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GRADUATE CATALOG
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The Catalog is available only online as of Fall 2007 and is updated continually. When the Graduate Council revises a policy, the previous policy and the updated policy (with “effective date”) both will appear in the online Catalog. The previous policy will be deleted after 12 months. Any new policy will be inserted at the appropriate place in the Catalog.

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1.1 INTRODUCTION

The University of Alabama, Graduate School, 102 Rose Administration Building, Box 870118, Tuscaloosa, AL 35487-0118; (205) 348-5921; e-mail usgradapply@aalan.ua.edu (U.S. students) or intergradapply@aalan.ua.edu (international students); website http://graduate.ua.edu. This catalog is produced by the Graduate School. Although the publisher of this catalog has made every reasonable effort to attain factual accuracy herein, no responsibility is assumed for editorial, clerical, or printing errors or error occasioned by honest mistake. All information contained in this catalog is subject to change by the appropriate officials of The University of Alabama without prior notice. Although this catalog intends to reflect any current policies or rules of The Board of Trustees of The University of Alabama referred to or incorporated herein, users are cautioned that changes or additions to policies or rules may have become effective since the publication of this material. In the event of such a conflict, the current statements of board policy contained in the official minutes and manual of rules, bylaws, and guidelines shall prevail.

1.2 EQUAL OPPORTUNITY IN EDUCATION AND EMPLOYMENT

The University of Alabama complies with applicable laws prohibiting discrimination, including Titles VI and VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act, Executive Order 11246, Title IX of the Education Amendments of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, the Vietnam Era Veterans Adjustment Assistance Act, the Age Discrimination Act of 1975, and the Americans with Disabilities Act of 1990, and does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, or veteran status in admission or access to, or treatment or employment in, its programs and services. Inquiries and concerns may be directed to Gwendolyn D. Hood, University Compliance Officer, 171 Rose Administration Building, Box 870300, Tuscaloosa, AL 35487-0300, (205) 348-5855 (Voice/TDD). This notice is available in alternative formats upon request.

The University is committed to making its programs and services accessible to individuals with disabilities and seeks to be responsive to the needs of qualified students with disabilities. Students who may need special services or reasonable accommodations because of a disability are encouraged to contact the Office of Disability Services, 133-B Martha Parham Hall East, Box 870185, Tuscaloosa, AL 35487-0185; telephone (205) 348-4285; TTY (205) 348-3081.

1.3 CAMPUS SECURITY REPORT

Each year, The University of Alabama publishes the UA Annual Campus Security Report. It contains crime statistics for the three most recent calendar years. It also details UA security policies and procedures. The report is provided in accordance with the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act and is available online at safety.ua.edu. The Alabama Department of Public Safety, a state agency, also provides an online listing of sex offenders currently registered with the state. This listing is available on the Alabama Department of Public Safety website at www.dps.state.al.us (click on the "Alabama Sex Offenders" link). For information regarding the enrollment or employment of registered sex offenders at The University of Alabama, or to request a printed copy of the Campus Security Report, write University Police, Attention: Community Services Division, Box 870180, Tuscaloosa, AL 35487-0180.
2.1 BOARD OF TRUSTEES

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MICHAEL A. BOWNES, Tuscaloosa, Secretary of the Board and Assistant to the Chancellor
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David A. Francko, Assistant Vice President for Academic Affairs and Dean of the Graduate School

John F. Schmitt, Associate Dean of the Graduate School and Assistant to the Executive Vice President and Provost

Natalie Adams, Assistant Dean of the Graduate School
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REBEKAH D. BROWN, rebekah.brown@ua.edu
Office Associate II for International Admissions

Visit these websites for current information about Graduate School policies, requirements, and degree programs:

Graduate School Contacts  Telephone (205) 348-5921 · Fax (205) 348-0400
Graduate School Website  http://graduate.ua.edu
Graduate Catalog  http://graduate.ua.edu/catalog
Electronic Application Materials  http://graduate.ua.edu/application
Application Forms (printable)  http://graduate.ua.edu/application/forms.html
Graduate Forms for Matriculated Students  http://graduate.ua.edu/forms/formidx.html
Graduate Assistant Guide  http://graduate.ua.edu/publications/ga/
Graduate Council Members

- Francko, David A., Ph.D., Asst VP for Academic Affairs & Dean of The Graduate School (ex officio & chair) 348-8280
- Bonner, Judith L., Ph.D., Executive Vice President & Provost (ex officio) 348-4892
- Pitschmann, Louis A., Ph.D., Dean of University Libraries (ex officio) 348-7561
- Acoff, Viola L., Ph.D., Faculty Senate Representative (ex officio) 348-3761

Graduate Council Members

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<th>College, Department</th>
<th>Term Expires</th>
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<tr>
<td>Bissell, Kimberly L., Ph.D.</td>
<td>College of Communication, Journalism</td>
<td>2008</td>
<td>348-8247</td>
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<td>Blackstock, Silas C., Ph.D.</td>
<td>College of Arts &amp; Sciences, Chemistry</td>
<td>2008</td>
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<td>Davies, Catherine E., Ph.D.</td>
<td>College of Arts &amp; Sciences, English</td>
<td>2010</td>
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<td>DeZoort, F. Todd, Ph.D.</td>
<td>College of Commerce &amp; Business Admin, Accountancy</td>
<td>2008</td>
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<td>Dixon, Martyn R., Ph.D.</td>
<td>College of Arts &amp; Sciences, Mathematics</td>
<td>2009</td>
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<td>Erevelles, Nirmala, Ph.D.</td>
<td>College of Education, Educational Leadership</td>
<td>2010</td>
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<td>Findlay, Robert H., Ph.D.</td>
<td>College of Arts &amp; Sciences, Biological Sciences</td>
<td>2010</td>
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<td>*Goldston, M. Jenice “Dee”, Ph.D.</td>
<td>College of Education, Elementary Education</td>
<td>2009</td>
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<td>Green, Matthew, Ph.D.</td>
<td>College of Education, Kinesiology</td>
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<td>Guo, Yuebin, Ph.D.</td>
<td>College of Engineering, Mechanical Engineering</td>
<td>2010</td>
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<td>*Johnson, Ida M., Ph.D.</td>
<td>College of Arts &amp; Sciences, Women's Studies</td>
<td>2010</td>
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<td>Kacmar, Charles J., Ph.D.</td>
<td>College of Commerce &amp; Business Admin, Mgt Sci</td>
<td>2009</td>
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<td>Kaufman, Allan V., Ph.D.</td>
<td>School of Social Work</td>
<td>2008</td>
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<td>Klinger, Mark R., Ph.D.</td>
<td>College of Arts &amp; Sciences, Psychology</td>
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<td>Martin, Elaine A., Ph.D.</td>
<td>College of Arts &amp; Sciences, Modern Languages</td>
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<td>Mills, Carol B., Ph.D.</td>
<td>College of Communication, Communication Studies</td>
<td>2010</td>
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<td>*Murphy, Michael D., Ph.D.</td>
<td>College of Arts &amp; Sciences, Anthropology</td>
<td>2009</td>
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<td>*O'Donnell, Janis M., Ph.D.</td>
<td>College of Arts &amp; Sciences, Biological Sciences</td>
<td>2008</td>
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<td>Roskos-Ewoldsen, David R., Ph.D.</td>
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<td>Roy, Samit, Ph.D.</td>
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<td>2010</td>
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<td>Rubin, Nancy J., Psy.D.</td>
<td>College of Community Health Sciences</td>
<td>2009</td>
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<td>Schnee, Edward J., Ph.D.</td>
<td>College of Commerce &amp; Business Admin, Accountancy</td>
<td>2009</td>
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<td>Sherrod, Roy Ann, D.S.N.</td>
<td>College of Nursing</td>
<td>2007</td>
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<td>*Sox, Charles R., Ph.D.</td>
<td>College of Commerce &amp; Business Admin, Management Sc</td>
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<td>Taylor, Robert P., Ph.D.</td>
<td>College of Engineering, Mechanical Engineering</td>
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<td>College of Education, Educational Leadership</td>
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<td>*Woodbury, Keith A., Ph.D.</td>
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<td>2010</td>
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<td>Wright, Kenneth E., D.A.</td>
<td>College of Human Environmental Sci, Consumer Science</td>
<td>2009</td>
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<td>Wright, Vivian H., Ph.D.</td>
<td>College of Education, Curriculum &amp; Instruction</td>
<td>2008</td>
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<td>Zhou, Shuhua, Ph.D.</td>
<td>College of Communication, Telecommunication &amp; Film</td>
<td>2010</td>
<td>348-8653</td>
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<td>**Yaya, Mehmet, Mr.</td>
<td>College of Communication &amp; Business Admin, Economics</td>
<td>2008</td>
<td>348-</td>
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<tr>
<td>**Collins, Sondra, Ms.</td>
<td>College of Communication &amp; Business Admin, Economics</td>
<td>2008</td>
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</table>

Terms Expiring 2008
- Dr. Kim Bissell
- Dr. Silas Blackstock
- Dr. Todd DeZoort
- Dr. Allan Kaufman
- Dr. Mark Klinger
- Dr. Janis O. O'Donnell
- Dr. Charles R. Sox
- Dr. Robert P. Taylor
- Dr. Stephen Tomlinson
- Dr. Vivian Wright
- Ms. Sondra Collins
- Mr. Mehmet Yaya

Terms Expiring 2009
- Dr. Martyn R. Dixon
- Dr. J. Matthew Green
- Dr. Charles J. Kacmar
- Dr. Michael D. Murphy
- Dr. David R. Roskos-Ewoldsen
- Dr. Nancy J. Rubin
- Dr. Edward J. Schnee
- Dr. Kenneth E. Wright
- Dr. Keith Woodbury
- Dr. Shuhua Zhou

Terms Expiring 2010
- Dr. Catherine Davies
- Dr. Nirmala Erevelles
- Dr. Robert Findlay
- Dr. Ida Johnson
- Dr. Carol Mills
- Dr. Samit Roy
- Dr. Roy Ann Sherrod
- Dr. Keith Woodbury
- Dr. Shuhua Zhou
- Dr. Sondra Collins

* Appointed, **Student Representative
2.6 QUALIFICATIONS OF THE GRADUATE FACULTY

The purpose of the graduate faculty of The University of Alabama is to set standards for graduate work and to provide graduate instruction. It is the responsibility of the graduate faculty in each division to elect its representative(s) to the Graduate Council, which acts for the faculty in matters relating to graduate work. There are three categories of members: full, associate, and temporary. Only members of the graduate faculty may teach courses numbered 500 or above, and only members of the graduate faculty may serve on thesis, dissertation, and examining committees. Only full members may chair dissertation committees.

Criteria for full and associate members. The dean of each academic division has the annual responsibility of nominating members who meet the following criteria to serve on the graduate faculty:

I. A. Hold the Ph.D. or other terminal degree and
   B. Hold the rank of at least assistant professor in a full-time, tenure-track position

II. Must demonstrate ability and continuing interest in the graduate program and in research or creative activity. Full members must show a strong, continuing record of productive research, publication, creative activity, and scholarly activity appropriate to the discipline. These broad requirements are best interpreted by each department and college considering their unique aspects.

III. Be recommended by the departmental graduate faculty, department chairperson, and dean of the academic division

These nominations will then be acted upon by the chairperson of the Graduate Council, the dean of the Graduate School.

Terms of appointment. Full and associate members are appointed for six-year renewable terms.

Temporary membership. Temporary membership may be extended to well-qualified individuals who do not satisfy the above criteria, to perform specific functions for specific time periods, not to exceed three calendar years. They should be recommended by the departmental graduate faculty, department chairperson, and dean of the academic division. These nominations will then be acted upon by the chairperson of the Graduate Council, the dean of the Graduate School.

Administrative appointments. Faculty members currently on administrative appointments, or returning to the faculty from such appointments, are eligible for full or associate membership on the graduate faculty. They should show, at a minimum, promise of satisfying the appropriate departmental as well as University membership criteria. The individual's record of teaching and research before becoming an administrator should be considered.

Retirement. Members of the graduate faculty are automatically permitted to retain graduate faculty status for one year after retirement. After a graduate faculty member retires, he or she may need to continue to serve as chair or committee member on students' thesis and/or dissertation committees. These graduate faculty members may be appointed as temporary members of the graduate faculty for these purpose and/or to perform other specific functions. The nomination and appointment procedure for these temporary appointments are the same as those adopted by the academic unit and the University.
2.7 GRADUATE FACULTY

A current list of Full and Associate Members of the Graduate Faculty is available online. It includes each faculty member’s name, department, status (associate or full member), appointment date, and end-of-appointment date. Faculty members need to apply through their department and the dean’s office of their college/school for reappointment to the graduate faculty during the fifth year of their six-year appointment, in order to continue to teach graduate courses, serve on thesis and dissertation committees, and chair dissertation committees (full members only.)

Also available online is a list of Temporary Graduate Faculty. The graduate dean appoints such faculty to perform specific functions (e.g., serving on a thesis or dissertation committee) for a finite period of time, and the appointment ends when the function is completed.
3.1 MISSION AND OBJECTIVES OF THE UNIVERSITY

The University of Alabama, the State of Alabama’s oldest public university, is a senior comprehensive doctoral-level institution. The University was established by constitutional provision under statutory mandates and authorizations. Its mission is to advance the intellectual and social condition of the people of the State through quality programs of teaching, research, and service.

Activities to Support the Mission
The University of Alabama’s activities emerge from a broad range of research and creative activities, many of which are recognized for their contributions to the economic, technological, and cultural growth of the State. Research and creative activity yields continuing stimulation for the instructional programs offered by the University’s colleges and schools, supported by the Amelia Gayle Gorgas Library, a member of the Association of Research Libraries. At the undergraduate level, the University offers a broad range of baccalaureate programs in the arts and humanities, science and technology, pre-professional, and professional fields. A University-wide core curriculum provides a general education component as the keystone of every undergraduate program. Graduate programs, built on these undergraduate foundations, concentrate on the development of original scholarship, research, and creative activity. Professional programs, including the state’s only public law school, prepare students with high levels of competence for leadership roles. As one of the major residential campuses in the State, the University enhances the academic and personal growth of its students through its on-campus environment. Recognizing that education is a lifelong endeavor, the University offers an array of educational opportunities for non-traditional students.

The University’s research, creative activities, and instructional programs form a foundation for extensive service activities, establishing a number of partnerships with business, nonprofit organizations, and government through applications of new knowledge. These relationships often extend beyond the bounds of the State as the University assists developmental efforts at regional, national, and international levels.
3.2 MISSION OF THE GRADUATE SCHOOL

The Graduate School, through graduate offerings of the various colleges and schools, prepares students for careers in a wide range of teaching, research, creative, and service activities. The Graduate School assists the graduate faculty in offering programs of study leading to more than 120 master’s, educational specialist, and doctoral degrees. It works with the office of the Executive Vice President and Provost to coordinate the ongoing program review of all academic departments and programs of the University.

Personnel of the Graduate School work with departments to identify prospective graduate students and enroll a graduate student population consistent with the enrollment objectives of the University. The objectives include not only overall enrollment, but also the enrollment of a diverse student body. The Graduate School operates in cooperation with the other colleges and schools of the University to foster the development of teaching by Graduate Teaching Assistants.
3.3 HISTORY AND ORGANIZATION

In 1819, the Congress of the United States donated 46,000 acres of land within the State of Alabama for the endowment of a seminary of learning. The board of trustees of the University was created by the General Assembly of Alabama in 1821, and on April 18, 1831, the University was opened for the admission of students. From the outset, the University offered graduate degrees, the first being a master of arts degree conferred in 1832. On April 4, 1865, most University buildings were burned to the ground by a body of federal cavalry. Construction of new buildings began in January 1867, and classes were resumed in April 1869. On February 25, 1884, the federal government donated 72 sections of public lands within the state to The University of Alabama in restitution for its loss in buildings and equipment when the campus was destroyed in 1865.

