianity from its beginnings through the fifteenth century. Also offered as a Divinity School course. Open to juniors and seniors only. One course. Keefe and Steinmetz
202C. Modern European Christianity. (CZ) A survey of the history of Christianity from the Reformation to the present, with emphasis on the early modern era. Also offered as a Divinity School course. Open to juniors and seniors only. One course. Heitzenrater and Steinmetz

203S. Sex, Gender, and Love in Medieval German Literature. (AL, FL) See C-L: German 203S. One course. Rasmussen

204. Origen. (CZ) See C-L: Religion 204. One course. Clark

205. The English Reformation. (CZ) The religious history of England from the accession of Henry VIII to the death of Elizabeth I. Extensive readings in the English reformers from Tyndale to Hooker. Also offered as a Divinity School course. Open to juniors and seniors only. One course. Steinmetz

206. The Christian Mystical Tradition in the Medieval Centuries. (CZ) Reading and discussion of the writings of medieval Christian mystics (in translation). A different focus each year: for example, 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) included. Also offered as a Divinity School course. Open to juniors and seniors only. One course. Keefe

207. Readings in Historical Theology. (CZ) Also offered as a Divinity School course. Open to juniors and seniors only. Prerequisites: Medieval and Renaissance Studies 202B and 202C. One course. Staff

208. History of the English Language. (SS) Not open to students who have taken English 112. See C-L: English 208; also C-L: Linguistics. One course. Butters or J. Tetel

209. Middle English Literature: 1100 to 1500. (AL) See C-L: English 212. One course. Aers or Beckwith

210A. History of the Spanish Language. (FL) See C-L: Spanish 210; also C-L: Comparative Area Studies, and Linguistics. One course. García-Gómez

210B. History of the French Language. (FL) See C-L: French 211; also C-L: Linguistics. One course. Thomas

211, 212. Notation. (AL) See C-L: Music 211, 212. One course each. Brothers or Silbiger


215S. German Baroque Literature. (AL, FL) See C-L: German 215S. One course. Borchardt


218S. Medieval Philosophy. (CZ) See C-L: Philosophy 218S. One course. Mahoney

219S. Late Medieval and Renaissance Philosophy. (CZ) See C-L: Philosophy 219S. One course. Mahoney

220. Shakespeare: Selected Topics. (AL) See C-L: English 220. One course. Porter or Shannon

221A. Special Topics in the History of Europe, 1200-1700. (CZ) See C-L: History 221; also C-L: Comparative Area Studies. One course. Nuschel or Robishuaux

221B. Renaissance Prose and Poetry: 1500 to 1660. (AL) See C-L: English 221. One course. De Neef, Randall, or Shannon

221C. Medieval Latin. (AL, FL) See C-L: Latin 221. One course. Newton

222A. The Humanist as Reformer: Petrarch, Machiavelli, and Erasmus. (CZ) Prerequisites: History 151A and reading knowledge of German, French, or Italian. See C-L: History 222A. One course. Witt
222B. Florence: Renaissance City. (CZ)  See C-L: History 222B. One course. Witt
222C, S. Petrarch. (CZ)  See C-L: History 222C. One course. Witt
223A. Music in the Middle Ages. (AL)  See C-L: Music 222. One course. Brothers
223B. Music in the Renaissance. (AL)  See C-L: Music 223. One course. Brothers or Silbiger
234A. Early Christian Asceticism. (CZ)  See C-L: Religion 234; also C-L: Women’s Studies. One course. Clark
236. Luther and the Reformation in Germany. (CZ)  The theology of Martin Luther in the context of competing visions of reform. Also offered as a Divinity School course. Open to juniors and seniors only. One course. Steinmetz
237S. Topics in Romanesque and Gothic Art and Architecture. (AL)  Consent of instructor required. See C-L: Art History 236S. One course. Bruzelius
238S. Europe in the High Middle Ages. (CZ)  Not open to students who have taken History 133B. See C-L: History 238S. One course. Shatzmiller
241-242. History of Netherlandish Art and Visual Culture in a European Context. (AL)  (Taught in the Netherlands.) Not open to students who have taken Art History 158-159. See C-L: Art History 241, 242; also C-L: Comparative Area Studies. Two courses. Van Miegroet
243S. Topics in Netherlandish and German Art. (AL)  Consent of instructor required. See C-L: Art History 243S; also C-L: Comparative Area Studies. One course. Van Miegroet
245. Problems in Reformation Theology. (CZ)  Consent of instructor required. Also offered as a Divinity School course. Open to juniors and seniors only. One course. Steinmetz
246. Problems in Historical Theology. (CZ)  Consent of instructor required. Also offered as a Divinity School course. Open to juniors and seniors only. One course. Staff
247A, 247B. Readings in Latin Theological Literature. (CZ)  Critical translation and study of important theological texts in Latin from various periods of the history of the Church. Also offered as a Divinity School course. Open to juniors and seniors only. Prerequisite: reading knowledge of Latin. One course each. Keefe
248S. Topics in Italian Renaissance Art. (AL)  Consent of instructor required. See C-L: Art History 247S. One course. Rice
250. Women in the Medieval Church. (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. One course. Keefe
251A. Topics in Intellectual History of Europe, 1250–1450. (CZ) See C-L: History 251A. One course. Witt

251B. Topics in Intellectual History of Europe, 1450–1650. (CZ) See C-L: History 251B; also C-L: Comparative Area Studies. One course. Witt


260B. History of the German Language. (FL) See C-L: German 260; also C-L: Linguistics. One course. Rasmussen

261S. Topics in Italian Baroque Art. (AL) Consent of instructor required. See C-L: Art History 260S. One course. Rice

267S. Britain in the Sixteenth Century. (CZ, SS) Consent of instructor required. See C-L: History 267S. One course. Herrup

268S. England in the Seventeenth Century. (CZ) See C-L: History 268S; also C-L: Comparative Area Studies. One course. Herrup

272. The Early Medieval Church. (CZ) Also offered as a Divinity School course. Open to juniors and seniors only. One course. Keefe

273. The Early Medieval Church, Out of Africa: Christianity in North Africa before Islam. (CZ) Selected writings of Tertullian, Cyprian, and Augustine, as well as lesser known African Fathers, on topics such as the African rite of baptism, African creeds, and African church councils. Focus on major theological, liturgical, and pastoral problems in the African church in order to gain perspective on the crucial role of the African church in the development of the church in the West. Also offered as a Divinity School course. Open to juniors and seniors only. One course. Keefe

276. The Sacraments in the Patristic and Early Medieval Period. (CZ) A study of the celebration and interpretation of baptism or eucharist in the church orders and texts of the early church writers. Also offered as a Divinity School course. Open to juniors and seniors only. One course. Keefe

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.
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.
215, 225, 495, 50, 100, 100S, 110, 114, 115, 195, 196, 200, 205.

Military Science Army ROTC (MSC)

Visiting Professor Adams, Lieutenant Colonel, U.S. Army, Chair and Supervisor of Senior Instruction; Visiting Assistant Professor Padgett, Captain, U.S. Army Reserve, Director of Undergraduate Studies and Supervisor of Sophomore Instruction; Visiting Assistant Professor Vanderbilt, Major, U.S. Army, Supervisor of Junior Instruction and Commandant of Cadets; Visiting Assistant Professor Park, Captain, U.S. Army, Supervisor of Freshman Instruction; Visiting Assistant Professor Sutter, Captain, U.S. Army, 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 material), 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 advanced 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 six-week basic camp 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, 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 1-800-222-9814, 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. Vandergriff

2L. Leadership Laboratory. (Spring semester only.) Drill and ceremonies, communications, and tactical exercises. Must be repeated with each spring semester course. Vandergriff

115. Leadership and Ethics in the Army Today. The military organization with emphasis on tradition, doctrine, and contribution to national objectives. Laboratory required for ROTC cadets. Half course. Park

125. The Military Profession. 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. Half course. Park

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


52. Introduction to Small Unit Tactics. Introduction to planning, organizing, and conducting small unit offensive and defensive operations. Consideration of the principles of war. Laboratory required for Army ROTC cadets. Half course. Padgett

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. Prerequisites: Military Science 51 and 52 or ROTC Basic Camp. One course. Vandergriff

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. One course. Vandergriff

151S. Military Justice and Law of War. Introduction to the Uniform Code of Military Justice, selected topics in military law, the law of land warfare, and war and morality. An analysis of the relationship of leadership to these topics. Laboratory required for Army ROTC cadets. One course. Adams

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. One course.

Music (MUS)

Professor Todd, Chair; Associate Professor of the Practice Bagg, Director of Undergraduate Studies; Professor of the Practice Parkins, Director of Performance; Professor Silbiger; Associate Professors Bartlet, Brothers, Gilliam, Jaffe, and Lindroth; Assistant Professors Meintjes, and Moreno; Professors Emeriti Bryan, Douglass, Hanks, and P. Williams; Associate Professor Emeritus Saville; Assistant Professor Emeritus Henry; Professor of the Practice Jeffrey; Associate Professors of the Practice Dunn, Pritchard, Raimi, Troxler, and Wynkoop; Assistant Professors of the Practice Ku, Love, and K. Williams; Artist in Residence Hawkins; Adjunct Assistant Professor Druesedow; Adjunct Associate Professor of the Practice Jensen; Staff Associates Crawford, Eagle, Gilmore, Greenberg, Halverson, Hanks, Kris, Lai, Lile, Liu, Pederson, Reed, Schultz, Simmons, and Tektonidis

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 includes assumptions that history, theory, composition, and performance are 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 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. Emphasis is placed equally on theory and practice, and 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, COMPOSITION, AND CONDUCTING

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).

36. Acoustics and Music. (NS) No previous knowledge of physics is assumed. See C-L: Physics 36. One course. Lawson

55. Introduction to Music Theory. (AL) Fundamentals of notation, melodic and harmonic practice, analysis, and score reading, as a basis for independent work. Prerequisite: some ability to read music. One course. Love, Troxler, or staff

56. The Songwriter's Vocabulary. (AL) Writing songs in various twentieth-century popular styles. Fundamentals of form, harmony, voice leading, text setting, and production. Prerequisites: Music 55 or consent of instructor. One course. Staff
65. Theory and Practice of Tonal Music I. (AL) Elementary principles of tonal organization: diatonic chord progressions and figured bass, two-part elementary counterpoint, introduction to musical forms. Writing of choral-style settings. Laboratory. Prerequisites: basic knowledge of musical notation and vocabulary, including scales, basic chords and intervals, key signatures, meter, and rhythm. One course. Lindroth, Moreno, or Parkins.

75. Jazz Improvisation I. (AL) The theory of jazz improvisation and its practical application to the different styles of jazz. Consent of instructor required. Half course. Crawford or Jeffrey.

76. Jazz Improvisation II. (AL) See Jazz Improvisation I. Prerequisite: Music 75 or consent of instructor. Half course. Crawford or Jeffrey.

114. Theory and Practice of Tonal Music II. (AL) Chromaticism, modulation, musical forms, and counterpoint. Writing of short pieces (minuets, variations, songs.) Laboratory. Prerequisite: Music 65. One course. Lindroth or Moreno.

115. Theory and Practice of Tonal Music III. (AL) Extended chromatic techniques of the nineteenth century, extended tonality, and larger forms. Writing of larger pieces (character pieces, rondo, sonata.) Laboratory. Prerequisite: Music 114. One course. Jaffe, Lindroth, or Moreno.

116S. Counterpoint. 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. One course. Jaffe or Moreno.

117S. Theory and Practice of Post-Tonal Music. (AL) Analytical studies and compositional exercises in various forms, techniques, and styles, with an emphasis on twentieth-century music. Corequisite: Music 124. Prerequisite: Music 115 or consent of instructor. One course. Jaffe or Moreno.

118S. Special Topics in Music Theory. (AL) Topics vary. Prerequisite: Music 114 or consent of instructor. One course. Jaffe, Lindroth, or Moreno.

123. Musicianship I. Taught in conjunction with Music 116S. Advanced musicianship skills relating to mid-eighteenth-century practice: figured-bass realization, open score-reading, improvisation, chromatic ear training, sight singing. Corequisite: Music 116S. Prerequisite: Music 115 or consent of instructor. Half course. Staff.

124. Musicianship II. 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. Half course. Staff.

128. Instrumental Conducting. (AL) 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. One course. Williams or staff.

129. Choral Conducting. (AL) 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. One course. Wynkoop.

151S. Composition I. (AL) 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. One course. Jaffe or Lindroth.

152S. Composition II. (AL) See Music 151S. Prerequisites: Music 65 and 114 or consent of instructor. One course. Jaffe or Lindroth.

161. **Advanced Composition. (AL)** Individual weekly sessions for advanced students. May be repeated for credit. Prerequisites: Music 151S and 152S or consent of instructor. One course. Jaffe or Lindroth

**HISTORY, LITERATURE, AND MUSICOLOGY**

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-159S (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. One course. Staff

48S. **FOCUS Seminar. (AL)** Topics vary each semester. Open only to students in the FOCUS Program. One course. Staff

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

60. **Duke-Administered Study Abroad: Special Topics in Music.** Topics differ by section. One course. Staff


119. **The Humanities and Music. (AL)** 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. C-L: Comparative Area Studies. One course. Bartlet or staff

125. **Masterworks of Music. (AL)** An introduction to the lives and works of major Western European and American composers. One course. Silbiger, Todd, or Williams

125D. **Masterworks of Music. (AL)** Same as Music 125 except instruction is provided in two lectures and one small discussion meeting each week. One course. Gilliam or Williams

136. **Music of the World's Peoples. (AL, CZ)** Study of musical styles and practices in relation to issues of creativity, forms of power, and cultural survival; focus on the music and experiences of indigenous peoples, migrants, and immigrants. C-L: Comparative Area Studies and Cultural Anthropology 145A. One course. Meintjes

137. **Music, Social Life, and Scenes. (AL, CZ)** Study of musical styles and performance practices in relation to issues of identity and other aspects of social life; focus on the diverse local musical scenes and traditions and on learning through doing original fieldwork. C-L: Cultural Anthropology 145B. One course. Meintjes

138S. **Special Topics in Ethnomusicology. (AL, CZ)** Topics to be announced addressing a range of musical traditions from around the world. One course. Meintjes or staff

139. **Twentieth-Century Music. (AL)** Influential creative stylistic developments in music of the present century. A critical survey of works by Bartók, Berg, Schoenberg, Stravinsky, and Webern as a means of establishing a relative standard of values for subsequent independent exploration. Prerequisite: a one-year course in music theory or literature, or consent of instructor. One course. Jaffe or Todd

Music (MUS) 333

141S. Special Topics in Jazz. (AL) Topics vary. Also taught as African and African-American Studies 141S. Prerequisite: Music 74 or consent of instructor. One course. Brothers or Jeffrey


144. Bach and His Time. (AL) The music of Johann Sebastian Bach and its historical and cultural background, with emphasis on the sacred and the instrumental works. Some consideration also given to the music of Bach’s contemporaries, including Vivaldi, Rameau, and Handel. C-L: Comparative Area Studies. One course. Silbiger

145. Mozart and His Time. (AL) A biographical sketch and a study of his works in their relationship to the past and to works of contemporaries in various European countries. C-L: Comparative Area Studies. One course. Silbiger

146. Nineteenth-Century German Romanticism in Music. (AL) The principal nineteenth-century figures, including Beethoven, Schubert, the Mendelssohns and Schumanns, Liszt, Wagner, and Brahms. Their eighteenth-century antecedents (C. P. E. Bach, Haydn, Mozart). One course. Silbiger

155S. Music History I: To 1650. (AL, CZ) The history of music in medieval and early modern Europe in its cultural and social context. Prerequisite: Music 65 or consent of instructor. C-L: Medieval and Renaissance Studies 155S. One course. Brothers

158S. Music History III: After 1850. (AL, CZ) The history of music in Europe and the United States in its cultural and social context. Prerequisite: Music 65 or consent of instructor. C-L: Comparative Area Studies. One course. Gilliam or Todd

159S. Music History II: From 1650 to 1850. (AL, CZ) The history of music in Europe in its cultural and social context. Not open to students who have had Music 156S or Music 157S. Prerequisite: Music 65 or consent of instructor. C-L: Comparative Area Studies. One course. Bartlet or Silbiger

160. Duke-Administered Study Abroad: Advanced Special Topics in Music. Topics differ by section. One course. Staff

164. The Musical. (AL) See C-L: Drama 111. One course. Clum

165. Opera in Vienna. (AL) 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. One course. Moore

166. Opera. (AL) 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. One course. Bartlet

168. Piano Music. (AL) 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. One course. Todd

169. Hollywood Film Music. (AL) Film scores from the 1930s to the present. Technical, structural, and aesthetic issues, as well as the problem of musical style. C-L: Film and Video. One course. Gilliam

185S, 186S. Seminar in Music. (AL) Primarily for junior and senior music majors. Topics to be announced. Consent of instructor required. One course each. Staff

187S, 188S. Seminar on Interpretation and Performance. (AL) Interpretative analysis of instrumental (piano, strings, winds) and vocal repertoire from baroque to modern composers. Participants expected to perform. Consent of instructor required. One course each. Dunn, Troxler, or staff

189S, 190S. Seminar in Music History. (AL) Primarily for junior and senior music majors. Topics to be announced. Prerequisites: Music 155S, 158S, and 159S. One course each. Staff

190S. Seminar in Music History. (AL) Primarily for junior and senior music majors. Topics to be announced. Prerequisites: Music 155S, 158S, and 159S. One course each. Staff

191, 192. Notation. (AL) 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. C-L: Medieval and Renaissance Studies 211, 212. One course each. Silbiger

213. Theories and Notation of Contemporary Music. (AL) 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. One course. Jaffe or Lindroth

215. Music Analysis. (AL) 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. One course. Moreno or Todd

217. Selected Topics in Analysis. (AL) 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. One course. Moreno or Silbiger

222. Music in the Middle Ages. (AL) Selected topics. C-L: Medieval and Renaissance Studies 223A. One course. Brothers

223. Music in the Renaissance. (AL) Selected topics. C-L: Medieval and Renaissance Studies 223B. One course. Brothers or Silbiger

225. Music in the Classic Era. (AL) Selected topics. One course. Bartlet or Todd

226. Music in the Nineteenth Century. (AL) Selected topics. One course. Bartlet, Gilliam, or Todd

227. Music in the Twentieth Century. (AL) Selected topics. One course. Gilliam or Todd

295S. Composition Seminar. (AL) Selected topics in composition. One course. Jaffe or Lindroth

296S. Analysis of Contemporary Music. (AL) 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. One course. Jaffe or Lindroth

297, 298, 299. Composition. (AL) Weekly independent study sessions at an advanced level with a member of the graduate faculty in composition. One course each. Jaffe or Lindroth

INDEPENDENT STUDY

Admission to these courses 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.

177, 178. Independent Study in Conducting. Advanced work in reading scores, analysis, principles of interpretation, and practical conducting experience. Prerequisite: Music 128 or 129 or consent of instructor. One course each. Muti or Wynkoop

191, 192. Independent Study. Directed reading, research, and/ or theoretical analysis, culminating in a substantial paper; or exploration of advanced compositional techniques resulting in a work of larger scale. For juniors only. One course each. Staff

193, 194. Independent Study. Same as 191, 192, but for seniors. One course each. Staff

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 are encouraged to enroll in private instruction and to 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.

57S, 58S. Vocal Diction. 57S: Italian/ English; 58S: German/ French. 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. Half course each. Lail

Instruction: half hour
79. Class Applied Music. Quarter course. Greenberg, Lail, Reed, or staff
80. Piano. Quarter course. Crawford, Hawkins, Liu, Love, or staff
81. Strings. Quarter course. Bagg, Ku, Pritchard, or Raimi
82. Woodwinds. Quarter course. Gilmore, Jeffrey, Pederson, Schultz, or Troxler
83. Brass. Quarter course. Dimsdale, Eagle, or Kris
84. Percussion. Quarter course. Hanks
85. Voice. Quarter course. Dunn, Jensen, Lail, or Taktonisidis
86. Organ. Quarter course. Parkins
87. Harpsichord. Quarter course. Parkins
88A. Classical Guitar. Quarter course. Reed
88B. Jazz Guitar. Quarter course. Lile

Instruction: 1 hour

91. Strings. Half course. Bagg, Ku, Pritchard, or Rami
92. Woodwinds. Half course. Gilmore, Jeffrey, Pederson, Schultz, or Troxler
93. Brass. Half course. Dimsdale, Eagle, or Kris
94. Percussion. Half course. Hanks
95. Voice. Half course. Dunn, Jensen, Lail, or Tektonidis
96. Organ. Half course. Parkins
97. Harpsichord. Half course. Parkins
98A. Classical Guitar. Half course. Reed
98B. Jazz Guitar. Half course. Lile

Ensemble Classes: pass/fail
100. Symphony Orchestra. Quarter course. Muti
101. Wind Symphony. Quarter course. Staff
102. Marching Band. Quarter course. Boumpani
103. Jazz Ensemble. Quarter course. Jeffrey
104. Small Jazz Ensemble. Quarter course. Jeffrey
105. Collegium Musicum. Quarter course. Staff
106. Chamber Music. Quarter course. Hawkins
107. Djembe Ensemble. Quarter course. Simmons

*108, 109. Advanced Study in Musical Performance. Open only to sophomores 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. Prerequisites: previous registration in private instruction in applied music at Duke, audition, and consent of instructor. One course each. Staff

*110, 111. Advanced Study in Musical Performance. Same as 108, 109, but for juniors. One course each. Staff

*112, 113. Advanced Study in Musical Performance. Same as 108, 109, but for seniors. One course each. Staff

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.

See also Institute of the Arts in this bulletin.

*The schedule of fees for private lessons is applicable to courses 179, 180, 181, 182, 183, 184 (see subsection on fees).
COURSES CURRENTLY UNSCHEDULED

120S. Women in Music. (CZ)
147. Verdi and Italian Romantic Opera. (AL)
156S. Music History IIA: Late Renaissance, Baroque. (AL)
157S. Music History IIB: Rococo and Classic. (AL)
167. Symphonic Literature. (AL)
218. Advanced Counterpoint. (AL)
236. Nineteenth-Century Piano Music. (AL)

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, 158S, 159S, either 189S or 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, 158S, 159S (students matriculating before fall 1997 may include 156S and 157S); 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 (NS)

Professor Guthe, Captain, U.S. Navy, Chair; Visiting Assistant Professor White, Lieutenant, U.S. Navy, Director of Undergraduate Studies; Visiting Associate Professor Ceci, Lieutenant Colonel, U.S. Marine Corps; Visiting Assistant Professors Filan, Lieutenant, U.S. Navy, Lott, Lieutenant, U.S. Navy, Rucker, Lieutenant, U.S. Navy, and Snyder, 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 mathematics, one year of physical science, 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.

11. Naval Orientation. Organization, missions, and branches of specialization within the United States Navy. Customs, traditions, leadership, and career opportunities. White

11L. Naval Orientation Laboratory. Practical application of the elements and material presented in Naval Science 11. White

12. Naval Ships Systems. Quantitative study of basic naval ships' systems. Focus on propulsion and various auxiliary systems. Ship design, stability, and damage control. One course. Rucker

12L. Naval Ships Systems Laboratory. Practical application of the theories and principles of naval ships systems. Lott

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

52. Seapower and Maritime Affairs. 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 Soviet maritime strategies. One course. White

52L. Seapower and Maritime Affairs Laboratory. Case studies and contemporary issues dealing with United States Navy. Mandatory for Navy ROTC midshipmen. White

126. Concepts and Analyses of Naval Tactical Systems. Detection systems; systems integration into current naval platforms and their offensive and defensive capabilities. One course. Rucker

126L. Naval Tactical Systems Laboratory. Practical application of the theories and principles of naval tactical systems. Rucker

131L. Navigation Laboratory. Practical application of the theories and principles of navigation as presented in the lecture series. Filan

132. Naval Operations. Components of general naval operations, including concepts and application of tactical formations and dispositions, relative motion, maneuvering board and tactical plots, rules of the road, and naval communications. Naval Science 132L is a concurrent requirement. One course. Filan

132L. Naval Operations Laboratory. Practical application of the theories of naval operations as presented in the lecture series. Filan

137L, 138L. Marine Tactics Laboratory. Concepts and applications of tactical employment of Marine amphibious forces. Ground weapons systems, land navigation, and small unit tactics. Snyder

141S. Evolution of Warfare. Continuity and change in the history of warfare, with attention to the interrelationship of social, political, technological, and military factors. One course. Snyder

145L. Naval Leadership and Management I. Study of organizational behavior and management in the context of naval organization. Topics include discussion of leadership and management functions of planning, controlling, and directing. Practical applications explored using case studies. White

146L. Naval Leadership and Management II. The study of officer responsibilities in naval administration. Discussions of counseling methods, military justice, human resources management, and supply systems. White

147L, 148L. Marine Leadership Laboratory. Marine Corps career management, naval correspondence, force structure, leadership techniques, and training. Snyder

151S. Amphibious Operations. Development of amphibious doctrine, with attention to its current applications. One course. Snyder

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 students in junior and senior years by consent of director of undergraduate studies. One course. Staff

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
Neurosciences Program

(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) 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 interdisciplinarianess 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@acpub.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. (Cross-listed.) Meck (psychology)

Neurobiology
154. Fundamentals of Neuroscience. (Cross-listed.) Meck

Psychology
91. Biological Bases of Behavior: Introduction and Survey (B). C. Erickson or C. Williams
135. Fundamentals of Neuroscience (B). (Cross-listed.) Meck

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) Staff
Biochemistry of Marine Animals. (Biology 155L) Rittschof
Animal Behavior. (Biology 201L, S) Blower
Marine Animal Navigation. (Biology 296.22S) Forward
Animal Communication. (Biology 296.22S) Nowicki
The Neurobiology of Mind. (Neurobiology 93S) Einstein
Fundamental Issues in the Study of the Brain. (Neurobiology 133) W. C. Hall
Mind and Brain. (Neurobiology 196S) Einstein
Learning and Adaptive Behavior. (Psychology 111) Higa
Comparative Psychology. (Psychology 120) Holland
Behavior and Neurochemistry. (Psychology 126) Meck
Psychobiology of Motivation. (Psychology 139) Staff
Methods in Behavioral Neurobiology. (Psychology 181A, S) W. G. Hall or staff
Hormones and Behavior. (Psychology 190S) Williams
Neurobiology of Learning and Memory. (Psychology 165S) Swartzwelder
Brain Mechanisms of Behavior (Psychology 167S) R. Erickson
Research Methods in Animal Learning. (Psychology 181B, S) Higa
Neural Networks and Psychology. (Psychology 182C) Schmajuk
Independent Study. (Biology 191, 192, Neurobiology 210, and Psychology 191, 192, 193, 194) Staff

* 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. (QR, 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. C-L: Physics 201. Half course. Behringer and Greenside

North American Studies Courses (NAS)

Associate Professor Mayer (public policy studies and political science), Director; Professor Thompson (history) and Visiting Professor Vega-Cánovas (political science, El Colegio de México), Associate Directors; Professors Gereffi (sociology), Goodwin (economics), Healy (environment), Kornberg (political science), Mendoza (economics), Mignolo (romance studies), Morgenstern (political science), Smith (sociology), Vidmar (law), and Warren (community and family medicine); Associate Professor French (history); Assistant Professors Elliott-Clarke (English) and 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 Program see the bulletin entry for Comparative Area Studies.

50. Duke-Administered Study Abroad: Special Topics in North American Studies. Topics differ by section. One course. Staff

97. Introduction to Mexico. (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. C-L: Latin American Studies. One course. Staff

100. Duke-Administered Study Abroad: Advanced Special Topics in North American Studies. Topics differ by section. One course. Staff


283S. Seminar in North American Studies. Topics vary each semester. One course. Staff

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 (MRX)
Professor Jameson, Chair

A six-course 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 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
70, 71. The Third World and the West. (Cross-listed.) Staff
125. Comparative Approaches to Global Issues. (Cross-listed.) Staff
127. Culture and Politics in Japan. (Cross-listed.) Starn
128. Culture and Politics in Latin America. (Cross-listed.) Starn

Art History
162. Art History. (Cross-listed.) Leighten or Stiles
166. History of the Working Class in the United States. (Cross-listed.) Keyssar

Comparative Area Studies
125. Comparative Approaches to Global Issues. (Cross-listed.) Staff

Cultural Anthropology
104. Anthropology and Film. (Cross-listed.) Allison or Litzinger
113. Gender and Culture. (Cross-listed.) Allison, Luttrell, Quinn, or Silverblatt
117. Global Culture. (Cross-listed.) Piot
122. Culture and Politics in Africa. (Cross-listed.) Piot
125. Comparative Approaches to Global Issues. (Cross-listed.) Staff
127. Culture and Politics in Japan. (Cross-listed.) Allison
128. Culture and Politics in Latin America. (Cross-listed.) Starn
139. Marxism and Society. (Cross-listed.) Staff

Education
100. Social and Philosophical Foundations of Education. (Cross-listed.) Di Bona or staff
139. Marxism and Society. (Cross-listed.) Staff

English
101B. Introduction to Cultural Studies. (Cross-listed.) Gaines, Radway, Surin, Torgovnick, or Willis

German
270. Consciousness and Modern Society. (Cross-listed.) Rolleston
History
75, 76. The Third World and the West. (Cross-listed.) Staff
111C. The Emergence of Modern America: The United States from the 1890s to the Cold War. (Cross-listed.) Keyssar
137. Comparative Approaches to Global Issues. (Cross-listed.) Staff
142A. China: Roots of Revolution. (Cross-listed.) Dirlik or Mazumdar
150A. Documentary Film History. (Cross-listed.) Gaines, Paletz, or Wood
153S. The Insurgent South. (Cross-listed.) Goodwyn
163C. The American Civil War. (Cross-listed.) Goodwyn
165. History of the Working Class in the United States. (Cross-listed.) Keyssar
185A. Socialist Realism: Soviet Literature of the 1930s and 1940s. (Cross-listed.) Lahusen
186. Marxism and Society. (Cross-listed.) Staff

Literature
98. Introduction to the Study of Literature and Society. (Cross-listed.) Lentricchia or Willis
100. Introduction to Cultural Studies. (Cross-listed.) Gaines, Radway, Surin, Torgovnick, or Willis
117. Documentary Film History. (Cross-listed.) Gaines, Paletz, or Wood
162. Special Topics in Literature and National Cultures, Ethnicity, Race. (Cross-listed.) Staff
181. Marxism and Society. (Cross-listed.) Staff

Political Science
125. Comparative Approaches to Global Issues (B). (Cross-listed.) Staff
198. Documentary Film History (B). (Cross-listed.) Gaines, Paletz, or Wood

Religion
183. Comparative Approaches to Global Issues. (Cross-listed.) Staff

Russian
130. Soviet Cinema. (Cross-listed.) Gaines, Jameson, and Lahusen
149S. Russian Culture in the Era of Terror: A Reexamination. (Cross-listed.) Lahusen
181. The Soviet 1920s: The Road to a New Synthesis. (Cross-listed.) Lahusen
182. Socialist Realism: Soviet Literature of the 1930s and 1940s. (Cross-listed.) Lahusen

Sociology
125. Comparative Approaches to Global Issues. (Cross-listed.) Staff
139. Marxism and Society. (Cross-listed.) Staff

Spanish
148. Colonial and Postcolonial Studies in Latin America and the Caribbean. (Cross-listed.) Mignolo
171. Literature of Contemporary Spain. (Cross-listed.) Vilarós or staff
251S. Spanish Film. (Cross-listed.) Vilarós

LECTURE/SPECIAL TOPICS COURSES OFFERED PERIODICALLY

Art History
187. Surrealism. Stiles
188. Twentieth-Century Modernist and Postmodernist Criticism. Stiles

Asian and African Languages and Literature
155. Introduction to Israeli Culture. Zakim
162. Modern Japanese Fiction in Translation. Ching

Cultural Anthropology
121. Culture and Politics in China. Litzinger

History
114B. Immigration, Migration, and Mobility of Labor. Keysaar
139A. Radical Movements in Modern Asia. Dirlik
172B. China and West. Mazumdar

Literature
114. Film Theory. Gaines
144S. Special Topics in Literature and Revolution. Hardt

Political Science
181. Marxism and Neo-Marxism. Coles

Philosophy (PHL)
Professor Flanagan, Chair; Professor Sanford, Director of Undergraduate Studies; Professors Brandon, Gillespie (political science), Golding, Joy, MacIntyre, Mahoney;

344 Courses and Academic Programs
and Stone (law); Associate Professors Ferejohn, Posy, Schmaltz, and Sugarman (medicine); Assistant Professors Cooper and Güzeldere; Professors Emeriti Peach and Welsh; Associate Professor of the Practice Kiss (Kenan Ethics Program); Adjunct Associate Professor Ward

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. Discussion is encouraged 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 is primarily in terms of the problems presented by the subject matter of that course, as in logic, ethics, and metaphysics. In historical courses, attention is directed 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 in respect to the various fields of the arts and sciences involve questions that are not normally given attention in those particular disciplines. In the consideration of such problems, therefore, it is expected that students will acquire some understanding and perspective of the major areas of the human intellectual endeavor. In this sense, philosophical comprehension is an essential part of a student’s learning and education.