The Graduate School was organized as a specialized division of the University in 1924, when the University began to offer master’s degrees. In the fall of 1950, the University began to offer the Ph.D. degree. Today, The University of Alabama provides a comprehensive program of graduate study in more than 120 master's, educational specialist, and doctoral degree programs. The comprehensive program of graduate study embraces the humanities, the sciences, education, and several professional areas.

Graduate study is designed for college graduates who desire a deeper and more thorough involvement in scholarship and research and more thorough professional preparation in their chosen fields. Graduate study, especially at the doctoral level, is designed to develop independent scholarship, originality, and competence in research or competence in the various professional areas in which doctoral programs are offered.

The Graduate School is composed of the divisions that offer graduate instruction leading to advanced degrees. The faculty of the Graduate School consists of those faculty members of the divisions who are deemed qualified by their peers and deans to teach and do research of graduate caliber and who participate actively in these graduate activities. The Graduate School has supervision over all graduate work in the University except law and medicine. The Graduate Council, composed of four appointed and 22 elected members, formulates graduate policy. The dean of the Graduate School is ex officio chairperson of the council and is responsible for the administration of the regulations and requirements for advanced degrees.
3.4 ACCREDITATION

The University of Alabama is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award bachelor's, master's, educational specialist, and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of The University of Alabama.

Selected graduate programs have been accredited by the American Assembly of Collegiate Schools of Business, American Bar Association, American Library Association, American Psychological Association, American Speech-Language-Hearing Association, Association of Research Libraries, Commission on Collegiate Nursing Education, Council on Social Work Education, National Association of School Psychologists, National Association of Schools of Art and Design, National Association of Schools of Dance, National Association of Schools of Music, National Association of Schools of Theatre, Council on Accreditation of Counseling and Related Educational Programs, Council on Rehabilitation Education, and National Council for Accreditation of Teacher Education.
3.5 LIBRARIES AT THE UNIVERSITY OF ALABAMA

The University of Alabama provides research library facilities and services to its faculty, students, staff, and other scholars and information users through a system of discipline-related libraries. Amelia Gayle Gorgas Library, serving the humanities, social sciences, and arts is centrally located on the University Quadrangle. Three other units are located adjacent to their discipline-related teaching areas: Angelo Bruno Business Library, McLure Education Library, and Eric and Sarah Rodgers Library for Science and Engineering. The W. S. Hoole Special Collections Library is located on the second floor of Mary Harmon Bryant Hall. Under separate administration are the Health Sciences Library located in the University Medical Center, the Bounds Law Library located in the Law Center, and the Map Library located in Farrah Hall.

The libraries combined hold more than two million cataloged items. In addition to book and microform materials, the collections include a broad selection of journals, newspapers, and other serial titles in paper and electronic format. The libraries serve as the regional depository for United States government publications. Through interlibrary loan and document delivery services, the library provides options for obtaining materials unavailable in the University's collections.

The W. S. Hoole Special Collections Library contains materials related to Alabama and the Deep South (including manuscripts), rare editions, Confederate imprints, pamphlets, maps, archives of the University, and Alabama state publications.

The University Libraries' website at http://www.lib.ua.edu provides all library users with off-site access to library information resources and services. Tutorials and FAQs on the website assist students and faculty in making effective off-site use of library resources and services.

The Libraries' catalog, e-journals, e-books, and a wide variety of databases may be accessed in the computer areas in each library as well as throughout the building via the wireless network. Materials for course reserves are provided in print and electronic format, and reference service is delivered in person, through chat in real time, and by e-mail. The libraries have a variety of study area options, including group study rooms, individual study desks, and scattered soft seating.

Librarians with subject expertise assist library users with specialized research needs. Library instruction classes are offered on campus to assist students and faculty with research and teaching. For students working on class projects or individual papers, expert assistance is provided in the library's center for digital media production in Gorgas Library.

The University's libraries are committed to providing service and access to information resources equally to all library users. Library services supporting distance education are available by telephone and through the University Libraries' website.

The University of Alabama has an academic membership in the Association of Research Libraries, a selective group of institutions emphasizing research and graduate instruction at the doctoral level and supporting large, comprehensive collections of library materials. The University's libraries also hold memberships in the Center for Research Libraries, the Association of Southeastern Research Libraries, the Southeastern Library Network, the Coalition for Networked Information, and the Network of Alabama Academic Libraries.
3.6 CENTER FOR MATERIALS FOR INFORMATION TECHNOLOGY

The Center for Materials for Information Technology (MINT) at The University of Alabama is a multidisciplinary research program that includes students and faculty from six different departments at UA and from the tri-campus Materials Science Program. MINT focuses on the discovery of advanced materials and new phenomena useful to information technology, especially information storage and retrieval. In recent years this research has emphasized nanometer scale structures and devices. MINT is sponsored by many of the world's leading information storage companies and is home to a Materials Research Science and Engineering Center supported by the National Science Foundation. MINT fosters a unique environment for multidisciplinary research and education that emphasizes shared facilities, collaborative research, and an educational environment that is simultaneously challenging and supportive. Professor William H. Butler is director of MINT. He may be reached at wbutler@mint.ua.edu.
The Office of Information Technology (OIT) is responsible for delivering state-of-the-art computer, network, telecommunication, and consulting services to the University of Alabama community. Faculty, staff, and students can turn to the OIT for access to and assistance with e-mail, websites, voice mail, and much more.

**E-mail Accounts**
Upon registration, accounts are automatically created for all students on the central academic computer, bama.ua.edu. These accounts are primarily used as the students' official University e-mail addresses, but they can also be used to publish personal websites or for direct login to a Sun Solaris system with programming languages and other tools.

**Telephone Service**
Students living on campus receive their telephone service from Telecommunications, a department of OIT. Basic service includes unlimited local calls, a long distance calling card, voice mail, caller ID, call waiting, three-way calling, and local last number redial. For more information, see the Telecommunications website at [http://telecom.ua.edu](http://telecom.ua.edu).

**Internet Access**
Another service for on-campus living is ResNet, a high-speed Internet connection available in many residence halls and small-group housing units. For information about which halls are connected to ResNet and how to connect, go online to [http://ResNet.ua.edu](http://ResNet.ua.edu). High-speed Internet access for non-ResNet halls is provided by Comcast. Students living off campus may be able to subscribe to either cable or DSL high-speed Internet service. All students may opt to use a dialup Internet service. More information about Internet connection options is available online at [http://helpdesk.ua.edu/internet](http://helpdesk.ua.edu/internet).

**Computer Labs**
Students who do not own their own computers should be able to complete their coursework in the many computer labs on campus. Some departments have special labs with the software needed by their students, and there are also many general-purpose labs that are open to any University student. For details, see [http://pclabs.ua.edu](http://pclabs.ua.edu).

**Resources for Research**
Those students who need computing resources for their research are also served by OIT. As noted previously, bama.ua.edu accounts are given to all students and can provide a Unix platform for programming, statistical computing, or Web development. The University of Alabama is also a member of the Alabama Research and Education Network (AREN), which provides high-speed network access to the Cray XD1 supercomputer and other network facilities. For more information about AREN local access and support, visit the Alabama Supercomputer Authority's website ([http://www.asc.edu](http://www.asc.edu)). The University is also a charter member of the Internet2 project, which connects schools and universities with a dedicated high-speed network for research. More information about the local Internet2 connection is available at [http://internet2.ua.edu](http://internet2.ua.edu).

**For Assistance**
The Network and Computing Support HelpDesk provides a central call center and solution provider for faculty, staff, and students' computer and network problems. For assistance, or for more information about the services offered by the Office of Information Technology, call (205) 348-HELP (4357), send e-mail to Help.Desk@ua.edu, visit the HelpDesk at A-203 Gordon Palmer Hall, or check out the HelpDesk website at [http://helpdesk.ua.edu](http://helpdesk.ua.edu).
3.8 RESEARCH AGENCIES

Oak Ridge Associated Universities
Since 1946, students and faculty of The University of Alabama have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 96 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education (ORISE), the DOE facility ORAU operates, undergraduates, graduates, postgraduates, and faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines, including business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are specially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the GRISE Catalog of Education and Training Programs, which is available at http://www.orau.gov/orise/educ.htm, or by calling either of the contacts below.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scientist Program, and various services to chief research officers.

For more information about ORAU and its programs, contact Dr. Joe Benson, UA's Interim Vice President for Research and ORAU councilor at (205) 348-4566; or Ms. Monnie Champion, ORAU corporate secretary, at (865) 576-3306; or visit the ORAU home page at http://www.orau.gov

- Alabama Business Research Council
- Alabama Council on Economic Education
- Alabama Law Institute
- Alabama Museum of Natural History
- Alabama Productivity Center
- Alabama State Oil and Gas Board
- Other Research Organizations

The following organizations also contribute to the research environment at The University of Alabama:
- Animal Care Facility
- William R. Bennett Alabama International Trade Center
- Bevill Center for Advanced Manufacturing Technology
- J. Nicholene Bishop Biological Station
- Brewer-Porch Children's Center
- Bureau of Educational Services and Research
- Bureau of Legal Research
- Capstone International Center
- Capstone Poll
- Cartographic Laboratory
- Center for Business and Economic Research
- Center for Current Accounting Issues
- Center for Developmental and Learning Disorders
- Center for Economic Education
- Center for Land Information Analysis and Mapping
- Center for Materials for Information Technology (MINT)
- Center for Public Television
- Center for the Study of Aging
- Center for Teaching and Learning
- Child Development Center
- Coalbed Methane Resource Center
- Critical Languages Center
- Early Childhood Learning Center
- Electron Microscope Laboratory
- English Language Institute
Evaluation and Assessment Laboratory
Gadsden Educational and Research Center
Geographic Information Systems Laboratory
Geological Survey of Alabama
Health Research Consulting Service
Hess Institute for Retailing Development
Human Resources Institute
Infant Laboratory
Institute for Communication Research and Service
Institute for the Book Arts
Institute for Social Science Research
Institute of Alcoholism Research and Studies Inc.
Institute of Higher Education Research and Services
Inter-University Consortium for Political Research
Laboratory for Human Osteology
Latin American Studies Program
Legal Counsel for the Elderly
Marine Environmental Sciences Consortium
Marine Science Program
Metal Casting Technology Center
Minority Culture Archives
Moundville Archaeological Park
National Network of State Polls
Natural Resources Center
Office of Archaeological Research
Office of Educational Media
Office of Informational Technology
Office of Institutional Research
Office of Sponsored Engineering Programs
Program for Rural Services and Research
Project ROSE
Psychology Clinic
Remote Sensing Laboratory
Research Grants Committee
RISE Program
Small Business Development Center
Speech and Hearing Center
State Data Center
Transportation Research Group
University Child Care Services
University of Alabama Arboretum
University of Alabama Art Gallery
University of Alabama Ichthyological Collection
University of Alabama Press
University of Alabama Theatre
U.S. Bureau of Mines
U.S. Geological Survey
West Alabama Comprehensive Services (WACS)

:: More information is available at: http://graduate.ua.edu/research/
3.9 FINANCIAL ASSISTANCE*

*Note: Amounts of the listed awards vary from year to year; amounts shown may change.

Students applying for financial assistance through the Graduate School must be admitted to the Graduate School and to The University of Alabama. Detailed graduate financial support information can be found at http://graduate.ua.edu/financial/

Application

Only academically superior students are eligible for teaching assistantships, research assistantships, or the other awards listed; an eligible student must also hold regular or conditional admission to a degree program. Conditionally admitted students whose graduate GPAs fall below 3.0 at any time during their conditional status will not be allowed to hold graduate teaching assistantships until such time as the GPA has increased to 3.0 or better. Nondegree students or students on academic warning may not hold assistantships. Prospective graduate students should contact their proposed departments and request information and application forms for assistantships, scholarships, and other awards. Prospective applicants should start the application process in the fall of a preceding academic year and have their applications completed no later than February 15 in order to be considered for financial assistance. Some departments may have earlier deadlines. Applicants should contact their departments for additional information.

Students enrolled in degree programs in the Graduate School are also eligible to apply for federally supported financial aid. Further information can be obtained from the Office of Student Financial Aid, 106 Student Services Center, Box 870162, Tuscaloosa, AL 35487-0162; telephone (205) 348-6756; website http://financialaid.ua.edu.

Fellowships and Assistantships**

**Fellowships and scholarships may impact a student’s allowable federal financial aid. Students who receive federal financial aid should consult with the UA Office of Student Financial Aid at (205) 348-2989 before accepting any of the fellowships listed above.

Departmental assistantships.

Most academic departments of the Graduate School have teaching or research assistantships with a minimum stipend of $9,200 per academic year for 6 semester hours of teaching per semester or 20 hours per week of research or the equivalent. Assistantships with lesser assignments carry proportionate stipends. Figures are for the 2004–05 academic year. Current rates may be found at the Graduate School’s website http://graduate.ua.edu.

Students should contact departments directly to obtain information and application forms for assistantships.

Teaching and research assistants who are assigned duties of .5 FTE or more may possibly receive tuition scholarships. The semester tuition grant for any eligible graduate assistant is limited to the full University charges for 9 graduate hours or to the student’s actual tuition costs, whichever is less. Graduate assistants assigned duties of less than .5 FTE receive payment at the ratio of assigned FTE to .5 FTE. When an assistant is paid from funds other than permanently budgeted funds, the provider of the funds used to create the assistantship may also provide a tuition grant, if the department has made such a provision.

Recipients of assistantships may be entitled to relief from paying full nonresident tuition during the Interim and/or summer sessions, again dependent upon the FTE of their appointments. Please inquire at the Graduate School for more information or refer to our website http://graduate.ua.edu.

Any nonresident foreign student who is offered a graduate assistantship is limited to a maximum .5 FTE assistantship. All non-native speakers of English who accept classroom teaching or other instructional duties must successfully complete the International Teaching Assistant Program (ITAP). Students are recommended for ITAP by their departments.

Graduate assistants whose appointments are terminated before the end of the academic semester or term are eligible only for reduced tuition grants. Those assistants who resign or are dismissed from their duties before the end of the academic semester or term are personally responsible for the payment of any tuition and fees not covered by the reduced tuition grant.

The Graduate School’s site http://graduate.ua.edu/publications/dept/ contains more detailed information concerning departmental graduate assistantships.
McNair Graduate Fellowship. The University of Alabama Graduate School awards a limited number of McNair Graduate Fellowships. These fellowships are specifically for entering graduate students who have either completed a McNair Scholars program as an undergraduate or who are McNair eligible (low income AND first-generation college student or from minority groups underrepresented in graduate education). Preference is given to students who have completed a McNair program and have applied to a Ph.D. program at The University of Alabama.

The service-free stipends for these fellowships will be $15,000 for the academic year and carry a scholarship to pay full tuition for up to 15 hours for fall and spring semesters in each academic year, according to the basic UA schedule for in-state/out-of-state tuition and fees. The Graduate School will provide single health insurance coverage for each recipient. Departments may elect to add a graduate assistantship up to 0.5 FTE to the first two years of the McNair Graduate Fellowship. A student must be enrolled full-time and maintain a 3.0 cumulative grade point average to remain eligible for the fellowship.