Philosophy provides a sound preparation for the demands of many professions. For example, the 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) Examination of problems in philosophy; emphasis on metaphysics and theory of knowledge. One course. Staff

42. Introduction to Philosophy. (CZ) Examination of problems in philosophy; emphasis on ethics and value theory. One course. Staff

43S. Introduction to Philosophy. (CZ) Philosophy 41 conducted as a seminar. One course. Staff

44S. Introduction to Philosophy. (CZ) Philosophy 42 conducted as a seminar. One course. Staff

48. Logic. (CZ) The conditions of effective thinking and clear communication. Examination of the basic principles of deductive reasoning. One course. Brandon, Güzeldere, Posy, Sanford, or staff

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

50. Duke-Administered Study Abroad: Special Topics in Philosophy. Topics differ by section. One course. Staff

100. History of Ancient Philosophy. (CZ) The pre-Socratics, Socrates, Plato, Aristotle, and post-Aristotelian systems. Not open to students who have taken Classical Studies 93 or Philosophy 93. C-L: Classical Studies 100. One course. Ferejohn, Joy, or Mahoney


102. Aesthetics: The Philosophy of Art. (CZ) The concept of beauty, the work of art, the function of art, art and society, the analysis of a work of art, criticism in the arts. One course. Ward
103. Symbolic Logic. (CZ) Detailed analysis of deduction and of deductive systems. Open to sophomores by consent of instructor. C-L: Linguistics. One course. Brandon, Güzeldere, or Posy

104. Philosophy of Science. (CZ) The principal philosophical and methodological problems in contemporary science. One course. Brandon, Cooper, or Güzeldere

106. Philosophy of Law. (CZ) Natural law theory, legal positivism, legal realism, the relation of law and morality. One course. Golding

107. Political and Social Philosophy. (CZ) The fundamental principles of political and social organizations. One course. Mahoney

109. Philosophy of Language. (CZ) A philosophical analysis of problems arising in the study of language and symbolism. Topics include: theories of language, the nature of signs and symbols, theories of meaning, types of discourse (scientific, mathematical, poetic), definition, ambiguity, metaphor. C-L: Linguistics. One course. Posy

110. Knowledge and Certainty. (CZ) Problems in the theory of knowledge: conditions of knowledge, skepticism, perception, memory, induction, knowledge of other minds, and knowledge of necessary truths. One course. Ferejohn or Sanford

111. Appearance and Reality. (CZ) Problems in metaphysics: theories of existence, substance, universals, identity, space, time, causality, determinism and action, and the relation of mind and body. One course. Ferejohn or Sanford

112. Philosophy of Mind. (CZ) 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. C-L: Linguistics. One course. Flanagan, Güzeldere, or Sanford

113. Philosophy of Mathematics. (CZ) Survey of mathematical thought including the nature of infinity, Platonism, constructivism, and the foundational crisis of the early twentieth century. Prerequisite: one course in calculus or logic or philosophy; or consent of instructor. One course. Posy

115. Environmental Ethics. (CZ) Critical investigation of the goals of environmental policy and the values to which these goals give expression. Various "land health" issues such as biodiversity, ecosystem preservation, ecological restoration, agricultural practice, and pollution. One course. Cooper

116. Systematic Ethics. (CZ) Problems in moral philosophy: the nature of morality, ethical relativism, egoism, utilitarianism. Both historical and contemporary readings, with emphasis on the latter. One course. Flanagan or Golding

117. Ancient and Modern Ethical Theories. (CZ) 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. One course. Flanagan, Golding, or McIntyre

118. Philosophical Issues in Medical Ethics. (CZ) 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. Prerequisites: for freshmen, previous philosophy course and consent of instructor. One course. Brandon, Cooper, Golding, or Sugarman

119. Medieval Philosophy. (CZ) Christian, Islamic, and Jewish philosophy from late antiquity to 1300. Special emphasis on historical influences and institutional

120. Late Medieval and Renaissance Philosophy. (CZ) Problems of political authority and nature of the state, mysticism, humanism, critical trends, background of Galileo, and impact of the Reformation related to cultural and institutional changes. C-L: Medieval and Renaissance Studies 120. One course. Mahoney

122. Philosophical Issues in Feminism. (CZ) 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. C-L: Women's Studies. One course. Staff

123. Aristotle. (CZ) Survey of principal topics in Aristotelian philosophy. Areas of study include metaphysics, epistemology, philosophy of science, philosophy of language, ethics, and political philosophy. C-L: Classical Studies 113. One course. Ferejohn


127. Duke-Administered Study Abroad: Advanced Special Topics in Philosophy. Topics differ by section. One course. Staff

130. Philosophy of Religion. (CZ) Selected concepts and doctrines. One course. Schmaltz


132. Nineteenth-Century Philosophy. (CZ) Emphasis on Hegel, Marx, and Nietzsche. Open to undergraduates only. One course. MacIntyre


139. Twentieth-Century Continental Philosophy. (CZ) 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. One course. MacIntyre

150. Logic and Its Applications. (QR) Prerequisite: a course in logic or consent of instructor. See C-L: Mathematics 188; also C-L: Computer Science 148. One course. Staff
191, 192, 193, 194. **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 highly qualified students in the junior and senior year with consent of the department. One course each. Staff

195. **Special Topics in Philosophy.** One course. Staff

196S, 197S, 198S, 199S. **Seminars in Philosophy. (CZ)** One course each. Staff

**For Seniors and Graduates**

203S. **Contemporary Ethical Theories. (CZ, 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. C-L: Political Science 2895 and Women’s Studies. One course. Flanagan, Golding, or McIntyre

206S. **Responsibility. (CZ)** 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. One course. Golding

208S. **Political Values. (CZ)** Analysis of the systematic justification of political principles and the political values in the administration of law. One course. Golding

211S. **Plato. (CZ)** Selected dialogues. C-L: Classical Studies 211S. One course. Ferejohn

217S. **Aristotle. (CZ)** Selected topics. C-L: Classical Studies 217S. One course. Ferejohn

218S. **Medieval Philosophy. (CZ)** Readings in Augustine, Aquinas, and others. Discussions regarding the nature of cognition, underlying metaphysics, and foundations of morality. C-L: Medieval and Renaissance Studies 218S. One course. Mahoney

219S. **Late Medieval and Renaissance Philosophy. (CZ)** Readings in Scotus, Ockham, and others. Discussions regarding the critical turn in fourteenth-century philosophy, rival theories of knowledge, the “Great Chain of Being.” C-L: Medieval and Renaissance Studies 219S. One course. Mahoney


225S. **British Empiricism. (CZ)** A critical study of the writings of Locke, Berkeley, or Hume with special emphasis on problems in the theory of knowledge. One course. Joy or Schmaltz

227S. **Continental Rationalism. (CZ)** A critical study of the writings of Descartes, Spinoza, or Leibniz with special emphasis on problems in the theory of knowledge and metaphysics. One course. Schmaltz

228S. **Recent and Contemporary Philosophy. (CZ)** A critical study of some contemporary movements, with special emphasis on analytic philosophers. C-L: Linguistics. One course. Posy

231S. **Kant’s Critique of Pure Reason. (CZ)** One course. Joy or Posy

232S. **Recent Continental Philosophy.** Selected topics. One course. Joy

233S. **Methodology of the Empirical Sciences. (CZ)** 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. One course. Brandon, Cooper, or Joy

234S. **Problems in the Philosophy of Biology. (NS)** Selected topics, with emphasis on evolutionary biology: the structure of evolutionary theory, adaptation, teleological or
teleonomic explanations in biology, reductionism and organismic, the units of selection, and sociobiology. Consent of instructor required. C-L: Biology 234S, Botany 234S, and Zoology 234S. One course. Brandon or Cooper

236S. Hegel's Political Philosophy. (SS) See C-L: Political Science 236S. One course. Gillespie

240S. Philosophical Psychology. (CZ) A study of recent work on the nature of the self and the nature and function of consciousness. Work from philosophy, psychology, cognitive neuroscience, and evolutionary biology will be discussed. One course. Flanagan or Güzeldere

251S. Epistemology. (CZ) 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. One course. Sanford

252S. Metaphysics. (CZ) Selected topics: substance, qualities and universals, identity, space, time, causation, and determinism. One course. Sanford

253S. Philosophy of Mind. (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. One course. Flanagan, Güzeldere, or Sanford

255S. Topics in Philosophy of Mind. (CZ) 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, cognitivescience). One course. Güzeldere

273S. Heidegger. (CZ, SS) See C-L: Political Science 273S. One course. Gillespie

289S. Environmental Ethics. (CZ) Selected topics involving values and the environment, for example, extending morality to nature, rights of future generations, environmental aesthetics, diversity and stability, ideological biases in ecological knowledge. Consent of instructor required. C-L: Environment 282S. One course. Cooper

291S, 292S. Special Fields of Philosophy. (CZ) One course each. Staff

COURSES CURRENTLY UNSCHEDULED

105. Philosophy of History. (CZ)
108. Social Ideals and Utopias. (CZ)
114D. Hellenistic Philosophy. (CZ)
121. Philosophy and Film. (CZ)
135. Philosophy in Literature. (CZ)
138. Analytic Philosophy in the Twentieth Century. (CZ)
202S. Aesthetics: The Philosophy of Art. (CZ)
204S. Philosophy of Law. (CZ)
205S. Philosophy of History. (CZ)
210. Logic for Computer Science. (QR)
235S. Nineteenth-Century German Philosophy. (CZ)
250S. Topics in Formal Philosophy. (CZ)
254S. Topics in Philosophy of Religion. (CZ)

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 (PHY)

Professor Müller, Chair; Assistant Professor Gauthier, Director of Undergraduate Studies; Professors Behringer, Evans, Fortney, Han, Johnson, Palmer, Thomas, Walter, and Weller; Associate Professors Greenside, Howell, Litvinenko, Oh, and Teitsworth; Assistant Professors Chandrasekharan, DeBraeckeleer, Lee, Kotwal, Matveev, Plesser, O'Shea, Socolar, and Springer; Professors Emeriti Bilpuch, Fairbank, Lewis, Meyer, Roberson, Robinson, and Walker; Research Professor Tornow; Research Assistant Professor Phillips; Adjunct Professors Ciftan, Guenther, Iafrate, Rogosa, and Stroscio; Adjunct Associate Professors Lawson and Skatrud; Adjunct Assistant Professors Everitt and Kolena; Visiting Professor Matinyan; Visiting Assistant Professor Brown; Lecturing Fellows Johnson and Tull

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, 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 each.

35. Conceptual Physics. (NS) Physical concepts relevant to common experience. Principles of mechanics, sound, electromagnetism, light, and microscopic structure, discussed with an emphasis on application to familiar phenomena and devices. Intended for persons not majoring in science or engineering; no previous knowledge of physics assumed. One course. Socolar


41L. Fundamentals of Physics. (NS) 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. Lecture, recitations, and laboratory. Closed to students having credit for Physics 51L, 52L. Prerequisites: consent of director of undergraduate studies; Mathematics 31 and 32 may be taken concurrently. One course. Staff
42L. Fundamentals of Physics. (NS) 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. Lecture, recitations, and laboratory. Closed to students having credit for Physics 51L, 52L. Prerequisites: consent of director of undergraduate studies; Mathematics 31 and 32 may be taken concurrently. One course. Staff

47S. Physics and the Universe. (NS) Same as Physics 48S, but emphasizing additional topics considered appropriate for the Origins Program (FOCUS). Introduction to the concepts and discoveries of modern cosmology, exploring issues such as Einstein's theory of relativity, the Big Bang, the origins of matter, and the origins of the laws of nature. Open only to students in that program. One course. Müller

48S. The Emergence of Complexity. (NS) How complex structures and phenomena arise out of the relatively simple underlying laws of physics and the operation of chance. Topics include physical, chemical, and social systems, in particular: pattern formation, condensed matter, cascades, and emergent functionality. Introduction to the statistical concepts and methods that form the foundation of the science of complexity. One course. Palmer

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

50. Duke-Administered Study Abroad: Special Topics in Physics. Topics differ by section. One course. Staff

51L, 52L. Introductory Technical Physics. (NS) 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; Physics 52L is closed to students having credit for Physics 42L, 53L or Physics 54L. Prerequisite: Mathematics 31, 32 or equivalent; Mathematics 32 may be taken concurrently with Physics 51L; for 52L: Physics 51L or 41L. One course each. Staff

53L, 54L. General Physics. (NS) 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 the emphasis is on applications to the biological sciences. 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; Physics 54L is closed to students having credit for Physics 42L or Physics 52L. Prerequisite: Mathematics 31, 32 or 25L, 26L, or equivalent; Mathematics 32 may be taken concurrently with Physics 53L; for 54L: Physics 41L, 51L or 53L. One course each. Staff

55. Introduction to Astronomy. (NS) The evolving theory of the physical universe. Cosmological models, galaxies, stars, interstellar matter, the solar system, and experimental techniques and results. Several observatory sessions. One course. Staff

100. Introduction to Modern Physics. (NS) Survey of modern physics including relativity and the quantum physics of atoms, nuclei, particles, quarks, condensed matter, and lasers. Not applicable toward a major in physics. Prerequisites: Physics 42L, 52L, or 54L and Mathematics 103 (may be taken concurrently). One course. Evans
101. Duke-Administered Study Abroad: Advanced Special Topics in Physics. Topics differ by section. One course. Staff

105. Introduction to Astrophysics. (NS) Basic principles of astronomy treated quantitatively. Cosmological models, galaxies, stars, interstellar matter, the solar system, and experimental techniques and results. Prerequisites: Mathematics 31 and Physics 42L, 52L, 54L or consent of instructor. One course. Kolena

143L. Optics and Modern Physics. (NS) Intended as a continuation of Physics 41L, 42L. Classical wave and ray optics. Introduction to quantum physics. Prerequisites: Physics 42L, 52L, or 54L and Mathematics 103 (may be taken concurrently). One course. DeBraeckeleer

Physics 42L, 52L, or 54L or equivalent, and Mathematics 103 or equivalent are prerequisites to all of the following courses.

171L. Electronics. (NS) Elements of electronics including circuits, transfer functions, solid-state devices, transistor circuits, operational amplifier applications, digital circuits, and computer interfaces. Lectures and laboratory. One course. Staff

176. Thermal Physics. (NS) Thermal properties of matter treated using the basic concepts of entropy, temperature, chemical potential, partition function, and free energy. Topics include the laws of thermodynamics, ideal gases, thermal radiation and electrical noise, Fermi-Dirac and Bose-Einstein distributions, semiconductor statistics, kinetic theory, and phase transformations. Prerequisites: Mathematics 103 or equivalent and Physics 51L, 52L or equivalent. C-L: Electrical Engineering 176. One course. Socolar

181. Intermediate Mechanics. (NS) Newtonian mechanics at the intermediate level, Lagrangian mechanics, linear oscillations, chaos, dynamics of continuous media, motion in noninertial reference frames. Prerequisite: Mathematics 111 or equivalent (may be taken concurrently). One course. Lee

182. Electricity and Magnetism. (NS) Electrostatic fields and potentials, boundary value problems, magnetic induction, energy in electromagnetic fields, Maxwell's equations, introduction to electromagnetic radiation. Prerequisite: Mathematics 111 or equivalent. One course. Teitsworth

185. Modern Optics I. (NS) Optical processes including the propagation of light, coherence, interference, and diffraction. Consideration of the optical properties of solids with applications of these concepts to lasers and modern optical devices. Lecture and laboratory projects. C-L: Electrical Engineering 274. One course. Guenther

191, 192. 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. One course each. Staff

For Seniors and Graduates


205. Introduction to Nuclear Physics. (NS) 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, nuclear reactions, particle scattering, nuclear models of the deuteron, nuclear forces, parity. One course. Weller

211. Fundamentals of Quantum Mechanics. (NS) Experimental foundation, wave-particle duality, the Schrödinger equation and the meaning of the wave function, analytical and numerical solution of one-dimensional problems, formulation in terms of
states and operators, angular momentum and spin, applications to the harmonic oscillator and hydrogen atom. Prerequisites: Mathematics 111 and Physics 143L. One course. Greenside

212. Applications of Quantum Mechanics. (NS) Further development of quantum mechanics with applications. Topics include: perturbation methods (time-independent and time-dependent), path integrals, scattering theory, local density theory, elements of relativistic quantum mechanics, and miscellaneous examples drawn from atomic, condensed matter, particle, and nuclear physics. Prerequisite: Physics 211. One course. Greenside

213. Nonlinear Dynamics. (QR) Introduction to the study of temporal patterns in nonequilibrium systems. Theoretical, computational, and experimental insights will be used to explain phase space, bifurcations, stability theory, universality, attractors, fractals, chaos, and time-series analysis. Prerequisites: Computer Science 6, Mathematics 111, and Physics 51L, 52L. C-L: Computer Science 264. One course. Behringer or Greenside

214. Introduction to Solid-State Physics. (NS) 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. C-L: Electrical Engineering 214. One course. Daniels-Race or Teitsworth

217S. Advanced Physics Laboratory and Seminar. (NS) Experiments involving the fields of electricity, magnetism, heat, optics, and modern physics. One course. Howell

222S. General Relativity. (NS) Review of special relativity; ideas of general relativity; mathematics of curved space-time; formation of a geometric theory of gravity; Einstein field equation applied to problems such as the cosmological red-shift and blackholes. Prerequisites: Physics 181 and Mathematics 111 or equivalents. One course. Lee

225, 226. Elementary Investigations. (NS) Training in the laboratory and library methods of physical research. Qualified students may conduct elementary investigations under the supervision of a member of the staff. One course each. Staff

230. Mathematical Methods in Physics. (QR) Includes topics in complex analysis, residue calculus, infinite series, integration, special functions, Fourier series and transforms, delta functions, and ordinary differential equations; and use of MATHEMATICA for graphical, symbolic, and numerical computation. Prerequisite: Mathematics 111. One course. Matveev

271. Quantum Optics. (NS) The linear and nonlinear interaction of electromagnetic radiation and matter. Topics include simple theory of lasers, second-harmonic generation, photon echos, bistability, Raman scattering, Brillouin scattering, phase conjugation, two photon lasers, and cooling and trapping of atoms. Prerequisites: Physics 212 and 231. One course. Thomas

281. Classical Mechanics. (NS) Newtonian, Lagrangian, and Hamiltonian methods for classical systems; symmetry and conservation laws; rigid body motion; normal modes and forced oscillations; small nonlinear oscillations; canonical transformations; Hamiltonian chaos. One course. Plesser

291S. Physics at the Cutting Edge. (NS) Introduction, for graduates and advanced undergraduates, to research topics at the core of recent advances in physics. Prerequisites: Physics 181, 182, and 211, or equivalents. One course. O’Shea and Springer

COURSES CURRENTLY UNSCHEDULED

102. Applications of Modern Physics in Medicine. (NS)
186. Modern Optics II. (NS)
215. Principles of Quantum Theory. (NS)
261. Laser Physics. (NS)

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, 42L or 51L, 52L or 53L, 54L, or equivalents; Mathematics 31, 32, 103, 111, or equivalents, and one additional course at the 100 or 200 level.

Major Requirements. Physics 143L, 176, 181, 211, either 171L or 217S, 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, 42L or 51L, 52L or 53L, 54L, or equivalents; Mathematics 31, 32, 103, 111, or equivalents, and one additional course at the 100 or 200 level.

Major Requirements. Physics 143L, 176, 181, 182, 211, 212, two among the laboratory courses 171L, 217S, and 225, plus one other course in physics above 100 except for Physics 230. (Students planning graduate study in physics are urged to take on additional elective in physics and one in mathematics. (For the major, Physics 230 is considered to be a mathematics courses.)

Honors/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 (PS)

Professor Lange, Chair; Associate Professor Eldridge, Director of Undergraduate Studies; Professors Aldrich, Ascher, Fish, Gillespie, Greeco, Horowitz, Hough, N. Keohane, R. Keohane, Kitschelt, Kornberg, MacIntyre, Mickiewicz, Palez, Price, and Spragens; Associate Professors Brehm, Coles, Feaver, Grant, Johns, Mckean, Munger, and Niou; Assistant Professors Gelpi, Goemans, Gronke, Hamilton, Morgenstern, Orr, Pickus, and Shi; Professors Emeriti Ball, Barber, Brabanti, Cleaveland, Hall, Holsti, and Leach; Associate Professor of the Practice Kiss; Adjunct Professors Curtis, Kessler, and O'Barr

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/
INTRODUCTORY COURSES

The following courses introduce the study of political science. Courses numbered 49S, 60S, and 91 through 94 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.

20S. Seminar: Problems in Political Science. (SS) Special topics courses open only to freshmen.
   A. American Politics
   B. Comparative Politics
   C. Political Theory
   D. International Relations
   One course. Staff

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

60S. Introductory Seminars in Political Science. (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
   One course. Staff

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) Theory and practice of American government and politics; federal-state relations; the separation and interrelationships of the executive, legislative, and judicial branches of government; judicial review; the role of political parties and public opinion; the formulation and execution of domestic and foreign policy; civil liberties. One course. Staff

91D. The American Political System (A). (SS) Same as Political Science 91 except instruction is provided in two lectures and one small discussion meeting each week. One course. Staff

92. Comparative Politics (B). (SS) Different types of political systems, their origins and evolution; basis of authority under totalitarian, authoritarian, liberal, and social democratic politics; problems in developing political authority, especially in poor countries via revolution, populism, nationalism, or authoritarianism. C-L: Comparative Area Studies. One course. Staff
92D. Comparative Politics. (B). (SS) Same as Political Science 92 except instruction is provided in two lectures and one small discussion meeting each week. One course. Staff

93. Elements of International Relations. (D). (SS) The nature of international politics, the analysis of national power, the instruments of foreign policy, and the controls of state behavior. One course. Staff

93D. Elements of International Relations. (D). (SS) Same as Political Science 93 except instruction is provided in two lectures and one small discussion meeting each week. One course. Staff

94. Contemporary Political Ideologies. (C-N). (SS) Liberalism, conservatism, socialism, fascism, and feminism. One course. Staff

94D. Contemporary Political Ideologies. (C-N). (SS) Same as Political Science 94 except instruction is provided in two lectures and one small discussion meeting each week. One course. Staff

98. Introduction to Canada. (B). (SS) See C-L: Canadian Studies 98 also C-L: Comparative Area Studies, Economics 98, History 98, and Sociology 98. One course. Staff

COURSES TAUGHT IN DUKE STUDY ABROAD PROGRAMS

50. Duke-Administered Study Abroad: Special Topics in Political Science. Topics differ by section. One course. Staff

100, A-Z. Duke University Overseas Program. (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. C-L: Comparative Area Studies. Variable credit.

100A. Duke Semester/Academic Year Program: Berlin. (FL, SS)
.01 Environmental Policy in Europe. (B). (SS) One course. C-L: Comparative Area Studies. Variable credit.

100E, S. Duke Summer Program: London. (SS)
.01 Media and Politics in Britain. (B). C-L: Comparative Area Studies. Two courses.

100J. Duke Wind Symphony Semester Program: Vienna. (SS)
.01 Government and Politics of Austria in Europe. (B). C-L: Comparative Area Studies. One course.

100K. Duke Summer Program: London/Cambridge/Edinburgh. (SS)

100L, S. Duke Summer Program: Oxford. (SS)
.01 Political System of Modern Britain. (B). Two courses. C-L: Comparative Area Studies. Variable credit.

100M. Duke Summer Program: Spain. (SS)
.01 Government and Politics of Spain. (B). Not open to students who have taken Political Science 117: Comparative Government and Politics: Spain. C-L: Comparative Area Studies. One course.
100Q. Duke Semester/Academic Year Program: France. (FL, SS). 01 Introduction to Islam and to Problems in the Middle East (B). C-L: Comparative Area Studies. One course.

100U. Duke Summer Program: Korea-Taiwan I. (SS). 01 Comparative Analysis of Democratic Institutions in East Asia (B). Analysis of the selection and consequences of democratic political institutions in East Asian countries. Topics include electoral systems, districting and timing of elections, presidential and parliamentary systems of executive responsibility, structure of the legislature, formation of parties and governing coalitions, federalism, term limits, plebiscites, constitutional amendments. C-L: Comparative Area Studies. One course.

100V. Duke Summer Program: Korea-Taiwan II. (SS). 01 East Asian Political Economy: Institutions, Networks, and Politics (B). See C-L: Sociology 188C; also C-L: Public Policy Studies 100A. One course.

100Z. Duke-Administered Study Abroad: Advanced Special Topics in Political Science. Topics differ by section. One course. Staff

OTHER UNDERGRADUATE COURSES

101C, S. Issues in Twentieth-Century American Political Theory (C-N). (SS) Seminar on contemporary issues of American political thought. Attempts to refurbish or develop alternatives to the dominant liberal tradition. Open only to students in the Twentieth-Century America (FOCUS) Program. One course. Staff


103B. Urban Poverty and the Urban Underclass (A). (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. C-L: African and African-American Studies 148B. One course. Orr

104. Politics and Literature (C-N). (SS) The enduring questions of politics and political philosophy illustrated in Western literature: historical, literary, and philosophical analysis. One course. Gillespie or Grant


106D. International Security (D). (SS) Same as Political Science 106 except instruction is provided in two lectures and one small discussion meeting each week. One course. Feaver

107. Environmental Politics and Policies in the Industrial World (B). (SS) Comparative analysis of environmental problems, protest, preferred approaches, and policy mix chosen in politically diverse industrialized nations including the United
States, Russia, Japan, and those in Europe. C-L: Comparative Area Studies and Public Policy Studies 107. One course. McKean

107D. Environmental Politics and Policies in the Industrial World (B). (SS) Same as Political Science 107 except instruction is provided in two lectures and one small discussion meeting each week. C-L: Comparative Area Studies and Public Policy Studies 107D. One course. McKean


108S. The American Presidency (A). (SS) Same as Political Science 108 except in seminar format. One course. Staff

110. American Political Parties (A). (SS) Introduction to party systems with application to the United States, including parties in the electorate, parties as organizations, and parties in government. One course. Gronke and Kornberg

111. Contemporary Japanese Politics (B). (SS) Introduction to political change in postwar Japan. Foundations of the modern industrial state, electoral politics, policy-making and bureaucracy, defense, foreign policy, and foreign trade. C-L: Comparative Area Studies. One course. McKean

113A. Issues of International Political Economy I: International Trade (D). (SS) An 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. One course. Grieco

113B. Issues of International Political Economy II: International Money and Finance (D). (SS) An 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. One course. Grieco

114. Public Opinion (A). (SS) Public attitudes toward political problems; special attention paid to the origins, manifestations, and consequences of public opinion in American politics. One course. Brehm or Gronke

115. Politics and Society in Germany (B). (SS) Industrialization, democratization, and fascism in Germany; social structure, political institutions, and political culture; selected public policies; Germany in the world economy and in world politics. C-L: Comparative Area Studies. One course. Kitschelt

115S. Post-World War II Europe and East Asia: A Comparative Perspective (D). (SS) 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. Close examination of the evolution of Western European politics and institutions since World War II (most importantly, the European Union); comparison with that of East Asia, another key region of the modern world that has not become a zone of peace but in fact may be increasingly a zone of major conflict and even war. C-L: Comparative Area Studies. One course. Grieco

117. Comparative Government and Politics: Selected Countries (B). (SS) Special topics course treating the political system of one or more countries from a comparative perspective. One course. Staff
118. Ethnicity and American Foreign Policy (D). (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; 1760-1775, and 1880-1915, especially the impact of the latter on American policy before and after World War II. Also examines the impact of foreign policy on identity formation, particularly the merging of "hyphenated-Americans" from Europe into "Whites." One course. Hough


120. International Conflict and Violence (D). (SS) Nature and processes of international conflict and violence with emphasis on contemporary instances of violence in international affairs. Consideration of restraints on violence. One course. Eldridge

120S. International Conflict and Violence (D). (SS) Same as Political Science 120 except in seminar format. One course. Staff

122. Foundations of Modern International Politics (D). (SS) Interactions between domestic politics and foreign policy-making and their effects on international relations. Problems, institutions, and processes studied under varied methodologies. No prerequisite, but Political Science 93 recommended. One course. Eldridge or Goemans

123. Introduction to Political Philosophy (C-N). (SS) The nature and enduring problems of political philosophy, illustrated by selected theorists in the Western political tradition. One course. Staff

124. National Economic Statecraft (D). (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. One course. Grieco

125. Comparative Approaches to Global Issues (B). (CZ, SS) Not open to students who have taken Religion 121. See C-L: Comparative Area Studies 125; also C-L: Cultural Anthropology 125, History 137, Perspectives on Marxism and Society, Religion 183, and Sociology 125. One course. Staff

126. Theories of Liberal Democracy (C-N). (SS) Critical discussion of classic theorists, such as Locke, Rousseau, Mill, and Madison, and contemporary theories of liberal democracy. One course. Grant or Spragens

127. Law and Politics (A). (SS) Nature and functions of law; Anglo-American legal institutions; the process of judicial decision making; and the relationships among judges, lawyers, legislators, and administrators in the development of public as well as private law. One course. Fish

128. Multiculturalism and Political Theory (C-N). (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. One course. Coles

130. Women and the Political Process (C-N). (SS) See C-L: Women's Studies 130. One course. Staff

131. Introduction to American Political Thought (C-N). (SS) Basic elements in the American political tradition as developed from its English roots to the present. One course. Grant or Spragens

1325. Immigration, Rights, and Citizenship (C-N). (SS) See C-L: Public Policy Studies
360 Courses and Academic Programs

133. Japan in World Politics (D). (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. C-L: Comparative Area Studies. One course. McKean

135. Political Development of Western Europe (B). (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. C-L: Comparative Area Studies. One course. McKean

136. Comparative Government and Politics: Western Europe (B). (SS) Modern political institutions and processes of European democracies: political parties, interest groups and parliaments; regional, religious, and class divisions; political participation and mobilization; relationships of state, society and economy; political, social and economic change in postwar Europe. C-L: Comparative Area Studies. One course. McKean or Lange

136D. Comparative Government and Politics: Western Europe (B). (SS) Same as Political Science 136 except instruction is provided in two lectures and one small discussion meeting each week. C-L: Comparative Area Studies. One course. McKean or Lange

137. Campaigns and Elections (A). (SS) An introduction to voting and elections in the United States, with emphasis on presidential nomination and election procedures, characteristics of the American electorate, and theories of voting behavior in presidential and congressional elections. One course. Aldrich, Brehm, Gronke, or Kornberg

137D. Campaigns and Elections (A). (SS) Same as Political Science 137 except instruction is provided in two lectures and one small discussion meeting each week. One course. Aldrich, Brehm, Gronke, or Kornberg

138. Quantitative Political Analysis I (C-E). (QR) 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. One course. Brehm

138D. Quantitative Political Analysis I (C-E). (QR) Same as Political Science 138 except instruction provided in two lectures and one small discussion meeting each week. One course. Brehm

139. Conflict, Collusion, and Cooperation (C-E). (SS) How actors in the political process manipulate information, institutions, and strategies to produce preferred outcomes. Applications to elections, legislative behavior, international conflict, and other areas. One course. Niou

140. Feminist Theory (C-N). (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. C-L: Women's Studies. One course. Curtis

141. Introduction to African-American Politics (A). (SS) Traces the history, evolution, and maturation of the African-American political experience in America from the colonial period through contemporary times. Impact of African-American political

142. War and Peace (D). (SS) The use of systems theory in comparative political history to explain why some international systems during particular periods have been plagued by war while others have been relatively peaceful. Special attention given to the Bismarckian system. One course. Staff

142S. War and Peace (D). (SS) Same as Political Science 142 except in seminar format. One course. Staff

143. Ethnicity, Religion, and American Parties (A). (SS) The extent to which social class or ethnicity and religion have been the bases of American political parties from the eighteenth century to the present—and, therefore, the relationship of economic and social issues in American campaigns. One course. Hough

144. Force and Statecraft (D). (SS) Theory and practice of the use of force as an instrument of state policy in international relations. Prerequisite: Political Science 93 or equivalent. One course. Feaver

145. Political Analysis for Public Policy-Making (A). (SS) Prerequisite: Political Science 90A, 91, 101, or equivalent. See C-L: Public Policy Studies 114; also C-L: Latin American Studies. One course. Ascher, Frank, Hamilton, Mayer, or Mickiewicz

146D. American Legislative Behavior (A). (SS) An introduction to the American legislative process, with specific focus on the U.S. Congress. Emphasis on legislative rules and procedures, congressional elections, and the behavior of legislators in their representative and policy-making roles. One course. Gronke


148D. Environmental Politics Beyond Borders (D). (SS) 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. C-L: Comparative Area Studies and Public Policy Studies 143D. One course. McKean


151. Dictators and Democrats in Modern Latin America (B). (SS) The political trajectories of Mexico and several South American countries. Democratization efforts, military governments, democratic transitions, and the consolidation of democracy. Political and economic plans of the leaders—dictators, populists, and democratic governments. This course is linked with Political Science 151B which examines more specifically current democratic institutions in these countries. C-L: Comparative Area Studies. One course. Morgenstern

151A. Introduction to Latin American Politics (B). (FL, SS) Same as Political Science 151 except taught in Spanish. C-L: Comparative Area Studies and Latin American Studies. One course. Staff

151B. Presidents, Parties, and Legislatures: The Institutions of Modern Latin American Democracies (B). (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. C-L: Comparative Area Studies and Latin American Studies. One course. Morgenstern

151D. Introduction to Latin American Politics (B). (SS) Same as Political Science 151 except taught with two lectures and one discussion group. C-L: Comparative Area Studies and Latin American Studies. One course. Morgenstern

155. The Politics and Economics of Developing Areas (B). (SS) Process and politics of transition of rural and agrarian societies to urban and industrial societies: Soviet Union, United States, India, Africa, and Asia. C-L: Comparative Area Studies. One course. Staff

156S. American Communities: A Documentary Video Approach. (AL, SS) See C-L: Film and Video 105S; also C-L: Cultural Anthropology 134S, History 150B, and Public Policy Studies 105S. One course. Staff

157D. Foreign Policy of the United States (D). (SS) Sources of American foreign policy, containment, international economic policy, deterrence, arms control, and disarmament. Prospects for the future. Emphasis on the period since World War II. One course. Feaver

158. Transnational Relations and International Public Policy (D). (SS) 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), and the unprecedented expansion of trade and integration of capital markets. Links between the world political economy and domestic politics. One course. Keohane

158D. Transnational Relations and International Public Policy (D). (SS) Same as Political Science 158 except instruction is provided in two lectures and one small discussion meeting each week. One course. Keohane

159. Ambition and Politics (C-N). (SS) A theoretical examination of the role of ambition in politics, including works by or on Homer, Plato, Plutarch, Machiavelli, Shakespeare, Tocqueville, Nietzsche, and Hitler. One course. Gillespie

162. Human Rights in Theory and Practice (C). (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. C-L: Public Policy Studies 162. One course. Kiss

163. Democracy and Democratization in North America: Political Institutions in Mexico, the United States, and Canada (B). (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 executive and 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. One course. Morgenstern
164. Political Organizations (A). (SS) Using classical organization theory and research on decision-making behavior of the members of political organizations to study those organizations (such as political parties, labor unions, businesses, and public bureaucracies). One course. Brehm


166. Congress and the President (A). (SS) Policy in the United States system of divided government representing cooperative and adversarial goals of the executive branch and the Congress. The executive branch’s control of the implementation of policy, with power to make appointments to government departments and regulatory agencies. Congress’s control of the purse strings, budgets of agencies, and a final say in political appointments. Features of this balance of power in policy-making; institutional and political origins of laws and regulations. One course. Munger

167. International Law and International Institutions (D). (SS) An investigation of the relationship between international politics and international law, by examining how international institutions actually operate, the significance of legal rules, issues of compliance with such rules, and the connections between international relations and domestic law. One course. R. Keohane

167D. International Law and International Institutions (D). (SS) Same as Political Science 167 except instruction is provided in two lectures and one small discussion meeting each week. One course. R. Keohane

168. Analysis of Political Decision Making (C-E). (SS) Surveys of some of the most prominent problems, methods, ideas, and findings that have emerged in recent theoretical studies of politics. Intellectual puzzles, speculative models and normative and explanatory applications, individual decision theory, game theory, and social choice theory. Not open to students who have taken Political Science 139. One course. Niou

169. Chinese Politics (B). (SS) An introduction to the Communist revolution, the structure of the political system and political decision making in the People’s Republic of China, the relations between state and society, and the political implications and consequences of reforms undertaken in the post-Mao era. C-L: Comparative Area Studies. One course. Shi

171. From Apartheid to Democracy in South Africa (B). (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. C-L: African and African-American Studies 171 and Comparative Area Studies. One course. Johns

172. Introduction to the Politics of the Communist System (B). (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. One course. Shi

175A. Distributive Justice and the Social Sciences (C-N). (SS) Prerequisites: Economics 1 or 51 and Economics 2 or 52. See C-L: Economics 199. One course. Moulin

176. Perspectives on Food and Hunger (B). 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. C-L: Comparative Area Studies. One course. Johns
177. American Constitutional Development I (A). (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. C-L: History 177A. One course. Fish

178. American Constitutional Development II (A). (SS) Development of the United States Constitution through modern Supreme Court decisions: the scope of authority, liberty, and equality through interpretations of the Bill of Rights and the Fourteenth Amendment. One course. Fish

179. Ecological Crisis and Political Theory (C-N). (SS) Interconnections between various dimensions of the ecological crisis including: conceptions of self, nature, ecological ethics, and environmental justice as related to politics, economics, and new social movements. One course. Coles

180. Media in Comparative Perspective (B). (SS) See C-L: Sociology 182; also C-L: Canadian Studies, Comparative Area Studies, and Film and Video. One course. Staff

183S. Democracy and Social Choice (B). (SS) Basic questions about 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, term limits. Different theories of social choice; empirical comparisons of politics in countries with different democratic institutions. One course. Niou

184S. Canadian Issues (B). (SS) Prerequisite: Canadian Studies 98 or consent of instructor. See C-L: Canadian Studies 184S; also C-L: Comparative Area Studies, Cultural Anthropology 184S, Economics 184S, History 184S, and Sociology 184S. One course. Staff


189, 190. 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. One course each. Staff

191, 192. Independent Study (A, B, C, D). Directed reading and/or research resulting in a substantive paper or report containing significant analysis and interpretation on a politics-related topic, under the supervision of a faculty member. Open only to qualified juniors by consent of the director of undergraduate studies and of the supervising instructor. One course each. Staff

193, 194. Independent Study (A, B, C, D). Directed reading and/or research resulting in a substantive paper or report containing significant analysis and interpretation on a politics-related topic, under the supervision of a faculty member. Open only to seniors by consent of the director of undergraduate studies and of the supervising instructor. One course each. Staff

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 credits.

A. Programs in American Government and Politics
B. Programs in International Relations

Four courses.

197S. Dealing with the Past in Democratic Transitions (B). (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. One course. Johns

198. Documentary Film History (B). (AL, CZ) See C-L: History 150A; also C-L: Film and Video, Literature 117, and Perspectives on Marxism and Society. One course. Gaines, Paletz, or Wood

199. Special Topics in Government and Politics. (SS) Topics vary from semester to semester.

A. American Government and Politics
B. Comparative Government and Politics
C. Political Theory
D. International Relations

One course. Staff

FOR SENIORS ONLY

200H. Senior Honors Program (A, B, C, D). (SS) Two-course, year-long sequence.

Fall: Senior Thesis Design, Research, Writing; One course.
Spring: Thesis Writing and Defense; One course.
Consent of instructor required. One course. Staff

200S. Senior Seminars. (SS) Special topics courses; open also, if places are available, to qualified juniors who have earned a 3.0 average and obtain the consent of the instructor.

A. American Government and Politics
B. Comparative Government and Politics
C. Political Theory
D. International Relations

One course. Staff

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) Major security issues. Prerequisite: a course in international relations or American foreign policy. One course. Staff

203S. Issues in Politics and the Media in the United States (A). (SS) Research seminar analyzing significant questions in the relationship between politics and the media of communication. Consent of instructor required. C-L: Canadian Studies and Film and Video. One course. Paletz

205S. The Political Economy of Environmental Resources (B). (SS) The rational choice tradition (public goods, collective action, game theory, property rights, new institutionalism) as applied to environmental problems, resource exploitation, environmental justice, and the design of an environmentally sound society. One course. McKean
2065. Political Participation: Comparative Perspectives (B). (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. C-L: Comparative Area Studies. One course. Shi

2075. American Constitutional Interpretation (A). (SS) U.S. Supreme Court interpretation of selected provisions of the Constitution. Prerequisites: Political Science 127 or 177 or 178 and consent of instructor. One course. Fish

2105. Politics and Markets in Modern Capitalism (D). (SS) Exploration, through 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. One course. R. Keohane

2125. Politics and Markets (D). (SS) Seminar on classics of political economy, exploring the relationship between economic markets and politics as treated in the works of Adam Smith, Marx, Polanyi, Schumpeter, Lindblom, and Hirsch, as well as contemporary works on globalization and its effects on domestic politics. Open only to seniors and graduate students. One course. R. Keohane

2135. Theories of International Political Economy (D). (SS) Comparison and assessment of traditional and modern theories in terms of their logical and empirical validity. One course. Grieco

2145. Economy, Society, and Morality in Eighteenth-Century Thought (C). (SS) Open only to seniors majoring in either economics or political science. Not open to students who have had Economics 146. See C-L: Economics 200C. One course. De Marchi and Grant

2155. Democratic Institutions (B). (SS) How do 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? What is the impact of such arrangements on the performance of democracies? Are some arrangements more durable than others? How do the rules of the game structure power relations among parties? Do democratic institutions affect economic and social policy outcomes? One course. Kitschelt

217. Comparative and Historical Methods (B). (SS) See C-L: Sociology 214; also C-L: Comparative Area Studies. One course. Geretti, Lin, or Tiryakian

218. Political Thought in the United States (C-N). (SS) American political thought through the Civil War period. The Founders and their European antecedents. Debates over the Constitution, slavery, and the Union. One course. Gillespie or Grant

2195. Film and Politics (A). (SS) Analysis of selected film genres and films as they illuminate political behavior. C-L: Film and Video. One course. Paletz

2205. Problems in International Politics (D). (SS) Prerequisite: one course in international relations, foreign policy, or diplomatic history. One course. Staff

222. Introduction to Statistical Analysis (C-E). (QR) Basic applications of statistical theory to political questions: research design, hypothesis tests, computer data analysis. Consent of instructor required for undergraduates. One course. Brehm or Gronke

223. Ancient Political Philosophy (C-N). (SS) Intensive analysis of the political philosophy of Plato, Aristotle, and other ancient theorists. C-L: Classical Studies 203. One course. Gillespie or Grant

2245. Modern Political Theory (C-N). (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. One course. Grant or Spragens

225. Topics in Comparative Government and Politics: Western Europe (B). (SS) Topics vary: the development of mass democracy and the welfare state; 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. C-L: Comparative Area Studies. One course. Kitschelt or Lange

227S. Issues in International Communications (B). (SS) Research seminar analyzing selected political issues in international communications. C-L: Film and Video. One course. Paletz

228S. Nineteenth- and Twentieth-Century Political Philosophy (C-N). (SS) Topics in nineteenth- and twentieth-century political philosophy, considering such authors as Hegel, Marx, Nietzsche, Kant, Fichte, Dostoevsky, and Heidegger. One course. Coles or Gillespie

229S. Contemporary Theory of Liberal Democracy (C-N). (SS) One course. Spragens

230S. Introduction to Positive Political Theory (C-E). (SS) Basic concepts of political economy, theory of preference and choice, social choice theory, and decision and game theory. One course. Aldrich or Niou

231S. Crisis, Choice, and Change in Advanced Democratic States (B). (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. C-L: Comparative Area Studies. One course. Kitschelt

232S. Political Economy: Theory and Applications (C-E). (SS) Selected topics. C-L: Comparative Area Studies. One course. Lange

234S. Political Economy of Development: Theories of Change in the Third World (B). (SS) Alternative approaches to political economy and social change in the Third World. C-L: Comparative Area Studies, Cultural Anthropology 234S, History 234S, and Sociology 234S. One course. Staff

236S. Hegel’s Political Philosophy (C-N). (SS) Within context of Hegel’s total philosophy, an examination of his understanding of phenomenology and the phenomenological basis of political institutions and his understanding of Greek and Christian political life. Selections from Phenomenology, Philosophy of History, and Philosophy of Right. C-L: Philosophy 236S. One course. Gillespie


240S. American Political Behavior (A). (SS) One course. Staff

247. Politics and Philosophy of Self and Other (C-N). (SS) Epistemological, ontological, ethical, and political dimensions of relations between self and other. Theorists may include Husserl, Merleau-Ponty, Levinas, Derrida, Adorno, Gadamer, Sartre, Foucault, and Bahktin. One course. Coles

256S. Theory and Practice of National Security (D). (SS) 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. One course.
Feaver

266. Comparative Social Policy (B). (SS) See C-L: Public Policy Studies 266; also C-L: Canadian Studies, and Comparative Area Studies. One course. Staff


271S. International Environmental Regimes (B). (SS) 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). C-L: Comparative Area Studies and Public Policy Studies 258S. One course. McKean


273S. Heidegger (C-N). (CZ, 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. C-L: Philosophy 273S. One course. Gillespie

274S. Seminar in Urban Politics and Urban Public Policy (A). (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. C-L: Public Policy Studies 275S. One course. Orr

275. The American Party System (A). (SS) An intensive examination of selected facets of American national political parties, such as relationships between presidential and congressional politics, the politics of national conventions, recent foreign policy and party alignments, and the controversy over party government. One course. Staff

276S. Media and Democratization in Russia (B). (SS) See C-L: Public Policy Studies 243S; also C-L: Comparative Area Studies. One course. Mickiewicz

277. Comparative Party Politics (B). (SS) The impact of social and political systems on party structures, functions, ideologies, and leadership recruitment. Emphasis upon research techniques and objectives. C-L: Canadian Studies and Comparative Area Studies. One course. Lange

278S. Black Political Participation (A). (SS) Topical issues concerning the political participation of African Americans, primarily on the national level. Black voter turnout, the electoral choice, the role of African Americans in the Democratic and Republican parties, black interest group politics, black political opinion, and black political socialization. C-L: African and African-American Studies 278S. One course. Orr

281. American Political Thought Since the Gilded Age (C-N). (SS) The development of American political thought since the late nineteenth century. Special emphasis on the Progressive era and on modern-day attempts to reconstruct theories of liberalism and democracy. One course. Staff
282S. Canada (B). (SS) See C-L: Canadian Studies 282S; also C-L: Comparative Area Studies, Cultural Anthropology 282S, Economics 282S, History 282S, and Sociology 282S. One course. Staff


284S. Public Policy Process in Developing Countries (B). (SS) See C-L: Public Policy Studies 284S; also C-L: Comparative Area Studies, Cultural Anthropology 284S, Economics 284S, History 284S, and Sociology 284S. One course. Ascher

285S. Seminar in North American Studies. Topics vary each semester. One course. Staff

286. Theory and Practice of International Security (D). (SS) Analyses and criticism of the current theoretical, empirical, statistical, and case study literature on international security. No prerequisite, but Political Science 93 recommended. One course. Goemans

287. Revolution, Reform, and Democratization (B). (SS) A comparison of revolution and democratization in the United States, Western Europe, and Russia with that in the contemporary Third World. One course. Hough


289S. Contemporary Ethical Theories (C-N). (CZ, SS) Consent of instructor required. See C-L: Philosophy 203S; also C-L: Women’s Studies. One course. Flanagan, Golding, or MacIntyre


299. Advanced Topics in Government and Politics. (SS) Topics vary from semester to semester.
   A. American Government and Politics
   B. Comparative Government and Politics
   C. Political Theory
   D. International Relations
   One course. Staff

COURSES CURRENTLY UNSCHEDULED

102. Comparative Analysis of Democratic Institutions (B). (SS)
121. International Organization (D). (SS)
152. Political Mobilization of the American Public (A). (SS)
160. Contemporary Global Issues (D). (SS)
161S. Comparative Government and Politics: Africa (B). (SS)
170. Europe Transformed (D). (SS)
182. Classical Political Philosophy (C-N). (CZ)
186. Political Leadership (A). (SS)
188. The Psychology of Political Symbols (A). (SS)
195. Comparative Political Behavior in the United States and Canada (B). (SS)
202. American Foreign Economic Policy (D). (SS)
204S. Ethics in Political Life (C-N). (SS)
208S. Analyzing the News (A). (SS)
209. Problems in State Government and Politics (A). (SS)
211S. Current Problems and Issues in Japanese Politics (B). (SS)
2165. Evolution of European Marxism (C-N). (SS)
2215. International Institutions and the World Political Economy (D). (SS)
233. Intermediate Statistical Methods (C-E). (QR)
2355. Comparative Development of Islam (B). (SS)
2445. The Politics of the European Community (D). (SS)
249. The Politics of Health Care (A). (SS)
2505. International Security after the Cold War (D). (SS)
2525. The Nation-State and the International System (D). (SS)
2545. Essential Global Democracy (A). (SS)
2575. Making American Defense Policy (D). (SS)
2605. The Tradition of Political Inquiry (C-N). (SS)
2625. Transitions from Classic Communism (B). (SS)
2655. The Process of International Negotiation (D). (SS)
2695. War and Wealth in the International System (D). (SS)
2705. Fundamentals of Political Economy (C-E). (SS)
2795. Political Protest and Collective Mobilization (B). (SS)
293. Federalism (B). (SS)

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). Students majoring in the department must complete at least one course in each of three fields.


*If subject matter is appropriate to the field
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 must be at least one course in each of three 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.

An area of concentration is defined as five courses, at least one of which must be at the 200 level. The twelve areas of concentration and the courses that qualify for each area are listed below. It should be noted that many courses are listed under more than a single area of concentration. All majors are required to select a concentration in consultation with their advisor; majors are strongly encouraged to make their selection by the end of the first semester of their junior year.

All courses currently being offered by the department are listed under one or more areas of concentration, but this list does not include courses that may be offered by visiting faculty, courses taken abroad, courses transferred from other universities, or courses that may have content that varies from year to year. More specifically, the following types of courses are not included in these lists:

- PS 20S First-year seminars
- PS 49S First-year seminars
- PS 60S Introductory Seminars in Political Science
- PS 100 Duke study abroad programs
- PS 189, 190 Internship credit
- PS 191-194 Independent Study
- PS 196 Washington Semester Program
- PS 200A-D Senior Seminars

Students taking such a course should consult with their advisors to determine in which sequence it will be assigned. The same procedure will apply to courses taught on a one-time basis by visiting faculty.

Areas of Concentration

### American Institutions and Public Policy

**Introductory**—205*, 495*, 605*, 91, 101A


### Public Opinion, Campaigns, and Elections

**Introductory**—205*, 495*, 605*, 91

- **100-Level**—110, 114, 129, 131, 137D, 143, 152, 154, 188, 189*, 190*, 191*, 192*, 193*, 194*, 199A*

- **200-Level**—200A*, 200H*, 203S, 208S, 219S, 240, 275, 299A*

### Philosophical and Legal Foundations of American Politics

**Introductory**—205*, 495*, 605*, 91

- **100-Level**—126, 127, 131, 146D, 177, 178, 191*, 192*, 193*, 194*, 199A*, 199C-N*

- **200-Level**—200A*, 200H*, 207S, 218, 229S, 238S, 254, 299A*, 299C-N*

### Comparative Democracies

**Introductory**—205*, 495*, 605*, 91, 92, 98

*If subject matter is appropriate to the field

†Students selecting this sequence must select at least two courses that deal with non-North American political systems.


Comparative and International Political Economy

Introductory — 205*, 495*, 605*, 92, 93
100-Level — 107, 113A, 113B, 116S, 122, 125, 136, 139, 147, 148, 155, 158, 164, 170, 172, 176, 191*, 192*, 193*, 194*, 199B*

Politics of Socialist and Capitalist Development

Introductory — 205*, 495*, 605*, 92

International Security

Introductory — 205*, 495*, 605*, 93
100-Level — 106D, 120, 122, 142, 144, 157D, 167D, 191*, 192*, 193*, 194*, 199D*
200-Level — 200D*, 200H*, 201S, 250S, 256S, 257S, 286, 288, 299D*

Problems and Issues in Contemporary International Relations

Introductory — 205*, 495*, 605*, 93
100-Level — 116, 120, 121, 122, 147, 160, 162, 191*, 192*, 193*, 194*, 199D*
200-Level — 200D*, 200H*, 201S, 205S, 220S, 227S, 252S, 265S, 269, 299D*

Comparative Foreign Policy Analysis

Introductory — 205*, 495*, 605*, 93
100-Level — 118, 124, 133, 157D, 191*, 192*, 193*, 194*, 199D*
200-Level — 200D*, 200H*, 202, 272, 299D*

International Political Economy

(see Comparative and International Political Economy)

Political Theory

Introductory — 205*, 495*, 605*, 94, 123
100-Level — 101C, 104, 123, 126, 131, 140, 150, 159, 162, 175A, 179, 182, 183, 191*, 192*, 193*, 194*, 199C-N*

Research Methods

Introductory — 496*, 605*, 139
100-Level — 125, 138, 145, 164, 168, 175A, 191*, 192*, 193*, 194*, 199C-E*

Of the ten required political science courses, at least eight must be taken at Duke to meet major requirements. However, only seven political science courses need be taken at Duke if the student: (1) is transferring courses from a year-long approved study abroad program; or (2) transferred to Duke after completing two undergraduate

*If subject matter is appropriate to the field.
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. For the purpose of this requirement courses in the Washington Semester Program at American University (Political Science 196, A, D) will be counted as transfer courses.

**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 usually taken in the fall of the senior year, is devoted to development of the honors thesis and includes close supervision of the writing stage of the project by a faculty supervisor selected by the student. Continued close faculty supervision of the project occurs in Political Science 200H.03, which is an independent study course.

Completion of the thesis, its evaluation, and its defense before a three-member faculty committee 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 University political science courses, but one course may be a transfer course. Courses taken Pass/Fail and Advanced Placement courses do not satisfy course requirements for the minor.

**Primatology (PRI)**

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.

PRIMATE COURSES (PRI)

186S. Research Internship in Primatology. (NS) Part of the Undergraduate Program in Primatology. Supervised work either in a laboratory or at the Primate Center. Consent of instructor required. One course. Glander

187S. Senior Seminar in Primatology. (NS) Part of the Undergraduate Program in Primatology. Consent of instructor required. One course. Glander

Psychology (PSY)

Professor R. Erickson and Associate Professor Putallaz, Co-Directors of Undergraduate Studies; Professors Bettman, Blumenthal, Brodie, Carson, Cole, Costanzo (Chair: Social and Health Sciences), Dodge, Eckerman, C. Erickson, Flanagan, George, Glenbe, W. G. Hall, Hamilton, Hasher, Holland, Lockhead, Madden, Mangun, McCarthy, Payne, Purves, Roth, Rubin, Sheppard, Siegler, Spener, Staddon, Surwit, Thompson, M. Wallach, and R. Williams; Associate Professors Anderson, Curry, Day, Fairbank, Kuhn, Linville, Logue, March, Marsh, Mazuka, Meck, Nowicki, Quinn, Robins, Schmajuk, and C. Williams (Chair: Experimental); Assistant Professors Curran, Fischer, Gustafson, Hill, Needham, Serra, Swaab; Professors Emeriti Alexander, Borstelmann, Kimble, Kremen, Lakin, H. Schiffman, and Wing; Research Professors Crovitz, Goldstein, W. C. Hall, S. Schiffman, and L. Wallach; Assistant Research Professors Sandstrom and Welsh;
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. Dr. Pullataz has primary responsibility for the developmental and personality/social areas of the major, and Dr. R. Erickson has primary responsibility for the biological and cognitive areas.

11. Introductory Psychology. (SS) Biological bases of behavior, psychological development, cognitive psychology, personality, abnormal behavior, and social psychology. Designed as a broad introduction to psychology for nonmajors as well as majors; not required for the major. Students are expected to participate as subjects in three to six hours of psychological research. One course. W. G. Hall or Holland

40. Duke-Administered Study Abroad: Special Topics in Psychology. Topics differ by section. One course. Staff

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

91. Biological Bases of Behavior: Introduction and Survey (B). (NS) Physiological, developmental, and evolutionary approaches to behavior. 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. C-L: Neurosciences. One course. C. Erickson or C. Williams

92. Cognitive Psychology: Introduction and Survey (C). (SS) Overview of cognitive processes including pattern recognition, concept formation, attention, memory, imagery, language, problem solving, and thinking. Emphasis both empirical and theoretical. Students required to participate as subjects in three to six hours of psychological research if not done in a previous introductory class. Not open to students who have taken Psychology 107. C-L: Linguistics. One course. Day, Hasher, Rubin, or Serra

97. Developmental Psychology: Introduction and Survey (D). (SS) Theory and research on growth and behavior from infancy to adolescence. Students required to participate as subjects in three to six hours of psychological research. Not open to students who have taken Psychology 105. One course. Hill, Needham, or Putallaz

99. Personality and Social Behavior: Introduction and Survey (P). (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. 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. One course. Costanzo or Sandstrom

**100B, S. Mind, Brain, and Cognition (B, C). (SS)** How humans function in a complex world given their biology and their experience. 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. One course. Rubin

**100C, S. Adolescence and Coming to Grips with Ideals (D). (SS)** Adolescence as perhaps the 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. Open only to students in the FOCUS Program. One course. Stocking

**101. Research Methods in Psychological Science (G). (SS, NS)** 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. One course. Holland or staff

**103. B,C,D,P. Practicum.** Introduction to the research of a faculty member, often preparing the student for Independent Study. Format varies, including readings, data collection and analysis, discussions, or other activities. Term paper required in the form of an Independent Study proposal using the department form for this purpose; does not oblige the student to take the Independent Study. Register by designated suffix. Consent of instructor required. Pass/fail grading only. Half course. Staff

**104. Intelligence (C, D, P). (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. One course. Goldstein

**106. The Psychology of Women (P). (SS)** The psychology of women in this country: development, including sex differences, separation and individuation, and achievement; sexuality; sex-roles; mental health problems particularly salient to women; cultural influences on female development; and views within the field of psychology about women. C-L: Women's Studies. One course. Fischer, Hamilton, or Roth

**109A. Health Psychology (P). (SS)** The role of behavior in the etiology, pathophysiology, and treatment of cardiovascular disease and endocrine disorders; psychoneuroimmunology; chronic pain; and life style behaviors with health consequences such as smoking and eating disorders. Not open to students who have taken Psychology 98. One course. Hamilton or staff

**109B. Stress and Coping (P). (SS)** Psychological theory and empirical work on stress and coping, with an emphasis on post-traumatic stress. Not open to students who have taken Psychology 163S. Prerequisite: Psychology 99. One course. Staff

**109C. Behavioral Medicine (P). (SS)** 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. One course. R. B. Williams

111. Learning and Adaptive Behavior (B, C). (NS) Principles of instrumental learning in animals and humans. Prerequisite: none, but some knowledge of quantitative science desirable. One course. Staddon

112. Cognitive Neuroscience (C). (SS) Relating empirical findings in perception and cognition to structures and processes in the brains of animals and people. Emphasis on vision. Prerequisite: prior course in psychology. One course. Lockhead

113A. Self and Society (P). (SS) See C-L: Cultural Anthropology 141; also C-L: Women's Studies. One course. Apte, Ewing, or Luttrell

113B. Psychological Anthropology (C, D, P). (SS) See C-L: Cultural Anthropology 165. One course. Ewing or Strauss

113C. Culture and Thought (C). (SS) See C-L: Cultural Anthropology 151. One course. Quinn or Strauss

114. Personality (P). (SS) Representative theories of personality from Freud to the present, emphasizing problems of normal personality structure, dynamics, development, and assessment. One course. Curry


117. Statistical Methods (G). (QR) See C-L: Sociology 133. One course. Staff

118. Special Topics in Social Psychology (P). (SS) Study of one broad area in social psychology; exact content area varies by semester. Possible areas include social cognition, social influence, and applied social psychology. Prerequisite: Psychology 99 or 116. One course. Costanzo, Fischer, or Hamilton

119A. Abnormal Psychology (P). (SS) Disordered behavior and constructive personality change viewed in interpersonal and social context for purposes of understanding normal and abnormal personality development and functioning. One course. Carson or Robins

119B. Child Clinical Psychology (D, P). (SS) Theories of clinical intervention with children and families, evaluation of therapy and epidemiological data. Prerequisite: Psychology 97 or 99. One course. Gustafson

120. Comparative Psychology (B). (SS) A survey of animal behavior from the psychologist's perspective. One course. Holland

121. Early Cognitive Development (C, D). (SS) Perceptual and conceptual development in humans from birth through early childhood. Topics include how infants and young children perceive the world, how they acquire knowledge about the world, and how they remember and use this knowledge over time. Prerequisite: Psychology 97. One course. Needham

122. Psychology of Thinking (C). (SS) An overview of high level cognitive processes. Topics include categorization, problem solving, decision making, and human factors. Prerequisite: one previous psychology course. One course. Serra

123. Introduction to Human Memory (C). (SS) A review of the theoretical and empirical study of the encoding, storage, and retrieval of information. The development, pathology, and computer modeling of memory in clarification of basic process and applications. One course. Hasher, Rubin, or Serra

124. Human Development (D). (SS) Especially for sophomores. Juniors and seniors by consent only. See C-L: Human Development 124; also C-L: Sociology 124. One course. Gustafson, Maxson, or staff

126. Behavior and Neurochemistry (B, P). (NS) The role of brain chemicals (neurotransmitters, peptides, and hormones) in behavior. Hypotheses addressing the neurobiology of mental disorders. Prerequisite: Psychology 91. One course. Meck

127. Drugs, Brain, and Behavior (B). (NS) Mechanisms by which psychoactive drugs act. Changes which occur with chronic use of drugs; drug abuse and dependence. Social and legal implications of psychoactive drugs. This course is designed for both science and nonscience majors. Prerequisites: introductory biology (Biology 25L) and chemistry (Chemistry 11L, 12L). C-L: Pharmacology and Cancer Biology 160. One course. Kuhn

129. Psychology and the Law (P). (SS) The relationship between psychology and the legal system. Theory, empirical findings, and court cases in mental health law, including the insanity defense, competency to stand trial, and civil commitment. Use of social science data in several legal domains, including expert testimony in rape and domestic assault trials, employment discrimination, and trademark infringement. Prerequisite: Psychology 99 or 116. One course. Fischer

130. Psychosocial Aspects of Human Development (D). (SS) See C-L: Human Development 180; also C-L: Sociology 169. One course. Gold

131. Early Social Development (D). (SS) The developmental course of children's social behavior. The role that certain relationships (for example, mother, father, siblings, peers, friends) play in that development as well as the effects of other influences (for example, school, television, divorce, daycare). Prerequisite: Psychology 97. One course. Hill or Putallaz

132A. Cognitive Aspects of Human Development (C, D). (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. Prerequisite: one course in psychology. One course. Mazuka

132B. Cross-Cultural Perspectives on Development: A View from Japan (C, D). (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. C-L: Cultural Anthropology 166. One course. Mazuka


134. Psychology of Language (C). (SS) Psychological "reality" of linguistic structures, language and cognition, biological bases, animal communication, language pathologies, nonverbal communication, language versus music, linguistic universals, and bilingualism. Everyday language phenomena (for example, slips of the tongue) as well as the experimental and theoretical literature. Psychology 92 desirable. C-L: Linguistics 110. One course. Day

135. Fundamentals of Neuroscience (B). (NS) Introduction to neuroscience, including: basic physiology; microstructure and anatomy of neural tissues; mechanisms of neuronal development and integration; sensory-motor control; the neural foundations of animal behavior; and the evolution of nervous systems. Prerequisites: Biology 25L, and Chemistry 12L or equivalent. C-L: Biology 154, Neurobiology 154, and Neurosciences. One course. Meck

136. Developmental Psychobiology (D). (SS) Early human social development, including the formation of social relationships, the origins of altruism and aggression,
sex differences, peer relationships, and verbal and nonverbal communication patterns. Prerequisite: Psychology 91, 97, or consent of instructor. One course. Eckerman

137. Adolescence (D). (SS) Adolescent development, including identity formation, intelligence, sexuality, peer and parent relationships, vocational choices, drugs, and psychopathology. Theory and empirical findings. One course. Stocking

139. Psychobiology of Motivation (B, D). (NS) The psychobiology of such concepts as motivation, drive, incentive, reward, and goal-directed behavior. The neural mechanism; developmental perspectives. Prerequisite: Psychology 91. One course. W. G. Hall or staff

140. Duke-Administered Study Abroad: Advanced Special Topics in Psychology. Topics differ by section. One course. Staff


150S. Hormones and Behavior (B, P). (NS) Behavioral neuroendocrinology of sexual differentiation, reproduction, emotion, feeding, learning, and memory in animals and humans. Prerequisite: Psychology 91. C-L: Women's Studies. One course. C. Williams


153S. Issues in Language Development (C, D). (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. C-L: Linguistics. One course. C. Williams

154S. Education, Children, and Poverty (D). (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. One course. Wallach

155S. Seminar in Perception (C). (SS) Discussion of theories and research concerning why the world appears as it does. One course. Lockhead

156S. Tests and Measurements (G). (SS) See C-L: Education 155S. One course. Goldstein

157S. Life Span Analysis of Social Relationships (D, P). (SS) The developmental changes that occur in social relationships (for example, parent, sibling, peer) across the life span; the differing roles these relationships play in the development of the individual. Prerequisite: Psychology 97. One course. Asher or Putallaz

158S. Sleep: Its Nature and Function (B). (NS) Explores the phenomena of sleep over the full range of biological and psychological aspects. Function of sleep and consequences of sleep loss and change. Sleep disorders. Prerequisite: Psychology 91. One course. Marsh
1595. Biological Psychology of Human Development (B, D, P). (SS) 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. C-L: Human Development. One course. Thompson

1625. Clinical Issues: Conceptions, Techniques, and Problems of Professional Clinical Psychology (P). (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 the instructor. One course. Lakin

1655. Neurobiology of Learning and Memory (B). (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. One course. Swartzwelder

1675. Brain Mechanisms of Behavior (B, C). (NS) General physiological principles of brain organization in relation to behavioral processes from sensation to concept formation. Discussions of original readings from seminal papers in the early nineteenth century to the present. Prerequisite: Psychology 91. One course. Erickson

1695. Eating Behavior and Disorders (B). (SS) The interaction of taste and smell with obesity, anorexia, and nutritional status including that of the elderly. Prerequisite: Psychology 91. One course. Schiffman

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. One course. Staff

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. Half course. Staff

173S. Theoretical Issues in General Psychology (C, D, P). (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? One course. Wallach

174S. Infancy (C, D, P). (SS) Covers perceptual, cognitive, social, and motor development during the first two years of life, with a focus on the connections between developments in these four areas. Prerequisites: Psychology 97 and one other psychology course. One course. Eckerman or Needham

175S. Psychophysiology (B). (NS) How emotional and cognitive processes are expressed physiologically, and how this can be used to understand how the brain works. Special attention given to how electrical activity of the brain is related to memory, selective attention, and decision making. A course in biological psychology (for example, Psychology 91) provides the proper background, but is not required. One course. Marsh
176S. Great Ideas in Psychology (C). (SS) Ideas in psychology drawn from various content areas (for example, perception, personality, motivation, biological bases, social, cognitive, developmental, learning, clinical) and various methodological approaches (for example, experimental, introspection, observation, interview, longitudinal, simulation). Not open to students who have taken Psychology 204S. Prerequisites: junior or senior psychology-major status and consent of instructor. One course.

177S. Human Sexuality (B). (NS) 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. Prerequisite: Psychology 91 or background in biology. C-L: Study of Sexualities. One course.

178S. The Psychology of Exceptional Ability (C, D). (SS) Examines various approaches to 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. Prerequisites: courses in either developmental or cognitive psychology and statistics recommended. C-L: Education 178S. One course.

180S. Advanced Topics in the Psychology of Gender (P). (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. 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. C-L: Women's Studies. One course.

181A, S. Methods in Behavioral Neurobiology (B). (NS) Research in neural bases of behavior using simple biological systems as models for more complex behavior. Laboratory experience in experimental methodologies. Observational techniques in study of natural behaviors and neurophysiological recording and stimulation. Not open to students who have had Psychology 149S. Prerequisites: Psychology 91 or background in biology, and consent of instructor. One course.

181B, S. Research Methods in Animal Learning (B, C). (NS) Behavioral experiments with rats and pigeons. Basic tools and methods used in study of animal learning (experimental design, methodology, data analysis, basic theoretical interpretation of results.) Prerequisite: Psychology 111 or 115 strongly recommended. One course.

182A, S. Cognitive Laboratory (C). (SS) 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. One course.

182B, S. Perception Laboratory (C). (SS) Experimental approaches to basic phenomena of perception as determined by conditions in the external situation and the person: biological and psychological. Not open to students who have had Psychology 148S. Prerequisite: Psychology 112 or consent of instructor. One course.