Following two years of stipend and tuition support from the Graduate School, the student’s home department will be required to continue to support the McNair Graduate Fellow for at least an additional two years through departmental research and teaching assistantships.

Nominations may be made by department or by student (with departmental support and funding commitment) beginning January 2008.

Graduate Council Fellowships. The Graduate School awards a number of nonrenewable regular Graduate Council Fellowships each year with stipends of $15,000 per academic year. The Graduate School will provide single health insurance coverage for each recipient. At least one half of these fellowships are awarded to beginning graduate students at The University of Alabama. Except in exceptional cases, only students who have completed no more than 60 semester hours of graduate credit at The University of Alabama are eligible. No service to the University is required, but recipients must carry a normal course load of 12 graduate hours during each semester.

Recipients for the coming academic year are selected at three times: the first week in February, the first week in March, and mid-April. Nominations are made by academic departments. Interested students should inquire at their department offices.

Students who are awarded Graduate Council Fellowships also receive scholarship grants equal to their full in-state and out-of-state tuition charges. Normally, 55 to 60 Graduate Council Fellowships (including regular Graduate Council Fellowships and Research/Creative Activity Fellowships) are awarded each year. A small number of regular Graduate Council Fellowship recipients also may be selected to receive special supplements to their fellowship stipends.

Graduate Council Research/Creative Activity Fellowships. Graduate Council Research/Creative Activity Fellowships with stipends of $15,000 per academic year are available to support graduate students in their own thesis/dissertation work or those working on faculty projects. The Graduate School will provide single health insurance coverage for each recipient.

Recipients for the coming academic year are selected once a year, in January. Nominations are made by academic departments. Interested students should inquire at their department offices.

Students who are awarded Graduate Council Research/Creative Activity Fellowships also receive scholarships equal to their full in-state and out-of-state tuition charges. Normally, 55 to 60 Graduate Council Fellowships (including regular Graduate Council Fellowships and Research/Creative Activity Fellowships) are awarded each year.

Graduate Student Travel and Research Support Fund. These awards are available to all graduate students on a competitive basis and are based on departmental nominations. For more information, students should contact their department offices.

Joint Faculty Development Program Fellowships.

Joint Faculty Development Program Fellowships. The University of Alabama Graduate School has joint programs with Alabama A & M University, Alabama State University, Oakwood College, and Stillman College for practicing faculty members at these institutions who do not have terminal degrees in their fields of instruction. Faculty members must be nominated for the fellowship by their home institution. Faculty at the partner institutions who wish to complete a terminal degree in their field of instruction must be admitted to a UA degree program as a prerequisite to receiving support from the Joint Faculty Development Program. Faculty who participate in this program receive support from both their home institution (to be negotiated with each institution’s vice president for academic affairs) and The University of Alabama Graduate School. The financial support from The University of Alabama consists of a $15,000 annual fellowship stipend and an in-state tuition scholarship (fall and spring semesters; summer semesters, if needed
Faculty Development Program provides financial support for up to two years of full-time graduate study in residence on the UA campus to allow the faculty members participating in this program to complete the majority of their required coursework.

**National Alumni Association Graduate Scholarship Program.** To be eligible for these awards, an applicant must hold regular admission to the Graduate School, must possess entrance examination scores well above the national norm, and must have a grade point average indicative of a high probability of success in graduate school. Preference is given to new students. Nominations for these awards are made by the dean of each division at the request of the Graduate School.

Each college and school that awards a post baccalaureate degree will receive one $1,000 annual scholarship from the National Alumni Association. Also, any college or school participating in the Alumni Association Membership “Shred-Out” Program receives additional scholarships, with the number being dependent on the level of participation. Nominations from each college are made in early March.

The National Alumni Association Graduate Fellowship awards a $15,000 stipend plus a full-tuition scholarship. The source of the fellowship is the National Alumni Association's Collegiate License Tag Endowed Graduate Education Fund. The award is based on students' academic and professional records and potential to make outstanding contributions during their careers to the lives of the people of the state of Alabama. Nominations for these fellowships are made by the academic departments in the spring of each year.

**The Alumni Heritage Graduate Scholarship** rewards the children and grandchildren of University of Alabama alumni for choosing the University for higher education. The scholarship is a one-year, nonrenewable award for 10 percent of in-state tuition. In order to qualify, students must be enrolled full-time (9 hours of graduate classes) and have a parent or grandparent who both 1) holds a degree (undergraduate, graduate, or law) from the University and 2) has been an active member of the Alumni Association for three of the past five years. For more information, click here or contact Kathleen Nodine at the Graduate School, Box 870118, Tuscaloosa, AL 35487-0118; (205) 348-8280; or knodine@ua.edu.

**Scholarships and Grants**

A number of departments and divisions offer special financial aid for graduate students.

**College of Arts and Sciences**

**James and Elizabeth Ball and James and Teresa Duggan Endowed Scholarship in Psychology.** Established in 1993 by Dr. James C. Ball and Mrs. Catherine D. Ball to honor their parents, this scholarship is to support an entering student over 30 years of age pursuing a doctoral degree in general or adult clinical psychology. Contact: Department of Psychology, 348 Gordon Palmer Hall or Box 870348, Tuscaloosa, AL 35487-0348.

**J. Nicholene Bishop Biology Fellowship Awards.** These awards, established by a gift from Ms. Alma Bishop Williams in honor of her aunt, Ms. J. Nicholene Bishop, provide supplementary stipends to graduate teaching assistants in the Department of Biological Sciences in order to recruit and retain outstanding teaching assistants in the biological sciences. Contact: Department of Biological Sciences, 319 Biology Building or Box 870344, Tuscaloosa, AL 35487-0344.

**Joseph S. and Carolyn Bolt Endowed Support Fund.** This fund was established in 2000 to promote research in art history by graduate students enrolled in the master's program in art history in the Department of Art. Contact: Department of Art, 103 Garland Hall or Box 870270, Tuscaloosa, AL 35487-0270.

**Buford Boone Memorial Fellowships.** These fellowships were established in 1984 by the Tuscaloosa News in honor of its longtime publisher, Buford Boone. They are used to support graduate teaching fellowships in English. Contact: Department of English, 103 Morgan Hall or Box 870244, Tuscaloosa, AL 35487-0244. Application deadline: January 25.

**Ralph L. Chermostock Prize.** This prize was established in 1978 by friends and colleagues of the late Dr. Ralph L. Chermostock. The annual prize is given to a graduate student in natural history or evolutionary biology. Contact: Department of Biological Sciences, 319 Biology Building or Box 870344, Tuscaloosa, AL 35487-0344.

**David and Elizabeth DeJarnette Endowed Scholarship in Anthropology.** This scholarship, established in 1993, is presented annually to a student of promise who is conducting research on the archaeology of prehistoric Moundville. Contact: Department of Anthropology, 19 ten Hoor Hall or Box 870210, Tuscaloosa, AL 35487-0210. Application deadline: January 25.
**Jen-Ho Fang Scholarship.** This scholarship was established in 2003 to provide a $3,000 award to an outstanding graduate or undergraduate student in the geological sciences. Contact: Department of Geological Sciences, 202 Bevill Building or Box 870338, Tuscaloosa, AL 35487-0338.

**Lex Arden Fikes Jr. Award.** This award is presented in memory of Lex Arden Fikes Jr., a graduate student in the Department of Political Science. It acknowledges the highest level of professional development and departmental service achieved by a student in the graduate program. All graduate students in the Department of Political Science are eligible to be nominated for this award by a faculty member in the department.

**Geological Sciences Advisory Board (GSAB) Scholarship Fund.** This fund was established in 2002 to provide $2,000 renewable awards to geology students meeting minimum academic criteria. Contact: Department of Geological Sciences, 202 Bevill Building or Box 870338, Tuscaloosa, AL 35487-0338.

**Isabella H. Graham Prize.** This prize was established in 1932 by Dr. John Y. Graham in memory of his wife, and encourages and rewards graduate work in biology. Contact: Department of Biological Sciences, 319 Biology Building or Box 870344, Tuscaloosa, AL 35487-0344.

**Miriam Locke Scholarships.** This fund provides support of professional travel for graduate students in English. Contact: Department of Geological Sciences, 202 Bevill Building or Box 870338, Tuscaloosa, AL 35487-0338.

**Robert E. Gross Lockheed Fellowship in Physics.** This is a fellowship awarded to graduate students majoring in physics. Contact: Chairperson, Department of Physics and Astronomy, 206 Galhave hall or Box 870324, Tuscaloosa, AL 35487-0324.

**Inge and Ilouise Hill Fellowships.** Established by a donation from Mr. and Mrs. Inge Hill, these fellowships aid in recruitment and retention of graduate students in the Department of Biological Sciences, by supplementing teaching or research assistantships. Contact: Department of Biological Sciences, 319 Biology Building or Box 870344, Tuscaloosa, AL 35487-0344.

**W. Gary Hooks Fund.** This fund was established in 1982 by friends, former students, and colleagues of geology faculty member Gary Hooks. The funds provides research support for graduate students in geology. Contact: Department of Geological Sciences, 202 Bevill Building or Box 870338, Tuscaloosa, AL 35487-0338.

**Henry E. Jacobs Fund.** The fund was established in 1986 by friends and colleagues of Dr. Jacobs to provide travel and publication funds for graduate students in English. Contact: Department of English, 103 Morgan Hall or Box 870244, Tuscaloosa, AL 35487-0244.

**A. S. Johnson Memorial Fund.** This fund, established in 1982, provides travel support for graduate students in the Department of Geology who are making presentations at regional, national, and international meetings. Contact: Department of Geological Sciences, 202 Bevill Building or Box 870338, Tuscaloosa, AL 35487-0338.

**Margaret S. Quayle Scholarship Fund.** Established by Dr. Quayle in 1975, the fund provides gift scholarships to deserving graduate students in clinical psychology, preferably women. Contact: Department of Psychology, 348 Gordon Palmer Hall or Box 870348, Tuscaloosa, AL 35487-0348.

**Society for the Fine Arts (SFA) Scholarships in Creative Writing.** Funded by members of SFA, this award of at least $1,000 goes to deserving graduate students in the creative writing program of the Department of English. Contact: Creative Writing Program, 101 Morgan Hall or Box 870244, Tuscaloosa, AL 35487-0244.

**Hudson Strode Fellowships for the Study of English Literature.** These fellowships were established in 1989 to commemorate Hudson Strode, who taught Shakespeare and creative writing classes at the University from 1916 to 1963. The awards support graduate study in English, preferably Renaissance studies. Contact: Director of the Strode Program, Department of English, 103 Morgan Hall or Box 870244, Tuscaloosa, AL 35487-0244. Application deadline: February 21.

**Hudson Strode Research Awards.** These awards were established in 1989 to support graduate student research projects in English Renaissance literature. Contact: Director of the Strode Program, Department of English, 103 Morgan Hall or Box 870244, Tuscaloosa, AL 35487-0244.

**Donald Strong Award.** The Strong Award is presented annually for the best research paper written by a political science graduate student. Papers are submitted to the Graduate Studies Committee by individual graduate students.

**Irene Thames Endowed Fine Arts Fellowship Fund.** This fund was established in 1986 to recruit and support graduate students studying ceramics, painting, photography, printmaking, and sculpture. Contact: Department of Art, 103 Garland Hall or Box 870270, Tuscaloosa, AL 35487-0270.

**Joab Thomas Endowed Fellowship Fund.** Established in 1983 by friends and colleagues of Dr. Joab L. Thomas, president of the University from 1981 to 1988, this fund provides a fellowship for a graduate student pursuing an
advanced degree in one of the biological sciences. Contact: Department of Biological Sciences, 319 Biology Building or Box 870344, Tuscaloosa, AL 35487-0344.

Bob Work Award for Scholastic Excellence in Archaeology. This annual graduate student paper competition was established in 1978 by the Archaeological Research Association of Alabama in honor of contributors Robert and Anne Work of North Carolina. Contact: Department of Anthropology, 19 ten Hoor Hall or Box 870210, Tuscaloosa, AL 35487-0210. Application deadline: January 25.

Manderson Graduate School of Business

Alabama Power Company Endowed Educational Fellowship. Provides graduate scholarships and postdoctoral fellowships for students pursuing a course of study in or conducting research in commerce and business administration. Contact: Director of Graduate Programs (or the department head/director of any academic department or program in the School), Box 870223, Tuscaloosa, AL 35487-0223.

AmSouth M.B.A. Graduate Fellowship. Provides fellowship awards to students pursuing M.B.A. degrees. Contact: Director of M.B.A. Programs, Box 870223, Tuscaloosa, AL 35487-0223.

Clifford H. and Mary K. Armstrong Fellowship. This fund was established to attract top-quality students to graduate degree programs in commerce and business administration. Academic quality and merit take precedence over all other considerations in selecting recipients. Contact: Director of Graduate Programs (or the department head/director of any academic department or program in the School), Box 870223, Tuscaloosa, AL 35487-0223.

Raymon J. Baker M.B.A. Student Endowed Scholarship in Investment Banking. Priority of consideration shall be given to graduate students enrolled in the Culverhouse College of Commerce and Business Administration who are seeking a master of business administration degree with an emphasis in investment management. Contact: Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

James O. Banks Endowed C&BA Scholarship. Established by James O. and Ann H. Banks to promote the education of graduate and undergraduate accounting students. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Becker CPA Review Course Award. Awarded to a graduating senior or graduate student. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

J. L. Bedsole Memorial Endowed Fellowship. Provides fellowship awards to promote the education of exceptional graduate students in any academic program in the School. Recipients are distinguished as J. L. Bedsole Scholars. Contact: Director of Graduate Programs (or the department head/director of any academic department or program in the School), Box 870223, Tuscaloosa, AL 35487-0223.

Culverhouse School of Accountancy Benefactor Award. Awarded to an undergraduate or graduate student in good standing and majoring in accounting. Financial need is a primary factor. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Emily S. and Lee Bidgood Memorial Endowed Fellowship. Established by the Bidgood children to honor the memory of their parents and to promote the education of outstanding graduate students in commerce and business administration. Recipients are recognized as Bidgood Scholars. Contact: Director of Graduate Programs (or the department head/director of any academic department or program in the School), Box 870223, Tuscaloosa, AL 35487-0223.

Young J. Boozer Endowed Graduate Student Fellowship. Established by Colonial BancGroup Inc. to honor the memory of Mr. Young Boozer and to promote the education of full-time graduate students in commerce and business administration. Contact: Director of Graduate Programs (or the department head/director of any academic department or program in the School), Box 870223, Tuscaloosa, AL 35487-0223.

Fred Bostick Endowed Fellowship. Established by the Bostick family to promote the education of students pursuing courses of study leading to graduate degrees in commerce and business administration. Recipients are distinguished as Bostick Scholars. Contact: Director of Graduate Programs (or the department head/director of any academic department or program in the School), Box 870223, Tuscaloosa, AL 35487-0223.