182C, S. Neural Networks and Psychology (B, C). (NS) Several neural networks applied to perception, learning, and cognition. Neural architectures including adalines, perceptron, backpropagation, autoassociative nets, Boltzman machines, reinforcement nets, competitive learning, and adaptivesystome theory. Computer simulations of the different networks. Prerequisites: Mathematics 31 and 32. One course.
183A, S. Research Methods in Developmental Psychology (D). (SS) Prerequisite: Psychology 97 or consent of instructor. One course. Eckerman

183B, S. Child Observation (D). (SS) Introduction of research methods used to study children, with particular emphasis on observational techniques. Prerequisites: Psychology 97 and consent of instructor. One course. Putallaz

185A, S. Experimental Approaches to Personality (P). (SS) Methods applied to personality research. Not open to students who have taken Psychology 145S. Prerequisite: one course in psychology. One course. M. Wallach

185B, S. Research Methods in Social Psychology (P). (SS) Study of empirical research methods used to study contemporary issues in social psychology, including both experimental and noneperimental strategies. Not open to students who have taken Psychology 147S. Prerequisite: Psychology 99 or 116. One course. Curran or staff

185C, S. Research Methods in Health and Clinical Psychology (P). (SS) Contemporary approaches to psychologically based research in health and mental health. Survey, laboratory, and/or narrative self-report methodologies. Class research projects. Prerequisites: Psychology 99 and Statistics 110 or the equivalent. One course. Blumenthal

190S. History of Modern Psychology (B, C, D, P). (SS) 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. One course. H. Schiffman or L. Wallach

191, 192, 193, 194. 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. 191, 192: junior year fall, spring; 193, 194: senior year fall, spring. Consent of instructor and director of undergraduate studies required. One course each. Staff

195. Topics in Neuroscience (B). (NS) A formal research and training component of the Howard Hughes Forum in Neuroscience that includes review of directed reading and research. Enrollment in an Independent Study and consent of instructor required. Pass/fail grading only. Half course. Meck

For Advanced Undergraduates and Graduates

202S. Autobiographical Memory (C). (SS) A review and critical analysis of the literature, theory, and empirical study of autobiographical memory within cognitive psychology. Consent of instructor required. One course. Rubin

205S. Children's Peer Relations (D). (SS) An 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. Consent of instructor required. One course. A sher or Putallaz

206S. Pediatric Psychology (D, P). (SS) The conceptual and methodological bases for the field. 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. One course. Staff

207S. Topics in Psychobiology (B). (SS, NS) Prerequisites: senior standing, Psychology 49S, (Psychobiology), and consent of instructor. See C-L: Distinguished Professor Courses 207S. One course. Brodie
2095. The Cognitive Psychology of Oral Traditions (C). (SS) The structure of songs and genres from oral traditions and the processes used in their composition, transmission, and recall, analyzed from the perspective of cognitive psychology. Consent of instructor required. One course. Rubin

2115. Neural Development and Comparative Cognition (B, C). (NS) Current research on neural development of cognitive processing in several sensory systems (for example, auditory, visual, and olfactory systems), and in several species (for example, aplysia, song birds, rats, cats, monkeys, and humans) with regard to how attention and memory processes develop. Both the normal ontogeny of cognitive ability and differentiation that is altered during an early sensitive period of development. Prerequisites: three courses in biological psychology for undergraduates and consent of instructor. One course. C. Williams

2125. Human Memory (C). (SS) Classical and modern literature, data, and theories relating to mechanisms of information processing, storage, and retrieval. Consent of instructor required. One course. Hasher, Rubin, or Serra

2145. Development of Social Interaction (D, P). (SS) Major concepts and methods pertaining to early social development, emphasizing human social behavior and a developmental psychobiological approach. Consent of instructor required. One course. Eckerman

2175. Advanced Social Psychology (P). (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. Prerequisites: Psychology 99 and 147S, and consent of instructor. C-L: Women's Studies. One course. Costanzo or Fischer

2185. Personality, Stress, and Disease (P). (SS) The interaction between person and social environment as a contributor to development of physical disease. Both epidemiological and laboratory-based research considered. Prerequisites: Psychology 98 or 109A for undergraduates and consent of instructor. One course. R. B. Williams

2205. Psycholinguistics (C). (SS) Selected topics such as neurolinguistics, linguistic versus pictorial representation, individual differences, oral versus written expression, language and personality, and the language-thought interaction. Prerequisites: Psychology 134 for undergraduates and consent of instructor. C-L: Linguistics. One course. Day or M azuka


2245. Timing and Time Perception (B, C). (NS) Selected topics dealing with the psychobiological bases of internal clocks used to time in the seconds-to-minutes range. Impact of neural pacemakers systems on cognitive processes involved in divided attention, temporal memory, and the determination of the quantal unit of time and/ or consciousness. Consent of instructor required. One course. M eck

2255. Ingestion: Behavior and Neurobiology (B). (NS) Selected topics dealing with the behavioral and neural organization of feeding and drinking. Reading typically includes:
ethological and behavioral system perspectives on ingestive behavior organization; the
learning and conditioning literature relevant to experience effects on feeding and
feeding development; recent research on the physiological and metabolic control of
ingestion; and current considerations of the neurobiological basis of ingestive behavior.
Emphasis on understanding ingestion as a sequence of behavior components whose
control is both hierarchical and dynamic. Prerequisites: Psychology 91 for undergradu-
ates and consent of instructor. One course. W. G. Hall

227S. Behavioral Physiology: Basic Systems (P). (SS) Organ systems review of
physiology, emphasizing the role of the central nervous system and behavior in
physiological function. Prerequisites: Psychology 91 or 159S for undergraduates and
consent of instructor. One course. Surwit

230S. Social Behavior of Animals (B, D, P). (NS) Developmental, ecological, and
physiological aspects of territorial, sexual, parental, and aggressive behavior. Consent
of instructor required. One course. C. Erickson

233S. Nature and Nurture in Development (B, D, P). (NS) The nature-nurture
dichotomy and reasons it is invalid; applications of the arguments and evidence to such
student selected topics as personality, intelligence, behavior genetics, social behavior,
infant behavior, criminality, mental disorder, homosexuality, sociobiology.
Prerequisites: Psychology 91 and consent of instructor. One course. Gottlieb

234S. Advanced Personality (P). (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. One course. M.
Wallach

249S. Anthropology and Psychology (C, P). (SS) See C-L: Cultural Anthropology 249S.
One course. Quinn or Strauss

258S. Social Behavior and Personality (P). (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 psychologi-
cal 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. Prerequisites:
Psychology 99 or 116 and 185A or 185B and Statistics 110, Psychology 117 or equivalent
and consent of instructor for undergraduates. One course. Costanzo

261S. Advanced Learning Theory (C). (SS) Selected topics in the data and theory of
basic processes of learning, memory, and motivation in animals and humans. Emphasis
on the nature of theory construction and evaluation, and the relation of current
perspectives to older ones. Consent of instructor required. One course. Holland

262S. Minority Mental Health: Issues in Theory, Treatment, and Research (P). (SS)
Survey and discussion of theoretical, research, and clinical issues in minority mental
health with special emphasis on African-Americans. Prerequisites: Psychology 119 for
undergraduates and consent of instructor. One course. Staff

264S. Gender, Hormones, and Health (P). (SS) 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. Consent of instructor
required. C-L: Study of Sexualities and Women's Studies. One course. Hamilton

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. One course.

273. Statistics I (G). (QR) Foundations of probability and statistical inference. Introduction to the general linear model via multiple regression. Emphasis on application via statistical computing with SAS. Prerequisites: Psychology 117 or Statistics 110 for undergraduates and consent of instructor. One course. Curran or staff

274. Statistics II (G). (QR) 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. Prerequisites: Psychology 117 or Statistics 110 and Psychology 273 for undergraduates and consent of instructor. One course. Curran or staff

284S. Feminist Theory and Methods in the Social Sciences (P). (SS) Consent of instructor required. One course. Hamilton

288S. Advanced Topics in Social Science and Law (P). (SS) Study of one broad domain in social science and law; exact content area to vary by semester. Emphasizes how empirical findings in social science are translated and used by the legal system. Possible areas include women's legal issues, family violence, expert testimony, employment discrimination. Prerequisites: Psychology 129 for undergraduates and consent of instructor. One course. Fischer

COURSES CURRENTLY UNSCHEDULED

110. Applied Psychology (P). (SS)
115. Introduction to Learning Theory (C). (SS)
128. Memory Disorders (C). (SS)
138. Language Development (C, D). (SS)
152S. Community Psychology (D, P). (SS)
168S. Body, Brain, and Auditory Perception (B). (NS)
172S. Pain: Coping and Adaptation (H). (SS)
186A, S. Measurement of Individual Differences (B, C, D, P). (SS)
203S. Seminar in Cognitive Neuroscience (C). (SS)
208S. Emotion (P). (SS)
210S. Cognition (C). (SS)
280S. History and Systems of Psychology (B, C, D, P). (SS)
289S. Psychology of Prevention (P). (SS)

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 110, 112, 113, 210B, 213; or Psychology 117. One of these courses will count toward the ten courses required of the major. Each
A 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.

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), 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 worldwide 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 (PPS)**

Professor Cook, Chair; Associate Professor Lipscomb, Director of Undergraduate Studies; Professors Ascher, Behn, Clotfelter, Fleishman (law), Healy (environment), Hough (political science), Keyssar (history), Kuniholm, Ladd, Magat (business), Mickiewicz, Pearsall (engineering), Price (political science), Schroeder (law), and Sloan (economics); Associate Professors Conrad, Hamilton, Mayer, and Moore (business); Assistant Professors Korstad, Pickus, Stangl (statistics), and Timmer; Professor Emeritus Barber (political science); Professors of the Practice Beckum, Brown, Harris, Jones, Raspberry, Stubbing, and Tiff; Assistant Research Professors Conover, Whetten-Goldstein, and Taylor; Visiting Professors Ahearne, Felsman, McGinnis and Lapp; Visiting Associate Professors Krupp and Leachman; Visiting Assistant Professor of the Practice Gergen; Lecturers O'dor and Payne; Part-time Lecturer Stevens; Adjunct Lecturer Reid; Visiting Lecturers Alden, Blount, Bovbjerg, Dancy, Dodson, Dorsen, Emison, Emmett, Frank, Frey, Grubb, Hart, Jaroslovsky, Kaufman, Lin, Moses, Montgomery, Prak, Rudy, Takahashi-Morris, Thomasson and Triebel; Senior Research Scientist Vaupel

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 vary each semester offered. One course. Staff

**50. Duke-Administered Study Abroad: Special Topics in Public Policy Studies.** Topics differ by section. One course. Staff

**55D. Introduction to Policy Analysis. (SS)** Basic concepts of analytical thinking including quantitative methods for assessing the probabilities of outcomes and appraising policy alternatives. Illustrated by problems faced by busy decision makers in government, business, law, medicine. C-L: Health Policy. One course. Hamilton, Lipscomb, Mayer, or Timmer

**80. Introductory and Basic Topics in Public Policy. (SS)** Topics vary each semester. Does not count for public policy studies major. One course. Staff

**100A. East Asian Political Economy: Institutions, Networks, and Politics. (SS)** (Taught in Korea and Taiwan.) See C-L: Sociology 188C; also C-L: Comparative Area Studies, and Political Science 100V. One course. Staff
101. Duke-Administered Study Abroad: Advanced Special Topics in Public Policy Studies. Topics differ by section. One course. Staff

105S. American Communities: A Documentary Video Approach. (AL, SS) See C-L: Film and Video 105S; also C-L: Cultural Anthropology 134S, History 150B, and Political Science 156S. One course. Staff

107. Environmental Politics and Policies in the Industrial World. (SS) See C-L: Political Science 107; also C-L: Comparative Area Studies. One course. McKean

107D. Environmental Politics and Policies in the Industrial World. (SS) See C-L: Political Science 107D; also C-L: Comparative Area Studies. One course. McKean

108. AIDS: Ethics, Policy, and Representation. (SS) See C-L: Women's Studies 108; also C-L: Study of Sexualities. One course. Rudy

110. Economic Analysis for Public Policy-Making. (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 52D or equivalent. One course. Clotfelter, Conrad, Cook, Krupp, Ladd, or Lipscomb


116. Policy Choice as Value Conflict. (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. One course. Blount, Hudson, Korstad, Payne, Pickus, or Rudy

116D. Policy Choice as Value Conflict. (SS) Same as Public Policy Studies 116 except instruction is provided in two lectures and one small discussion meeting each week. One course. Hudson, Korstad, Payne, or Pickus


131S. Law, Culture, and the Russian Legal Tradition. (CZ, SS) Open only to students in the FOCUS Program. See C-L: Russian 157S; also C-L: Comparative Area Studies. One course. Newcity

137. Integrating Community and Classroom. (SS) An integration of community-based summer internship experience with study of service, social change, citizenship, and leadership. Students investigate a social policy issue relevant to internship and complete a portfolio of research and reflection. Consent of instructor required.
Prerequisite: completion of Hart Leadership Program Summer Internship. One course.


1395. Business Leadership, Social Responsibility, and Public Policy. (SS) Effective business leadership, including individual leadership and companies as leaders in society. One course. Brown

1405. Women as Leaders. (SS) Intellectual and experiential exploration of the theory and practice of leadership, with an emphasis on the special role gender plays. Topics include: authority, conflict, power, and an assessment of each student's potential for leadership. Small group work required. C-L: Women's Studies. One course. Staff

141. Social Policy in America. (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. One course. Clotfelter or Korstad

1425. Chinese Economy in Transition. (SS) Prerequisites: Economics 1 or 51, and 2 or 52. See C-L: Economics 1425; also C-L: Comparative Area Studies. One course. Yang

143D. Environmental Politics Beyond Borders (B). (SS) See C-L: Political Science 148D; also C-L: Comparative Area Studies. One course. McKean

145. Leadership, Policy, and Change. (SS) Ethical and practical problems of leadership, including motivation, organizational morale, and strategies for large-scale change. Historical and modern case studies, literary examples, and political and psychological theory. One course. Payne

145D. Leadership, Policy, and Change. (SS) Same as Public Policy Studies 145 except instruction provided in two lectures and one discussion meeting each week. One course. Payne


147. Environmental Politics and Policies in the Developing World. (SS) See C-L: Political Science 147; also C-L: Comparative Area Studies. One course. McKean or Miranda

1485. 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. Variable credit. Staff

149. United States Environmental Policy. (SS) 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. C-L: Environment 149. One course. Emison or Miranda

1505. Policy, Philanthropy, and the Arts. (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. One course. Payne

151. Administration of Justice. (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. One course. Montgomery

1525. 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. Variable credit. Staff

154S. Free Press and Public Policy. (SS) Policy problems and conflicts involved in applying First Amendment principles to print and electronic journalism. Topics include libel, privacy, national security, fair trial, and antitrust. Consent of instructor required. C-L: Film and Video. One course. Stevens

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. Variable credit. Staff

156. Health Economics. (SS) Prerequisite: Economics 149 or Public Policy Studies 110. See C-L: Economics 156; also C-L: Health Policy. One course. Sloan

157. Health Policy. (SS) Introduction to United States health care policies and practices. Historical perspectives as backdrop to current topics analyses. Role of current debates in changes to United States health care system and structure. Consent of instructor required. C-L: Health Policy. One course. McGinnis

1585. 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. Variable credit. Staff

159. State and Local Public Policy. (SS) How state and local governments pay for public services. Financing education and transportation programs, the use of municipal bonds for capital projects, the design of intergovernmental aid programs, and state and local tax policy. Consent of instructor required. One course. Clotfelter, Grubb, or Ladd

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. Variable credit. Staff


163S. Telecommunications Policy and Regulation. (SS) Broadcast policies, the rise of cable television, spectrum allocation and authorization, and developments in common carrier telecommunications. Consent of instructor required. C-L: Film and Video. One course. Prak

1645. Telecommunications Policy, Summer Internship. Pass/ fail grading only. Includes seminar in Washington, DC, as a follow-up to Public Policy Studies 1635. Half course or one course. Prerequisite: Public Policy Studies 1635. Variable credit. Staff

165. American International Economic Policy. (SS) Prerequisites: Economics 1 or 51 and 2 or 52. See C-L: Economics 165. One course. Staff

167. International Policy. (SS) Relationships among organizations and agencies involved in international political and economic affairs, focusing on selected problems
of international policy. Consent of instructor required. One course. Ascher, Kuniholm, Leachman, or Mayer

168S. International Policy, Summer Internship. Pass/fail grading only. Includes seminar in Washington, DC, as a follow-up to Public Policy Studies 167. Half course or one course. Prerequisite: Public Policy Studies 167. Variable credit. Staff

169A. United States Foreign Policy I: From World War I to Vietnam War. (CZ, 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. C-L: History 167A. One course. Kuniholm

169B. United States Foreign Policy II: From Vietnam War to the Present. (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). C-L: History 167B. One course.

170S, 171S. Poverty and Public Education. (SS) Contemporary issues in leadership and public policy. Social science research and data analysis techniques. Research projects examining policy issues concerning health, community, education, social services, family, employment and economy, and criminal justice and politics. For students interested in nonprofit, public sector, service-oriented programs that focus on youth and education, such as tutoring, Big Brother/Big Sister, and after-school programs. Prerequisite: for Public Policy Studies 171S/Education 181S: Public Policy Studies 170S/Education 180S. C-L: Education 180S, 181S. One course each. Beckum

172S. Topics in Specific Substantive Policy Areas. (SS) Formal study in public policy issues relevant to summer internships. Topics differ by section. Consent of instructor required. One course.

173S. Public Policy Issues, Summer Internship. Includes seminar in Washington, DC, or Research Triangle Park, NC, area as a continuation study of issues considered in Public Policy Studies 172S. Pass/fail grading only. Half course or one course. Prerequisite: Public Policy Studies 172S. Variable credit. Staff

175S. American Communities: A Photographic Approach. (AL, SS) A documentary approach to the study of American communities through individual photographic projects centered around a community of the student's choosing. Consent of instructor required. C-L: Visual Arts 118S and Film and Video. One course. Harris or Sartor

1775. Advanced Documentary Photography. (AL, 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. C-L: Visual Arts 119S and Film and Video. One course.

178. Doing Documentary Work. (AL, SS) Explores the work of documentary photographers and writers, and their struggles to reconcile scholarly, literary, and artistic pursuits with moral and ethical concerns. Class projects require students to
create documentaries, to thereby connect readings, classroom discussion, and field experience through written or visual narratives. C-L: Visual Arts 178, English 171, and History 150C. One course. Coles and Harris

1805. Writing for the Media. (SS) Workshop on writing news stories, editorials, and features for the print media. Consent of instructor required. C-L: Film and Video. One course. Dancy or Reid

1815. Advanced News Reporting. (SS) Students report, write, and rewrite six in-depth stories during the semester. Assignments designed to explore investigative reporting techniques and the issues that arise in writing longer, more complex stories. Prerequisite: Public Policy Studies 1805 or consent of instructor. C-L: Film and Video. One course. Staff

1875. The Canadian Health Care System. (SS) See C-L: Canadian Studies 185S; also C-L: Comparative Area Studies, Cultural Anthropology 185S, Economics 185S, History 108E, Political Science 185S, and Sociology 185S. One course. Warren

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. One course. Lipscomb

191, 192. 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. One course each. Staff

193, 194. 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. One course each. Staff

195, 196. Selected Public Policy Topics. (SS) One course each. Staff

1955, 1965. Selected Public Policy Topics. (SS) Seminar version of Public Policy Studies 195, 196. One course each. Staff

197. Marine Policy. (SS) Formal study of policy and policy-making concerning the coastal marine environment. History of specific marine-related organizations, legislation, and issues and their effects on local, regional, national, and international arenas. Topics explored through use of theoretical and methodological perspectives, including political science, sociology, and economics. Consent of instructor required. (Given at Beaufort.) C-L: Environment 276 and Marine Sciences. One course. Orbach


For Seniors and Graduates

2165. Economics of Education. (SS) Prerequisite: Economics 149 or Public Policy Studies 110. See C-L: Economics 2165. One course. Clotfelter

218. Macroeconomic Policy. (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. C-L: Economics 218. One course. Lapp
235S. Setting the National Agenda for the Twenty-First Century. (SS) The role of the federal government in addressing major United States public policy issues. Special emphasis on setting priorities among a wide range of public choices and achieving political acceptance for new plans. Consent of instructor required. One course. Stubbing


238. Public Budgeting and Financial Management. (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. One course. Stubbing

239. Nonprofit Leadership and Management. (SS) The impact of nonprofit organizations on public policy making; management and leadership skills for nonprofit organizations; laws affecting nonprofit organizations. One course. Staff

242S. Chinese Economy in Transition. (SS) Prerequisites: Economics 1 or 51, and 2 or 52. See C-L: Economics 242S; also C-L: Comparative Area Studies. One course. Yang

243S. Media and Democratization in Russia. (SS) Analysis of policy, content, and audiences of mass media in the Soviet Union and post-Soviet Russia. Focus on such issues as media access, media markets, television and electoral campaigns, and relationship to political authority. C-L: Comparative Area Studies and Political Science 276S. One course. Mickiewicz

255S. Health Policy Analysis. (SS) Group analysis of a current health-policy problem. Project involves background research, data acquisition, analysis, writing, and presentation of a substantial policy report. Designed for candidates seeking the undergraduate certificate in health policy. Consent of instructor required. C-L: Health Policy. One course. Conover or Taylor

257. United States Policy in the Middle East. (SS) From World War II to the present with a focus on current policy options. C-L: Comparative Area Studies and History 296. One course. Kuniholm

258S. Evaluation of Public Expenditures. (SS) Basic development of cost benefit analysis from alternative points of view, for example, equity debt, and economy as a whole. Techniques include: construction of cash flows, alternative investment rules, inflation adjustments, optimal timing and duration of projects, private and social pricing. Adjustments for economic distortions, foreign exchange adjustments, risk and income distribution examined in the context of present value rules. Examples and cases from both developed and developing countries. C-L: Economics 261, Environment 272, and Health Policy. One course. Conrad

262S. Seminar in Applied Project Evaluation. (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. C-L: Economics 262S. One course. Conrad
263S. Public Health Issues: Prevention and Management. (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. Methodologic techniques and traditional and emerging organizational structures defined. 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. One course. Whetten-Goldstein

264. Advanced Topics in Public Policy. (SS) Selected topics. One course. Staff

264S. Advanced Topics in Public Policy. (SS) Selected topics. Seminar version of Public Policy Studies 264. One course. Staff

266. Comparative Social Policy. (SS) An examination of social and health policies in advanced industrial countries. Focus on understanding the comparative methods and role of the state, market, and voluntary sector in policy development and implementation. C-L: Canadian Studies, Comparative Area Studies, and Political Science 266. One course. Staff

267S. Policy-Making in International Organizations. (SS) Emphasis on international financial institutions such as the World Bank and the International Monetary Fund. C-L: Political Science 267S. One course. Ascher

269S. The Regulatory Process. (SS) 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. Analysis of what is effective in a regulatory agency. C-L: Political Science 269S. One course. Hamilton

271S. Schools and Social Policy. (SS) Public schools as instruments of public policy. Economic and statistical analysis of the educational production process. Consideration of alternative school reforms. One course. Ladd

272. Resource and Environmental Economics. (SS) Prerequisite: introductory course in microeconomics. See C-L: Environment 270; also C-L: Economics 270. One course. Kramer


275S. Seminar in Urban Politics and Urban Public Policy. (SS) See C-L: Political Science 275S. One course. Orr

280S. Philanthropy, Voluntarism, and Not-for-Profit Management. (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. C-L: Law 585S. One course. Fleishman

282S. Seminar in North American Studies. Topics vary each semester. One course. Staff


284S. Public Policy Process in Developing Countries. (SS) Policy-making patterns in less developed countries; examples from Latin America, Africa, and Asia. C-L: Comparative Area Studies, Latin American Studies, and Political Science 284S. One course. Ascher

285. Land Use Principles and Policy. (SS) Consideration of four major roles of land in the United States: as a producer of commodities, financial asset, component of

286S. Economic Policy-Making in Developing Countries. (SS) Fiscal, monetary, and exchange rate policies in less developed countries; issues in public policy toward natural resources and state-owned enterprises. Prerequisite: Economics 149 or Public Policy Studies 110. C-L: Comparative Area Studies, Economics 286S, and Latin American Studies. One course. Conrad

290S. Glasgow Seminar in Public Policy. (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.) Prerequisites: Public Policy Studies 55D, two of the core courses (PPS 110, 112, 114, or 116), and consent of director of undergraduate studies. One course. Staff

Skills Courses


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. One course. O’dor

83S. Argumentation. Analysis, investigation, evidence, reasoning and refutation, and other communication strategies. Consent of instructor required. Does not apply toward public policy studies major. One course. O’dor

Courses Currently Unscheduled

112. Statistics and Public Policy. (QR)
175S. The Palestine Problem and United States Public Policy. (CZ)
221. Decision Analysis for Public Policymakers. (SS)
237. Public Management II: Managing Public Agencies. (SS)
240S. Analyzing the News. (SS)
251S. Regulation of Vice and Substance Abuse. (SS)
253. The Politics of Health Care. (SS)
260. Economic Policy Analysis of Nonrenewable Resources. (SS)
265S. The Process of International Negotiation. (SS)

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 contemporary policy issues such as air pollution, crime, health, and international trade disputes. 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 52D; Political Science 90A, 91, 101 or equivalent; and Public Policy Studies 55D.

Major Requirements. Public Policy Studies 110, 112, 114, 116, plus four 100/200-level elective courses; one of these must be a 200-level course. Statistics 110C, Statistics 110A, Statistics 110B, Statistics 110E, Statistics 112, or Political Science 138 is an acceptable substitute for Public Policy Studies 112. 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 110C 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). 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 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 (REL)

Professor Lawrence, Chair; Professor Kort, Director of Undergraduate Studies; Professors Clark, Corless, Hillerbrand, C. Meyers, E. Meyers, Sanders, and Surin (literature); Associate Professors Bland, Martin, and Peters; Assistant Professors Cornell, Hart, Joyce, and Nickerson. Affiliated faculty: Professor Aers (English) and Associate Professor Beckwith (English)

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. One course. Staff

GLOBAL RELIGIONS

40. Judaism. (CZ) Introduction to Judaic civilization from its origins to modern times. Not open to students who have taken Religion 51. C-L: Judaic Studies and Women's Studies. One course. Staff

41. Christianity. (CZ) Introduction to Christianity in history and modern times. One course. Hillerbrand or staff

42. Islam. (CZ) Introduction to Islam in history and modern times. One course. Cornell or Lawrence

43. Hinduism. (CZ) Introduction to Hinduism in history and modern times. One course. Staff

44. Buddhism. (CZ) Introduction to Buddhism in history and modern times. Not open to students who have taken Religion 149. One course. Corless or staff

45. Religions of Asia. (CZ) Problems and methods in the study of religion, followed by a survey of the historical development, beliefs, practices, and contemporary significance of the Islamic religion and religions of south and east Asia. Not open to students who have taken Religion 57. C-L: Comparative Area Studies. One course. Cornell, Lawrence, Nickerson, or staff

47. Taoism. (CZ) Introduction to Taoism in history and modern times in mainland China and Taiwan. One course. Nickerson

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

50. Duke-Administered Study Abroad: Special Topics in Religion. Topics differ by section. One course. Staff

71A, 72A. Seminar for First- and Second-Year Students: Global Religions. (CZ) Topics and instructors to be announced. One course each. Staff

71B, 72B. Seminar for First- and Second-Year Students: Traditions, Texts, and Contexts. (CZ) Topics and instructors to be announced. One course each. Staff

71C, 72C. Seminar for First- and Second-Year Students: Theoretical Perspectives. (CZ) Topics and instructors to be announced. One course each. Staff

**TRADITIONS, TEXTS AND CONTEXTS**

100. The Old Testament/Hebrew Bible. (CZ) Historical, literary, and theological investigations. Not open to students who have taken Religion 50. C-L: Judaic Studies. One course. C. Meyers, E. Meyers, or Peters

101A. Selected Studies in the Bible: Pentateuch. (CZ) Analysis and interpretation of major themes and figures, with special consideration of the narratives dealing with human and Israelite origins. Not open to students who have taken Religion 100. C-L: Judaic Studies. One course. Staff


101C. Selected Studies in the Bible: Writings. (CZ) Analysis and interpretation of representative forms and ideas, with particular attention to wisdom literature and psalms. Not open to students who have taken Religion 102. C-L: Judaic Studies. One course. Staff

102. The New Testament. (CZ) Origins, development, and content of thought. Not open to students who have taken Religion 52. One course. Martin, Sanders, or staff


104. Religion in the West. (CZ) Judaism, Christianity, and Islam in their historical and cultural contexts, with their precursors and successors. Not open to students who have taken Religion 56 (Religion in the West). One course. Corless


108. The Life and Letters of Paul. (CZ) Paul’s role in the expansion of the Christian movement, the most important aspects of his thought, and his continuing influence. One course. Martin or Sanders


111. The Historical Jesus. (CZ) Historical research on the life of Jesus. One course. Martin or Sanders

112. Muslim Minorities in Society: From Asia to America. (CZ) The historical formation, legal status, and political options of Muslim minorities in non-Muslim nation-states. Special attention to China, the Philippines, India, Europe, and North
America. Intra-Muslim and international perspectives, looking at the networks of exchange and communication since the end of colonialism. C-L: Comparative Area Studies. One course. Cornel and Lawrence


117. Mahayana Buddhism. (CZ) Special features of the doctrine and practice of Buddhism in Tibet, China, Korea, and Japan, with an account of their origins in the Indian subcontinent. One course. Corless


119. Muslim World: Transformations and Continuities. (SS) See C-L: Cultural Anthropology 126; also C-L: Comparative Area Studies, and Women's Studies. One course. Ewing

120. History of the Christian Church. (CZ) 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. C-L: History 156B. One course. Hillerbrand

121. Roman Catholic Tradition. (CZ) History of the tradition from early days through the reforms of Vatican II with emphasis on the experiences of American Catholics, concluding with a discussion of current concerns about gender equality, sexuality, and the post-Vatican II crisis of authority. Not open to students who have taken Religion 53. One course. Joyce

122. Religion in American Life. (CZ) 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. One course. Joyce


124. Christians in Crisis. (CZ) Christian thought and debate on, and theological analysis of, such contemporary issues as abortion, creationism, homosexuality, liberation, poverty, racism, and sexism. One course. Staff

130. Late Antique Christian Art. (AL) See C-L: Art History 130; also C-L: Classical Studies 130, and Medieval and Renaissance Studies 130. One course. Wharton


136. Contemporary Jewish Thought. (CZ) Modern Jewish thought from Mendelssohn to the present, with particular reference to American thinkers. C-L: Judaic Studies. One course. Bland or E. Meyers

Religion (REL) 399
138. Women and Religion in America. (CZ) Women's religious experience in America, from the lives of early American “good wives” to the work of Catholic nuns in the nineteenth century and the spirituality of Jewish feminists in modern America, concluding with a discussion of contemporary issues, for example, feminist theology, sexuality, and admission of women to pastoral leadership. Not open to students who have taken Religion 118. C-L: Study of Sexualities and Women's Studies. One course. Joyce


144, 145. Introduction to the Civilizations of Southern Asia. (CZ) Not open to students who have taken Religion 160, 161. See C-L: Asian and African Languages and Literature 160, 161; also C-L: Comparative Area Studies, Cultural Anthropology 101, 102, and History 193, 194. One course each. Staff

146, 147. Introduction to Islamic Civilization. (CZ) Extensive survey of Muslim peoples and institutions. 146: the Middle Eastern origins and cultural attainments of medieval Islam. 147: modern developments and global features of the Islamic world. Not open to students who have taken Religion 162, 163. C-L: Comparative Area Studies, Cultural Anthropology 147, 148, History 101G, 102G, and Medieval and Renaissance Studies 146A, 147A. One course each. Cornell, Lawrence, or staff

148. Alternative Religion in America. (CZ) 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 millenarian movements). One course. Joyce or staff

150. Mysticism. (CZ) The mystical element of religion: Hinduism, Buddhism, Christianity, and Islam. Not open to students who have taken the former Religion 143 (Mysticism). C-L: Comparative Area Studies. One course. Staff


152B. Islamic Mysticism: Perso-Indian (Eastern) Traditions. (CZ) Sufism as an ascetical protest movement that affected the worldwide growth of Islam. C-L: Comparative Area Studies. One course. Lawrence


THEORETICAL PERSPECTIVES

165. Religion and Psychology. (CZ, SS) Contributions of major psychological theories to an understanding of religion, especially Christianity. Not open to students who have taken Religion 61. One course. Staff

171. Religion and Society. (CZ) 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. Not open to students who have taken Religion 63. One course. Staff


174. Apocalypse Then and Now: Ancient and Modern Apocalypticism. (CZ) An interdisciplinary examination of ancient Jewish and Christian apocalypticism combined with study of occurrences of apocalyptic images and themes in modern fiction, politics, art, film, and social movements. The various functions of apocalyptic in ancient and modern cultures and conflicts. Not open to students who have taken Religion 104. One course. Martin

175. Archaeology and Art of the Biblical World. (AL, CZ) The material culture of ancient Palestine as it relates to the Hebrew Bible, the New Testament, and early Judaism. Not open to students who have taken Religion 110. C-L: Comparative Area Studies and Judaic Studies. One course. C. Meyers or E. Meyers

176. Principles of Archaeological Investigation. (CZ) Supervised fieldwork, visits to other excavations, introduction to ceramic chronology, numismatics, and other related disciplines. Excavation of a late Roman village in Galilee. Offered in Israel, only in the summer. Not open to students who have taken Religion 131D. C-L: Judaic Studies. One course. C. Meyers or E. Meyers

177. Perspectives in Archaeology. (CZ) Major trends and issues in archaeology, literature and material culture, history and process, and applications of archaeology to modern society. Focus on the material remains of the past and traditional and modern methods of their analysis. May be offered abroad in Duke's Summer Program in Israel or Greece. Not open to students who have taken Religion 99 or Classical Studies 99. C-L: Classical Studies 177 and Judaic Studies. One course. C. Meyers, E. Meyers, Younger, and staff

178. Moses, Socrates, Buddha, Jesus, Gandhi. (CZ) A critical study of paradigmatic individuals—figures who are held to exemplify the virtues or whose lives are held up as examples for others to follow, and of virtue, ethics, politics, and social criticism. One course. Hart

179S. Ethical Issues in Twentieth-Century America. (CZ) A critical examination of ethical themes, with special emphasis on public policy. For participants in the Twentieth-Century America FOCUS Program only. Not open to students who have taken Religion 114S. One course. Hart

180. Ethical Issues in the Life Cycle. (CZ) Human development viewed in religious, ethical, and psychological perspectives. Not open to students who have taken Religion 155. One course. Staff