Wilbur J. Bradford Scholarship. Awarded annually to an outstanding accounting student. Financial need is considered. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Frederic Augustin Brett Memorial Endowed Scholarship. Established by Elizabeth Maye J. Brett in memory of her husband to promote the education of deserving students pursuing doctoral degrees in accounting or management. Contact: Director of Graduate Programs, Director of the Culverhouse School of Accountancy, or Head of the Department of Management and Marketing, Box 870223, Tuscaloosa, AL 35487-0223.
Ehney Addison Camp Jr. Memorial Endowed Scholarship. Established in 1993 to promote the education of full-time, needy, and qualified students preparing for careers in business. Priority consideration is given to M.B.A. students. Contact: Director of Graduate Programs or Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

Robert G. Campbell Class of 1936 Endowed Scholarship. Established in 1999 to promote the education of full-time graduate students in the Manderson Graduate School of Business. Contact: Director of Graduate Programs or Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

Cap Gemini Ernst & Young M.B.A. Health Care Scholarship. Priority of consideration shall be given to second-year students enrolled in the M.B.A. Program in the Manderson Graduate School of Business who have undergraduate backgrounds or licensing in health care management or nursing, and/or to students enrolled in the M.B.A./M.S.N. Program in the Capstone College of Nursing. Contact: Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

Comer Foundation Graduate Fellowship. Supports truly deserving graduate students pursuing master's or doctoral degrees in commerce and business administration. Contact: Director of Graduate Programs (or the department head/director of any academic department or program in the School), Box 870223, Tuscaloosa, AL 35487-0223.

Delchamps Endowed Scholarship for Marketing. Established by Delchamps Incorporated to support undergraduate and graduate students pursuing a degree in marketing, with priority consideration given to students from Alabama, Georgia, Mississippi, Louisiana, and Tennessee. Contact: Head of the Department of Management and Marketing, Box 870225, Tuscaloosa, AL 35487-0225.

Sara Elliott Donahoo Memorial Endowed Accounting Scholarship. Established by J. Wesley Donahoo to honor his first wife and to promote the graduate and undergraduate education of students majoring in accounting. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Donaldson, Holman & West, PC Accounting Scholarship. Awarded annually to an accounting major. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35486-0220.

Mark and Dawn Dunning Endowed C&BA Master's in Business Administration Scholarship. Established in 1996 to promote the education of full-time M.B.A. students in the Manderson Graduate School of Business. Recipients are selected based on scholastic merit and leadership. Contact: Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

Durr-Fillauer Endowed Graduate Fellowship. Established by Durr-Fillauer Medical Inc. to award fellowships to outstanding students pursuing graduate degrees in commerce and business administration. Contact: Director of Graduate Programs (or the department head/director of any academic department or program in the School), Box 870223, Tuscaloosa, AL 35487-0223.

El Paso Corporate Foundation Endowed Diversity Accounting Scholarship. El Paso Corporate Foundation Scholars receive in-state tuition and must be full-time accounting majors; junior, senior, or graduate status; a member of a population group that is underrepresented in C&BA; selection made on the basis of merit, scholarship, character, and/or leadership qualities; must have demonstrated solid academic promise and have a minimum GPA of 3.0 or higher or be deemed otherwise academically acceptable by the University. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0330.

Ernst and Young Accounting Scholarship. A scholarship for an accounting major of junior standing or a candidate for an accounting master's degree. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Federal Tax Clinic Scholarship. Awarded to an incoming master of tax accounting student. GPA, GMAT score, and overall potential for success are considered. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Federation of Schools of Accountancy Student Award. Awarded to a graduating master's student in accounting. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

First Alabama Bank Endowed C&BA Scholarship for Productivity and Quality Enhancement. Established in 1993 by First Alabama Bancshares to support both scholarly work that directly benefits the economic well-being of the state and students assisting business and industry through the activities of the Alabama Productivity Center. Contact: Director, Alabama Productivity Center, Box 870318, Tuscaloosa, AL 35487-0318.

Paul Garner Graduate Accounting and Research Award. An award for an accounting graduate student. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Robert W. Hodgkins Endowed C&BA Scholarship. This scholarship is awarded to deserving C&BA students who...
intend to concentrate in the area of insurance. Contact: Head of the Department of Economics, Finance, and Legal Studies or Director of Graduate Programs, Box 870223, Tuscaloosa, AL 35487-0223.

**C. E. Hornsby Jr. and Emily Jones Hornsby Endowed Scholarship.** Established in 1998 to promote the education of full-time graduate and undergraduate students in the College of Commerce, with preference to graduates of Bibb County, Alabama, high schools. Contact: Director of Graduate Programs or Director of Undergraduate Programs, Box 870223, Tuscaloosa, AL 35487-0223.

**Ingram-Reid Endowed Accounting Scholarship.** Established by Professor Robert W. and Christine M. Ingram in honor of their parents to promote the education of graduate and undergraduate accounting students. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Jackson, Thornton and Company Scholarship.** Awarded annually to an accounting major. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Maxie Glen Jackson Memorial C&BA Scholarship.** The Alabama Chapter of the Risk and Insurance Management Society provides this scholarship to deserving full-time C&BA students with an interest in the area of insurance. Contact: Head of the Department of Economics, Finance, and Legal Studies or Director of Graduate Programs, Box 870223, Tuscaloosa, AL 35487-0223.

**Ingram-Reid Endowed Accounting Scholarship.** Established by Professor Robert W. and Christine M. Ingram in honor of their parents to promote the education of graduate and undergraduate accounting students. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Sally R. and Laurens W. Jones Endowed Scholarship.** Awarded to students who have been accepted into the master of accountancy program in the Culverhouse School of Accountancy. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**L. Paul Kassouf & Company Scholarship.** Awarded to an undergraduate or graduate student in accounting desiring to enter public accounting. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Dr. Saburo Kawai Endowed Scholarship.** Established in 1998 by Dr. Saburo Kawai of Tokyo, Japan, to promote international business in a global economy by means of promoting the education of deserving full-time graduate students in the Culverhouse College of Commerce and Business Administration. Priority consideration is given to students expressing an interest in Japanese business or culture who intend to pursue master's degrees, with preference to M.B.A. students specializing in insurance or finance. Contact: Director of Graduate Programs or Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

**Chester Knight Memorial Scholarship.** A scholarship awarded to an accounting major of junior, senior, or graduate standing. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**KPMG Peat Marwick Endowed Accounting Scholarship.** Awarded annually to an accounting student. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Allen J. Lambert Annual Accounting Award in C&BA.** Awarded to a fifth-year student (master's level) who intends to sit for the CPA exam. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Joe Lane Memorial Endowed Accounting Scholarship.** Established in memory of Professor Emeritus Joseph E. Lane Jr. to promote the education of graduate and undergraduate accounting students. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Lewis Manderson Graduate School of Business Scholarship.** Established in 1994 to promote graduate education in commerce and business administration and to support qualified minority students who have high potential for success in graduate study in business. Contact: Director of Graduate Programs or Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

**Lewis Manderson M.B.A. Fellowship.** A competitive award for exceptionally well-qualified M.B.A. students. Provides an annual scholarship award of $4,470 plus one-half of the student's University tuition. Contact: Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

**Marvin L. Mann Endowed C&BA Graduate Scholarship.** Established in 1999 through a gift from Lexmark International to honor the retirement of Lexmark's first chairman and chief executive officer, and University alumnus, Marvin L. Mann, and to promote the education of deserving graduate students in the Manderson Graduate School of Business. Contact: Director of Graduate Programs or Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

**Charles Irving Massey Endowed Graduate M.B.A. Scholarship.** Established by Mr. Charles Rayford Massey to promote the education of exceptional students pursuing M.B.A. degrees. Recipients are recognized as Massey Scholars. Contact: Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.
Master of Accountancy Endowed Scholarship. Awarded to students who have been accepted into the master of accountancy program in the Culverhouse School of Accountancy. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Master of Tax Accounting Alumni Endowed Fellowship. Awarded to a student accepted into the master of tax accounting program. Scholarship, leadership, and financial need are considered. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Mauldin & Jenkins Accounting Scholarship. Awarded annually to an accounting major. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Minnie C. Miles Human Resources Management Endowed Graduate Scholarship. Established to promote the education of full-time students pursuing graduate degrees in management. Contact: Head of the Department of Management and Marketing, Box 870223, Tuscaloosa, AL 35487-0223.

Minnie Cadell Miles Endowed Graduate Scholarship. Awarded to a master's degree candidate, with preference to the behavioral area. Contact: Director of Graduate Programs or Head of the Department of Management and Marketing, Box 870225, Tuscaloosa, AL 35487-0225.

National Alumni Association Graduate Scholarship Program. The National Alumni Association provides funds for $1,000 scholarships for students in any business discipline. Priority consideration is given to first-year master's degree students. Contact: Director of Graduate Programs, Box 870223, Tuscaloosa, AL 35487-0223.

Larry E. Newman-Ernst & Young Endowed Accounting Scholarship. Priority awarded to undergraduate or graduate students who have been accepted into the accounting program in the Culverhouse School of Accountancy, and have demonstrated either academic merit or financial need, although not necessarily financial need as defined by federal guidelines. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Roy C. Ossman National Food Brokers Association Foundation Scholarship. A $1,000 scholarship awarded to a student at the undergraduate or graduate level who is interested in a career in the food industry. Scholastic ability, character, and financial need will be considered in selecting the recipient. Contact: Head of the Department of Management and Marketing, Box 870225, Tuscaloosa, AL 35487-0225.

O’Sullivan Creel, LLP Accounting Scholarship. Awarded annually to an accounting major. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Timothy M. Parker Sr. and Thelma F. Parker Endowed Scholarship. Provides scholarships to graduate students who are either Alabama natives or graduates of Alabama high schools. Financial need is considered in making awards. Contact: Director of M.B.A. Program or Director of Graduate Programs, Box 870223, Tuscaloosa, AL 35487-0223.

Culverhouse School of Accountancy Patron Scholarship. Awarded to full-time undergraduate or graduate student enrolled in the Culverhouse School of Accountancy in good academic standing. Need is a consideration. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Pearce, Bevill, Leesburg, and Moore Accounting Scholarship. Awarded to a declared accounting major or an accounting equivalency major who has completed the intermediate-level accounting courses, and has a minimum 3.25 GPA in accounting. Student must be actively involved in at least one professional organization such as, but not limited to, Beta Alpha Psi. Financial need will be the deciding factor where there are students of otherwise equal merit. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

John Howell Pearson Endowed Scholarship in Accounting. Established by Jack H. and Sue A. Pearson in memory of their son, John Howell Pearson, to promote the education of students who intend to pursue degrees in accounting; who have demonstrated strong character and commitment, as evidenced by involvement in community activities, school activities, and/or employment; and who have minimum GPAs of 2.5. Priority of consideration shall be given to students from the state of Alabama. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Dr. A. J. Penz Endowed Graduate Accounting Scholarship. Established by Dr. A. J. Penz to promote the education of accounting graduate students. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

PricewaterhouseCoopers-Joe Lane Accounting Scholarship. An award for an accounting major of junior standing or a candidate for a master's degree who is judged to have outstanding potential for success in public accounting. Must have a minimum overall GPA of 3.3, oral and written communication skills, an ability to interact with people, and leadership qualities as demonstrated by positions of responsibility in campus, civic, or service organizations. Contact: Director of the Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.
**Professional Advisory Board Graduate Scholarship.** Awarded to fifth-year incoming (master of accountancy or master of tax accountancy) accounting students. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Roland Pugh Endowed M.B.A. Scholarship in Family Business and Entrepreneurship.** Established in 1998 by Mr. Roland Pugh to promote the education of deserving full-time graduate students in the Manderson Graduate School of Business. Priority consideration is given to M.B.A. students who are concentrating in family business and entrepreneurship. Contact: Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

**Mike and Julie Ranney Accounting Scholarship.** Awarded annually to an accounting major. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**J. Ronald Renzetti Sr. M.B.A. Endowed Fellowship.** Established to promote the education of exceptional students pursuing M.B.A. degrees. Recipients are recognized as Renzetti Scholars. Contact: Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

**John L. and Margaret E. Rhodes Endowed Scholarship in Accounting.** Awarded to students enrolled in C&BA and accepted into the Culverhouse School of Accountancy who have demonstrated either academic excellence or financial need. Contact: Director of the Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Martha Lou Jones Riddle Endowed M.B.A. Scholarship.** Established by Kenneth A. Riddle to honor his wife and to promote the education of deserving full-time graduate students pursuing M.B.A. degrees. Contact: Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

**Steven J. Ross Endowed Graduate Accounting Scholarship.** Established by the Ross Family Charitable Foundation in honor of Steven J. Ross to promote the education of graduate students in accounting. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Sales and Marketing Executives of Birmingham Inc. Fellowship.** A gift scholarship for outstanding seniors or graduate students interested in sales and marketing. Contact: Head of the Department of Management and Marketing, Box 870225, Tuscaloosa, AL 35487-0225.

**William Samson Memorial Accounting Scholarship.** Awarded annually to an accounting major. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Savela & Associates Scholarship.** Awarded annually to a master of accountancy student. Preference is based on academic performance and “well-roundedness” as reflected in the candidate’s extracurricular activities. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Sellers, Richardson, Watson, Haley and Logan Accounting Scholarship.** Awarded annually to an accounting major with a 3.5 or higher who intends to work in the Birmingham, Alabama area. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

**Young Ho Shin Endowed Scholarship.** Established through a gift from the Daehan Kyoyuk Insurance Company Ltd. to promote international business in a global economy. Priority consideration is given to Korean graduate students who intend to pursue master's or doctoral degrees specializing in the field of insurance or finance. Contact: Head of the Department of Economics, Finance, and Legal Studies or Director of Graduate Programs, Box 870223, Tuscaloosa, AL 35487-0223.

**Clarence DeWitt Smith Memorial Scholarship.** Awarded to a student in applied statistics. Contact: Head of the Department of Information Systems, Statistics and Management Science – Scholarships, Box 870226, Tuscaloosa, AL 35487-0226.

**Morris “Munny” Sokol Endowed Memorial C&BA Scholarship.** Established by Mr. Aaron Aronov, former trustee of The University of Alabama, in honor of civic leader Munny Sokol to support students enrolled in the Culverhouse College of Commerce and Business Administration. Contact: Director of Graduate Programs (or the department head/director of any academic department or program in the College), Box 870223, Tuscaloosa, AL 35487-0223.

**Curtis Springer Scholarship.** Established by the Alabama Dairy Products Association of Greensboro in 2001, this award is given annually to full-time graduate students in Marketing pursuing a concentration in distribution and supply chain management. Contact: Head, Department of the Management and Marketing, Box 870225, Tuscaloosa, AL 35487-0225.

**Charles William Stephan Endowed M.B.A. Scholarship.** Established in 1998 to be used for the betterment of M.B.A. students in the Manderson Graduate School of Business. Contact: Director of M.B.A. Program, Box 870223, Tuscaloosa, AL 35487-0223.

**Elton B. Stephens Sales and Sales Management Scholarships.** Awarded annually to undergraduate or graduate marketing majors. Contact: Head of the Department of Management and Marketing, Box 870225, Tuscaloosa, AL
Way, Ray, Shelton & Company-ASCPA Scholarship. Awarded annually to an accounting student. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Fred & Dot Thompson Accounting Scholarship. Established by Professor Mary S. Stone in honor of her parents to promote the education of graduate and undergraduate accounting students. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Sue and Stanley Virciglio Accounting Scholarship. Established by Beverly S. Virciglio in honor of her parents to promote the education of students in the College of Commerce and Business Administration. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Marcus Whitman Endowed Graduate Fellowship. Established by Dr. Marcus Whitman, professor emeritus of finance, to promote the education of deserving graduate students in commerce and business administration. Overall merit of the recipient is the primary consideration. Preference is given to students pursuing graduate degrees in finance. Contact: Director of Graduate Programs or Head, Department of Economics, Finance, and Legal Studies, Box 870223, Tuscaloosa, AL 35487-0223.

James W. Wilson Sr. Memorial Endowed Scholarship in Tax Accounting. Priority to a Master of Tax Accounting student based on academic achievement and financial need. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

Murray D. Wood-Joe Lane Graduate Fellowship. Established by Murray D. Wood to honor Professor Joe Lane and to promote the education of outstanding students in graduate study in tax accounting. Contact: Director, Culverhouse School of Accountancy, Box 870220, Tuscaloosa, AL 35487-0220.