181. Ethical Issues in Social Change and Public Policy. (CZ) American moral tradition and factors in social change in the normative analysis of public policy, with a consideration of specific ethical issues. Not open to students who have taken Religion 151. One course. Staff

183. Comparative Approaches to Global Issues. (CZ, SS) Not open to students who have taken Religion 121. See C-L: Comparative Area Studies 125; also C-L: Cultural Anthropology 125, History 137, Perspectives on Marxism and Society, Political Science 125, and Sociology 125. One course. Staff

184. Religion and Film. (CZ) A study of the relationship of motion pictures and religion. The inquiry will focus on the portrayal of organized religion; expressions of religious life; and religious topics, such as God, evil and morality, in motion pictures. Not open to students who have taken Religion 62. C-L: Film and Video. One course. Hillerbrand

186. The Theology and Fiction of C. S. Lewis. (AL, CZ) 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. One course. Kort

188. Religion in Recent American Fiction. (AL, CZ) Religious elements in recent literature. One course. Kort

SPECIAL TOPICS, INDEPENDENT STUDIES, AND SMALL GROUP LEARNING EXPERIENCES

185. Special Topics in Religion. Topics vary from semester to semester. One course. Staff

185S. Special Topics in Religion. Seminar version of Religion 185. One course. Staff

190. Duke-Administered Study Abroad: Advanced Special Topics in Religion. Topics differ by section. One course. Staff

191, 192. 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. For freshmen and sophomores with departmental approval. One course each. Staff

193, 194. 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. For juniors and seniors with departmental approval. One course each. Staff

195A, 196A. Junior-Senior Seminars: Global Religions. (CZ) Topics and instructors to be announced. One course each. Staff

195B, 196B. Junior-Senior Seminars: Traditions, Texts, and Contexts. (CZ) Topics and instructors to be announced. C-L: Judaic Studies. One course each. Staff

195C, 196C. Junior-Senior Seminars: Theoretical Perspectives. (CZ) Topics and instructors to be announced. One course each. Staff

197-198. Honors Research. Consent of the director of undergraduate studies required. Two courses. Staff

199. Colloquium for Majors. A survey of currently important theories of religion and methodologies employed in the study of religion. Restricted to majors. One course. Staff

FOR SENIORS AND GRADUATES

201. Studies in Intertestamental Literature. (CZ) Selected documents of the Apocrypha and Pseudepigrapha examined exegetically and theologically in their relation to postexilic Judaism. Consent of instructor required. One course. Staff
204. Origen. (CZ) The systematic and apologetic writings of an important Alexandrian thinker and exegete of the third century. C-L: Medieval and Renaissance Studies 204. One course. Clark

207. Hebrew Prose Narrative. (FL) Focus on the grammar, syntax, and prose style of classical Hebrew composition; a comparative reading of modern and precritical Jewish and Christian commentary. Readings spanning the spectrum from the early Hebrew prose of Genesis and I and II Samuel to the late compositions of Chronicles and Ezra-Nehemiah. One year of classical Hebrew required. C-L: Judaic Studies and OT 207. One course. Crenshaw or LaRocca-Pitts

208. Classical Hebrew Poetry: An Introduction. (FL) The problem of defining and understanding what is "poetic" in classical Hebrew. Theories of Hebrew poetry from Lowth to Kugel and O'Connor illustrated with readings from Psalms, Isaiah, Job, and Jeremiah. One year of classical Hebrew required. C-L: Judaic Studies and OT 208. One course. Crenshaw or LaRocca-Pitts

212. Theories of Religion. (CZ) Late nineteenth- and twentieth-century theories, interpretations, and approaches to the study of religion. One course. Cornell or Hart

215. Biblical Interpretation in Early Christianity. (CZ) 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 asceticism in the development of biblical interpretation and canon development, and special problems that arose around these issues. One course. Clark

216. Syriac. (CZ) The script and grammar, with readings from the Syriac New Testament and other early Christian documents. Prerequisite: some knowledge of Hebrew and Aramaic. One course. Staff

217. Islam and Islamic Art in India. (AL, CZ) 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. C-L: Art History 217 and Comparative Area Studies. One course. Lawrence


220. Rabbinic Hebrew. (FL) Interpretive study of late Hebrew, with readings from the Mishnah and Jewish liturgy. C-L: Judaic Studies. One course. E. Meyers or staff

224B. Comparative Semitic II. (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. One course. Staff

226B. Exegesis of the Greek New Testament (Romans). (CZ) Consent of instructor required. One course. Staff

226F. Exegesis of the Greek New Testament (I and II Corinthians). (CZ) Consent of instructor required. One course. Staff

229S. Old Church Slavonic. (FL) See C-L: Russian 203S; also C-L: Linguistics. One course. Staff

230. Sainthood in Comparative Perspective. (CZ) Examination of sainthood, saint cults, and sacred biography from a multidisciplinary and global perspective. One course. Cornell
231S. Seminar in Religion and Contemporary Thought. (CZ) 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. One course. Staff

232S. Religion and Literary Studies. (AL) Theories concerning the relation of religion to literary forms, particularly narrative. One course. Kort

233. Modern Fiction and Religious Belief. (AL) A study of kinds of religious meaning or significance in representative American, British, and continental fiction of the first half of the twentieth century. One course. Kort


239. Introduction to Middle Egyptian I. (FL) Grammar and readings in hieroglyphic texts relating to the Old Testament. One course. Staff

240. Introduction to Middle Egyptian II. (FL) Readings in Middle Egyptian and introduction to New Egyptian grammar. Prerequisite: Religion 239. One course. Staff


244. Archaeology of Palestine in Hellenistic-Roman Times. (CZ) The study of material and epigraphic remains as they relate to Judaism in Hellenistic-Roman times, with special emphasis on Jewish art. C-L: Judaic Studies. One course. E. Meyers

245. Special Topics in Religion. (CZ) Subject varies from semester to semester. One course. Staff

248. Theology of Karl Barth. (CZ) A historical and critical study of Barth's theology. One course. Staff


258. Coptic. (FL) Introduction to the Sahidic dialect with selected readings from Christian and Gnostic texts. Prerequisite: one year of Greek or consent of instructor. One course. Staff

262. Special Topics in Gender and Religion. (CZ) Study of gender and sexualities; emphasis on cultural and social constructions of womanhood, masculinity, and sexual identities in the American context. C-L: Study of Sexualities and Women's Studies. One course. Joyce

284. The Religion and History of Islam. (CZ) Origins and development of the Islamic community and tradition, with particular attention to the religious element. C-L: Comparative Area Studies. One course. Cornell or Lawrence


COURSES CURRENTLY UNSCHEDULED
123. Issues in Early Christian History. (CZ)
126. Russian Orthodoxy. (CZ)
127. Protestant Traditions. (CZ)
132D. Palestine in Late Antiquity. (CZ)
137. An Introduction to Judaism in the Greco-Roman World. (CZ)
140. Religions of India. (CZ)
143. History and Religions of North Africa. (CZ)
149. Introduction to Christian Theology and Ethics. (CZ)
170. Problems of Religious Thought. (CZ)
187. Atmosphere and Mystery in Twentieth-Century English Fiction. (AL)
189. Autobiography and Religious Identity. (CZ)
202. Language and Literature of Dead Sea Scrolls. (CZ)
218. Religions of East Asia. (CZ)
221. Readings in Hebrew Biblical Commentaries. (CZ)
224A. Comparative Semitic I. (FL)
228. Twentieth-Century Continental Theology. (CZ)
238. Witchcraft in New England. (CZ)
243. Archaeology of Palestine in Biblical Times. (CZ)
261. Islam in the African-American Experience. (CZ)
264. The Sociology of the Black Church. (SS)
274A. Philosophies, Sciences, and Theologies of the European Enlightenment: Descartes to Kant. (CZ)
274B. Philosophies, Sciences, and Theologies after the European Enlightenment: Schleiermacher to Troeltsch. (CZ)
277. Judaism in the Greco-Roman World. (CZ)
280. The History of the History of Religions. (CZ)
283. Islam and Modernism. (CZ)
288. Buddhist Thought and Practice. (CZ)
297. Philosophical and Theological Discourses on Modernity. (CZ)

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 the 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 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 (RS)

Professor Mignolo, Chair; Associate Professor Vilarós, Director of Undergraduate Studies; Professors Bell, Caserta, Garci-Gómez, Jameson, Kaplan, Moi, Orr, Pérez-Firmat, Stewart, Tetel, and Thomas; Associate Professors Finucci, Greer, Longino, Moreiras, Sieburth, and Solterer; Assistant Professors Dainotto, Fischer, Hardt, Jonassaint, and Nouzeilles; Associate Professor of the Practice and Director of French Language Program Tufts; Assistant 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.

French, Italian, and Spanish 22, 76, or an Achievement or SAT II score of 640 or above in French, and 660 or above in Spanish are prerequisites for all courses at or above the 100 level not taught in English. Students who by reason of foreign residence have had special opportunities in French, Italian, or Spanish must be classified by the director of undergraduate studies. The accelerated language courses 21 and 22 provide an introduction to the language. They are recommended for students who wish to acquire proficiency in a second foreign language before entering graduate school. In literature, one credit is granted for a score of 4 and two credits for a score of 5 (French or Spanish 70, 71) on the examination of the advanced placement program. In language, one advanced placement credit (French or Spanish 76) is granted for a score of 4.

FRENCH (FR)

1-2. Elementary French. (FL) Understanding, speaking, reading, and writing French. Language laboratory for recording-listening practice. Two courses. Staff

12. Review of Elementary French. (FL) Intensive review of first-year French. Open only to students with a placement or achievement score of 380-440. May not be taken for credit by students who have taken 1-2. One course. Staff

21. Accelerated Elementary French. (FL) Basic grammar structures in one semester; emphasis on oral work. Prerequisite: four semesters or the equivalent of another foreign language or consent of instructor. One course. Staff

22. Accelerated Intermediate French. (FL) Review of basic grammar; emphasis on reading, with some practice in writing. Prepares students to enroll in courses at the 100 level. Prerequisite: French 21 or consent of instructor. One course. Staff

406 Courses and Academic Programs
495. First-Year Seminar. Topics vary each semester offered. One course. Staff

63. Intermediate French. (FL) Grammar review, reading, and oral practice, including laboratory experience. Prerequisite: French 2, 12, or achievement or placement test score of 450-540. One course. Staff

70, 71. Introduction to Literature. One or two course credits for Advanced Placement in literature. One course each.

76. Advanced Intermediate French. (FL) Oral practice, reading, composition. Prerequisite: French 63 or achievement or placement test score of 550-590. One course. Staff

100. Cultural and Literary Perspectives. (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. One course. Staff

101. Advanced Grammar and Composition. (FL) A systematic study of the structure of formal French. Practice in writing. Not open to students who have taken the course as French 110. One course. Thomas or staff

103A. Advanced French Language Abroad. (FL) Topics may vary. One course. Staff

104S. French for Current Affairs. (FL) Problems and controversies in today's France. Readings, discussions, and expositions. Not open to students who have taken the course as French 111S. C-L: Comparative Area Studies. One course. Keineg or staff


108. Advanced Translation and Stylistics. (FL) Differences between French and English patterns of expression. Levels of usage. Practice in translation. Not open to students who have taken the course as French 118. Prerequisite: French 101 or equivalent or consent of instructor. C-L: Linguistics. One course. Thomas or staff

109S. French for Business. (FL) Current issues in French business and commerce. Not open to students who have taken the course as French 113S. One course. Staff

111. Introduction to French Literature I. (AL, FL) Major writers of the French literary tradition from the Middle Ages to the seventeenth century. Poetry, fiction, theater, and essay. Conducted in French. Not open to students who have taken the course as French 101. C-L: Medieval and Renaissance Studies 111C. One course. Staff

112. Introduction to French Literature II. (AL, FL) Major writers of the French literary tradition in the eighteenth, nineteenth, and twentieth centuries. Poetry, fiction, theater, and essay. Conducted in French. Not open to students who have taken the course as French 102. One course. Staff

114S. Discussions of Readings. (AL, FL) Selected topics. Open only to freshmen and sophomores. May be repeated. One course. Staff

115. Topics in French Thought and Culture from the Middle Ages to 1900. (CZ, FL) 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. One course. Staff

116. Topics in Modern French Thought and Culture: 1900 to the Present. (CZ, FL) 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. One course. Staff
1175. Contemporary Ideas. (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. C-L: Comparative Area Studies. One course. Staff

124A. Topics in French Literature and/or Culture Abroad. (AL, CZ) Topics to be announced. Taught in English. One course. Staff

136A. Topics in French and/or Francophone Culture Abroad. (CZ, FL) Topics may vary. One course. Staff

137. Aspects of Contemporary French Culture. (CZ, FL) Offered only as part of summer program in Paris. C-L: Comparative Area Studies. One course. Staff

139. French Civilization. (CZ, FL) The institutions and culture of France from the Middle Ages to the present. Readings and discussions in French. C-L: Comparative Area Studies. One course. Keineg or Tetel

140. France in the Making: Language, Nation, and Literary Culture in Premodern Europe. (CZ, FL) 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. C-L: Comparative Area Studies and Medieval and Renaissance Studies 140A. One course. Solterer

1415, 1425. French Literature. (AL, FL) Topics to be announced. Open to juniors and seniors. May be repeated. One course each. Staff

142. Aspects of French Literature. (AL, FL) Concentration on single authors, genres, movements, or themes. Topics to be announced. Offered only as part of summer program in Paris. One course. Staff

143. Medieval Fictions. (AL, FL) 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. C-L: Medieval and Renaissance Studies 144A. One course. Solterer

145S. Topics in Renaissance Literature and Culture. (AL, FL) Topics may include: women writers, love and self-knowledge, carnival and the grotesque, in search of Rome, text as political and religious pamphlet. C-L: Comparative Area Studies and Medieval and Renaissance Studies 160S. One course. Tetel


147. Seventeenth-Century Fictions of Women. (AL, FL) Works by and about women in the early modern period taking into account the querelle des femmes, the préciosité movement, and women's contribution to the development of the novel and the epistolary genre. C-L: Medieval and Renaissance Studies 147C and Women's Studies. One course. Longino

148. Topics in Seventeenth-Century French Theater. (AL, FL) The plays of Corneille, Molière, Racine, and their contemporaries in context; topics vary and may include the staging of the family, of the state, travel, education, classicalism, genre, canon formation. C-L: Drama 171 and Medieval and Renaissance Studies 171. One course. Longino

149. Topics in Seventeenth-Century French Literature. (AL, FL) Readings from philosophers, poets, moralists, historians, travelers, novelists, letter writers, organized around topics such as taste, science, religion, love, death, autobiography. One course. Longino


154. Upheavals That Made Modern France. (CZ, FL) See C-L: History 154B; also C-L: Comparative Area Studies. One course. Orr and Reddy

155. Insiders and Outsiders of Nineteenth-Century France. (AL, 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. C-L: Comparative Area Studies. One course. Orr

156. The Age of the Novel. (AL, FL) Flaubert, Balzac, and Stendhal. One course. Bell or Orr

159. Topics in Sexuality and Gender Studies. (AL, FL) The study of differences redefined and questioned in terms of sexuality and social identities. Works may be by women or men writers, critics, sociologists, and thinkers from France and Francophone countries and include different historical periods. C-L: Women’s Studies. One course. Staff

162. French Drama of the Twentieth Century. (AL, FL) A survey of literature for the stage from 1890 to the present. One play each of Claudel, Maeterlinck, Jarry, Giraudoux, Cocteau, Ghelderode, Anouilh, Montherlant, Sartre, Camus, Genet, Ionesco, Beckett, Pinget, Viau, and Arrabal. C-L: Drama 172. One course. Tufts

163. World War II and French Film. (CZ, FL) Film scripts, memoirs, novels, political and social history, and cinematic technique that inform the viewing of French films on World War II. Possible films to be viewed: Clément’s Jeux interdits, Malle’s Au revoir les enfants and Lacombe Lucien, Miller’s L’accompagnatrice, Yanne’s Boulevard des hirondelles, and Lanzmann’s Shoah. One course. Orr

164. French Cinema. (AL, FL) Historical overview of French cinema from the beginning of the sound period (1930). Films by directors such as Clair, Renoir, Carné, Godard, Truffaut, and Varda. Readings in the theory of cinema by French theorists. C-L: Film and Video. One course. Bell


170. Contemporary Culture Wars. (CZ, 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. One course. Orr

191, 192. 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 by consent of instructor and director of undergraduate studies. One course each. Staff

Romance Studies (RS) 409
193, 194. 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 seniors by consent of instructor and director of undergraduate studies. One course each. Staff

195. Topics in French Literature and Culture. (A L, FL) Topics to be announced. Offered only in the Duke in France Program. One course. Staff

196A. Advanced Topics in French and/or Francophone Literature/Culture Abroad. (A L, FL) Topics may vary. One course. Staff

200S. Seminar in French Literature. (A L, FL) Topics to be announced. One course. Staff

211. History of the French Language. (FL) The evolution of French from Latin to its present form; internal developments and external influences. C-L: Linguistics and Medieval and Renaissance Studies 210B. One course. Thomas


223. Semiotics for Literature. (A L) 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. C-L: Literature 280. One course. Thomas

240. Medieval Narrative. (A L, FL) 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. C-L: Medieval and Renaissance Studies 240. One course. Soliter

247. Early Modern Studies. (A L, FL) 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, with commentary by contemporary critics and theorists (Foucault, Bourdieu, Said). Genres may include fables, letters, memoirs, sermons, treatises, novels, plays. Topics may vary, but will focus on problems of identity, methodology, gender, spirituality, sociability, and state-making. C-L: Medieval and Renaissance Studies. One course. Longino

251. Topics in French Literature of the Eighteenth Century. (A L, FL) Close study of a particular author, genre, or interpretive category of Enlightenment literature. One course. Stewart

256. Modern Literature and History. (A L, C Z) 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. C-L: Comparative Area Studies and History 256. One course. Kaplan, Orr, or staff

267. Writers, Artists, and Intellectuals in Twentieth-Century France. (A L, FL) Interdisciplinary focus on one figure or one closely connected group of people (writers, artists, filmmakers, intellectuals, and so on); their works studied in their historical and cultural context. One course. Moi

Courses Currently Unscheduled

14A. Intensive Study of French. (FL)
15. Intensive French. (FL)
131S. French in the New World. (FL, SS)
151. French Comedy. (A L, FL)
157. Difference and Representation. (A L, FL)
158. Toward Modernism in French Poetry. (AL, FL)
165. French Existentialism. (CZ, FL)
166, 167. Contemporary French Life and Thought. (AL, FL)
169. The Contemporary Novel in French Canada. (AL, FL)
257. Problems of Identity in the Nineteenth-Century Novel. (AL, FL)
258. The Narrative of Social Crisis. (AL, FL)
261. French Symbolism. (AL, FL)
263. Contemporary French Theater. (AL, FL)
264. Contemporary French Poetry. (AL, FL)
265. French Literature of the Early Twentieth Century. (AL, FL)
266. French Literature of the Mid-Twentieth Century. (AL, FL)
281. Paradigms of Modern Thought. (AL)
290S. Studies in a Contemporary Figure. (AL, FL)

ITALIAN (IT)

1-2. Elementary Italian. (FL) Understanding, speaking, reading, and writing Italian. Language laboratory available for recording-listening practice. Two courses. Staff
21. Accelerated Elementary Italian. (FL) Basic grammar structures in one semester; emphasis on oral work. Prerequisite: four semesters or the equivalent of another foreign language or consent of instructor. One course. Staff
22. Accelerated Intermediate Italian. (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. One course. Staff
49S. First-Year Seminar. Topics vary each semester offered. One course. Staff
63. Intermediate Italian. (FL) Grammar review, reading, oral practice including laboratory experience. One course. Staff
76. Advanced Intermediate Italian. (FL) Oral practice, reading, and composition. Prerequisite: Italian 63 or equivalent. One course. Staff
101. Cultural and Literary Perspectives. (AL, FL) A close reading of cultural and literary texts designed to give students leaving advanced intermediate Italian more polished reading and writing skills. Not open to students who have taken the course as Italian 110. One course. Dainotto or Finucci
102S. Special Topics in Advanced Language. (AL, FL) Intensive instruction in Italian language using newspapers, short stories, and films in order to enhance oral fluency. Not open to students who have taken Italian 103. One course. Caserta
103. Topics in Italian Culture. (AL, FL) Practice in understanding, speaking, reading, and writing Italian with special attention to cultural topics and issues. Offered in Italian to students enrolled in Duke Programs in Italy. One course. Staff
111. Introduction to Italian Literature I. (AL, FL) Major writers of the Italian literary tradition from the Middle Ages to the seventeenth century. Poetry, fiction, theater, and essay. Conducted in Italian. Not open to students who have taken the course as Italian 101. C-L: Medieval and Renaissance Studies 111A. One course. Caserta, Dainotto, or Finucci
112. Introduction to Italian Literature II. (AL, FL) Major writers of the Italian literary tradition in the eighteenth, nineteenth, and twentieth centuries. Poetry, fiction, theater, and essay. Conducted in Italian. Not open to students who have taken the course as Italian 102. One course. Caserta, Dainotto, or Finucci
113. Italian Short Fiction. (AL, FL) Novellas and short stories drawn from different periods of Italian literature. Not open to students who have taken the course as Italian 107. One course. Finucci
115. Italian Women Writers. (AL, FL) Representative works by women. May include only contemporary writers or cover earlier periods as well. Memoirs, works of fiction, poetry, essays, films, and other pertinent texts. Not open to students who have taken the course as Italian 105. C-L: Comparative Area Studies and Women's Studies. One course. Finucci

118S. Italian Literature and Popular Culture. (AL, FL) The formation of Italian popular culture in different historical periods. Emphasis to vary; 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. C-L: Comparative Area Studies. One course. Dainotto or Finucci

122. Topics in Italian Literature in Translation. (AL, CZ) Single authors, genres, movements, or themes. Topics to be announced. One course. Finucci

123. Aspects of Italian Literature. (AL) Concentration on single authors, periods, genres, regions, or themes. Topics to be announced. (Taught in Italy.) Taught in English. C-L: Comparative Area Studies. One course. Staff

125. Aspects of Renaissance Culture. (AL, CZ) Taught in English. See C-L: Medieval and Renaissance Studies 115; also C-L: Art History 149, and History 148A. One course. Finucci, Rasmussen, Rice, Van Miegroet, or Witt

126. Topics in Italian Literature, Culture, Civilization, and/or Cinema. (AL, CZ) Topics to be announced. Offered to students enrolled in Duke Programs in Italy. Taught in English. One course. Staff

131. Topics in Italian Civilization. (CZ, FL) The institutions and culture of Italy throughout the centuries. Topics to be announced. C-L: Comparative Area Studies. One course. Dainotto or Finucci

139. Modern Italy. (CZ, FL) Political, social, economic, and cultural problems in Italian history from 1861 to the present. C-L: Comparative Area Studies. One course. Caserta

141S, 142S. Italian Literature. (AL, FL) Topics to be announced. Open to juniors and seniors. One course each. Staff

145S. Topics in Renaissance Literature and Culture. (AL, FL) Topics may include: epic, women writers, treatises, Petrarchism, the novel, theater. C-L: Medieval and Renaissance Studies 161S. One course. Dainotto or Finucci

148S. Italophone Culture and Literature. (CZ, FL) Focus on issues of identity, nationality, race, and origin in Italian and Italophone literature and culture. C-L: Comparative Area Studies. One course. Dainotto or Finucci

151S. The Italian Theater. (AL, FL) 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. C-L: Drama 175S. One course. Finucci

155S. Nineteenth-Century Italian Literature. (AL, FL) An historical and aesthetic appreciation of principal works of selected major Italian writers of the nineteenth century. C-L: Comparative Area Studies. One course. Caserta

159S. Topics in Sexuality and Gender Studies. (AL, 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. C-L: Comparative Area Studies, Study of Sexualities, and Women's Studies. One course. Finucci or staff

164, 165. Dante. (AL, FL) 164: La Vita Nuova and a close reading of the Inferno. 165: the Purgatorio and the Paradiso in the light of Dante's cultural world. Special attention will be
given to the poetic significances of the Commedia. Readings in Italian or English. Prerequisite: for 165, Italian 164 or equivalent. C-L: Medieval and Renaissance Studies 166, 167. One course each. Caserta

170S. Film and the Italian Novel. (AL, FL) Novels and classical narrative cinema. Topics such as novels and their cinematic versions, war, women's fiction and the woman's picture, and neorealism in novel and film. C-L: Film and Video. One course. Finucci

191, 192. 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 by consent of instructor and director of undergraduate studies. One course each. Staff

193, 194. 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 seniors by consent of instructor and director of undergraduate studies. One course each. Staff

195. Topics in Italian Literature and Culture. (AL, FL) Topics to be announced. Offered to students enrolled in Duke Programs in Italy. One course. Staff

283. Italian Novel of the Novecento. (AL, FL) Representative novelists from Svevo to the most recent writers. One course. Caserta

PORTUGUESE (PTG)


21. Accelerated Elementary Portuguese. (FL) Basic grammar structures in one semester; emphasis on oral work. Prerequisite: four semesters of another foreign language or consent of instructor. One course. Damasceno or staff

22. Accelerated Intermediate Portuguese. (FL) Introduction to aspects of Luso-Brazilian culture based on readings, films, and music. Review of basic grammar, emphasis on class reports and participation, several essays required. Prepares students to enroll in courses at the 100 level. Prerequisite: Portuguese 21 or consent of instructor. One course. Damasceno or staff

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

1115. Research Seminar in Contemporary Lusophone Issues. (FL) A research seminar that allows students to practice advanced language skills and develop individual research projects on contemporary issues in the Portuguese-speaking world with an interdisciplinary focus. Prerequisite: Portuguese 22 or equivalent. C-L: Comparative Area Studies and Latin American Studies. One course. Damasceno

191, 192, 193, 194. 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. One course each. Staff

2005. Seminar in Luso-Brazilian Literature. (AL, FL) Topics to be announced. One course. Damasceno

2025. Topics in Portuguese and Brazilian Literature and Culture. (AL, FL) Exploration of topics of cultural formation in the Lusophone world that emphasize autochthonous
cultural theory. Examples of semester topics: Brazilian cultural theory: modernism to postmodernism; Brazilian popular culture; Portugal post-Salazar. A graduate level course open to juniors and seniors with background in cultural theory. Level of Portuguese required varies with semester topic; consult instructor. Damasceno

SPANISH (SP)

12. Review of Elementary Spanish. (FL) Intensive review of first-year Spanish. Open only to students with a placement or achievement score of 430-490. May not be taken for credit by students who have taken 1-2. One course. Staff

21. Accelerated Elementary Spanish. (FL) Basic grammar structures in one semester; emphasis on oral work. Prerequisite: four semesters or the equivalent of another foreign language or consent of instructor. One course. Staff

22. Accelerated Intermediate Spanish. (FL) Review of basic grammar; emphasis on reading, with some practice in writing. Prepares students to enroll in courses at the 100 level. Prerequisite: Spanish 21 or consent of instructor. One course. Staff

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

62. Intensive Study of Spanish. (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. One course. Staff

63. Intermediate Spanish. (FL) Grammar review, reading, and oral practice, including laboratory experience. Prerequisite: Spanish 2, 12, or achievement or placement test score of 500-570. One course. Staff

70, 71. Introduction to Literature. One or two course credits for Advanced Placement in literature. One course each.

76. Advanced Intermediate Spanish. (FL) Oral practice, reading, composition. Prerequisite: Spanish 63 or achievement or placement test score of 580-620. One course. Staff

101. Advanced Composition and Conversation. (FL) Focus on the refinement of writing (control of grammar, range of vocabulary, rhetorical techniques for organizing information) and on the expansion of the oral communication through discussions about current issues. One course. Staff

102. Advanced Intensive Spanish. (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.) One course. Staff

107. Advanced Grammar. (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. One course. Staff

108S. Advanced Colloquial Spanish. (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. One course. Garci-Gómez

109S. Structure of Spanish. (FL) A systematic study of modern Spanish morphology and syntax with some readings in current linguistic theory. Prerequisite: Spanish 101. C-L: Linguistics. One course. Staff
110. Introduction to Literary Analysis. (AL, FL) Different genres, including narrative, poetry, drama, essay, film, and song. Texts will be drawn from different periods of Spanish and Spanish-American literature. One course. Staff

111. Introduction to Spanish Literature I. (AL, FL) A survey of major writers and movements of the Spanish literary tradition from the Middle Ages through the seventeenth century. C-L: Medieval and Renaissance Studies 111B. One course. Garci-Gómez, Vilarós, or staff

112. Introduction to Spanish Literature II. (AL, FL) A survey of major writers and movements of the Spanish literary tradition in the eighteenth, nineteenth, and twentieth centuries. One course. Garci-Gómez, Vilarós, or staff

114S. Discussion of Readings. (AL, FL) Selected topics. Open only to freshmen and sophomores. Prerequisite: Spanish 76 or placement/achievement score of 630+. One course. Staff

115, 116. Introduction to Spanish-American Literature. (AL, FL) A survey of major writers and movements from the period of discovery to the present day. 115: the periods of conquest, colonial rule, and early independence. Includes works by native Indian, mestizo, and women writers. 116: from modernismo to the contemporary period. C-L: Comparative Area Studies and Latin American Studies. One course each. Staff

117S. Spanish-American Short Fiction. (AL, FL) Novellas and short stories of the nineteenth and twentieth centuries: Martí, Dario, Quiroga, Borges, Cortázar, García Márquez, Allende, Ferré, Carpentier, and others. Not open to students who have taken Spanish 117A,S. C-L: Latin American Studies. One course. Pérez-Firmat or staff

118. Introduction to Culture and the Environment in a Latin American Perspective. (CZ, FL) An introduction to Latin American culture from a perspective highlighting issues of particular importance to students of the environment and the biological sciences. (Offered only in the Duke/Organization of Tropical Studies Program in Las Cruces, Costa Rica.) Prerequisites: Spanish 76 or equivalent and three-week immersion course. One course. Staff

121. Latin-American Literature in Translation. (AL) Fictional and poetic works of the last thirty years that have made an impact on world literature. Taught in English. C-L: Comparative Area Studies and Latin American Studies. One course. Dorfman

122S. Topics in Spanish and/or Latin-American Literatures and Cultures. (AL, 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. One course. Staff

124. Special Topics in Latin American Studies. (AL, CZ) For juniors and seniors. Taught in English. See C-L: Latin American Studies 198; also C-L: Comparative Area Studies. One course. Staff

125. Duke-Administered Study Abroad: Advanced Special Topics in Spanish. Topics differ by section. One course. Staff

131. Topics of Hispanic Civilization. (CZ, FL) A humanistic study of Spain or Spanish America through history, culture, people, and institutions. Topics may vary each semester. C-L: Comparative Area Studies. One course. Staff

132A, S. The Articulation of Culture in the Bolivian Andes. (FL, SS) Focus on the media and the public sphere, on capitalization and cultural politics, on plurilinguism and multilingualism, and on globalization, ecology, and identities in present-day Bolivia and the Andes. (Taught in Bolivia.) C-L: Cultural Anthropology 199A and Latin American Studies. One course. Staff
132B, S. Colonialism, Ethnicity, and Gender in Postrevolutionary Bolivia. (CZ, FL) (Taught in Bolivia.) See C-L: Sociology 188B; also C-L: Cultural Anthropology 199E, Latin American Studies, and Women's Studies. One course. Staff

133. Contemporary European Issues. (CZ, FL) An interdisciplinary seminar addressing topics of European culture, with emphasis on Spain. (Taught in Spain.) C-L: Comparative Area Studies and Cultural Anthropology 182. One course. Staff

137. Topics in Contemporary Spanish Culture. (CZ, FL) (Taught in Spain.) C-L: Comparative Area Studies. One course. Garci-Gómez

138S. The Spanish Civil War in History and Literature. (AL, FL) An examination of the Spanish Civil War of 1936-39 through literary and historical readings, and through its representation in art, music, and film. One course. Sieburth

140A, S. Bolivian Contemporary Short Fiction. (AL, FL) Introduction to Bolivian and Latin American short fiction. The relationship between contemporary short fiction and the concept of "magical realism." The influence of Borges, Cortázar, García Márquez, Carpentier, as well as the influence of popular folk tale, legend, and myth on contemporary Bolivian fiction writers. (Taught in Bolivia.) C-L: Latin American Studies. One course. Staff


140C, S. Cultural Diversity in the Andes. (CZ, FL) 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.) C-L: Comparative Area Studies, Cultural Anthropology 140S, and Latin American Studies. One course. Staff

140E. Film and Political Culture in Contemporary Bolivia. (AL, FL) Focus on films and mass media used to appeal to the dispossessed and marginal sectors of society. (Taught in Bolivia.) C-L: Latin American Studies. One course. Staff

141. Spain: Cultural Studies. (AL, FL) Intensive course on 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.) One course. Staff

142S. Spanish Literature. (AL, FL) Topics to be announced. Open to juniors and seniors. One course. Staff

143S. Literature of the Discovery and Conquest of America. (AL, FL) Prose and poetry from the sixteenth through eighteenth centuries, exploring the idea of the New World from conquest to independence. C-L: Comparative Area Studies and Latin American Studies. One course. Staff

144S. Spanish-American Literature of Identity. (AL, FL) Exploration of the concepts of lo criollo or lo americano, essentially through the analysis of texts by Arrivi, Carpentier, Neruda, Paz, and others. C-L: Comparative Area Studies and Latin American Studies. One course. Pérez-Firmat


146. The Spanish-American Novel. (AL, FL) Masterworks of the twentieth century. C-L: Comparative Area Studies and Latin American Studies. One course. Moreiras or staff
147S. Latin-American Women Writers. (AL, FL) 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. C-L: Comparative Area Studies, Latin American Studies, and Women's Studies. One course. Staff

148. Colonial and Postcolonial Studies in Latin America and the Caribbean. (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. C-L: Latin American Studies and Perspectives on Marxism and Society. One course. Mignolo

151. Spanish Literature of the Renaissance and the Baroque. (AL, FL) Selected works of the sixteenth and seventeenth centuries with attention to their reflection of social, religious, and political ideas. C-L: Medieval and Renaissance Studies 151B. One course. Greer


161S. Literature and the Performing Arts I. (AL, FL) Selected literary works written before the nineteenth century that have been rendered in film or are presently on stage in Madrid. Students will see the films or plays. (Taught in Spain.) One course. Staff

162S. Literature and the Performing Arts II. (AL, FL) Selected literary works of the nineteenth and twentieth centuries that have been rendered in film or are presently on stage in Madrid. Students will see the films or plays. (Taught in Spain.) One course. Staff

165S. Major Spanish Authors. (AL, FL) Textual studies; methods of literary interpretation and criticism. One course. Vilarós or staff

169. Topics in Nineteenth- and Twentieth-Century Spanish Literature. (AL, FL) Focus on a specific genre or theme to be announced. One course. Sieburth or Vilarós

171. Literature of Contemporary Spain. (AL, FL) A cultural critique of contemporary Spain (1936 to present) through different literary genres (novel, theater, poetry). Authors include Celaya, Otero, Arrabal, Rodoreda, Goytisolo, and Martín-Gaite. C-L: Comparative Area Studies and Perspectives on Marxism and Society. One course. Vilarós or staff

175S. Hispanic Literature and Popular Culture. (AL, FL) Works of Spanish and Latin American fiction that parody or rewrite popular culture genres such as serial novels, detective stories, or Hollywood films. Authors include Cervantes, Galdós, Borges, Marsé, and Puig. C-L: Comparative Area Studies and Latin American Studies. One course. Sieburth

177S. Women Writers of Spain. (AL, FL) Prominent Spanish women writers through literary history, from María de Zayas and Santa Teresa de Avila (XVI Century) to Carmen Martín Gaite or Almudena Grandes (contemporary). Fictional writing, films, essays, and other pertinent texts. Catalan and Galician authors, such as Mercè Rodoreda or Rosalía de Castro (as well as Basque authors when translations are available); Castillian-Spanish writers. Questions of gender identity will be particularly important for this course. C-L: Women's Studies. One course. Vilarós or staff

191, 192. 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 by consent of instructor and director of undergraduate studies. One course each. Staff

193, 194. 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 seniors by consent of instructor and director of undergraduate studies. One course each. Staff

195. Topics in Spanish Literature and Culture. (AL, FL) Topics to be announced. Offered only in the Duke in Madrid Program. One course. Staff

200S. Seminar in Spanish Literature. (AL, FL) Topics to be announced. One course. Staff


244. Topics in Twentieth-Century Latin-American Fiction. (AL, FL) 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. One course. Moreiras

248. Studies in Spanish-American Literature. (AL, FL) Concentration on single authors, genres, movements, or themes. One course. Staff

251S. Spanish Film. (AL, FL) 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. C-L: Comparative Area Studies and Perspectives on Marxism and Society. One course. Vilarós

255. Topics in Early Modern Spanish Literature and Culture. (AL, FL) Focus on one or more areas, including: the Other Cervantes, mysticism and orthodoxy, the picaresque, limpieza de sangre, witchcraft, and the Inquisition. One course. Greer

280. The Cultures of Immigration in Spanish. (AL, FL) A study of the cultural processes generated by two significant migratory movements in Spain: one in Catalonia in the 1960s and early 1970s, composed mostly of impoverished peasants coming from southern Spain; and the more recent global wave composed of Latin American, African, and Filipino immigrants to the affluent industrial areas. The study will use literary and cinematic texts, and testimonial narratives. C-L: Comparative Area Studies. One course. Vilarós

Courses Currently Unscheduled

15. Intensive Spanish. (FL)
163. The Generation of 1898. (AL, FL)
166. Nineteenth-Century Prose Fiction. (AL, FL)
176S. Disenchanted Texts: Spanish Literature 1975-1990. (AL, FL)
245. Latin-American Poetry. (AL, FL)
246. Textual Politics in Nineteenth-Century Spanish-American Literature. (AL, FL)
250. Latin-American Film. (AL, FL)
262. The Romantic Movement. (AL, FL)
275. Modern Spanish Poetry. (AL, FL)
276. Modern Spanish Drama. (AL, FL)
277. Modern Spanish Novel. (AL, FL)
50. Duke-Administered Study Abroad: Special Topics in Romance Studies. Topics differ by section. One course. Staff

100. Duke-Administered Study Abroad: Advanced Special Topics in Romance Studies. Topics differ by section. One course. Staff

124. Modernity, Ethnicity, and Colonization. (AL, CZ) 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. C-L: African and African-American Studies 123, Canadian Studies, Comparative Area Studies, and Cultural Anthropology 130. One course. Mignolo or staff


210S. Topics in Linguistics. (SS) One course. Staff

Courses Currently Unscheduled

218. The Teaching of Romance Languages.

283S. Seminar in North American Studies.

INDIGENOUS LANGUAGES

Aymara (AYM)

21. Beginning Aymara. (FL) Introduction through immersion to the history and structure of Aymara. (Taught in the Duke in the Andes Program only.) One course. Staff

63. Intermediate Aymara. (FL) Grammar review, reading, and oral practice. Review of the history of Aymara/ Spanish contact. (Taught in the Duke in the Andes Program only.) One course. Staff

76. Advanced Aymara. (FL) Oral practice, writing exercises, and advanced grammar. Further studies of Aymara/ Spanish contact in the current Bolivia and the Andes. (Taught in the Duke in the Andes Program.) One course. Staff

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

Quechua (QCH)

21. Beginning Quechua. (FL) Introduction through immersion to the history and structure of Quechua. (Taught in the Duke in the Andes Program only.) One course. Staff

63. Intermediate Quechua. (FL) Grammar review, reading, and oral practice. Review of the history of Quechua/ Spanish contact. (Taught in the Duke in the Andes Program only.) One course. Staff

76. Advanced Quechua. (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.) One course. Staff

100. Duke-Administered Study Abroad: Advanced Special Topics in Quechua. Topics differ by section. One course. Staff
THE MAJOR

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.

Prerequisite. French, Italian, or Spanish 22, 76, or equivalents.

French Studies Major Requirements. The French Studies major offers two tracks: (1) French Studies and (2) French and European Studies.

Prerequisites: French 100 or equivalent (grade of A- or above in French 22 or 76, Advanced Placement literature score of 5, achievement test score of 640 or above, or placement test score of 600 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 courses on any European-related topic at the 100 level or above must be taken in other departments. 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 courses on any European-related topic at or above the 100 level must be taken in other departments (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. These eight core courses must include any two of the survey sequences (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 America-related 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. 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 courses on Latin American topics at or above the 100 level must be taken in other departments. 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. 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 courses on an European-related topic at or above the 100 level must be taken in other departments. Proficiency in another European language is highly desirable (consult the undergraduate major advisor concerning approved related courses).

Courses numbered 120 through 129 are taught in English and do not count toward the major (French and Spanish only). Course numbers 181 and 182 (now renumbered as 21, 22) do not count toward the major (French, Spanish, and Italian).

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. The department in conjunction with the Office of Foreign Academic Programs sponsors the following study abroad programs: Duke-in-Madrid, Duke-in-the-Andes (semester programs); Duke-in-France (one-year program); and Duke-in-France and Duke-in-Spain (summer programs). A maximum of two courses per semester, or one per summer, may be counted toward the seven or eight core courses required in any of the major tracks. (The summer course restriction does not apply to Duke-administered programs.)

Departmental Graduation with Distinction. The department encourages French and Spanish majors to work towards the completion of a thesis for the honor of Graduation with Distinction. The student's overall and major grade point average must be at least 3.3 at the time of application. These averages 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.

If the student meets the requirements listed above, the student will make application through independent study no later than the preregistration 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 his/her supervising professor. The principal piece of evidence that the student will offer in support of his/her candidacy for Graduation with Distinction will be the completed thesis done through the independent study course(s) that it is expected will normally be completed during the senior year, or during the junior and senior years. The thesis should be approximately forty pages in length, typewritten, and conforming in style to the specifications of the MLA Style Sheet. The thesis will normally be written in the student's major foreign language.

The student will defend the thesis (in the student's major foreign 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, High 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, majors 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.

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. 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.

Russian
 For courses in Russian, see Slavic Languages and Literatures.

Science, Technology, and Human Values Program (STH)

Professor Vesilind, Director

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

The Program in Science, Technology, and Human Values offers students an opportunity to cross departmental and professional lines in enriching their educational experience. The program offers monthly dinner/seminars for students and faculty, sponsors three courses designed to bridge the "two cultures," and provides an organized approach to selecting courses that offer interdisciplinary approaches to the study of values in our increasingly technological society.

COURSE OF STUDY

The seven courses which satisfy the requirements of this program are classified according to their approach: ethical, analytical (historical, philosophical, or sociological), policy-centered. Each of these three approaches is, in turn, applied to three different areas of study: Science, Medicine, Technology. The nine related-approaches-areas of study form a matrix of courses. Trinity College undergraduates must take six courses in four of the nine categories including one course applying each of the three approaches. They must also complete the senior capstone course (Science, Technology and Human Values 108). Science, Technology, and Human Values 112 and 113 are "wildcards"; they cover all categories and thus satisfy any one or two, if both are taken, of the four needed categories. No more than three courses which originate in the same department or program other than those originating in Science, Technology and Human Values may be taken by Trinity College undergraduates who must take at least four courses at the 100-level.

Science majors are urged to take at least one course that treats each of the three approaches in relation to the science area; pre-medical students should follow the same path with respect to the medicine area and engineers should follow the same path with respect to the technology area.

Undergraduates in the School of Engineering must complete four courses from the nine categories, as well as Science, Technology and Human Values 108. Such students are also exempt from other course restrictions as listed above.
108S. Professional Ethics. (SS) 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. C-L: Engineering 108S. One course. Vesilind

112S, 113S. Special Topics in Science, Technology, and Human Values. 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. One course each. Vesilind and staff

ELIGIBILITY AND CERTIFICATION
Undergraduates may apply to the program at any time. To students who complete the program, Duke University gives official recognition of their participation. Further information about the program, the approved courses, and the matrix may be obtained at: 203 Hudson Hall; http://www.duke.edu/sthv; e-mail: pav@egr.duke.edu

Study of Sexualities (SXL)
Professor Younger, 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 COURSE

115S. Perspectives in Gay, Lesbian, and Bisexual Studies. (CZ) Topics include homosexuality and theory, history, law, religion, education, the arts and literature, the military, and the health sciences. C-L: English 101S. One course. Younger

OTHER COURSES

African and African-American Studies
209S. Race, Class, and Gender in Modern British History. (Cross-listed.) Thorne
216S. Gender, Race, and Class. (Cross-listed.) Luttrell

Biological Anthropology and Anatomy
146. Sociobiology. van Schaik
Cultural Anthropology
103. Sexuality and Culture in America. (Cross-listed.) Luttrell
113. Gender and Culture. (Cross-listed.) Allison, Luttrell, Quinn, or Silverblatt
142. Sexuality in Global Perspective. (Cross-listed.) Luttrell
216S. Gender, Race, and Class. (Cross-listed.) Luttrell

English
101S. Perspectives in Gay, Lesbian, and Bisexual Studies. (Cross-listed.) Younger
184. Literature and Sexualities. Clum

History
169A. American Women, 1600-1877. (Cross-listed.) Staff
169B. American Women, 1877 to the Present. (Cross-listed.) Staff
209S. Race, Class, and Gender in Modern British History. (Cross-listed.) Thorne

Italian
159S. Topics in Sexuality and Gender Studies. (Cross-listed.) Finucci or staff

Psychology
177S. Human Sexuality (B). Staff
264S. Gender, Hormones, and Health (P). (Cross-listed.) Hamilton

Public Policy Studies
108. AIDS: Ethics, Policy, and Representation. (Cross-listed.) Rudy

Religion
125. Women and Sexuality in the Christian Tradition. (Cross-listed.) Clark
138. Women and Religion in America. (Cross-listed.) Joyce
262. Special Topics in Gender and Religion. (Cross-listed.) Joyce

Sociology
103. Sexuality and Culture in America. (Cross-listed.) Luttrell
118. Sex, Gender, and Society. (Cross-listed.) Bach, Buchmann, or O’Rand
149. Sexuality and Society. (Cross-listed.) Bach or Tiryakian

Women’s Studies
108. AIDS: Ethics, Policy, and Representation. (Cross-listed.) Rudy

SPECIAL TOPIC COURSES OFFERED PERIODICALLY
Cultural Anthropology
112. Gender and Languages. Andrews
280S. Gender and Learning and Teaching. Luttrell

Classical Studies
195S. Gender and Sexuality in Ancient Greece. Younger
195S. Gender and Sexuality in Ancient Rome. Janan

English
288. Homosexuality-Masculinity in Drama. Clum

History
103. Cultural Perspectives of the Twentieth-Century, United States South. Staff

Literature
125. Special Topics in Gender and Sexuality. Staff
152. Love, Marriage, and Adultery in the Nineteenth Century. Moi
289. Sex and Gender. Moi

Psychology
180S. Advanced Topics in the Psychology of Gender. Fischer, Hamilton, or Roth

Religion
72C. Defining Deviance. Joyce

Slavic Languages and Literatures
Research Scholar Mickiewicz, Acting Chair; Professor Andrews, Director of Undergraduate Studies; Associate Professor Lahusen; Assistant Professor Gheith; Associate Professor Emeritus Jezierski; Associate Professor of the Practice Flath; Assistant Professors of the Practice Maksimova and Van Tuyl
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 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 (RUS)

1-2. Elementary Russian. (FL) Introduction to understanding, speaking, reading, and writing. Audiolingual techniques are combined with required recording-listening practice in the language laboratory. Two courses. Van Tuyll

4. 5. Elementary Russian Conversation. (FL) Introduction to spoken Russian with emphasis on basic conversational style and increasing vocabulary. Half course each. Staff

14. Intensive Russian. (FL) Russian 1 and 2 combined in one semester. Two meetings daily, as well as daily computer and language laboratory work. Two courses. Andrews or Maksimova

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

61S, 62S. Intermediate Russian Language and Culture. (CZ, FL) Intensive classroom practice in phonetics, conversation, and grammar. Literature, films, museums, and theater performances. (Taught in St. Petersburg in Russian and English depending on placement.) Prerequisite: Russian 2 or equivalent. One course each. Staff

63. Intermediate Russian I. (FL) Intensive classroom and laboratory practice in spoken and written patterns. Reading in contemporary literature. Prerequisites: Russian 1 and 2, or two years of high school Russian. One course. Flath

64. Intermediate Russian II. (FL) Intensive classroom and laboratory practice in spoken and written patterns. Reading in contemporary literature. Prerequisites: Russian 1, 2 and 63 or equivalent. One course. Flath

66, 67. Intermediate Russian Conversation. (FL) Consolidation of oral skills. Intensive conversation on a broad range of topics. Prerequisites: Russian 1 and 2, or equivalent. Half course each. Staff

70. Intensive Intermediate Russian. (FL) Russian 63 and 64 combined. Two meetings daily, as well as daily computer and language laboratory work. Two courses. Staff

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

101S, 102S. Contemporary Russian Composition and Readings. (FL) Advanced grammar and syntax with intense composition component. Analytical readings in the
original. Prerequisites: for 101S, Russian 63 and 64, or equivalent; for 102S, Russian 101S. One course each. Staff

103S, 104S. Studies in the Russian Language and Culture. (CZ, FL) Analytical readings including grammatical and textual analysis. Additional work in phonetics and conversation. Literature, films, museums, and theater performances. (Taught in St. Petersburg in Russian.) Prerequisite: Russian 64 or equivalent. C-L: Comparative Area Studies. One course each. Staff

105, 106. Third-Year Russian Conversation. (FL) Conversation course for students enrolled in Russian 101, 102. Not open to students currently taking Russian 63, 64 or Russian 195, 196. Half course each. Staff

107S. Russian Phonetics. (FL) Analysis of contemporary standard Russian literary pronunciation, phonology, and intonational structures. Prerequisite: Russian 64 or consent of instructor. One course. Staff

108S. Soviet Civilization: History and Its Mythologies. (AL, CZ) 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. C-L: Comparative Area Studies. One course. Staff

110. Intensive Russian Composition and Readings. (AL, FL) Russian 101S and 102S combined in one course. Two meetings daily, as well as daily language laboratory work. Two courses. Staff

111S, 112S. Senior Honors Seminar. Introduction to methods of research and writing, including selection of thesis topics, preliminary research and organization, and writing of the thesis. Consent of the director of undergraduate studies required. One course each. Staff

113. Studies in Comparative World Cinema. (AL) See C-L: Literature 113; also C-L: English 122, Film and Video, and German 113. One course. Staff

115. Russian Language Studies in St. Petersburg. (FL) Russian grammar and composition taught only in St. Petersburg for students participating in the semester program. One course. Staff

119S, 120S. Topics in Slavic and Northern European Languages. (FL, SS) Introduction to a Slavic or Northern European language, including relevant linguistic topics and theories. Open only to students in the FOCUS Program. One course each. Andrews

121S, 122S. Introduction to Russian Literature. (AL, FL) Major works in Russian literature including prose and poetry. Prerequisite: Russian 63, 64 or equivalent. One course each. Staff


131. Language, Culture, and Myth: The Slavic Proverb. (AL) The sources of the Slavic proverb, the proverb as microtext of national stereotypes, and its function in modern literature and culture. Problems of translation. Taught in English. One course. Staff

135. Contemporary Russian Media. (FL, 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. Taught in English, readings in Russian. Prerequisite: Russian 64 or equivalent. C-L: Comparative Area Studies and Film and Video. One course. Andrews

135A. Contemporary Russian Media. (FL, SS) Same as Russian 135 but taught only in St. Petersburg. Prerequisite: Russian 64 or equivalent. C-L: Comparative Area Studies and Film and Video. One course. Staff

149S. Russian Culture in the Era of Terror: A Reexamination. (AL) Readings from various sources, such as recently published diaries and literary works; film; 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. C-L: Comparative Area Studies and Perspectives on Marxism and Society. One course. Lahusen

155. Special Topics in Russian and American Culture. (AL) 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. C-L: Comparative Area Studies. One course. Lahusen and Van Tuyl

157S. Law, Culture, and the Russian Legal Tradition. (CZ, SS) A study of the development of the Russian legal tradition, with particular emphasis on the historical 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 in Russian popular culture, especially Russian literature. Taught in English. Open only to students in the FOCUS Program. C-L: Comparative Area Studies and Public Policy Studies 131S. One course. Newcity

159. Women's Autobiographies in European Contexts: Telling the Self in Russia, France, and Britain. (AL) 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. C-L: Comparative Area Studies and Women's Studies. One course. Gheith

160. The Classics of Russian Twentieth-Century Literature. (AL, CZ) Prose works that marked the canon and anticanon of twentieth-century Russia. Readings include: Petersburg (A. Bely), Mother (M. Gorky), Envy (Yu. Olesha), 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). Taught in English. C-L: Comparative Area Studies. One course. Lahusen

161. Masterpieces of Nineteenth-Century Russian Literature I. (AL) Selected nineteenth-century authors, works, and genres. Authors include Pushkin, Lermontov, Gogol, Turgenev, Herzen, Goncharov, and Dostoevsky. Taught in English. C-L: Comparative Area Studies. One course. Staff

162. Masterpieces of Nineteenth-Century Russian Literature II. (AL) 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. C-L: Comparative Area Studies. One course. Staff

163. Literature of Former Soviet Republics. (AL) Ukrainian realism of the nineteenth century, futurism, neoclassicism, and the literary struggle of the 1920s; Belorussian literature; Lithuanian psychological prose; the Estonian experimental novel; Georgian literature from Rustaveli to the philosophical novel of the 1970s; the work of Chingiz Aitmatov; Soviet "recent literacy." Taught in English. C-L: Comparative Area Studies. One course. Staff

164. Symbolist Movement in Russia. (AL) 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. One course. Mickiewicz

170. Russian Dissident and Emigré Literature. (AL) 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. C-L: Comparative Area Studies. One course. Lahusen


175. Tolstoy. (AL) Introduction to life, works, and criticism. Readings include: War and Peace, Anna Karenina, the shorter fiction, dramatic works and essays. Taught in English. C-L: Comparative Area Studies. One course. Van Tuyl


177S. Chekhov. (AL) Drama and prose works. Taught in English. Not open to students who have taken Drama 157S/Russian 174S (Chekhov). C-L: Comparative Area Studies and Drama 177S. One course. Flath and staff

178A. Russian Short Fiction. (AL) The history, development, and shifts of Russian short fiction in the nineteenth and twentieth centuries. Authors include Dostoevsky, Vovchok, Leskov, Chekhov, Gippius, and Zoshchenko. Topics include gender, genre, and national identity in historical/cultural context. Taught in English. C-L: Comparative Area Studies. One course. Gheith

178B. Russian Short Fiction in the Original. (AL, FL) Same as Russian 178A except taught in Russian. C-L: Comparative Area Studies. One course. Gheith

179S. Selected Topics in Russian Literature. (AL) Women writers of the twentieth century, Soviet film, samizdat/tamizdat, the Petersburg paradigm in Russian literature and culture. Taught in English. C-L: Comparative Area Studies. One course. Staff

181. The Soviet 1920s: The Road to a New Synthesis. (AL) The literary struggle of the 1920s: proletarian literature from the Smity to RAPP, LEF and the fate of the avant-garde, the aesthetic conception of Perelv, 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. C-L: Perspectives on Marxism and Society. One course. Lahusen

182. Socialist Realism: Soviet Literature of the 1930s and 1940s. (AL) 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. C-L: Comparative Area Studies, History 185A, and Perspectives on Marxism and Society. One course. Lahusen

183. Post-Stalinist and Contemporary Soviet Literature. (AL) 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. C-L: Comparative Area Studies. One course. Lahusen

185S. Introduction to Slavic Linguistics. (FL) Basic introduction to linguistic terminology; emphasis on synchronic linguistic theory in the East, West, and South Slavic areas.

**1865. History of the Russian Language. (AL, FL)** The development of the Russian language from the eleventh century, with consideration of the origins of modern literary and dialectal features. Readings in Russian. Prerequisite: second year Russian or consent of instructor. C-L: Linguistics. One course. Andrews

**1905. Introduction to Russian Civilization. (CZ)** Basic knowledge of Russian society, history of ideas, folklore tradition, orthodoxy, and history of Russian readership. Taught in English. C-L: Comparative Area Studies and History 146S. One course. Pelech

**191, 192. 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 students by consent of director of undergraduate studies. One course each. Staff

**193, 194. 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. For qualified seniors. Consent of director of undergraduate studies required. One course each. Staff

**195. Advanced Russian. (FL)** Advanced grammar review with an emphasis on the refinement of oral and written language skills. Development of writing style through compositions and essays. Prerequisite: Russian 102S or consent of instructor. C-L: Comparative Area Studies. One course. Andrews or Maksimova

**196. Advanced Russian: Readings, Translation, and Syntax. (FL)** Intensive reading and conversation with emphasis on contemporary Russian literary and Soviet press texts. English-Russian translation stressed. Russian media, including television and films. Prerequisite: Russian 195 or consent of instructor. C-L: Comparative Area Studies. One course. Andrews or Maksimova

**198, 199. Russian Stylistics and Conversation. (AL, FL)** Refinement of stylistic control and range in spoken and written Russian. Emphasis on fluent discursive skills, as well as development of expository prose style. Prerequisites: Russian 195 and 196, or consent of instructor. One course each. Maksimova

**For Seniors and Graduates**

**201S. Topics in Comparative Slavic Linguistics. (SS)** A cycle of survey courses on the phonology, morphology, and dialects of the Slavic languages. Taught in English. Readings in Russian.

- A. East Slavic
- B. West Slavic
- C. South Slavic
- D. Common Slavic C-L: Linguistics.
  One course. Andrews


**203S. Old Church Slavonic. (FL)** Introduction to the language of the earliest Slavic texts. Close study of phonological and morphological systems, reading of texts and discussion. Taught in English. C-L: Linguistics and Religion 229S. One course. Staff
206. **Russian Modernism. (AL)** 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. One course. Mickiewicz


208. **Stylistic and Compositional Elements of Scholarly Russian. (FL)** Introduction to Russian texts and terminology including business, economics, law, history, political sciences, psychology, linguistics, and literary criticism. Prerequisite: Russian 64 or consent of instructor. One course. Maksimova

211. **Legal and Business Russian. (CZ, FL)** Introduction to 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 contracts, advertising, and financial documents. Prerequisites: Russian 1 and 2 or consent of instructor. One course. Andrews or Maksimova

212S. **Proseminar. (AL)** Introduction to research methodologies, professional skills (including discussions of teaching), as well as a theoretical basis for students in Slavic linguistics and literature. Mandatory for all graduate students and open to upper-level undergraduates. Team taught; taught in English and Russian. One course. Staff

214. **Gender, Nationalities, and Russian Literary Traditions. (AL, CZ)** Russian literature of the nineteenth and twentieth centuries compared with both Western and Eastern literature of the same time period, including questions of national identity. Readings include: Pushkin, Lermontov, Tur, Aitmatov, and Iskander. C-L: Comparative Area Studies, Literature 214, and Women's Studies. One course. Gheith

240S. **Russian Literary Discourse. (AL)** Nineteenth- and twentieth-century Russian literary theory, with close readings in the original. Application to fiction. Taught in English. One course. Lahusen

245. **Theory and Practice of Translation. (FL)** Overview of the scholarly literature on translation combined with a program of practical translation exercises. Prerequisite: three years of Russian language study or consent of instructor. One course. Flath

250. **Trends in Russian and East European Literary Criticism and Beyond. (AL)** 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 or Russian. One course. Gheith

261. **Masterpieces of Nineteenth-Century Russian Literature I. (AL)** Selected nineteenth-century authors, works, and genres. Authors include Pushkin, Lermontov, Gogol, Turgenev, Herzen, Goncharov, and Dostoevsky. Taught in English. Readings in Russian. C-L: Comparative Area Studies. One course. Staff

262. **Masterpieces of Nineteenth-Century Russian Literature II. (AL)** 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. C-L: Comparative Area Studies. One course. Staff

264. **Symbolist Movement in Russia. (AL)** 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. One course. Mickiewicz

269. Women and Russian Literature. (AL) 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. One course. C-L: Comparative Area Studies and Women's Studies. Mickiewicz

273S. Gogol. (AL) Life, works, and criticism. Readings include Dead Souls, The Inspector General, Petersburg Tales, and other short fiction. Readings in Russian. One course. Gheith

275. Tolstoy. (AL) Introduction to life, works, and criticism. Readings include War and Peace, Anna Karenina, the shorter fiction, dramatic works and essays. Taught in English. Readings in Russian. One course. Van Tuyl


281. The Soviet 1920s: The Road to a New Synthesis. (AL) 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, Kharmas, and Pasternak. Readings in Russian. One course. C-L: History 242B. Lahusen

282. Socialist Realism: Soviet Literature of the 1930s and 1940s. (AL) 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, Azhaev, Babaevsky, Kochetov, and Simonov. Readings in Russian. One course. Lahusen

283. Post-Stalinist and Contemporary Soviet Literature. (AL) Literature of the thaw after Stalin: the young prose, little realism, new modernism, and rural prose. Authors include Aksyonov, Trifonov, Baranskaia, Bitov, Solzhenitsyn, Rasputin, Shukshin, and Zalygin. Readings in Russian. One course. Lahusen

284. Late- and Post-Soviet Literature. (AL) From the 'recovered' avant-garde to the new literature during the Gorbachev era and beyond. The unmasking of Soviet history and its aestheticization. Underground literature and Soviet postmodernism. Authors include Rybakov, Pietsukh, Petrushhevskaya, Kuraev, Tolstaya, Viktor Erofeev, Makanin, Prigov, and Narbikova. Readings in Russian. One course. Gheith or Lahusen


299S. Special Topics. Seminars in advanced topics, designed for seniors and graduate students. One course. Staff

Courses Currently Unscheduled

129. Russian Orthodoxy. (CZ)

141, 142. Teaching Practicum.

145. Theory and Practice of Translation. (FL)

151, 152. Fourth-Year Russian Conversation. (FL)

165S. Old Russian Literature. (AL)

168S. Russian Classical Literature and Music. (AL)

169. Women and Russian Literature. (AL)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>1725</td>
<td>Pushkin and His Time.</td>
<td>(AL)</td>
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<tr>
<td>1735</td>
<td>Gogol.</td>
<td>(AL)</td>
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<tr>
<td>180</td>
<td>Early Twentieth-Century Russian Literature: From Symbolism to the 1920s.</td>
<td>(AL)</td>
</tr>
<tr>
<td>184</td>
<td>Late- and Post-Soviet Literature.</td>
<td>(AL)</td>
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<tr>
<td>187</td>
<td>Intensive Advanced Russian.</td>
<td>(FL)</td>
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<tr>
<td>1885</td>
<td>Advanced Russian Language and Culture.</td>
<td>(CZ, FL)</td>
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<tr>
<td>197</td>
<td>Russian Poetry.</td>
<td>(AL)</td>
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<tr>
<td>2045</td>
<td>Russian Folklore and Popular Culture.</td>
<td>(CZ, FL)</td>
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<tr>
<td>205</td>
<td>Semiotics and Linguistics.</td>
<td>(SS)</td>
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<tr>
<td>209</td>
<td>Intensive Advanced Stylistics.</td>
<td>(AL, FL)</td>
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<tr>
<td>210</td>
<td>Literature and Criticism of Socialist Realism.</td>
<td>(AL)</td>
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<tr>
<td>213</td>
<td>Silver Age of Russian Literature.</td>
<td>(AL)</td>
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<tr>
<td>230</td>
<td>Soviet Cinema.</td>
<td>(AL)</td>
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<tr>
<td>257</td>
<td>Law, Culture, and the Russian Legal Tradition.</td>
<td>(CZ)</td>
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<tr>
<td>2655</td>
<td>Literature of Early Russia.</td>
<td>(AL)</td>
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<tr>
<td>2665</td>
<td>The Sources of Modern Russian Literature: The Eighteenth Century.</td>
<td>(AL)</td>
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<tr>
<td>2725</td>
<td>Pushkin and His Time.</td>
<td>(AL)</td>
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<tr>
<td>2775</td>
<td>Chekhov.</td>
<td>(AL)</td>
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<tr>
<td>278</td>
<td>Russian Short Fiction.</td>
<td>(AL)</td>
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<tr>
<td>2795</td>
<td>Literature of the Former Soviet Republics.</td>
<td>(AL)</td>
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<tr>
<td>280</td>
<td>Early Twentieth-Century Russian Literature: From Symbolism to the 1920s.</td>
<td>(AL)</td>
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<tr>
<td>285</td>
<td>Babel and the Russian-Jewish Cultural Dialogue of the Twentieth Century.</td>
<td>(AL)</td>
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<tr>
<td>2865</td>
<td>Zamyatin.</td>
<td>(AL)</td>
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<tr>
<td>2875</td>
<td>Platonov.</td>
<td>(AL)</td>
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<tr>
<td>290</td>
<td>Trifonov, or the Life and Death of the Soviet Intelligentsia.</td>
<td>(AL)</td>
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<tr>
<td>298</td>
<td>Akhmatova.</td>
<td>(AL)</td>
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<tr>
<td>BALTO-FINNIC (BF)</td>
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<tr>
<td>100</td>
<td>Duke-Administered Study Abroad: Advanced Special Topics in Balto-Finnic.</td>
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Courses Currently Unscheduled

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<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>1, 2</td>
<td>Elementary Estonian.</td>
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<tr>
<td>3, 4</td>
<td>Elementary Finnish.</td>
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<tr>
<td>200</td>
<td>Balto-Finnic Linguistics.</td>
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HUNGARIAN (HUN)

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>1-2</td>
<td>Elementary Hungarian.</td>
<td>(FL)</td>
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Introduction to understanding, speaking, reading, and writing Hungarian. Two courses. Viktorov

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

POLISH (POL)

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<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>1-2</td>
<td>Elementary Polish.</td>
<td>(FL)</td>
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</table>

Introduction to understanding, speaking, reading, and writing Polish. No preliminary knowledge of Polish necessary. Two courses. Lahusen

63, 64. Intermediate Polish. (FL) Intensive classroom and laboratory practice in spoken and written patterns. Readings in contemporary literature. Prerequisites: Polish 1 and 2, or consent of instructor. One course each. Lahusen

101. Duke-Administered Study Abroad: Advanced Special Topics in Polish. Topics differ by section. One course. Staff

Courses Currently Unscheduled

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<tr>
<th>Course Code</th>
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<th>Offered in</th>
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<tbody>
<tr>
<td>14</td>
<td>Intensive Elementary Polish.</td>
<td>(FL)</td>
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<tr>
<td>100</td>
<td>Poland in Transition.</td>
<td>(CZ)</td>
</tr>
<tr>
<td>1745</td>
<td>Topics in Polish Literature.</td>
<td>(AL)</td>
</tr>
<tr>
<td>187</td>
<td>Introduction to Polish Literature.</td>
<td>(AL)</td>
</tr>
</tbody>
</table>
SERBIAN AND CROATIAN (SCR)

100. Duke-Administered Study Abroad: Advanced Special Topics in Serbian and Croatian. Topics differ by section. One course. Staff

Courses Currently Unscheduled
1-2. Elementary Serbian and Croatian. (FL)
63, 64. Intermediate Serbian and Croatian. (FL)
70. Intensive Intermediate Serbian and Croatian. (FL)

UKRAINIAN (UKR)
1-2. Elementary Ukrainian. (FL) Introduction to understanding, speaking, reading, and writing Ukrainian. No preliminary knowledge of Ukrainian necessary. Two courses. Staff

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

Courses Currently Unscheduled
187. Introduction to Ukrainian Literature. (AL)

THE MAJOR
Major Requirements. Often 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.