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College of Communication and Information Sciences — School of Library and Information Studies

Alabama Public Library Service Scholarships. Scholarships of up to $250 per credit hour for employees of Alabama public libraries who are pursuing graduate library and information studies degrees on a part-time basis. Contact: Scholarship Committee, Alabama Public Library Service, 6030 Monticello Drive, Montgomery, AL 36130 ; 1-800-723-8459 and ask for Jim Smith. Application deadline: May 1.

Alabama Library Association Scholarships. Awarded to promising Alabama students who wish to pursue graduate degrees accredited by the American Library Association or by the National Council for Accreditation of Teacher Education. Contact: Alabama Library Association Scholarship and Loan Fund, (334) 262-5210 or allaoonline@mindspring.com. Application deadline: June 1.

Martha Jule Blackshear Scholarship. Awarded annually to a student in SLIS who is planning a career in public or school librarianship and providing evidence of this commitment through prior work experience.

Marie Drolet Bristol Endowed Scholarship. Awarded annually to one or more SLIS students, based on scholastic potential and financial need.

Corr Scholarship. Awarded to students currently enrolled in SLIS and pursuing specializations in school or youth services. Awarded on Honors Day.

Barbara Doughty Scholarship. Awarded to a student in SLIS on the basis of scholastic potential.

Mary Elizabeth Webster Edwards Scholarship. Awarded annually to students in SLIS on the basis of scholastic potential and need.

Bethel Fite Endowed Scholarships for Part-Time Students in SLIS. Awarded on Honors Day to a part-time student pursuing an M.L.I.S. degree.

Cherie D. Feenker Law Librarianship Scholarship. Awarded annually to a student planning a career in law libraries.

Pauline M. Foster Endowed Scholarship. Awarded annually to a student from Alabama specializing in school librarianship.

Mary Lou Jones Griffin Scholarship. Awarded to a student in SLIS on the basis of scholastic potential and need.

Mildred and Karl Harrison Endowed Scholarship in SLIS. Awarded annually to a student in SLIS based on scholastic potential and financial need.

Elizabeth Melton Lee Endowed Scholarship. Awarded to a student in SLIS on the basis of scholastic potential and...
financial need.

**Library School Association Endowed Graduate School Scholarship.** Awarded annually to a student in SLIS based on scholastic potential and financial need.

**Mary Sue McGarity Endowed Scholarship.** Awarded to a student in SLIS on the basis of scholastic potential and need.

**M.I.S. Faculty Scholar Endowed Award.** Awarded on Honors Day to an outstanding SLIS student in recognition of academic excellence, outstanding service, and professional promise.

**James D. Ramer Endowed Outstanding Doctoral Dissertation Award in SLIS.** $1,000 awarded to a doctoral student in SLIS based on the quality of his or her dissertation. Awarded on Honors Day.

**James D. Ramer Scholarship.** Awarded to students in SLIS to help defray the cost of summer school study.

**Jewell Sandoval Endowed Student Support Fund in SLIS.** Established by the Library School Association for students in SLIS to support student research and special projects.

**Fannie Schmitt Scholarship.** Awarded annually to students in SLIS on the basis of scholastic potential and financial need.

**SLIS Minority Quasi-Endowed Scholarship.** Awarded annually to students in SLIS who are members of a minority group.

**Bernice Stacy Endowed Scholarship.** Awarded annually to a student in SLIS on the basis of scholastic potential and financial need.

**Annabel and Nell K. Stephens Memorial Endowed Scholarship.** Awarded to a student in SLIS on the basis of career potential and financial need. Preference is given to a student pursuing a career in public librarianship in Alabama.

**Elton B. Stephens Scholarship.** Awarded annually on the basis of academic achievement and merit to a doctoral student in SLIS.

**George R. Stewart Endowed Scholarship.** Awarded annually to a student in SLIS based on scholastic potential and financial need.

**Ruth Waldrop Part-Time Student Endowed Scholarship in SLIS.** Established by the Library School Association. Awarded to graduate students pursuing degrees in SLIS on a part-time basis.

**Annie Ford Wheeler Endowed Scholarship.** Awarded annually to a student in SLIS based on scholastic potential and financial need.

**H. W. Wilson Endowed Scholarship.** Awarded annually to a student in SLIS based on scholastic potential and financial need.

**Kenda Wise Endowed Scholarship in SLIS.** Awarded annually based on scholastic potential and financial need.

**Powers-Meriam Wyman Endowed Scholarship.** Awarded annually to a student in SLIS based on scholastic potential.

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**College of Continuing Studies**
Information on the following awards can be obtained by contacting the College of Continuing Studies, Adult Student Programs, Box 870388, Tuscaloosa, AL 35487-0388.

**Barksdale Warrior Paper Company-Robert M. Barksdale Memorial Endowed Scholarship.** Awarded to part-time or full-time undergraduate or graduate students, with priority given to employees and their dependents of Barksdale-Warrior Paper Company who plan to enroll in academic programs facilitated through the College of Continuing Studies; secondary consideration will be given to applicants from the West Alabama area, at least 25 years old, who demonstrate satisfactory academic progress and who are enrolled in programs facilitated through the College of Continuing Studies. The amount is variable.

**James C. Caldwell Endowed Scholarship.** Awarded to part-time or full-time undergraduate or graduate students. Priority will be given to applicants from Winston and Marion counties; secondary consideration will be given to deserving applicants who are enrolled in academic programs facilitated through the College of Continuing Studies.
Demonstration of financial need (not necessarily as defined by federal guidelines) may also be a consideration for the award. The amount is variable.

**Thomas S. Graves Memorial Endowed Scholarship.** This scholarship is awarded to a part-time or full-time undergraduate or graduate student with demonstrated academic excellence who is an Alabama resident and currently enrolled or accepted for admission. A minimum 3.0 GPA, a major in a science-based curriculum, and enrollment in at least one College of Continuing Studies course during the semester in which the award is received are required. Priority will be given to the residents of Etowah and Cherokee counties. Secondary consideration will be given to applicants from any other academic division. The scholarship is merit-based; financial need is not a requirement. The amount is variable.

**James A. Hood Endowed Scholarship.** Awarded to a full-time University of Alabama graduate or undergraduate student who is currently enrolled or has been accepted for admission. The applicant must be at least 25 years old, a resident of Alabama, and a graduate of the state’s public school system. The applicant must be pursuing a degree as a teacher or school administrator and be planning to enroll in academic programs facilitated through the College of Continuing Studies. The amount is variable.

**Jerold Kennedy Memorial Endowed Scholarship.** Awarded to part- or full-time undergraduate or graduate students who are at least 25 years old and who are enrolled in academic programs facilitated through the College of Continuing Studies, with preference given to students pursuing degrees in disciplines served by the College of Continuing Studies. The amount is variable.

**Colonel Floyd H. Mann Memorial Endowed Scholarship.** Awarded to an undergraduate or graduate student, part- or full-time, who is enrolled at The University of Alabama or accepted for admission. Priority will be given to students who are children of law enforcement officials and/or who intend to pursue careers in law enforcement and who demonstrate financial need (not necessarily as defined by federal guidelines). Amount is variable.

**Clarice L. Parker Memorial Endowed Scholarship.** Awarded to a part-time or full-time undergraduate or graduate student, currently enrolled or accepted for admission. An applicant must be at least 25 years old and a resident of Alabama, have a GPA of 2.5 or above for the previous semester, be enrolled in at least one College of Continuing Studies course during the semester in which the award is received, and demonstrate financial need. Primary preference will be given to students from Tuscaloosa County. Applicants must also file a Free Application for Federal Student Aid (FAFSA) form. The amount is variable.

**Douglas W. Patterson Memorial Endowed Scholarship.** Awarded to a part-time or full-time University of Alabama graduate or undergraduate student who is currently enrolled or has been accepted for admission. An applicant must be at least 25 years old and enrolled in academic programs facilitated through the College of Continuing Studies. The amount is variable.

**William Henry Rhea Jr. Memorial Endowed Scholarship.** Awarded to a part-time or full-time undergraduate or graduate student who is an Alabama resident at least 25 years old and who has demonstrated academic excellence (minimum GPA of 3.0) and established financial need. Preference will be given to students majoring in engineering or business who are taking courses facilitated through the College of Continuing Studies. The amount is variable.

**Warrior Roofing-Thomas G. Shurett Endowed Scholarship.** Awarded to a full-time undergraduate or graduate student who is currently enrolled or accepted for admission and an Alabama resident. Priority will be given to students intending to enroll in academic programs facilitated through the College of Continuing Studies during the term in which the award is received. Preference will be given to employees (or dependents of employees) of Warrior Roofing Company Inc. and students from West Alabama. Amount is variable.

**John C. Snider Scholarship.** Awarded to part-time or full-time undergraduate or graduate students who are at least 25 years old, who are enrolled in academic programs facilitated through the College of Continuing Studies, and who demonstrate satisfactory academic progress. The amount is variable.

**Ruth P. Snider Memorial Scholarship.** Awarded to part-time or full-time undergraduate or graduate students who are at least 25 years old and are enrolled in academic programs facilitated through the College of Continuing Studies, with preference given to students with a major or minor in music, music education, or a related field. Recipient must demonstrate satisfactory academic progress. The amount is variable.

**Hershel Trimm Memorial Endowed Scholarship.** Awarded to a part-time or full-time undergraduate or graduate student who is currently enrolled or accepted for admission. An applicant must be at least 25 years old and a resident of Alabama, have a GPA of 2.5 or above for the previous semester, and be enrolled in at least one College of Continuing Studies course during the semester in which the award is received. Priority will be given to those who desire careers in the home-building industry.

**Robert L. Williamson Endowed Memorial Scholarship.** Awarded to a University of Alabama undergraduate or graduate student over the age of 25 who is majoring in engineering or business and is facilitating his or her education through the College of Continuing Studies and its Division of Academic Outreach. Priority will be given to undergraduate students who are taking at least one course through QUEST (Quality University Extended Site Telecourses) or other distance learning methods. Must demonstrate academic excellence (GPA of 3.0 on a 4.0 scale)
and show financial need. The amount is variable.

**Jerry F. Wilson Sr. Memorial Endowed Scholarship.** Awarded to an undergraduate or graduate student enrolled part- or full-time who is at least 25 years old; enrolled at The University of Alabama or accepted for admission; and enrolled in an academic program facilitated through the College of Continuing Studies. Preference is given to students pursuing degrees in disciplines served through the Academic Outreach division of the College of Continuing Studies. The amount is variable.

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**College of Education**

Scholarships available through this office for full-time graduate education students range from $350 to $2,000. For its purposes, the College's graduate scholarship committee defines a full-time graduate student as a student enrolled in at least 9 credit hours per semester for an academic year. A graduate teaching or research assistant is considered to be a full-time student if he or she is enrolled in 6 or more credit hours per semester for an academic year. The following information must be submitted to the office of the scholarship steward no later than the deadline date printed on the application form:

- cover letter
- application form
- statement of purpose
- official transcript(s)
- three letters of recommendation
- vita or résumé

A detailed description of each component of the application is included in the College's scholarship information packet.

Scholarship recipients are selected annually during the spring semester that precedes the academic year to which the award will be applied. All applicants will be notified by letter of the disposition of their applications within two weeks prior to the College of Education Honors Day convocation in April. Recipients will be announced during the convocation.

Generally, scholarships are awarded for one academic year; however, some may be renewable, offering the recipient an opportunity to receive funding for one or more subsequent years. A recipient must request consideration for continuation in a letter submitted with an updated application. Renewal requests are subject to review and evaluation by the scholarship committee. A request does not guarantee renewal. A nonrenewable scholarship will not be awarded to an individual more than once.

Each scholarship is awarded in two equal installments. One installment is made during the fall semester; the other is made during the spring. Receipt of the second installment is contingent upon the recipient's continued maintenance of the eligibility requirements established by the respective scholarship.

Questions about the application or the application process should be directed to the scholarship steward.

More information about graduate-level College of Education scholarships and an accompanying application form may be obtained from the office of the scholarship steward (104 Carmichael Hall) during regular University hours (8:00 a.m.-4:45 p.m., Monday through Friday). The mailing address for this office is Box 870231, Tuscaloosa, AL 35487-0231; the telephone number is (205) 348-6073.

**Sandra R. Apolinsky Memorial in Counselor Education:** Criteria: Doctoral student in Counselor Education; priority given to returning female students after meeting family obligations.

**Susan Duckworth Bedsole Scholarship:** Criteria: Priority given to J. L. Bedsole Scholars as selected by the J.L. Bedsole Foundation; students from southwest Alabama; students accepted into the College of Education

**Russell S. and Mary Louise Cantwell Endowed History Scholarship:** Criteria: Graduate or undergraduate student majoring in Social Sciences (History); GPA of 3.0+; financial need; renewable

**Jean H. Cecil Memorial Endowed Scholarship:** Criteria: Graduate student majoring in Counselor Education; competitive GPA

**Ralph W. Cowart Memorial Scholarship:** Criteria: Competitive GPA; legal resident of Pike County, Alabama; renewable

**Merlin G. Duncan Memorial Endowed Scholarship:** Criteria: Doctoral student; competitive GPA; personal

http://graduate.ua.edu/catalog/12600.html
qualities assuming leadership roles in education (Educational Leadership); potential for making significant contributions to education; renewable

**Sarah H. Healy Endowed Graduate Scholarship:** Criteria: Graduate student in Higher Education Administration or Educational Leadership; female; short essay detailing academic and professional record together with career goals

**Irene Merriwether Jones Memorial Endowed Scholarship:** Criteria: Alabama public school teacher pursuing a Master's Degree in education; demonstrated financial need (Statement of Financial Need); competitive GPA

**Leeman C. Joslin Scholarship in Behavioral Studies:** Criteria: Counselor Education, Educational Psychology, Educational Research, or School Psychology; African American or female or both: competitive GPA; demonstrated financial need (Statement of Financial Need)

**Paul G. Orr Memorial Fellowship in Educational Administration with priority to Educational Leadership:** Criteria: Applicants should be U.S. or foreign nationals who plan to teach or work in American-Sponsored Overseas Schools (ASOS) or foreign national education systems. The recipient shall agree to make every effort to work in either type of system for no less than three (3) years from the date of an awarded degree or completion of course work. Competitive GPA; renewable for a maximum of two academic years only; one of the three letters of recommendation to be submitted must be written by the director of the school that has most recently employed the applicant: demonstrated financial need (Statement of Financial Need)

**Thelma Julia Mildred Smith Endowed Scholarship in Counselor Education:** Criteria: Indication of plans for a career as an elementary or secondary guidance counselor; competitive GPA; personal qualities for assuming leadership roles in education; demonstrated financial need (Statement of Financial Need); renewable

**Esther J. Swenson Endowed Scholarship:** Criteria: Doctoral student majoring in Early Childhood/Elementary Education; competitive GPA; personal qualities for assuming leadership roles in education; potential for making significant contributions to education. Application Dates: October 1st – only on even years of the fall semester, alternating with the Thompson Scholarship.

**Paul W. Terry Memorial Endowed Scholarship:** Criteria: Graduate student in Educational Psychology; competitive GPA; renewable

**Yewell R. Thompson Endowed Scholarship:** Criteria: Early Childhood/Elementary Education major; priority given to male students actively pursuing a doctoral degree, specialist, masters, bachelors (in that order); personal qualities for assuming leadership roles in education; potential for making significant contribution to education. Application Dates: October 1st – only in odd years of the fall semester, alternating with the Swenson Scholarship.

**TCI Companies Choice Award in Education Endowed Scholarship:** Criteria: Graduate or undergraduate student; competitive GPA; legal Alabama resident; applicants must submit a short essay on having inspired others to fulfill their potential in order to demonstrate that the applicant has the passion and energy to influence people’s lives as is expected of teachers.

**The College of Education Retired Faculty Endowed Scholarship:** Criteria: Priority of consideration shall be given to full-time undergraduate and graduate students enrolled in the College of Education who demonstrate financial need, although not necessarily as defined by federal guidelines, and whose academic records indicate a high probability of success. Additional preference shall be given to those students who are descendents of faculty members of the College of Education

**College of Human Environmental Sciences

**Agnes Ellen Harris Scholarship.** This scholarship is awarded on the basis of academic achievement and merit, as determined by the scholarship committee. Eligibility is restricted to full-time graduate students majoring in an area in human environmental sciences. Contact: Dean, College of Human Environmental Sciences, Box 870158, Tuscaloosa, AL 35487-0158.

**Mabel Hewitt Lynch Scholarship.** This scholarship is awarded on the basis of academic achievement and merit, as determined by the scholarship committee. Eligibility is restricted to full-time graduate students majoring in clothing and textiles or in interior design. Contact: Head, Department of Clothing, Textiles, and Interior Design, Box 870158, Tuscaloosa, AL 35487-0158.

**Thompson-Bramblett Scholarship.** This scholarship is awarded on the basis of academic achievement and merit, as determined by the scholarship committee. Eligibility is restricted to full-time graduate students majoring in clothing and textiles or in interior design. Contact: Head, Department of Clothing, Textiles, and Interior Design, Box 870158, Tuscaloosa, AL 35487-0158.

For more information about scholarships for graduate students in the School of Social Work, contact the Associate
Dean, School of Social Work, Box 870314, Tuscaloosa, AL 35487-0314. Note that concentration-specific scholarships will change to reflect the new curriculum in Fall 2006.

**Warren G. Augins Endowed Scholarship.** The award supports a full-time, first-year student in the master of social work program who has shown promise in the profession.

**James and Teresa Duggan and James and Elizabeth Ball Endowed Scholarship.** This scholarship assists full-time graduate students in the School of Social Work at The University of Alabama who intend to pursue a master’s degree in social work in clinical practice and who are over the age of thirty.

**Lola Louise Bealle Endowed Scholarship.** This scholarship assists full-time students in the School of Social Work.

**Russell and Barbara Beaulieu Endowed Support Fund.** This fund was established to support the Program and Agency Administration academic program as well as to support the needs of selected students enrolled in the School of Social Work, who have financial need, although not necessarily as defined by federal guidelines.

**Doris Bender Memorial Endowed Scholarship.** This scholarship assists deserving M.S.W. students in the School of Social Work.

**Lucille Clark Bennett Endowed Scholarship.** This scholarship assists outstanding M.S.W. students who have career interests in geriatrics in their second year of study.

**Julia B. Caddell Endowed Scholarship.** This scholarship assists full-time students in the School of Social Work who demonstrate need, although not necessarily as defined by federal guidelines. Second priority goes to adult students enrolled in the School of Social Work who are beginning or continuing their academic educations after entering the work field or to any students enrolled in the School of Social Work who express an interest in health care and/or child care.

**Ehney A. and Mildred Fletcher Tillman Camp Endowed Scholarship.** This scholarship assists outstanding students in the M.S.W. program.

**Daniel Foundation Endowed Scholarships.** These scholarships are awarded annually to outstanding graduates of each of the accredited B.S.W. programs in Alabama who are admitted to the University’s advanced-standing M.S.W. program.

**Eulene Hawkins-Alabama Chapter NASW Endowed Scholarship.** This scholarship is for a deserving full-time M.S.W. student in the advanced-standing program. Priority goes to the recipient of the Eulene Hawkins scholarship at Troy University. Second priority goes to an NASW member who exhibits academic excellence.

**Lori Kaye Hebert Endowed Scholarship.** This award assists an M.S.W. student with a career interest in mental retardation and developmental disabilities. Spring semester only.

**Madeleine M. Hill Endowed Graduate Scholarship.** The award assists a full-time student in the master of social work program who is preparing for a career in social work program and agency administration.

**Hill Crest Foundation Inc. Graduate Scholarships.** These scholarships are awarded to master of social work students with a strong interest in a mental-health career.

**Marilyn Brewer Lauber Endowed Scholarship.** This scholarship assists graduate students in the School of Social Work. Peggy Spain McDonald Endowed Scholarship. This scholarship assists a promising student in the M.S.W. program whose home is in the greater Birmingham area.

**Arlene Mitchell Endowed Scholarship.** This scholarship assists outstanding full-time students in the M.S.W. program.

**Ada Kate Morgan Endowed Scholarship.** This scholarship assists full-time students in the M.S.W. program.

**National Alumni Association Scholarship.** This scholarship is awarded to an outstanding incoming student in the M.S.W. program.

**John W. Nixon Fiesta Bowl Endowed Graduate Scholarship.** The scholarship assists African-American students who are pursuing the M.S.W. degree.

**Ben Avis Orcutt Endowed Doctoral Student Scholarship.** This scholarship is awarded to a doctoral student who has displayed outstanding dedication and commitment to the social work profession.

**Nell Hopkins Clarkson and Sue Clarkson Phifer Endowed Scholarship.** This scholarship assists graduate students pursuing the M.S.W. in the School of Social Work.

**Charles S. Prigmore Endowed Graduate Scholarship.** This scholarship assists outstanding M.S.W. students.
Priority is given to African-American students with interests in program and agency management.

**Cartis T. and Rose N. Roff Endowed Scholarship.** This scholarship is for an outstanding M.S.W. student.

**School of Social Work Stipends.** In addition to grants and stipends related to field education agencies, the School of Social Work awards stipends each year to full-time graduate students in the master's degree program.

**Leslie J. Shellhase Endowed Scholarship.** This scholarship is awarded to an outstanding doctoral student who has been advanced to candidacy for the degree.

**Social Work Society-Dean Lucinda Roff Endowed Scholarship.** This scholarship is awarded to a full-time student enrolled in the second semester of the concentration year of the master of social work program who shows evidence of superior scholarship, based on graduate grades and an original paper, and evidence of professional citizenship, action, or achievement that furthers the goals of the School and the profession of social work. The scholarship is granted for one spring semester only.

**Lorraine Bedsole Tunstall Endowed Scholarship.** This scholarship assists outstanding students in the M.S.W. program. Priority is given to students from the Mobile area with interests in careers in child welfare services.

**Cassie Wallace-Helen Brown Endowed Scholarship.** This scholarship was established to assist full-time students in the School of Social Work who intend to pursue a career in the area of working with elderly or aging people.

**Miscellaneous Financial Aid**

**Loans** are administered through the Office of Student Financial Aid, Box 870162, Tuscaloosa, AL 35487-0162. Application for financial aid should be made online at [http://www.fafsa.ed.gov](http://www.fafsa.ed.gov)

The University's housing office offers **counseling positions** for qualified graduate students. Inquiries should be addressed to the Office of Residential Life, Box 870399, Tuscaloosa, AL 35487-0399; 1-888-498-2262.

The University's Office of Student Affairs also provides **assistantship opportunities** in various campus locations to graduate students. Inquiries should be addressed to Graduate Student Services, Office of the Dean of Students, The University of Alabama, Box 870292, Tuscaloosa, AL 35487-0292; (205) 348-6796.

Please refer to the **Financial Assistance Handbook** for details.
3.10 TUITION AND OTHER EXPENSES

The current rates for graduate students can be found at the University’s Cost of Attendance web page at http://cost.ua.edu.

Application Fee

A non-refundable application fee of $30 for electronic submissions and $35 for paper submissions is required with all graduate applications for admission to the University.

Auditing courses

Auditing a course does not affect the rate charged for the course.

Status as Alabama Resident

The University’s policy on residency can be found at: http://registrar.ua.edu/residency.html.

Any questions regarding residency should be directed to the Office of Academic Records and University Registrar, 206 Student Services Center, Box 870134, Tuscaloosa, AL 35487-0134 or (205) 348-4886.

Alabama resident status should not be confused with “residency” requirements for completion of master’s, educational specialist, or doctoral degrees. Please refer to those degrees’ respective sections of the Catalog for information on residency requirements for degree purposes.

Payment/Confirmation Policies and Deadlines

The University has specific and detailed requirements regarding payment and confirmation of class schedules, please refer to the policies and deadlines information at: http://studentreceivables.ua.edu/payment_deadlines.html.
3.11 WITHDRAWAL FROM THE UNIVERSITY

A graduate student may withdraw from the University (i.e., withdraw from all courses in the semester), either for non-medical or medical reasons, as long as this is done prior to the last day of classes. The first thing a student considering withdrawal should do is to consult with his or her academic advisor.

It is the student’s responsibility to initiate a withdrawal and provide the information necessary to complete the withdrawal process. Withdrawal cannot be initiated through myBama, and academic bankruptcy (described in the Undergraduate Catalog) is not available to graduate students.

Withdrawal from the University requires approval for withdrawal from the Office of Academic Records and University Registrar (206 Student Services Center), as well as approval of the dean of the division in which the student is enrolled.

After the first week of a semester, the fact and date of a withdrawal from the University will be noted on the student’s permanent record. After the tenth week, the student’s academic status at the time of withdrawal will be noted on the record with a “W” for courses passing and an “F” for courses failing.

For a medical withdrawal, the student must contact University Health Service. A medical withdrawal cannot be granted if the graduate student has taken any finals or their equivalent (final papers, final projects, or similar assignments) for the semester for which a withdrawal is being requested. The procedures for a medical withdrawal are available by contacting University Health Service (348-6262).

The University’s policies regarding withdrawal can be found at: http://studentreceivables.ua.edu/withdrawal.html

For the different types of withdrawal, the process to initiate each one, and its impact on academic records, please go to the University main web pages regarding withdrawal at: http://catalogs.ua.edu/undergraduate/13000.html

Financial Implications of Withdrawals
For complete details about the implications of withdrawal on tuition and other expenses please refer to the University’s policies at: http://studentreceivables.ua.edu/financial_implications_withdrawal.html

Impact of Withdrawal on Students Receiving Federal Financial Aid
Information about the impact of withdrawal in this area can be found at the following web pages: http://studentreceivables.ua.edu/impact_on_students_receiving_federal_financial_aid.html

Impact of Withdrawal on Institutional and Non-Institutional (Non-Federal only) Loans and Scholarships if no Federal Aid is Involved
Please refer to the detailed information on the following web pages: http://studentreceivables.ua.edu/impact_withdrawal_no_federal_aid.html
3.12 RESIDENTIAL COMMUNITIES AND FOOD SERVICE

General Information
A major component of the University’s academic community is its residential campus. The University has an outstanding residence program that assists graduate students in the pursuit of academic excellence and personal development. The University-operated Crimson Towers serves graduate, law, and nontraditional students exclusively. The one bedroom, furnished units are ideally suited for one occupant and have recently been remodeled. Students who have families may be interested in the University-operated Presidential Apartments.

The advantages of living in on-campus housing are numerous. Benefits cited by students include convenience, affordability, a carefully selected and trained staff to assist residents, programs designed to enhance scholastic achievement, opportunities to meet a diverse cross-section of the student body, and greater access to a wide range of University activities and services.

If you are a student with a disability and have special housing needs, you should notify the Office of Residential Communities at (205) 348-6676 before March 1. It is important to inform the housing office about your needs early so they can assist in obtaining the needed housing arrangements.

Housing is also available in the pleasant neighborhoods surrounding the University where apartments, rental houses, and condominiums are plentiful and reasonably priced. Typical Rates per Academic Year:

| Apartment Cost | $4,800 - $10,200 |

Application Procedures
To see specific rates and floor plans for University-operated apartments or to complete an application, go to Residential Life’s website at http://housing.ua.edu.

Dining Options
There are many food-service areas on campus, including the Ferguson Center food court, two “unlimited seconds” residence-hall dining halls, three snack bars, two convenience stores, the outdoor snack bar at the Student Recreation Center, and the Java City coffee kiosk in Gorgas Library. The Ferguson Center also has Starbucks, Freshëns Smoothie, and the Fresh Food Company. The Fresh Food Company is an unlimited seconds dining facility where entrees are prepared fresh and made to order by a chef. Students who live off campus, as well as campus residents, can enjoy the convenience of Bama Dining food service.

The Action Card debit (Bama Cash) account may be used at any Bama Dining location. Students may deposit money in a debit (Bama Cash) account at any time during the semester. Money-saving meal plans are also available through Bama Dining. Additional information may be obtained by writing to Bama Dining, Box 870389, Tuscaloosa, AL 35487-0389, or by calling (205) 348-6816 or 1-888-226-2366. Also visit us on the Web at http://www.bamadining.com.
3.13 VETERANS SERVICES

The Office of Veterans Services provides assistance to veterans, reservists, service persons, and eligible dependents. The office processes all certifications that must be filed with the Department of Veterans Affairs before educational benefits can be received. Students must register with the Office of Veterans Services each semester to begin receiving or to continue receiving benefits. In addition to helping students apply for benefits and complete VA certifications, the Office of Veterans Services provides academic, personal, and financial referrals to students in VA programs. VA-sponsored work-study programs and tutoring are available to those who qualify. Students eligible for veterans benefits include VEAP veterans, reservists and veterans on the "New GI Bill," disabled veterans, dependents of persons who have total and permanent service-connected disabilities, and dependents of persons whose deaths were service-connected.

Information about services, application procedures, and compliance with VA requirements is available at the Office of Veterans Services, 106 Student Services Center, or by contacting The University of Alabama, Office of Veterans Services, Box 870162, Tuscaloosa, AL 35487-0162; (205) 348-6770, fax (205) 348-2989.
3.14 UNIVERSITY HEALTH SERVICE

The purpose of the University Health Service is to provide high-quality, low-cost, ambulatory health care and related services to the students of The University of Alabama; to educate the University community concerning health issues and prevention strategies; to develop collaborative relationships with related academic areas; and to provide both teaching and learning opportunities to our students and faculty. Students taking more than 4 hours of coursework pay a mandatory student health fee as part of their tuition and are thus eligible for care. Students taking 4 hours or less may waive the health fee, and if they waive the health fee, they are not eligible for care. Health services are not available during the holiday periods when the University is not officially in session. As a registration requirement, all new students born in or after 1957 must provide proof of immunization with two measles-containing vaccines after their first birthday: one of these vaccinations must have been an MMR and must have been given after 1980. All new students must be appropriately screened for tuberculosis within the last year as a registration requirement.

The Student Health Center (SHC) is a modern facility designed especially for the University Health Service's purposes. The service is accredited by the Accreditation Association for Ambulatory Health Care (AAAHC) and is the only accredited student health service in the state of Alabama to earn this distinction.

Outpatient services. Full clinical services are available from 8:00 a.m. to 8:00 p.m. Monday through Thursday, from 9:00 a.m. to 5:00 p.m. Friday, and from 1:00 p.m. to 4:00 p.m. on Saturdays (except game days) and Sundays. (During Interim term and the summer session, the health center closes at 5:00 p.m. weekdays and is not open on the weekend.) Students are strongly encouraged to schedule appointments with the health care provider by calling (205) 348-APPT. Care consists of general medicine, women's health, counseling and psychological services, and minor surgery. Referrals to appropriate specialists are available. The cost of the specialized care is the responsibility of the student.