Sociology (SOC)
Professor Spren, Chair; Professor George, Director of Undergraduate Studies; Professors DiPrete, Gereffi, Land, Lin, Morgan, Simpson, Tiryakian, and Wilson; Associate Professors O’Rand and Zhou; Assistant Professors Buchmann, Gao, Hughes, Jackson, Shanahan, and Thornton; Professors Emeriti Back, Kerckhoff, Maddox, Myers, Preiss, and Smith; Adjunct Professors Carroll (religion), P. Cook (public policy), Lewin (business), and O’Barr (cultural anthropology); Adjunct Associate Professor Gold (psychiatry and aging center); Adjunct Research Professor Manton (demographic studies); Adjunct Assistant Professor of the Practice Brown (public policy); Lecturers Bach and Williams; Scholar-in-Residence Gittler

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) 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. One course. Bach or Shanahan

11. Contemporary Social Problems. (SS) A survey of approaches to the study of current social problems and social trends. Sexism, racism, age discrimination; job displacement by technological change; social consequences of environmental pollution; unemployment and poverty; interpersonal problems associated with changes in family structures; maldistribution of health care and educational opportunities; deviance. One course. Land or Simpson

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

50. Duke-Administered Study Abroad: Special Topics in Sociology. Topics differ by section. One course. Staff

98. Introduction to Canada. (SS) See C-L: Canadian Studies 98; also C-L: Comparative Area Studies, Economics 98, History 98, and Political Science 98. One course. Staff

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

101A, S. Contemporary American Society. (SS) Social trends and problems and their effects on individuals and society. Urbanization; bureaucracy; distribution of wealth, income, and power; status of minorities. Open only to students in the FOCUS Program. One course. Simpson or Spenner

101B, S. Science and Technology in Twentieth-Century America. (SS) Science and technology as embedded in social and political institutions that constrain and promote their development over time. The complex and dynamic set of relations during the twentieth century across scientific and technological domains (for example, cybernetics, atomic energy, and biotechnology). Particularly controversial events and theories that illustrate these relations. Open only to students in the FOCUS Program. One course. O'Rand

101C, S. A Single Europe? Dreams and Reality. (SS) Twentieth-century forces and happenings which undergird the notion of a "Single Europe," twelve hundred years after its ancestral beginnings with Charlemagne. Structural, ideological, and leadership factors that seek, after two calamitous world wars, to renovate the European community into a broad socioeconomic and perhaps even political union. Open only to students in the FOCUS Program. One course. Tiryakian

101E, S. The Political Economy of East Asia: From Nation-State to Regional Cooperation. (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. One course. Gao

103. Sexuality and Culture in America. (SS) See C-L: Cultural Anthropology 103; also C-L: Study of Sexualities, and Women's Studies. One course. Luttrell
106. Social Psychology. (SS) See C-L: Psychology 116; also C-L: Women's Studies. One course. Costanzo, Fischer, George, or staff

107. Bargaining, Power, and Influence in Social Interaction. (SS) How power and influences are exercised, conflict is handled, cooperation promoted, and agreements negotiated in social groups. Related issues in the study of social interaction, such as the role of emotion. One course. Spener


110. A-E. Comparative Sociology: Selected Areas. (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  
C-L: Comparative Area Studies. One course. Gao, Gereffi, Lin, or Tiryakian

111. Social Inequality: An International Perspective. (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. C-L: Women's Studies. One course. DiPrete or O’Rand

112. American Demographics. (SS) Examination of trends in the fertility, migration, geographic distribution, and composition of the United States population. Consequences for lifestyles, social trends, consumer markets, health care, and public policy. One course. Land or Morgan


117. Childhood in Social Perspective. (SS) Social forces affecting the place and purpose of children in society, their relations to adults and their treatment by social institutions such as schools and governments. Topics include parent-child relations, sibling relations, child abuse, children’s rights, child labor, and the portrayal of children in the mass media. One course. Simpson


119. Juvenile Delinquency. (SS) Environments in which juvenile delinquency develops; delinquent subcultures and peer groups; societal reactions to delinquency in schools, courts, and other agencies. One course. Land or Williams
Sociology 120 and 122 are designed as a sequence and might optimally be taken in that order, with Sociology 120 being recommended preparation for 122. However, there are no prerequisites.

120. Causes of Crime. (SS) Definition, types, and extent of crime; biological, psychological, economic, and social causes of criminality; explanation and critical evaluation of theories of crime; structure and patterns of recruitment of criminal organizations; social reactions to crime and the justice system. One course. Land or Williams

122. Punishment and Treatment of Deviants. (SS) Concepts of punishment and rehabilitation. Programs and facilities for deviants. Structure and operation of "total" institutions, such as prisons and hospitals. Problems of returning to family and community life. One course. Williams or staff

123. Social Aspects of Mental Illness. (SS) Theoretical and practical sociological contributions to problems of etiology, definition, law, and treatment; comparisons with other contributions; questions of public policy and programs. One course. George or Jackson

124. Human Development. (SS) Especially for sophomores. Juniors and seniors by consent only. See C-L: Human Development 124; also C-L: Psychology 124. One course. Gustafson, Maxson, or staff

125. Comparative Approaches to Global Issues. (CZ, SS) Not open to students who have taken Religion 121. See C-L: Comparative Area Studies 125; also C-L: Cultural Anthropology 125, History 137, Perspectives on Marxism and Society, Political Science 125, and Religion 183. One course. Staff

126. Third World Development. (SS) Theories concerning the role of transnational corporations and international financial institutions (for example, World Bank) in the development of Third World nations, assessed with the aid of sociological and economic data. C-L: Comparative Area Studies and Latin American Studies. One course. Buchmann or Gereffi

132. Methods of Social Research. (SS) Principles of social research, design of sociological studies, sampling, and data collection with special attention to survey techniques. One course. George, Hughes, or Lin

133. Statistical Methods. (QR) Elementary statistical techniques and their application to the analysis and interpretation of social science data. Theory of inference is stressed. C-L: Psychology 117. One course. Staff

138D. History of Social Thought. (SS) Theories of society and social relations in the writings of Montesquieu, Rousseau, Comte, Marx, Weber, Durkheim, Simmel, Veblen, Sorokin, and others. The history of sociology in relation to philosophical currents, social movements, and transformation of the modern world. Two lectures and one discussion. One course. Tiryakian or Wilson

139. Marxism and Society. (SS) See C-L: Cultural Anthropology 139; also C-L: Comparative Area Studies, Education 139, History 186, Literature 181, and Perspectives on Marxism and Society. One course. Staff

141. Consuming Passions. (SS) Consumption as the appropriation of meaning to express individual and collective identity, social forces leading to the rise of societies organized around consumption, global diffusion of consumer culture, social dynamics of change in consumption (for example, fashion), and social constraints on consumption (for example, environmentalism). One course. Gao or Wilson

142. Organizations and Global Competitiveness. (SS) Competition between national economies as understood in the context of social factors such as ethnicity, kinship, gender, education, with a special emphasis on the role of multinational corporations,
public bureaucracies, and small firms. C-L: Comparative Area Studies and Markets and Management Studies. One course. Buchmann or Gereffi

143. Management and Labor Relations. (SS) Theories and current research on the interlocking roles of business and labor in the United States and elsewhere. C-L: Comparative Area Studies. One course. Gereffi or Thornton

144. Organizations and Their Environments. (SS) How organizations (governments, cultures, and technology) are affected by the environment in which they must operate. Competitive strategies (for example, takeovers and mergers); corporate cultures (for example, United States versus Japan); and the impact of technology. C-L: Markets and Management Studies. One course. Gao or Thornton

145. Nations, Regions, and the Global Economy. (SS) The changing configuration of global capitalism, with emphasis on comparing global regions (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). C-L: Comparative Area Studies and Markets and Management Studies. One course. Buchmann, Gereffi, or Shanahan

146. Organizational and Occupational Deviance. (SS) Organizational and occupational deviance ("white collar crimes") rooted in the structure and workings of modern organizations, for example, business corporations, nonprofit agencies and religious institutions, government bureaucracies. Violations of regulatory standards, corporate fraud, and unethical occupational conduct identifying the characteristics of offending organizations and offenders. Various control mechanisms, such as regulatory agencies, the media, and whistle-blowing. One course. Simpson or Thornton

149. Sexuality and Society. (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. C-L: Study of Sexualities and Women's Studies. One course. Bach or Tiryakian

150. The Changing American Family. (SS) Structure, organization, and social psychology of marital, parental, and sibling relations over the life cycle of a family; courtship, marriage, family dissolution in relation to contemporary American society; deviations from and alternatives to the traditional nuclear family. C-L: Women's Studies. One course. Simpson


153. Sport and Society. (SS) The effect of sports on people, their self-image, and social roles. Relation of sports as an institution to the family, education, economics, and politics. One course. Wilson

155. Organizations and Management. (SS) Forms of work organization (corporations, government agencies), the social forces shaping them (management styles, technology, government policy, labor markets), and their effects on employees (productivity, work satisfaction, turnover). C-L: Markets and Management Studies and Women's Studies. One course. DiPrete, Thornton, or Zhou

156. Global Contexts of Science and Technology. (SS) National variations in the structures of scientific systems, and their consequences for the production and application of scientific knowledge, paying particular attention to how these variations are shaped by national differences in politics, economics, and education. Special focus on recent developments in the biomedical sciences, such as genetic engineering and bio-ecology. One course. O'Rand
158. Markets and Marketing. (SS) Markets as systems of social exchange: how they are organized and developed; their relationship to other social structures such as families, work organizations, and the state; their impact on individuals, careers, consumption patterns, and lifestyles. C-L: Markets and Management Studies. One course. DiPrete or Spenner

159. The Sociology of Entrepreneurship. (SS) The social origins and careers of entrepreneurs. The interrelation of their work and family roles and the distinctiveness of their values and interests. The role of entrepreneurial activity in societal development, and its function in different industries, ethnic groups, and societies. C-L: Markets and Management Studies. One course. Thornton

160. Advertising and Society: Global Perspective. (SS) See C-L: Cultural Anthropology 110; also C-L: Canadian Studies, Comparative Area Studies, English 120, Film and Video, Linguistics, and Women's Studies. One course. Luttrel, O'Barr, or Wilson

161. Adulthood and Aging. (SS) Sociological and psychological perspectives on aging, from adolescence through old age and death; demography of human aging; problems caused by increased longevity; policy issues. C-L: Women's Studies. One course. George, Gold, or O'Rand

162. Health and Illness in Society. (SS) Relations between patients and health professionals, and utilization of resources for health care. One course. Jackson or Lin

163. Aging and Health. (SS) 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. One course. George or Gold

165. Occupations, Professions, and Careers. (SS) How occupations organize and control labor markets, define services, chart career lines, and develop and sustain occupational identities. C-L: Women's Studies. One course. O'Rand, Simpson, or Spenner

166. Psychosocial Aspects of Human Development. (SS) See C-L: Human Development 180; also C-L: Psychology 130. One course. Gold

170. Mass Media. (SS) An analysis of the role of radio, the press, magazines, movies, and television. An examination of the selective audiences, content characteristics, controlling elements, and organizational structure of the various media. Comparative Canadian material considered where feasible. C-L: Canadian Studies, Comparative Area Studies, and Film and Video. One course. Staff

171. Comparative Health Care Systems. (SS) The interaction of historical, political, economic, legal/ethical, and sociological factors in the organization and operation of health care systems in the United States, the United Kingdom, Sweden, and elsewhere. C-L: Canadian Studies, Comparative Area Studies, and Health Policy. One course. Staff

173. Social Conflict and Social Movements. (SS) Theories and current research in the United States and abroad on a variety of social movements and cycles of social protest. A comparative analysis of the movements of the 1960s/1970s and their extension to the present in such forms as civil rights, student protest movement, the peace movement, nationalistic and ethnic movements, fundamentalism, ecofeminism. One course. Tiryakian or Wilson

182. Media in Comparative Perspective. (SS) Impact of mass media outside the United States. Cross-national comparisons of media content, audiences, and control. Relationships of governments to media and media policies. International flow of media materials and their cross-national impact. C-L: Canadian Studies, Comparative Area Studies, Film and Video, and Political Science 180. One course. Staff
184S. Canadian Issues. (SS) Prerequisite: Canadian Studies 98 or consent of instructor. See C-L: Canadian Studies 184S; also C-L: Comparative Area Studies, Cultural Anthropology 184S, Economics 184S, History 184S, and Political Science 184S. One course. Staff


188B, S. Colonialism, Ethnicity, and Gender in Postrevolutionary Bolivia. (CZ, FL) Analysis of Latin American colonialism and ethnicity based on the writings of Balandier and Casanovas. Special emphasis on Bolivian colonialism as reflected in Andean oral history and the institutionalization of the Indian movement. The situation of Aymara-speaking women and their role in the informal economy of La Paz and El Alto. (Taught in Spanish in Bolivia.) C-L: Cultural Anthropology 199E, Latin American Studies, Spanish 132B, and Women's Studies. One course. Staff

188C. East Asian Political Economy: Institutions, Networks, and Politics. (SS) Investigation of new frontiers of East Asian political economy. How institutions, networks, and coalition politics influence policy choice and economic performance in East Asian countries. Primary focus on Korea and Taiwan with comparison to Japan. (Taught in Korea and Taiwan.) C-L: Comparative Area Studies, Political Science 100V, and Public Policy Studies 100A. One course. Staff

193, 194. 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. One course each. Staff

195S, 196S, 197S. Seminar in Special Topics. One course each. Staff

198. Special Topics in Sociology. Topics vary each semester. One course. Staff

199S. Sociology Internship. Open only to sociology majors. Requires eight to ten hours per week in a community organization; specific internship placement arranged with instructor to meet student's interest. Seminar topics focus on application of sociological theories to internship experience. Course culminates in substantive research paper. One course. Bach or staff

For Seniors and Graduates

206. Sociological Theory. (SS) Structure, foundations, and historical antecedents of recent formulations of such theoretical approaches as phenomenological sociology, exchange theory, critical theory, structuralism, neo-Marxist sociology, sociobiology, and action theory. One course. Tiryakian or Wilson


208. Survey Research Methods. (SS) Theory and application of survey research techniques in the social sciences. Sampling, measurement, questionnaire construction and distribution, pretesting and posttesting, response effects, validity and reliability, scaling of data, data reduction and analysis. Prerequisite: Sociology 207 or the equivalent. One course. Lin or staff

211S, A-E. 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
One course. Tiryakian or Wilson

212. Social Statistics II: Linear Models, Path Analysis, and Structural Equation Systems. (QR) Model specification, review of simple regression, the Gauss-Markov theorem, multiple regression in matrix form, ordinary and generalized least squares, residual and influence analysis. Path analysis, recursive and nonrecursive structural equation models; measurement errors and unobserved variables. Application of statistical computing packages. Prerequisite: Sociology 207 or equivalent. One course. DiPrete or Land

213. Social Statistics III: 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. One course. DiPrete or Land


215. Basic Demographic Methods and Materials. (SS) Population composition, change, and distribution. Methods of standardizing and decomposing rates, life tables and population models, analysis of data from advanced and developing countries. Applications of computer programs for demographic analysis. Prerequisite: Sociology 207 or equivalent. One course. Hughes or Morgan

216. Advanced Methods of Demographic Analysis. (SS) Mathematical methods and computer software for the analysis of population dynamics. Life table and stationary population theory; methods of life table estimation; multiple-decrement and multistate life tables; stationary population theory and its extensions; model life tables and stationary populations; two-sex models and interacting populations; hazard regression models, grade-of-membership analysis, and cohort studies. One course. Land or Stallard

   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
   One course. DiPrete or Land

221S, A-D. Proseminars in Aging and Life Course Analysis. (SS) Selected topics in socialization, human development, status attainment and careers, and the sociology of aging.
   A. Social Structure and the Life Course
   B. Social Patterns of Personal Development
   C. Social Gerontology
   D. Special Topics in Aging and Life Course Analysis
   One course. George, Jackson, or O’Rand

440 Courses and Academic Programs
222S, A-G. 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

One course. Buchmann, Gao, Gereffi, Lin, Simpson, or Tiryakian

223S, A-E. 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

One course. Land, Simpson, or Wilson


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

One course. DiPrete, Hughes, Land, Manton, Morgan, or O’Rand

225S, A-H. Proseminars in Organizations, Markets, and Work. (SS) Selected topics in complex organizations, the labor process, and changing occupations.

A. Basic Concepts, Theories, and Methods
B. Organizations and Environments
C. Social Psychology of Organizations
D. Markets and Market Systems
E. Careers and Labor Markets
F. Sociology of Work and Industrial Relations
G. Special Topics I: Micro Issues
H. Special Topics II: Macro Issues

One course. DiPrete, Gao, O’Rand, Spenner, or Thornton


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

One course. Staff

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)
One course. George, Gold, Jackson, Lin, or Thornton

228S, A-F. Proseminars in Stratification, Mobility, and Labor Force Behavior. (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
One course. Buchmann, DiPrete, Lin, Spenner, or O’Rand

229S, A-F. Proseminars in Social Psychology. (SS) Selected topics in microsociology and social psychology, including social interaction, decision making, social exchange, group processes, intergroup relations, self and identity, social structure and personality, social networks, and applications in organizations and health care.

A. Introduction to Social Psychology
B. Rational Choice and Social Exchange
C. Sociology of Self and Identity
D. Group Processes and Intergroup Relations
E. Experimental Research: A Practicum
F. Special Topics in Social Psychology
One course. George, Jackson, Lin, or Spenner

234S. Political Economy of Development: Theories of Change in the Third World. (SS) See C-L: Political Science 234S; also C-L: Comparative Area Studies, Cultural Anthropology 234S, and History 234S. One course. Staff

282S. Canada. (SS) See C-L: Canadian Studies 282S; also C-L: Comparative Area Studies, Cultural Anthropology 282S, Economics 282S, History 282S, and Political Science 282S. One course. Staff

283S. Seminar in North American Studies. Topics vary each semester. One course. Staff


298S, 299S. Seminar in Selected Topics. Substantive, theoretical, or methodological topics. One course each. Staff

COURSES CURRENTLY UNSCHEDULED
157. The Legal Profession and the Law. (SS)
167. The Social Bases of Politics. (SS)
175. Contemporary Global Issues. (SS)
179. Modern Nationalist Movements. (SS)
188A. The Sociology of Contemporary Spain. (SS)
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 110C, 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; Associate Professor Johnson; Director of Undergraduate Studies; Professors Berger, Berry, Sacks, and Winkler; Associate Professors Burdick, Lavine, Müller, Parmigiani, Reckhow, Rosner, and Wolpert; Assistant Professors Clyde, Higdon, Stangl, and Vidakovic; Adjunct Professor Smith; Adjunct Assistant Professors Iverson and Ulmer

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.

10D. Basic Statistics. (QR) Statistical concepts involved in making inferences, decisions, and predictions from data. Emphasis on applications, not formal technique. Not open to students who have had Political Science 138, Psychology 117, Public Policy Studies 112, Sociology 133, or Statistics 110, 112, 113, 114, or 115. One course. Staff

50. Duke-Administered Study Abroad: Special Topics in Statistics. Topics differ by section. One course. Staff

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

104. Probability. (QR) Prerequisite: Mathematics 103. See C-L: Mathematics 135. One course. Staff


Introduction to linear regression modeling. Not open to students who have taken Statistics 10D after spring 1999; also not open to students who have had Mathematics 136, Statistics 110A, 110C, 112, 113, 114, 210A, 210B, or 213. One course. Staff


112. Introduction to Applied Statistics. (QR) 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. One course. Staff

113. Probability and Statistics in Engineering. (QR) 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. One course. Staff


191, 192. 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. One course each. Staff

205. Probability and Measure Theory, (QR) 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. Prerequisites: elementary real analysis and elementary probability theory. One course. Wolpert

207. Probability. (QR) Not open to students who have taken Mathematics 290. Prerequisite: Mathematics 241 or equivalent. See C-L: Mathematics 287. One course. Staff

210B. Statistics and Data Analysis in Biological Science. (QR) Elements of statistical inference and estimation including exploratory data analysis, regression, and analysis of variance. Emphasis on biological science applications. Not open to students who have
Institute of Statistics and Decision Sciences (STA)  445


213. Introduction to Statistical Methods. (QR) 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. One course. Staff

214. Probability and Statistical Models. (QR) 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 queueing models. Prerequisites: Statistics 213 and 244 or consent of instructor. One course. Staff

215. Statistical Inference. (QR) 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 predictive perspective. Applications include estimation and testing in normal models; model choice and criticism. Prerequisites: Statistics 213 and 244 or consent of instructor. One course. Staff

216. Generalized Linear Models. (QR) 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. Prerequisites: Statistics 213 and 244 or consent of instructor. One course. Staff


241. Environmental Experimental Design. (QR) The principles of statistical experimental design used to set up experiments in environmental science and to analyze data from such experiments. Topics include analysis of variance and covariance, blocking, random versus fixed effects, repeated measures, power, impact assessment, and adaptive management. Prerequisite: Environment 251, Statistics 210B, or equivalent. C-L: Environment 257. One course. Burdick

242. Applied Regression Analysis. (QR) Linear regression using both graphical and numerical methods. Model construction, critique, and correction using graphical residual analysis. One-way and two-way analysis of variance; introduction to design of experiments. Use of a standard statistical software package. Applications and examples drawn from various sources, emphasizing the biological and environmental sciences. Prerequisite: Statistics 210B or equivalent. C-L: Environment 255. One course. Staff
244. **Linear Models. (QR)** 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. Corequisite: Statistics 213 or equivalent. C-L: Mathematics 217. One course. Staff

245. **Introduction to Multivariate Statistics. (QR)** 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. C-L: Mathematics 218. One course. Burdick

253. **Applied Stochastic Processes. (QR)** Not open to students who have taken Mathematics 240. Prerequisite: Mathematics 135 or equivalent. See C-L: Mathematics 216. One course. Staff

273. **Numerical Analysis. (QR)** Prerequisites: knowledge of an algorithmic programming language, intermediate calculus including some differential equations, and Mathematics 104. See C-L: Computer Science 250; also C-L: Mathematics 221. One course. Rose or Sun

290. **Statistical Laboratory. (QR)** 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. One course. Staff

293. **Special Topics in Statistics. (QR)** Advanced topics of current interest. Prerequisite: Statistics 213 or consent of instructor. One course. Staff

294. **Special Topics in Statistics. (QR)** Prerequisite: Statistics 213 or consent of instructor. One course. Staff

297. **Topics in Probability Theory. (QR)** Prerequisite: Mathematics 287 or consent of instructor. See C-L: Mathematics 288. One course. Staff

**COURSES CURRENTLY UNSCHEDULED**

30. **Introduction to Decision Analysis. (QR)**
31. **Applied Game Theory. (QR)**
104S. **Probability. (QR)**
115. **Statistical Data Analysis in Engineering. (QR)**
203S. **Senior Seminar in Statistics. (QR)**
246. **Experimental Design. (QR)**
282. **Optimization Methods. (QR)**

**Swahili**

For courses in Swahili see Asian and African Languages and Literature.

**University Writing Program**

Assistant Professor of the Practice Hillard, Director of the First-Year Writing Program; Lecturer Matthews, Assistant Director of the First-Year Writing Program; Professor of the Practice Gopen; Lecturer Askounis; Instructors Kellogg and Russell; Senior Lecturing Fellow DiPietro
The first-year writing requirement may be fulfilled by successfully completing University Writing Course 5, 7, or 8. The requirement must be fulfilled in a student's first semester of residence at Duke. All these courses deal with the same core concerns and have the same objectives: they are intended to help students of all abilities to analyze, to integrate, and to synthesize information and ideas in a scholarly fashion and to develop, support, critique, and refine written arguments. Advanced Composition courses focus on particular aspects of rhetoric and argument such as: issues of language and reason, connections between writing and ethics, matters of style, differences in genre, and writing for publication.

5. **Academic Writing (5).** Instruction in the complexities of producing sophisticated academic argument, with attention to critical analysis and rhetorical practices. One course. Staff

7. **Academic Writing (7): The FOCUS Program.** Instruction in the complexities of producing sophisticated academic argument, with attention to critical analysis and rhetorical practices. Designed to coordinate with the FOCUS programs. One course. Staff

8. **Academic Writing (8).** This course, which covers the rhetorical principles covered in University Writing Course 5 and 7, is offered only in the spring. Not open to students who have passed 5 or 7. One course. Staff

12. **Intermediate Academic Writing (12).** For transfer students and continuing education students only. The approach to producing written argument taught in University Writing Course 5 and 7. Not open to students who have taken University Writing Course 5, 7, or 8. One course. Staff

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

112S. **Scientific Writing.** Advanced composition for those who will be choosing careers in science. Techniques for presenting complicated data and complex thought in clear and persuasive prose. Readings in the history, philosophy, or theory of science. Weekly writing tasks. Prerequisite: University Writing Course 5, 7, or 12. C-L: English 116A. One course. Staff

117S. **Advanced Composition I.** Emphasis on particular rhetorical and argumentative features of writing. May explore issues of language and reason, public literacies, stylistic variation, differences in writing cultures and genres, and writing for publication. Tailored to the needs and interests of students who enroll. Prerequisite: University Writing Course 5, 7, or 12, or consent of the director of the University Writing Program. C-L: English 117A. One course. Staff

118S. **Advanced Composition II.** Emphasis on preparing prose for publication, in whatever fields interest the participating students. Prerequisite: successful completion of University Writing Course 117S. C-L: English 117B. One course. Staff

**COURSES CURRENTLY UNSCHEDULED**

3. **Introductory Composition and Rhetoric.**

**Women's Studies (WST)**

Professor of the Practice J. O'Barr, Director; Assistant Professor of the Practice Rudy; Research Professor Giddings. A affiliated faculty: Associate Professors Fulkerson (divinity) and Sieburth (romance studies); Assistant Professor of the Practice Curtis (political science); Adjunct Professor White; Visiting Assistant Professor Armstrong

A major or minor is available in this program.

The Program in Women's Studies provides for students an understanding of the forces that shape the position of women and men in society and develops an
appreciation for knowledge about gender. Women's studies brings together faculty and students from across the university who are encouraged to question and reinterpret existing bodies of knowledge and to include women's perspectives and contributions in this critical approach.

The courses listed below are offered by the Women's Studies Program (WST) or by other academic departments and programs. For a more detailed description of each course, contact the Women's Studies Program Office or the appropriate department or program office.

REGULARLY SCHEDULED COURSES IN WOMEN'S STUDIES

Women's Studies Core Courses (WST)

50. Duke-Administered Study Abroad: Special Topics in Women's Studies. Topics differ by section. One course. Staff

60. Gender, Social Policy, and Politics. (SS) A study of the social context of gender roles and the varying political perspectives used to analyze them. Emphasis on contemporary issues and proposed policy solutions to them. One course. Staff

100. Duke-Administered Study Abroad: Advanced Special Topics in Women's Studies. Topics differ by section. One course. Staff

103. An Introduction to Women's Studies. (SS) A course about women, gender, and feminist theories in the United States, using a variety of disciplinary approaches to analyze women's experiences, the women's movement, and women's studies. One course. J. O'Barr or staff


130. Women and the Political Process. (SS) An analysis of the historical advancement of women in United States political life, and current issues and perspectives women bring to the political process as voters and as leaders. C-L: Political Science 130. One course. Staff

150. Selected Topics in Women's Studies. Topics vary, focusing on interdisciplinary work arising from feminist scholarship. One course. Staff

150S. Selected Topics in Women's Studies. Seminar version of Women's Studies 150. One course. Staff


180S. Feminism and Practice. (SS) A course designed for Women's Studies students who have worked in an organization or have studied abroad and who want to reflect on that experience from a feminist perspective. Focus on a major research paper based on questions arising from the student's experience. The instructors set the first month's readings; students select articles from their research for discussion in later classes. One course. Plummer and Sieburth

191, 192. Independent Study. Directed reading and/or research resulting in a substantive paper or report containing significant analyses and interpretation on a Women's Studies related topic. Open only to juniors with consent of instructor and program director. One course each. Staff

193, 194. Independent Study. Directed reading and/or research resulting in a substantive paper or report containing significant analyses and interpretation on a
Women’s Studies related topic. Open only to seniors. Consent of instructor and program director required. One course each. Staff

195S. Senior Seminar in Women’s Studies. Original research project in feminist scholarship, applying multidisciplinary perspectives. For Women’s Studies Program majors and minors. Consent of instructor required. One course. Staff

Women’s Studies Courses Across Disciplines

African and African-American Studies

90S. Identity in Fiction and Ethnography. (Cross-listed.) Daniels
115A. History of Africa: From Antiquity to Early Modern Times. (Cross-listed.) El Hamel or Ewald
115B. History of Africa: From Early Modern Times to Independence. (Cross-listed.) El Hamel or Ewald
117. Black Women and the Civil Rights Movement. (Cross-listed.) Giddings
160. Women in Islam: Fact and Fiction. (Cross-listed.) Cooke
216S. Gender, Race, and Class. (Cross-listed.) Luttrell

Art History

167. Twentieth-Century Art, 1900-1945: The Avant-garde and Modernism. (Cross-listed.) Antliff, Leighten, or Stiles
168. Art since 1945: Modernism and Postmodernism. (Cross-listed.) Leighten or Stiles
179. The History of Performance Art. (Cross-listed.) Stiles
187. Surrealism. Leighten or Stiles

Asian and African Languages and Literature

188. The Politics of Women’s Liberation in the Arab World. (Cross-listed.) Staff
190. Women in Islam: Fact and Fiction. (Cross-listed.) Cooke

Classical Studies

104S. Women in the Ancient World. (Cross-listed.) Boatwright

Cultural Anthropology

90S. Identity in Fiction and Ethnography. (Cross-listed.) Daniels
103. Sexuality and Culture in America. (Cross-listed.) Luttrell
110. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O’Barr, or Wilson
113. Gender and Culture. (Cross-listed.) Allison, Luttrell, Quinn, or Silverblatt
115S. The Anthropology of Gender: Special Topics. Allison, Luttrell, Quinn, Silverblatt, or Starn
126. Muslim World: Transformations and Continuities. (Cross-listed.) Ewing
137. Gender Inequality. (Cross-listed.) Allison, Luttrell, Quinn, or Silverblatt
141. Self and Society. (Cross-listed.) Apte, Ewing, or Luttrell
142. Sexuality in Global Perspective. (Cross-listed.) Luttrell
179. The History of Performance Art. (Cross-listed.) Andrews
191A, S. Feminist Ethnography. (Cross-listed.) Luttrell
199E, S. Colonialism, Ethnicity, and Gender in Postrevolutionary Bolivia. (Cross-listed.) Staff
215S. The Anthropology of Gender: Theoretical Issues. Allison, Luttrell, Quinn, Silverblatt, or Starn
216S. Gender, Race, and Class. (Cross-listed.) Luttrell

Drama

107S. Twentieth-Century Women Playwrights. P. Randall
179. The History of Performance Art. (Cross-listed.) Stiles

English

115. Gender and Language. (Cross-listed.) Andrews
120. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O’Barr, or Wilson
269. American Women Writers. Davidson or Pope

French

147. Seventeenth-Century Fictions of Women. (Cross-listed.) Longino
159. Topics in Sexuality and Gender Studies. Staff

German

137S. Introduction to Twentieth-Century German Women Writers. (Cross-listed.) Rasmussen
254S. Literature by Women. Rasmussen

History

115A. History of Africa: From Antiquity to Early Modern Times. (Cross-listed.) El Hamel or Ewald
115B. History of Africa: From Early Modern Times to Independence. (Cross-listed.) El Hamel or Ewald
117. Early Modern Europe. (Cross-listed.) Neuschel
126S. Women in the Ancient World. (Cross-listed.) Boatwright
160. The United States from the New Deal to the Present. Chafe
169A. American Women, 1600-1877. (Cross-listed.) Staff
169A. American Women, 1877 to the Present. (Cross-listed.) Staff
170. History of Women in Early Modern Europe. (Cross-listed.) Neuschel
190. The History of Women in Science and Medicine. Green

**Italian**

115. Italian Women Writers. (Cross-listed.) Finucci
159S. Topics in Sexuality and Gender Studies. (Cross-listed.) Finucci or staff

**Literature**

114. Film Theory. (Cross-listed.) Gaines
121. Special Topics in Women in Literature. Staff
123. Special Topics in Women Writers. Staff
125. Special Topics in Gender and Sexuality. Staff
214. Gender, Nationalities, and Russian Literary Traditions. (Cross-listed.) Gheith

**Medieval and Renaissance Studies**

118. Early Modern Europe. (Cross-listed.) Neuschel
147C. Seventeenth-Century Fictions of Women. (Cross-listed.) Longino
234A. Early Christian Asceticism. (Cross-listed.) Clark

**Philosophy**

122. Philosophical Issues in Feminism. Staff
203S. Contemporary Ethical Theories. (Cross-listed.) Flanagan, Golding, or McIntyre

**Political Science**

130. Women and the Political Process (C-N). (Cross-listed.) Staff
140. Feminist Theory (C-N). Curtis
157S. Politics and the Libido (A). Paletz
289S. Contemporary Ethical Theories (C-N). (Cross-listed.) Flanagan, Golding, or McIntyre

**Psychology**

106. The Psychology of Women (P). Fischer, Hamilton, or Roth
113A. Self and Society (P). (Cross-listed.) Apte, Ewing, or Luttrell
116. Social Psychology (P). (Cross-listed.) Costanzo, Fischer, George, or staff
150S. Hormones and Behavior (B, P). C. Williams
180S. Advanced Topics in the Psychology of Gender (P). Fischer, Hamilton, or Roth
217S. Advanced Social Psychology (P). Costanzo or Fischer
262S. Gender, Hormones, and Health (P). (Cross-listed.) Hamilton

**Public Policy Studies**

108. AIDS: Ethics, Policy, and Representation. (Cross-listed.) Rudy
140S. Women as Leaders. Staff

**Religion**

40. Judaism. (Cross-listed.) Staff
119. Muslim World: Transformations and Continuities. (Cross-listed.) Ewing
125. Women and Sexuality in the Christian Tradition. (Cross-listed.) Clark
138. Women and Religion in America. (Cross-listed.) Joyce
139. Women in Islam: Fact and Fiction. (Cross-listed.) Cooke
234. Early Christian Asceticism. (Cross-listed.) Clark
253. Feminist Theory and the Study of Christianity. Clark and McClintock-Fulkerson
262. Special Topics in Gender and Religion. (Cross-listed.) Joyce

**Russian**

159. Women's Autobiographies in European Contexts: Telling the Self in Russia, France, and Britain. (Cross-listed.) Gheith
174. Gender and Language. (Cross-listed.) Andrews
214. Gender, Nationalities, and Russian Literary Traditions. (Cross-listed.) Gheith
269. Women and Russian Literature. (Cross-listed.) Gheith

**Sociology**

103. Sexuality and Culture in America. (Cross-listed.) Luttrell
106. Social Psychology. (Cross-listed.) Costanzo, Fischer, George, or staff
111. Social Inequality: An International Perspective. DiPrete or O’Rand
118. Sex, Gender, and Society. (Cross-listed.) Bach, Buchmann, or O’Rand
149. Sexuality and Society. (Cross-listed.) Bach or Tiryakian
150. The Changing American Family. Simpson
155. Organizations and Management. (Cross-listed.) DiPrete, Thornton, or Zhou
160. Advertising and Society: Global Perspective. (Cross-listed.) Luttrell, O’Barr, or Wilson
161. Adulthood and Aging. George, Gold, or O’Rand
165. Occupations, Professions, and Careers. O’Rand, Simpson, or Spanner
188B. S. Colonialism, Ethnicity, and Gender in Postrevolutionary Bolivia. (Cross-listed.) Staff

Spanish
132B. S. Colonialism, Ethnicity, and Gender in Postrevolutionary Bolivia. (Cross-listed.) Staff
147S. Latin-American Women Writers. (Cross-listed.) Staff
177S. Women Writers of Spain. Vilarós or staff

Recommended Course Offerings

The courses listed below are recommended by the Women's Studies Program as complementary and relevant.

Art History
168. Art since 1945: Modernism and Postmodernism. Stiles
179. The History of Performance Art. Stiles
187. Surrealism. Stiles

Cultural Anthropology
110. Advertising and Society: Global Perspectives. Luttrell, O’Barr, or Wilson

Economics
208S. Economics of the Family. McElroy

English
156. History of Mass Culture in the United States. Gaines, Radway, Torgovnick, or Willis
179S. Repairing the Continent. Staff
189S. Sexualities in Film and Literature. Clum, Gaines, or Moses

History
107A. Tudor/ Stuart Britain. Herrup
107B. Modern Britain. Thorne
115A. History of Africa: From Antiquity to Early Modern Times. El Hamel or Ewald
115B. History of Africa: From Early Modern Times to Independence. El Hamel or Ewald
117. Early Modern Europe. Neuschel
160. The United States from the New Deal to the present. Chafe

Literature
114. Film Theory. Gaines

Psychology
113A. Self and Society. Apte, Ewing, or Luttrell

Religion
40. Judaism. Staff
234. Early Christian Asceticism. Clark

Sociology
106. Social Psychology. Costanzo, Fischer, George, or staff
111. Social Inequality: An International Perspective. DiPrete or O’Rand
150. The Changing American Family. Simpson
155. Organizations and Management. DiPrete, Thornton, or Zhou
161. Adulthood and Aging. George, Gold, or O’Rand
163. Aging and Health. George or Gold
165. Occupations, Professions, and Careers. O’Rand, Simpson, or Spanner

House Courses. The Women's Studies Program regularly sponsors house courses on topics of interest to students in the program. 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 the house courses being offered 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. Introduction to Women's Studies (WST 103) and a senior seminar (WST 195S) or their equivalents are required for the major. Additionally, in order to place the study of women, gender, and feminist theories in a global context, students must choose, in consultation with their advisors, at least one course that focuses primarily on a non-United States and nonwestern European topic or culture. Such courses may include modern and/or historical perspectives on a single culture or number of cultures.

At least seven of these courses must come from courses listed in women's studies either designated as WST or cross-listed with other departments. Up to three courses may be in the following forms: (1) courses from the Recommended Course Offerings list, (2) independent studies, or (3) one-time course offerings not appearing on regular lists, but which are complementary and relevant to a student's course of study. Such courses must be approved by a program advisor in order to be credited toward the major.

As an interdisciplinary major, the women's studies major is organized around a set of guidelines rather than a sequence of required courses. The guidelines are designed to facilitate three distinct yet overlapping levels of inquiry into women's experiences and gender analysis: critique, comparison, and connection. Within the requirements for the major, a student has a great deal of flexibility in designing the substantive focus of the major. To fulfill the major, students must take at least two courses that focus on critique, two that are primarily comparative in nature, and two that emphasize connection. Additional courses may fall under any of these guidelines.

Acquiring critical perspectives is a process involving three steps. The first is to produce new knowledge. In the light of that new knowledge, the second step is to modify the frameworks of knowledge that already exist. The third step is to correct assumptions and biases that prove to be incorrect in the light of this more complete knowledge. Critical perspectives are honed in the women's studies major through courses which emphasize the historical omissions, factual errors, and misrepresentations of women's experiences.

Comparative perspectives are pursued in at least two ways: within and across disciplines and within and across cultures. By comparing how feminist analysis operates in two or more disciplines, students will be able to identify and analyze the ways in which the methods of academic inquiry differ by discipline and what makes an analysis feminist. By comparing cultural contexts, students will be able to identify and analyze women's and men's diverse experiences.

The emphasis on connections is one of the distinguishing features of the women's studies major. Students are continually encouraged to make connections between ideas and experiences, between past knowledge and future possibilities, between cultural and policy issues and personal decisions, and between women's studies and other academic study. These connections are fostered in senior seminars and independent studies, and through internships or other supervised practice, among other possibilities.

Individual courses will often fulfill more than one of these guidelines. Students will be expected to articulate the ways in which an individual course and particular configurations of courses have facilitated their pursuit of critique, comparison, and connection. Students are thus responsible for designing their own major in close consultation with program advisors. This allows students to explore the topics which most interest them; the flexible nature of the curricular requirements also enables students to take advantage of the onetime course offerings and visiting scholars in constructing personalized programs.

In planning the major, each student works with a faculty advisor to accomplish
three goals. The first is to develop a coherent plan of study through which the student pursues a theme or concentration within coursework; that theme or concentration may emphasize breadth or depth in subject matter. The second is to insure that a student balances introductory and advanced courses as they are available from other departments. The third is to fulfill the three guidelines of critique, comparison, and connection described above.

Advising

Each year, several faculty affiliated with the women's studies program 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

Requirements. The requirements for the minor reflect the ideas shaping the major. A student must complete five courses, including Women's Studies 103 or its equivalent. The four additional courses must come from courses listed in Women's Studies, at least two of which must be at the 100 level. At least one course must be a 100-level seminar. Following the same guidelines of critique, comparison, and connection, students must take at least one course that focuses on critique, one that is comparative nature, and one that emphasizes connection.

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 Program Office, 210 East Duke Building.

Writing

See University Program in Writing.

School of Engineering

Professor Dowell, Dean; Professor Shepard, Associate Dean

ENGINEERING

(INTERDEPARTMENTAL) (EGR)

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. One course. Cocks

24L. Introduction to Environmental Engineering. Materials and energy balances applied to environmental engineering problems. Water pollution control, applied ecology, air quality management, solid and hazardous waste control. Environmental ethics. Prerequisite: Chemistry 11L. One course. Vesilind
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. One course. Petroski

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

50. Introduction to Numerical Computing. Introduction to the use of computers in the solution of engineering and scientific problems. Systematic methods for algorithm development and coding in a higher-level computer language. Application of selected numerical methods. Not open to students who have matriculated at Duke. One course. Staff

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. One course. Staff

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. One course. Stetten

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. One course. Gavin, Hueckel, Laursen, Nadeau, Utku, or J. F. Wilson

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 and Mathematics 31 or 33. One course. Cocks, Eom, Gösele, Jones, Needham, or Tan

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. C-L: Science, Technology and Human Values 108S. One course. Vesilind

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. One course. Parce

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. One course. Knight, Virgin, or Wright

150L. Engineering Communication. Principles of written and verbal technical communication; graphics, mapping, surveying and engineering drawing. Computer graphics, two- and three-dimensional transformations, hidden-surface and hidden-line algorithms, and computer aided design. Prerequisite: Engineering 53L or equivalent. One course. Vesilind

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. Variable credit. Staff

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. Prerequisites: junior or senior standing. One course. Staff

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. One course. Pearsall

183, 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. One course each. Staff

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. One course. S. Utku

COURSES CURRENTLY UNSCHEDULED

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.
188. History of Nuclear Energy: Military Applications.
Biomedical Engineering (BME)

Professor Barr, Chair; Associate Professor Truskey, Director of Undergraduate Studies; Professors R. Anderson, Floyd, Hammond, Hochmuth, Jaszczak, Johnson, Katz, McElhaney, Nolte, S. Smith, Strohbehn, Trahey, von Ramn, and Wolbarsht; Associate Professors Burdick, Dobbins, Glower, Henriquez, Krassowska, MacFall, Massoud, Myers, Needham, and Reichert; Assistant Professors Chilkoti, Collins, Guilak, Hsu, Niklason, Setton, Wolf, T. Wong, and Yuan; Professors Emeriti Clark and Plonsey; Associate Research Professor Lindner; Assistant Research Professors M. Anderson, Frey, Gauthier, Gilland, Hales, Henderson, Hooper, Lo, Lobach, Owen, K. Nightingale, R. Nightingale, Rinker, Stetten, Taylor, Turkington, and Yang; Adjunct Professors Ideker, Neuman, and W. Smith; Adjunct Associate Professors Cooper and Loeb; Adjunct Assistant Professors Black and Cartee.

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 is to prepare students for professional employment, for graduate work in engineering, or for entrance into medical school. To achieve this goal, the program is flexible so that electives can be chosen to meet the respective requirements of the direction chosen by the student.

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. One course. Barr or Henriquez

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. One course. Henriquez

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; corequisite: Physics 51L. One course. Chilkoti or Reichert

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. One course. Barr, Henriquez, or Krassowska

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. One course. Myers or R. Nightingale

145. **Classical Thermodynamics.** Thermodynamic properties and thermodynamic state. Exchange of heat and work in quasi-equilibrium processes. Chemical and phase equilibria of multicomponent mixtures. Prerequisites: junior standing. One course. Setton, Truskey, or Yuan

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. Prerequisites: sophomore standing; corequisite: Physics 52L or equivalent. One course. S. Smith

163L, 164L. Biomedical Electronics and Measurements. 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 physiological events. Prerequisites: Electrical Engineering 61L. One course each. S. Smith, Trahey, von Ramm, or Wolf

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. One course. E. Barr or Krasowska

191, 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. Half course to two courses. Variable credit. Staff

193, 194, 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. One course each. Staff

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. One course. E. Barr or Henriquez

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. One course. Wolf

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. One course. W. Hammond

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. C-L: Civil Engineering 207 and Mechanical Engineering 207. One course. Katz, Truskey, or Yuan

208. Theoretical and Applied Polymer Science. See C-L: Mechanical Engineering 211. One course. Pearsall

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. One course. Barr or Krassowska

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. One course. Barr

213L. Nonlinear Dynamics in Electrophysiology. Electrophysiological behavior of excitable membranes and nerve fibers examined with methods of nonlinear dynamics. Phase-plane analysis of excitable membranes. Limit cycles and the oscillatory behavior of membranes. Phase resetting by external stimuli. Critical point theory and its applications to the induction of rotors in the heart. Theory of control of chaotic systems and stabilizing irregular cardiac rhythms. Initiation of propagation of waves and theory of traveling waves in a nerve fiber. Laboratory exercises based on computer simulations, with emphasis on quantitative behavior and design. Readings from original literature. Prerequisite: Biomedical Engineering 101L or 201L or equivalent. One course. Krassowska

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 Engineering 83L or consent of instructor. C-L: Mechanical Engineering 215. One course. Reichert

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. One course. Truskey

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. One course. Chilkoti
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. One course. von Ramm

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. One course. Truskey

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. One course. Setton

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 Engineering 83L or equivalent. One course. Myers

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. One course. Wolf

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. Prerequisites: junior or senior standing. One course. Trahey

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. C-L: Electrical Engineering 284. One course. Collins or Trahey

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. One course. Reichert

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 non-directed 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. One course. Katz

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. One course. Hales or Hammond

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. One course. Hales or Hammond

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. One course. Henriquez

260. **Devices for the Disabled.** 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 or consent of instructor. One course. Staff

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. Prerequisites: Biomedical Engineering 164L or equivalent or senior standing. One course. S. Smith, Trahey, or Wolf

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. One course. Staff

**COURSES CURRENTLY UNSCHEDULED**

106. Mass and Energy Balances in Chemical and Biological Systems.


206L. Microprocessors and Digital Instruments.


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 (CEE)**

Professor Petroski, Chairman; Visiting Professor Rumer, Director of Undergraduate Studies; Professors Haff, Medina, Reckhow, Utku, and Vesilind; Associate Professors Hueckel, Kabala, Laursen, Malin, Peirce, Rojstaczer, and Virgin; Assistant Professors Ahmann, Boadu, Gavin, Katul, Nadeau, and Vasudevan; Professor Emeriti Brown, Melosh and Wilson; Adjunct Professors Ahearne and McKinney; Adjunct Associate Professors Piver and Robinson; Lecturer Brasier and Speed

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. Prerequisites: Statistics 113 and consent of instructor for nonengineering students. One course.

Robinson

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 bioenvironmental engineering: 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. One course.

Peirce

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. One course.

Boadu, Kabala, Laursen, Medina, or Rumer
123L. **Water Resources Engineering.** Descriptive and quantitative hydrology, hydraulics of pressure conduits and measurement of flow, compound pipe systems, analysis of flow in pressure distribution systems, open channel flow, reservoirs and distribution system storage. Groundwater hydrology and well-hydraulics. Probability and statistics in water resources. Selected laboratory and field exercises, computer applications. Prerequisite: Civil Engineering 122L. One course. Kabala or Medina

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. One course. Peirce

127. **Environmental Pollution Control.** A study of the environmental causes and effects of air, land, and water pollution. Interactions between the environment and stresses to which it is subjected as a consequence of growth and concentration of populations and their increasing demands on natural resources. Solid waste, recycling, noise pollution, and environmental ethics. Not open to engineering majors. One course. Vesilind

130L. **Introduction to Design.** Principles of design as an iterative process involving problem statements, incomplete information, conservative assumptions, external regulations and other constraints, and creative solutions. Selected case studies and design problems from civil and environmental engineering will be discussed. Introduction to steel and reinforced concrete design with applications to bridges, towers, tanks, and other constructed facilities. Prerequisite: Engineering 75L. One course. Gavin

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. One course. Gavin or Utku

133L. **Structural Design I.** Nonhomogenous materials. Determination of physical and mechanical properties of construction materials. Theory and design of compression and flexural members. Emphasis on ultimate strength theory for concrete. Timber design using mechanical fasteners. Laboratory exercises include concrete aggregate evaluation, concrete mix design, and structural timber tests. Prerequisite: Engineering 75L. One course. Nadeau

134L. **Structural Design II.** Design in metals, primarily steel. Properties of materials as criteria for failure. Tension, compression, and flexural members. Bolted and welded connections, including eccentric connections. Built-up members. Design by elastic and plastic methods. Selected problems to include computations and drawings. Prerequisite: Engineering 75L. One course. Speed

139L. **Introduction to Soil Mechanics.** Origin and composition of soils, soil structure. Flow of water through soils. Environmental geotechnology: land waste disposal, waste containment, and remediation technologies. Soil behavior under stress; compressibility, shear strength. Elements of mechanics of soil masses with application to problems of bearing capacity of foundations, earth pressure on retaining walls, and stability of slopes. Laboratory included. Prerequisite: Civil Engineering 122L. One course. Boadu or Hueckel

141, 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. Variable credit. Staff
161. Architectural Engineering I. Analysis of the building through the study of its subsystems (enclosure, space, structural, environmental-control). Building materials and their principal uses in the enclosure and structural subsystems. Computer aided design. Field trips. Prerequisites: junior or senior standing, consent of instructor for nonengineering students. One course. Brasier

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. One course. Brasier

192. Civil Engineering Design. Student design teams complete a preliminary design of an actual civil 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. One course. Rumer and Speed

197, 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. Variable credit. Staff


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. One course. Utku

207. Transport Phenomena in Biological Systems. See C-L: Biomedical Engineering 207; also C-L: Mechanical Engineering 207. One course. Katz, Truskey, or Yuan


217. Transportation Systems Analysis. The transportation systems planning process. Quantitative analysis; mathematical modeling and computer simulation techniques for short-and long-range planning and evaluation of transportation systems. Prerequisite: (or corequisite) Civil Engineering 116 or consent of instructor. One course. Staff

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. One course. Staff

221. Engineering Systems Reliability, Safety, and Risk Assessment. Introduction to the concepts of design reliability and safety. Topics include: concepts of probability in engineering planning and design, decision analysis and assessment of reliability, modeling and analysis of uncertainty, reliability-based design, multiple failure mode analysis, redundant and nonredundant systems, and fault tree analysis. Emphasis on determining the probability of failure for numerous engineering systems including structural systems, infrastructure systems, water treatment systems, environmental systems, and transportation networks. Prerequisite: Mathematics 111 or consent of instructor. One course. Staff

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. One course. Medina


233. Prestressed Concrete Design. A critical review of research and recent developments in prestressed concrete design. Prestressed tanks, beams, and columns; partial prestressing and composite design. Prerequisite: Civil Engineering 133L or consent of instructor. One course. Staff

soil behavior; cyclic behavior of soils; liquefaction and cyclic mobility; elements of soil
dynamics; thermal effects on soils. Prerequisite: Civil Engineering 139L or equivalent.
One course. Hueckel

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. C-L: Environment 240. One course. Dubay and Vasudevan

241. Atmospheric Chemistry and Air Pollution. Chemical kinetics and equilibrium
applied to the mechanistic and quantitative description of processes affecting the fates
of anthropogenic and natural chemicals in the troposphere, on local, regional, and
global scales. Direct photolysis; gas-phase photo-formation and fates of ozone, radicals,
and other oxidants; gas-phase oxidations of volatile organic compounds; gas-to-drop
partitioning; aqueous-phase photoformation and fates of hydrogen peroxide, radicals,
and other oxidants in the aqueous phases of clouds, fogs, and aerosols; effects of
aqueous-phase reactions on the chemical composition of the troposphere; gas-phase
and aqueous-phase oxidations of organic and inorganic compounds; stratospheric
ozone depletion. Prerequisites: university-level general chemistry and organic
chemistry within last four years. C-L: Environment 241. One course. Staff

242. Environmental Aquatic Chemistry. Principles of chemical kinetics and equilibria
applied to quantitative description of the chemistry of lakes, rivers, oceans,
groundwaters, and selected treatment processes. Equilibrium and steady state models
applied to processes such as acid-base chemistry, the carbonate system, coordination
chemistry, precipitation and dissolution, oxidation-reduction, adsorption. Prerequisite:
university-level general chemistry within last four years. C-L: Environment 242. One
course. Ahmann

243. Physicochemical Unit Operations in Water Treatment. Fundamental bases for
design of water and waste treatment systems, including transport, mixing, sedimento-
tion and filtration, gas transfer, coagulation, and absorption processes. Emphasis on
physical and chemical treatment combinations for drinking water supply. Prerequisite:
Civil Engineering 124L. One course. Kabala

244. Applied Microbial Processes. Existing and novel microbial processes as they
pertain to biotechnological products, specialty bioconversions, and to treat or exploit
wastes. Concepts of microbiology, chemical engineering, the stoichiometry and kinetics
of complex microbial metabolism, and process analysis. Specific processes such as
carbon oxidation, vinegar and alcohol production, nitrification, methane production,
biological electricity generation, recombinant protein secretion, and wastewater
treatment in long-term space travel are discussed. Consent of instructor required. One
course. Staff

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. One course. Medina

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. One course. Vesilind

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. One course. Peirce

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. C-L: Environment 248. One course. Vesilind


251. Systematic Engineering Analysis. 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. Prerequisites: senior or graduate standing. One course. Laursen or Utku

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. C-L: Mechanical Engineering 252. One course. Virgin

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. One course. Laursen

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. One course. Laursen
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. One course. Kabala

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. One course. Kabala


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. One course. Kabala

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. One course. 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. One course. Boadu


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. Prerequisites: senior or graduate standing in engineering or the physical sciences. One course. Gavin

**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). One course. Gavin

**COURSES CURRENTLY UNSCHEDULED**

202. Advanced Mechanics of Solids II.
205. Elasticity.
212. Mechanical Behavior and Fracture of Materials.
226. Operable Hydrology.
232. Reinforced Concrete Design.
234. Advanced Structural Design in Metals.
235. Foundation Engineering.
236. Earth Structures.
239. Physical Properties of Soils.
245. Structural Optimization.

**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, 139L, and 192L. Majors choosing the structural engineering and mechanics sequence must take Civil and Environmental engineering 131L, 133L, and 134L. Majors choosing the environmental engineering and water resources sequence must take Civil and Environmental Engineering 120L, 123L, and 124L.

**Electrical and Computer Engineering (EE)**

Professor Nolte, Chairman, Associate Professor Board, Associate Chair; Visiting Professor McCumber, Director of Undergraduate Studies; Professors Casey, Fair, Joines, Marinos, Trivedi, and P. Wang; Associate Professors Carin, Dewey, Kedem, Krolik, Massoud, Schmajuk, and Teltzworth; Assistant Professors Chakrabarty, Collins, George, and H. Wang; Professors Emeriti Owen and Wilson; Associate Research Professor Daniels-Race; Assistant Research Professors Ben Ghalia, Papazoglou, and Ybarra; Adjunct Associate Professor Derby; Adjunct Assistant Professors Bushnell, Morizio, and Palmer; 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 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 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 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.

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, 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 such areas as biomedical engineering, computer science, physics, mathematics, economics, public policy studies, and others. 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, servers and X-terminals interconnected via an Ethernet network which also gives access to campus, regional and international data networks, including 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 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, Thévenin 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 SPICE. Prerequisite: Mathematics 32. One course. George, McCumber, or Ybarra.


64. Fundamentals of 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 and SPICE. Prerequisite: Electrical Engineering 61L. One course. McCumber or H. Wang.


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. Prerequisite: Electrical Engineering 64 and consent of instructor. One course. Staff.

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. One course. George.
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. C-L: Computer Science 120L. One course. Marinos or Strole

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. One course. Board

153. Introduction to Operating Systems. Prerequisites: Computer Science 100 and 104. See C-L: Computer Science 110. One course. Chase or Ellis


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. Prerequisite: knowledge of at least one programming language at level of Computer Science 1. Half course. Board

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. One course. Marin


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 181. One course. George

170. 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. One course. Carin, Joines, or Palmer

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. One course. Carin or Joines

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 transitions. Prerequisites: Mathematics 103 or equivalent and Physics 51L, 52L or equivalent. C-L: Physics 176. One course. Socolar


182. Statistical Signal Processing. The theory and application of discrete-time signal processing, with an emphasis on estimating signals in random noise. Deterministic and random discrete-time signal fundamentals, multirate sampling, the discrete Fourier and cosine transforms, JPEG, the FFT algorithm, introductory FIR and IIR filter design, practical spectral analysis, adaptive filtering, and recursive mean-square signal estimation. Applications of statistical signal processing to communications, radar, and sonar. Prerequisite: Electrical Engineering 181. One course. Papazoglou

186. Wireless Communications 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. Radio wave propagation models. Intelligent antenna systems. Traffic considerations for cellular radio. Packet switched data access to the Internet and information services via wireless modems. Prerequisites: Electrical Engineering 181 and Mathematics 135 or Statistics 113. One course. Ybarra

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 181 and Mathematics 135. One course. Staff

191, 192. Undergraduate Research in Electrical Engineering. For juniors only. Half course or one course each. Variable credit. Staff

193, 194. Undergraduate Research in Electrical Engineering. For seniors only. Half course or one course each. Variable credit. Staff
195, 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. Variable credit. Staff

197, 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. Variable credit. Staff

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. One course. Staff

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. C-L: Physics 214. One course. Daniels-Race or Teitsworth

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. One course. Staff

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. One course. Casey

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. One course. Staff


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. One course. Bushnell, H. Wang, or P. Wang

243. Pattern Classification and Recognition. Parameter estimation and supervised learning, nonparametric techniques, linear discriminant functions, clustering, language theory related to pattern recognition, examples from areas such as character and severe weather recognition, classification of community health data, recognition of geometrical configurations, algorithms for recognizing low resolution touch-sensor array signatures and 3-D objects. Consent of instructor required. One course. P. Wang

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. One course. Staff


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. Prerequisites: Electrical Engineering 151L and 163L (or Biomedical Engineering 163L with consent of instructor). One course. Marinos


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. One course. Staff

262. Analog Composite Microsystems. Advanced very large scale integrated (VLSI) circuits. Emphasis on analog electrical circuit analysis and design; introduction to composite circuit analysis and design. Composite circuits involve coupled-energy domains such as microelectromechanical and microelectrofluidic. Brief review of electrostatics and derivation of transistor large signal and small signal models. Basic analog circuits including current sources, amplifiers, voltage sources, and buffers. Strength of material and mechanics with design applications to microstructure sensing and actuating. Mixed-signal (electrical and mechanical), coupled-energy component modeling, and simulation using a behavioral hardware description language and SPICE. Prerequisite: Electrical Engineering 261. One course. Dewey

263. Multivariable Control. Prerequisites: a course in linear systems and classical control, or consent of instructor. See C-L: Civil Engineering 263; also C-L: Mechanical Engineering 263. One course. Bushnell, Clark, Gavin, or H. Wang

266. VLSI Design Verification Techniques. VLSI verification tool design. Design and capabilities of circuit simulation, timing simulation, logic simulation, and functional simulation. Techniques applied in timing verification and other static verification tools. Parallel processing and its application to simulation. Physical design issues related to verification. Prerequisite: Electrical Engineering 261, working knowledge of C. One course. Staff

269. VLSI System Testing. Theory and practice of fault analysis, test generation, and design for testability for VLSI circuits and systems. Testing tools and systematic design-for-test methodologies needed to handle design complexity, ensure reliable operation, and achieve short time to market. Topics include fault modeling, fault simulation, test generation algorithms for combinational and sequential circuits, testability measures, design for testability and scan design, built-in self test, IDDQ testing, processor and memory testing, and on-line testing. Term project consisting of a research survey or a software implementation of a test methodology. Prerequisite: Electrical Engineering 151L. One course. Chakrabarty
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. Consent of instructor required. One course. Carin or Joines


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. One course. Joines

274. 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. Lecture and laboratory projects. C-L: Physics 185. One course. Guenther


281. Random Signals and Noise. Introduction to mathematical methods of describing and analyzing random signals and noise. Review of basic probability theory; joint, conditional, and marginal distributions; random processes. Time and ensemble averages, correlation, and power spectra. Optimum linear smoothing and predicting filters. Introduction to optimum signal detection, parameter estimation, and statistical signal processing. Prerequisite: Mathematics 135 or Statistics 113. One course. Collins or Hansen


284. Acoustics and Hearing. Prerequisites: Mathematics 111 and Physics 52L or equivalents. See C-L: Biomedical Engineering 235. One course. Collins or Trahey

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. One course. Nolte
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. One course. Hansen

287. Underwater Communications. Elements of communication theory and digital signal processing are combined with basic physics and oceanography to offer an overview of underwater communications, with an emphasis on the radar/sonar problem. Beamforming with transducer arrays. Signal design and target resolution; the ambiguity function. The ocean as a communication channel: sound propagation and ambient noise characteristics. Performance analysis of selected communication scenarios and case studies of operational sonar systems. Prerequisite: Electrical Engineering 181 or consent of instructor. One course. Staff

288. Image and Array Signal Processing. Multidimensional digital signal processing with applications to practical problems in image and sensor array processing. Two-dimensional discrete signals and systems, discrete random fields, 2-D sampling theory, 2-D transforms, image enhancement, image filtering and restoration, space-time signals, beamforming, and inverse problems. Prerequisite: Electrical Engineering 282 or consent of instructor. One course. Krolik


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. Consent of director of undergraduate studies and of supervising instructor required. One course. Staff

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 Cocks, Chair; Associate Professor Knight, Director of Undergraduate Studies; Professors Bejan, Dowell, Garg, Harman, Hochmuth, Pearsall, Shaughnessy, Shepard, and Tan; Associate Professors Bliss, R. Clark, Eom, Hall, Jones, Needham, Quinlan, Virgin, and Wright; Assistant Professors Franzoni and Howle; Associate Research Professor Zhong; Assistant Research Professors W. Clark, Florea, Galbraith, Ghadimi, Oliver, Ting-Beall, Thomas, and Zhelev; Adjunct Professors Gosele and Wu; Adjunct Associate Professors Crowson and Jenkins; Adjunct Assistant Professors Kasbekar and Prabhu
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 product manufacturing, transportation, power generation, construction, aerospace, electronics, biomechanical and biomedical engineering, and national defense. Within these industries, the engineer might specialize in the design of machinery or fluid handling systems, the analysis of heat transfer from electronics packages or of vibration in mechanical systems, the automation of manufacturing processes, the efficient operation of industrial plants, the marketing of technical products or services, or any of a number of other activities. The individual’s contribution may lie anywhere in the spectrum from highly theoretical to imminently practical, and often involves operating as an engineering manager.

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 engineering 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, 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. Quarter course. Staff

101L. Thermodynamics. The principal laws of thermodynamics for open and closed systems and their application in engineering. Properties of the pure substance, relationships among properties, mixtures and reactions. Power and refrigeration cycle analysis. Prerequisite: Physics 52L. One course. Harman or Hochmuth
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 83L or consent of instructor. One course. Cocks, Jones, or Pearsall

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. One course. Cocks, Jones, or Pearsall

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. One course. Bliss, Hall, Hochmuth, Knight, or Shaughnessy

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: Engineering 83L. One course. Wright

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 radiation. Free and forced convection across boundary layers. Application to heat exchangers. Selected laboratory work. Prerequisites: Mathematics 111 and Mechanical Engineering 126L. One course. Howle or Hochmuth

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. One course. Staff

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 course or one course each. Staff


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. Variable credit. Staff

207. **Transport Phenomena in Biological Systems.** See C-L: Biomedical Engineering 207; also C-L: Civil Engineering 207. One course. Katz, Truskey, or Yuan

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. One course. Needham

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. C-L: Civil Engineering 210. One course. Hall or Knight

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. C-L: Biomedical Engineering 208. One course. Pearsall

212. **Electronic Materials.** An advanced course in materials science and engineering dealing with the various materials important for solid-state electronics including semiconductors, ceramics, and polymers. Emphasis on thermodynamic concepts and on defects in these materials. Materials preparation and modification methods for technological applications. Prerequisite: Engineering 83L. One course. Tan

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: Engineering 83L and Mechanical Engineering 101L. One course. Pearsall


215. **Biomedical Materials and Artificial Organs.** Prerequisite: Biomedical Engineering 83L, Chemistry 151L or Engineering 83L or consent of instructor. See C-L: Biomedical Engineering 215. One course. Reichert

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 Engineering 083L. One course. Jones

Fracture of specific materials. Prerequisites: Engineering 83L and Mechanical Engineering 115L. One course. Jones

**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. One course. Tan

**219. Thin Film Processing.** Thin film deposition processes for the fabrication of electronic, photonic, and magnetic devices. Vacuum techniques, the control of growth of thin films on an atomic scale, and microanalytical techniques of thin film heterostructures. Prerequisite: Engineering 83L. One course. Eom

**220. X-Ray Diffraction.** The theory of X-ray diffraction and its relationship to structural determination in solids. Various X-ray diffraction techniques and laboratories, including single crystal diffraction, thin film diffraction, powder diffraction, grazing incident diffraction, and diffraction from layered materials are covered. Prerequisite: Engineering 83L. One course. Eom

**221. Compressible Fluid Flow.** Basic concepts of the flow of gases from the subsonic to the hypersonic regime. One-dimensional wave motion, the acoustic equations, and waves of finite amplitude. Effects of area change, friction, heat transfer, and shock on one-dimensional flow. Moving and oblique shock waves and Prandtl-Meyer expansion. One course. Shaughnessy

**222. Magnetic Materials.** The theory of magnetism, magnetic materials, and applications of magnetic materials. Various magnetic property measurement techniques and laboratories, including magnetization and magnetotransport measurements of magnetic thin films. Prerequisite: Engineering 83L. One course. Eom

**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. One course. Hochmuth

**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. One course. Shaughnessy or Thompson


**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. One course. Knight

**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). One course. Howle


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. One course. Clark


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 multimass systems, convolution and data processing, introduction to random vibration. One course. Knight or Wright

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. One course. Bliss

237. Aerodynamics. Fundamentals of aerodynamics applied to wings and bodies in subsonic and supersonic flow. Basic principles of fluid mechanics and analytical methods for aerodynamic analysis. Two- and three-dimensional wing theory, slender-body theory, lifting surface methods, vortex and wave drag. Brief introduction to vehicle design, performance, and dynamics. Special topics such as unsteady aerodynamics, vortex wake behavior, and propeller and rotor aerodynamics. One course. Bliss


484 Courses and Academic Programs
239. **Unsteady Aerodynamics.** Analytical and numerical methods for computing the unsteady aerodynamic behavior of airfoils and wings. Small disturbance approximation to the full potential equation. Unsteady vortex dynamics. Kelvin impulse and apparent mass concepts applied to unsteady flows. Two-dimensional unsteady thin airfoil theory. Time domain and frequency domain analyses of unsteady flows. Three-dimensional unsteady wing theory. Introduction to unsteady aerodynamic behavior of turbomachinery. Prerequisite: Mechanical Engineering 237. One course. Hall

240. **Patent Technology and Law.** The use of patents as a technological data base is emphasized including information retrieval in selected engineering disciplines. Fundamentals of patent law and patent office procedures. Consent of instructor required. One course. Cocks

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. One course. Wright

252. **Buckling of Engineering Structures.** Prerequisite: Civil Engineering 131L or consent of instructor. See C-L: Civil Engineering 252. One course. Virgin

263. **Multivariable Control.** Prerequisites: a course in linear systems and classical control, or consent of instructor. See C-L: Civil Engineering 263; also C-L: Electrical Engineering 263. One course. Bushnell, Clark, Gavin, or H. Wang

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. Variable credit. 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. One course. Needham

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. One course. Garg

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. One course. Pearsall

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. One course.
Pearsall


280. Convective Heat Transfer. Models and equations for fluid motion, the general energy equation, and transport properties. Exact, approximate, and boundary layer solutions for laminar flow heat transfer problems. Use of the principle of similarity and analogy in the solution of turbulent flow heat transfer. Two-phase flow, nucleation, boiling, and condensation heat and mass transfer. One course. Bejan

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. One course. Bejan

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. One course. Staff

290. Physical Oceanography. 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. Prerequisites: Mathematics 31 and 32 or consent of instructor. C-L: Environment 290 and Geology 203. One course. Lozier

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 101L, 125L, 126L, 141L, 150L, and 160L; Electrical Engineering 148L.
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