Any student requiring services not available at the health center will be transferred or referred elsewhere at the student's expense, under the care of a physician of the student's choice. Ambulance service is not furnished.

Charges. The student health fee provides access to all Student Health Center (SHC) services and covers the cost of SHC's nursing, assessment, triage, health education, health promotion, and counseling services. As is true in other health care settings, there is a charge for office visits with SHC's health care providers, X-rays, and laboratory tests. SHC accepts all health insurance plans and will bill your insurance carrier for these services. SHC provides health care for all students whether or not they have health insurance and without regard for their ability to pay for services.

SHC charges for any co-payments required under students' health insurance plans, and there are fees for certain products and services such as orthopedic appliances issued and prescriptions filled at our pharmacy. The student is responsible for fees for any services of non-staff physicians or consultants and for the costs of hospitalization or services other than those provided at the Student Health Center.

The Student Health Center is located at 750 5th Avenue East. For more information, contact The University of Alabama, SHC, Box 870360, Tuscaloosa, AL 35487-0360 ; telephone (205) 348-2778. Visit the website at http://www.shc.ua.edu.
3.15 CENTER FOR TEACHING AND LEARNING

The Center for Teaching and Learning (CTL) is an integral part of the University's plan for academic excellence. The mission of the CTL is to enhance learning through the design and delivery of academic support services. CTL services are designed to help students upgrade study strategies and reading proficiencies, succeed in specific University courses—especially quantitative ones—and compete successfully for admission to graduate and professional schools. The CTL maintains a dual service orientation through the provision of opportunities to advance learning strategies for academically gifted students and to enhance learning strategies for students who need to strengthen their academic skills.

Academic support programs are offered through individual tutoring and consultation, a multimedia resource center, curricular courses, structured review programs, supplemental instruction, and informal help sessions. The CTL also serves the entire University community through its educational programming on CTL-TV, a closed-circuit broadcast available 24 hours a day on campus channel 75. Two TRIO programs funded through the U.S. Department of Education also operate in the CTL. Student Support Services provides academic assistance and counseling to 200 first-generation, income-eligible, and disabled students. The Ronald E. McNair Postbaccalaureate Achievement Program prepares first-generation and traditionally underrepresented students for successful entry into and completion of doctoral degree programs. Student involvement in these units is criterion-based. GEAR UP is an early academic intervention partnership program designed to help students improve academic performance, decrease school attrition, increase high-school graduation rates, and increase enrollment in postsecondary education. JUMP (Juvenile Mentoring Program), funded through the Office of Juvenile Justice and Delinquency Prevention, is the most recent program addition in the Center for Teaching and Learning. JUMP connects underserved students in Holt High School and Davis-Emerson Middle School with adults, ages 19 years and older, in an innovative mentoring program. JUMP is designed to improve students' academic successes and promote constructive decision-making skills.

For further information, contact the Center for Teaching and Learning, 101 Osband Hall, Box 870304, Tuscaloosa, AL 35487-0304; telephone (205) 348-5175; or via the Internet at http://www.ctl.ua.edu/
3.16 OFFICE OF DISABILITY SERVICES

The Office of Disability Services (ODS) is the central contact point for University students with disabilities. The goal of ODS is to ensure that University programs and services are accessible to qualified students with disabilities. ODS works to provide individualized academic accommodations and support services, whenever necessary, while promoting student responsibility and self-advocacy. It is the student’s responsibility to make known a need for academic accommodations and services by providing documentation of his or her disability to ODS and by formally requesting accommodations. For more information, contact ODS at (205) 348-4285 (voice) or (205) 348-3081 (TTY), or write the Office of Disability Services at Box 870185, Tuscaloosa, AL 35487-0304. ODS is located at 133-B Martha Parham Hall East. The ODS website is http://ods.ua.edu.
3.17 GRADUATE STUDENT SERVICES

The Mission of Graduate Student Services (GSS) is to increase and support the academic, personal, and professional growth of graduate and professional students at The University of Alabama. This mission holds at its core the commitment to sharing in the socialization process of graduates and professionals to the culture of their UA graduate family and their chosen profession. GSS provides an avenue to lifelong learning, acquiring essential resources and services, as well as promoting a supportive framework of unique services through collaborating with student organizations, academic departments, and other student affairs units. GSS is dedicated to student development and giving graduate and professional students at UA an audible and collective voice. GSS coordinates Orientation for New Graduate Students at the beginning of fall semester and supports scheduled workshops and seminars during the school year that are designed to assist students in succeeding and excelling in graduate school. Development of research skills is the focus of an annual graduate student research conference sponsored by Graduate Student Services, the Graduate Student Association (GSA), and the Graduate School. Additionally, GSS publishes a newsletter each month to keep graduate students informed of campus services and activities, coordinates Graduate Appreciation Week in April, and advises the GSA and Alpha Epsilon Lambda Graduate Honor Society.

The office of Graduate Student Services is located in the Office of Student Affairs, 355 Ferguson Center, and can be reached by telephone at (205) 348-6796 or by fax at (205) 348-1405.
3.18 DIVISION OF ACADEMIC OUTREACH

The Division of Academic Outreach accommodates distance and adult learners through a variety of programs. Evening, weekend, distance, and off-campus programs serve students who are limited by time, geography, work schedules, or personal obligations. Distance courses and degrees are available through the Internet, written correspondence, videotape, and videoconferencing, and degree completion programs are offered in the evening and on weekends. In addition, Academic Outreach facilitates a number of off-campus programs. Through Academic Outreach students can initiate the admission process learn about financial aid, work-study, guaranteed students loans, and available scholarships attend the Returning Adult Students Seminar, where various offices on campus present services available to students be referred to appropriate offices at the University for additional assistance with individual needs attend special registration periods receive assistance with child care referrals receive assistance with academic advising and schedule building.

For more information on these programs, please write The University of Alabama, College of Continuing Studies, Division of Academic Outreach, Box 870388, Tuscaloosa, AL 35487-0388 ; telephone (205) 348-0089 or toll free 1-800-467-0227; fax (205) 348-0249; or visit the website http://academicoutreach.ua.edu.

Online Courses
Academic Outreach delivers high school and college courses over the Internet directly to the student's computer. Students are instructed through a secured Internet site, and they interact with their professors and complete lessons via e-mail. Online courses accommodate the educational needs of individuals who have access to and experience with a computer and the Internet.

Video Courses
Academic Outreach delivers undergraduate and graduate courses via videotape to students who cannot attend classes on campus. Courses are filmed as they occur, and videotapes are mailed to students the same week. Students complete the same course requirements as on-campus students and take proctored exams at convenient sites. Students choosing this program may enroll in engineering, social work, computer science, education, and human environmental sciences courses.Video courses are entered on a University of Alabama transcript and are fully accredited toward degree programs.

IITS (Videoconferencing)
The Intercampus Interactive Telecommunication System (IITS) is a network of conference rooms connected to a statewide videoconferencing network. Approximately 30 sites throughout Alabama are equipped with cameras, monitors, and other devices that allow teachers and students to interact as if they were in the same room. Presenters use traditional visuals, such as slides, overheads, and videotape as well as digital options unique to IITS. Anyone using IITS can offer two-way interactive classes or meetings at all locations. Courses are offered in education, engineering, math, science, communication, law, library studies, foreign language, and other disciplines.

Weekend College
Designed to meet the needs of both part-time and full-time students, Weekend College offers a number of courses in the fall, spring, and summer on Friday evenings and Saturday mornings and afternoons. Scheduling weekend classes is especially convenient for part-time students who would like to pursue academic studies while working. All Weekend College courses are approved by the appropriate department chairpersons and academic deans and are taught by UA faculty members. Weekend College students are admitted through regular University admission procedures and have full use of UA's educational resources and services.

Gadsden Education and Research Center
Established in 1946, The University of Alabama's Gadsden Education and Research Center is an off-campus program serving residents of Northeast Alabama. The center offers graduate coursework for credit, noncredit programs for professional development, and test services as well as serving as a liaison to the University's main campus. Currently the center offers more than 25 complete graduate degree or certification programs in education, including master's degree, Ed.S. degree, class A, and class AA certification programs. The center also offers a bachelor's degree in human environmental sciences with a concentration in general studies or family financial planning and counseling. For more information, please call (256) 456-2886 or 1-888-223-4131 or visit the website (http://www.gadsden.ua.edu).

Evening Program
The Evening Program offers classes at times convenient for working adults. Students unable to continue their education in the traditional format (day classes) may complete degrees in business, geography, and criminal justice through this program. Many other courses from the College of Arts and Sciences, the Culverhouse College of Commerce and Business Administration, the College of Communication and Information Sciences, the College of
Human Environmental Sciences, and the School of Social Work are offered after 5:00 p.m., Monday through Thursday.

**Adult Students Services**
The Division of Academic Outreach provides a University-wide point of entry for adult students returning to campus or entering the University for the first time. The division provides the services listed below to meet the particular needs of adult students, the most rapidly growing portion of the student population.
3.19 WORKSHOP FOR NEW GRADUATE TEACHING ASSISTANTS

Each August, the Graduate School hosts a workshop for all new graduate teaching assistants (GTAs). The program is mandatory for all U.S. and international GTAs. All GTAs who are non-native speakers of English must also successfully complete the International Teaching Assistant Program (ITAP), conducted by the University's English Language Institute, before they will be allowed to teach. Details on the ITAP program are available at http://eli.ua.edu/itap.html

At the Workshop for New GTAs, faculty and staff who have been recognized for their superior teaching provide formal presentations on topics such as syllabus and course preparation, the advantages and disadvantages of the lecture format for college teaching, using multimedia and the Internet in teaching, effective communication by classroom and laboratory instructors, and the effective use of active and collaborative learning techniques in both small and large classes.

Experienced GTAs recognized for superior teaching in their respective colleges lead one day of sessions at the workshop. These "Graduate Teaching Fellows" videotape new GTAs who have each prepared a short presentation. Each GTA receives both written and oral analyses of teaching strengths and areas for improvement. The new GTAs then have the opportunity to analyze videos that show some of the most frequently occurring problems in the classroom. The Fellows conclude the day with the new GTAs by discussing important University policies such as services for students with disabilities, sexual harassment, academic misconduct, academic grievances, and the confidentiality of student records.
3.20 CAPSTONE INTERNATIONAL

The University of Alabama provides a wide variety of international education programs and services at the Capstone International Center, housed on the first floor of B. B. Comer Hall. Known simply as Capstone International, the Capstone International Center takes its name from its historical pre-eminence in the state as a provider of international education. A combination of several recently integrated units, the Capstone International Center has multiple complementary yet diverse functions, ranging from intensive English language instruction in the English Language Institute (ELI) to U.S. immigration compliance, Fulbright programs, and overseas study. Capstone International is a multipurpose center designed to inform, assist, and educate both international and domestic students, faculty, and staff members, as well as members of the local civic, education, and corporate communities. Capstone International annually welcomes almost 1,000 international students to campus and makes possible the participation of UA faculty, students, and staff in a multitude of internationally focused degree, research, and outreach programs.

Outreach is an important function within Capstone International as evidenced by its bi-monthly Capstone International newsletter, the German Supplementary School (for school-age children from Germany), the Japan Culture and Information Center (a resource for both the local and academic communities), and the English Language Institute (on-site corporate programs and tailored courses for usage by children and spouses of the employees). A wide variety of international student activities are coordinated in conjunction with the Rotary International Club of Tuscaloosa, Tuscaloosa’s International Friends (TIF), the Children’s Hands-on Museum (CHOM), University Place Montessori School, and the Tuscaloosa Club of Altrusa International.

The University is a member of national organizations providing Congressional support, professional training, and annual conferences to promote international education at member universities, namely NAFSA: Association for International Educators, the Institute for International Education (IIE), and the Council for International Education Exchange (CIEE).

Capstone International has three functional focal points known as Academic Programs, Services, and English Language Institute. Collectively they provide courses and activities available to the constituents of Capstone International.

- Academic Programs
- Fulbright Programs
- German Supplementary School
- Graduate Research Scholarships
- International Exchange Programs
- International Honors Program
- International Linkages
- Japan Culture and Information Center
- Japan Program
- Overseas Study
- Overseas Study Resource Center
- Services
- International Scholar Events
- International Student and Scholar Services
- International Student Programming
- Multicultural Guidance and Counseling
- U.S. Immigration Compliance
- Visa Advising
- English Language Institute
- Intensive English Program
- External Group Programs
- International Teaching Assistant Program (ITAP)
- Academic Support Program

Capstone International can be contacted by telephone at (205) 348-5256 or (205) 348-5402, by fax at (205) 348-5298 or (205) 348-5406, or by mail at The University of Alabama, Capstone International Center, Box 870254, Tuscaloosa, AL 35487-0254. The office is located in 135 B. B. Comer Hall.
PROGRAMS

**Fulbright programs.** Capstone International encourages and facilitates active participation in all Fulbright programs. Since the founding of the Fulbright programs in 1948, more than 100 UA students, faculty, and professional staff members have been selected to receive the prestigious Fulbright award. Their appointments have ranged from Austria to Zimbabwe.

German Supplementary School. Established by The University of Alabama in 1995 in cooperation with Mercedes-Benz U.S. International Inc., the German Supplementary School provides supplementary education in German to children ages six to 16 who will return to a German-speaking educational system after living in Alabama for several years. In addition to providing education to German-speaking children, the GSS provides University of Alabama students who have an interest and proficiency in German language and culture the opportunity to work with GSS in a variety of ways. More information about possibilities is available from the director, Dr. Marilyn B. Emplaincourt, 135 B. B. Comer Hall, (205) 348-5312 or fax (205) 348-5298.

Graduate Research Scholarships. Capstone International annually awards a small number of International Research Scholarships to graduate students with summer research projects in another country. These scholarships are made available to Capstone International from the UA Office of Alumni Affairs. Smaller awards are also available from Capstone International for graduate students invited to present papers at international conferences and to participate in other short-term academic projects overseas.

**International exchange programs.** The University of Alabama offers a number of international exchange programs that allow students to act as visiting scholars at overseas universities. Each program gives students opportunities to learn in a foreign country where they obtain firsthand knowledge of another people, language, and culture in addition to gaining course credits. In some cases, a working knowledge of the language of the host country is a prerequisite. In others, the language can be studied for the first time in the host country; sometimes, no language requirement is necessary (e.g., England and Australia). Students pay University of Alabama tuition based on Capstone International credits and are assisted in arranging transfer of credits through appropriate departments and divisions prior to departure. Graduate students should secure approval from the Graduate School prior to taking any overseas credit that they may wish to transfer.

International exchange programs are available to UA students at the following partner universities for either one or two semesters and, in some cases, summer study:

- Australia: Queensland University of Technology (Brisbane), Monash University (Melbourne)
- Austria: University of Klagenfurt
- Belgium: Hautes Etudes Commerciales (Liège)
- Denmark: Aarhus School of Business
- England: University of Hull; University of Birmingham Shakespeare Institute
- France: Université François Rabelais (Tours), Bordeaux Ecole de Management/Bordeaux Business School
- Germany: University of Mannheim; Pädagogische Hochschule (Weingarten); VWA Studiena Kademie (Stuttgart)
- Japan: Chiba University; Hiroshima University; Kansai Gaidai University (Osaka); Ritsumeikan University (Kyoto)
- Korea: Pusan National University; Yonsei University (Seoul), Ajou University (Suwon)
- The Netherlands: Hanzehogeschool-Gröningen
- Mexico: Monterrey Tech (Tampico)
- Scotland: University of Glasgow
- Spain: Universidad de Alcalá
- Taiwan: Feng Chia University (Taichung)
- Wales: University of Wales (Aberystwyth)

**Short-term group overseas study.** In addition to its longer-term international exchange programs, The University of Alabama conducts many overseas study programs lasting from two to six weeks, most often during the summer and Interim sessions. Scholarships and financial aid are available to students participating in these programs. Programs and fields of study in recent years include the following:

- Alabama at Oxford: English, history, political science
- Alabama in Belgium: economics, business studies
- Alabama in China: art, history, Chinese
- Alabama in France: French, business studies
- Alabama in Germany: German language and culture
- Alabama in Ghana: geography
- Alabama in Greece: modern Greek studies
Alabama in Ireland: education
Alabama in Italy: art, Italian, finance, business studies
Alabama in Japan: economics, business studies
Alabama in Korea: Asian studies
Alabama in Spain: Spanish, business studies
Alabama in Yucatan: anthropology, sociology, history, economics

Capstone International issues international identification cards made available through CIEE for students wishing to take advantage of travel insurance and discount rates for transportation, as well as educational and cultural programs, during their sojourns overseas.

Additional information about international exchanges and short-term overseas study programs may be obtained from 135 B. B. Comer Hall or by writing The University of Alabama, Capstone International, Box 870254, Tuscaloosa, AL 35487-0254; (205) 348-5256. If The University of Alabama is unable to meet the overseas study needs of a student, Capstone International provides information about additional international education opportunities that are available through other institutions and organizations. A library of materials describing these programs is available in the Overseas Study Resource Center, open daily from 9:00 a.m. until 4:00 p.m., 135 B. B. Comer Hall; (205) 348-9079.

**Japan Program.** The Japan Program, as part of the Capstone International Center, administers academic and cultural programs and activities designed to increase understanding between the peoples of the United States and Japan. Through linkages with universities and other educational or cultural agencies in Japan, the program enables UA students and faculty members to study, conduct research, and teach in Japan.

Reciprocal student exchange programs with Kansai Gaidai University in Osaka, Ritsumeikan University in Kyoto, Hiroshima University, and Chiba University enable qualified postgraduate students to study Japanese in Japan while undertaking Asian studies, humanities, social science, and science courses taught in English. Generous AIE-J scholarships providing round-trip transportation and a monthly stipend are available on a competitive basis to UA students. Examples of courses offered at partner institutions include Japanese-Style Management, Japanese Economic Development, Sociology of Everyday Life in Japan, Survey of Modern Japanese History, Japanese Culture and Education, Seminar in Geography, Agriculture and Agricultural Sciences in Japan, and Introduction to Deep-Sea Biology.

Chiba University offers prestigious Monbusho (Ministry of Education) graduate student research scholarships for 18 months of study. The Monbusho scholarship provides round-trip transportation and monthly stipends to cover living costs.

The Japan Program conducts a variety of outreach and academic enrichment programs in its Japan Culture and Information Center (see below). A founding and active member of the Tuscaloosa Sister-Cities Commission as well as the Japan-America Society of Alabama, the Japan Program also organizes the annual spring Sakura Festival and Haiku contest for the state of Alabama.

Additional information about the Japan Program may be obtained from the director, Dr. Marilyn B. Emplaincourt, 135 B. B. Comer Hall; (205) 348-5312.

The Japan Culture and Information Center. Established by The University of Alabama as part of the Japan Program in 1990, the Japan Culture and Information Center (JCIC) serves as a meeting place and clearinghouse for information about Japan and its culture. Located in the Capstone International Center, 141 B. B. Comer Hall, JCIC is designed to facilitate research, to complement classroom instruction, and to respond to requests for information about either Japan or the U.S., thereby increasing communication and understanding about both countries. More information about programs at the Japan Culture and Information Center may be obtained from the Programs Coordinator, Mrs. Satoko Seale, 141 B. B. Comer Hall; (205) 348-5311 or fax (205) 348-2439.

**SERVICES**

International Services, located within the Capstone International Center of The University of Alabama, provides specialized services for international students, professors, research scholars, visitors, and their families. International Services conducts intensive orientation programs and provides vital information regarding U.S. Immigration compliance as well as multicultural guidance and counseling. These are ongoing services that monitor individual progress according to federal regulations.

Great emphasis is placed on international student programming. International Services coordinates a wide variety of student activities such as a weekly international coffee hour, an annual international week, and an annual "Welcome"
reception for international students at the President's Mansion.

Professional staff members advise and assist the International Student Association, which represents all international students and the many nationality organizations on campus. Professional staff work closely with community groups such as the Rotary Club of Tuscaloosa, which sponsors the Rotary International Student Center, an on-campus residence for male students and a gathering place that fosters international friendships; and Tuscaloosa’s International Friends (TIF), which sponsors a friendship family program for international students.

International Services may be contacted by telephone at (205) 348-5402, by fax at (205) 348-5406, and by mail at Box 870254, Tuscaloosa, AL 35487-0254, USA. Offices are located in 112-D and 135 B. B. Comer Hall.

ENGLISH LANGUAGE INSTITUTE

For the non-native speaker of English, The University of Alabama English Language Institute (ELI), a part of Capstone International, offers two types of year-round English-language programs: the Intensive English Program is designed for individuals who are seeking intensive English study, while External Programs are designed for groups who desire highly specialized curricula. In addition, the ELI has two programs for matriculated students at The University of Alabama: the International Teaching Assistant Program, which trains and evaluates international graduate teaching assistants, and the Academic Support Program, which provides opportunities for undergraduate and graduate students who may want or need additional English-language instruction.

Intensive English Program and Courses. The ELI Intensive English Program (IEP), which is accredited by the Commission on English Language Program Accreditation (CEA), is designed for individuals who need to learn English as a second language. The focus of the program is on preparing students for academic success in undergraduate and graduate study at The University of Alabama.

Six levels of study, from beginning to advanced, are available. Each level consists of 20 hours of core classes per week; additional optional classes are also available for students who want more hours. Each level of study lasts seven to eight weeks and is available six times per year. Sessions begin in August, October, January, March, May, and June. Students may begin their English study in any one of these sessions.

Students pursuing graduate study must complete Levels 4, 5, and 6 with a GPA of 3.5 or obtain a TOEFL score of 550 (213 computerized). In certain cases, the Graduate School, the ELI, and the student's academic department may together grant permission for a student to enroll in one graduate course per semester while completing the ELI program of study. The specific course must be approved by the instructor and department prior to enrollment. Students who apply for admission to UA and meet the academic and financial qualifications to enter the University but do not have TOEFL scores available or do not meet the TOEFL score requirement may be given the institutional version of the TOEFL examination upon arrival. Students who do not obtain the required minimum score on the institutionally administered version of the TOEFL will be required to register for study in the ELI until they meet the TOEFL requirement or satisfactorily complete the ELI program as outlined above.

ELI Intensive English Program courses are designed for those who require a concentrated curriculum of study in English:

Structure: Levels 1–6. ELI structure courses provide students with the basic grammatical structures they will need to communicate effectively in English in the four language skill areas: listening, speaking, reading, and writing. Each structure course emphasizes communication—both comprehension (listening and reading) and production (speaking and writing). Structure courses meet five hours per week.

Speaking/Listening: Levels 1–6. ELI courses in speaking/listening provide students with the opportunity to improve their listening and speaking skills and to gain confidence in using English to communicate orally. Students practice appropriate conversation management skills, receive instruction on problem areas of pronunciation, and learn useful vocabulary. These activities are carried on through a variety of classroom exercises that focus on the everyday situations students are likely to encounter while adjusting to life in the United States. Speaking/listening courses meet five hours per week.

Reading/Writing: Levels 1–6. The ELI reading/writing curriculum is designed to provide students with skills needed to comprehend written discourse at the college level as well as produce written English in a variety of forms. Reading skills include understanding the main idea of a passage, understanding an author’s purpose, distinguishing fact from opinion, reading quickly, using the resources of a collegiate dictionary, and discussing written discourse in a relatively sophisticated manner. Writing exercises are designed to stimulate self-expression and personal involvement in writing. With attention to each step of the writing process—thinking, writing, and rewriting—teachers guide students toward communicating their ideas with increasing clarity and depth. Reading/Writing courses meet ten hours per
week.

**Optional Classes.** The ELI offers several choices of optional courses. Some examples of optional courses are TOEFL Preparation, Pronunciation, American Culture, Current Events, Business English, English Through Music, and English Through Film. Optional classes typically meet two or three hours per week.

**Conversation Partner Program.** Through the Conversation Partner Program, ELI students can meet regularly with American students to converse in English in relaxed surroundings. The Conversation Partner Program is a comfortable way for ELI students to form friendships with American students and to practice their English.

**Culture and Language Exchange Program.** The Culture and Language Exchange Program pairs an ELI student with an American student who is studying or has expressed an interest in the ELI student's native language/culture. Once paired, these students then meet as often as they like for conversation practice in both English and in the particular foreign language.

ELI External Programs. ELI External Programs consist of customized programs designed for groups of participants with mutual goals and concerns who desire highly specialized, intensive curricula. Such programs are typically designed for international English teachers, students whose international universities have approved given curricula for credit, international graduate students preparing to enter universities throughout the U.S., and business professionals who wish to improve their overall effectiveness in English or to concentrate on specific skills such as written communication.

An organization wishing to participate in such a program should clearly define the goals of its group and keep in mind that program enrollments typically require a minimum of 10 participants. Financial sponsorship for the above programs may come from ministries of education, embassies, corporations, private philanthropic organizations, U.S. or other government sponsoring agencies, or the individual participants themselves. Programs may be offered at any time of the year and typically range in length from two to six weeks.

**Academic Support Program.** The ELI Academic Support Program provides opportunities for UA undergraduate and graduate students who may want or need additional English-language instruction. At the graduate level, ESL support courses in written and spoken English are available free of charge to full-time international graduate students each fall and spring semester. In addition, for both undergraduate and graduate students, the UA Language Resource Center is available for individualized language assistance.

**International Teaching Assistant Program.** The International Teaching Assistant Program (ITAP) provides training and evaluation for international students with graduate teaching assistantships. A mandatory ITAP program for all non-native English-speaking GTAs and graduate assistants with any instructional responsibilities is offered at the English Language Institute (ELI).

To obtain more information about any of the above ELI programs, to request a brochure and application to the Intensive English Program, or to discuss the possibility of an external program for your group, contact The University of Alabama, English Language Institute, Box 870250, Tuscaloosa, AL 35487-0250; (205) 348-7413; fax (205) 348-9266; e-mail info@eli.ua.edu; or visit our website at http://www.eli.ua.edu.
3.21 ACADEMIC COMMON MARKET (ACM)

UA reinstated most of its ACM programs beginning with the Fall semester of 2007. The bachelor’s degree programs in the College of Commerce and Business Administration (C&BA) and the bachelor’s and master’s programs in Human Environmental Sciences (HES), however, were not reinstated. There was a change in scholastic standards for first-time ACM certification, as well as an increased GPA requirement for continuation in the ACM each semester thereafter.

For students newly certified for Fall 2007 or any subsequent semester, the following two conditions are in effect:

1. For first-time ACM certification, a new undergraduate or transfer student must have at least a 25 ACT composite score or 1130 SAT composite score (math and verbal only) and at least a 3.00 overall high school GPA.

2. For continuing certification after the first semester of ACM support, each UA ACM student must maintain at least a 3.00 overall GPA on all UA course work attempted. This GPA standard is in addition to the long-standing requirements for maintaining residency and major.

A complete list of UA ACM programs by state, as well as an online ACM application, are available at http://graduate.ua.edu/academics/acm.html

NOTE. The SREB (Southern Regional Education Board) oversees the ACM. Its website (http://www.sreb.org) maintains the contact information for each state’s ACM coordinator and a list of UA’s currently approved ACM programs.

If you have any questions please contact jchamber@bama.ua.edu
3.22 MILITARY PROGRAMS

General
Army or Air Force ROTC scholarships and other financial assistance may be available to qualified students who plan to be enrolled for at least two years. Interested students may obtain information about current programs from one of the following ROTC offices: The University of Alabama, Professor of Military Science, Box 870260, Tuscaloosa, AL 35487-0260; or Air Force ROTC Detachment 10, The University of Alabama, Box 870258, Tuscaloosa, AL 35487-0258.

Air Force ROTC
An Air Force officer's commission is available to graduate students through the Air Force ROTC Two-Year Program. If other qualifications are met, a student with at least two full years of full-time coursework remaining (in either graduate studies or a combination of undergraduate and graduate courses) can apply for entry into the Professional Officer Course (POC).

Applicants must favorably complete the Air Force Officer Qualifying Test, pass a medical physical, pass a physical fitness test, and have at least a 2.0 GPA. Students selected to enter the cadet corps will be scheduled for a summer field training encampment prior to entry into the POC. Field training camps are conducted at Air Force bases throughout the United States. Successful completion of field training qualifies the student to enter the POC. The student then completes the last two academic years of graduate and/or undergraduate studies, taking one 3-hour Air Force studies (AFS) class and a leadership laboratory each semester in order to gain an officer's commission upon completion of studies. Cadets in the POC are paid a $350–400 stipend per month during the academic year and may be eligible for academic scholarships. To apply, contact The University of Alabama, AFROTC DET010, Box 870258, Tuscaloosa, AL 35487-0258, or call (205) 348-5900 prior to planned entry into Air Force ROTC.

Required Air Force ROTC courses for the Two-Year Program are AFS 350 and AFS 301, AFS 360 and AFS 302, AFS 470 and AFS 401, and AFS 480 and AFS 402. Course descriptions may be found in The University of Alabama undergraduate catalog.

Army ROTC
Army officer's commissions are available to graduate students through the Army ROTC two-year option. A student with at least two years of full-time coursework remaining (in either graduate studies or a combination of undergraduate and graduate courses) can apply for the Advanced ROTC Program. Students will be required to take three ROTC classes each semester while completing their graduate or undergraduate studies. Advanced ROTC Program students must attend the Leader's Development Assessment course between the first and second years of enrollment, for which they will be paid one-half the pay of a second lieutenant ($887.00). Students are paid a monthly tax-free subsistence allowance ($450.00 per month during the first year and $500.00 per month the second year) while enrolled in the Advanced ROTC Program. Full-tuition scholarships are available to qualified students who commission before age 27. To apply, contact The University of Alabama, ROTC Department, Box 870260, Tuscaloosa, AL 35487-0260; or call (205) 348-1056.

Course descriptions may be found in The University of Alabama undergraduate catalog.
4.1 DEGREES CONFERRED

The following degrees are conferred by the Graduate School:

Master of Accountancy

Master of Arts in the fields of:

Master of Business Administration

Master of Fine Arts in the fields of:
Art, Book Arts, Creative Writing, and Theatre

Master of Library and Information Studies

Master of Music

Master of Public Administration

Master of Science in the fields of:
Biology, Geography, Geology, Physics, Speech-Language Pathology, and Statistics

Master of Science in the fields of:
Aerospace Engineering, Banking and Finance, Chemical Engineering, Chemistry, Civil Engineering, Computer Science, Criminal Justice, Electrical Engineering, Engineering (Environmental Engineering), Engineering Science and Mechanics, Human Environmental Sciences, Marine Science (Biology), Marketing, Management Science, Mechanical Engineering, Metallurgical Engineering, and Nursing

Master of Social Work

Master of Tax Accounting

Educational Specialist in the fields of:
Counselor Education, Educational Leadership, Educational Psychology, (including general educational psychology, educational research, and school psychology), Elementary Education, Special Education, and Secondary Education

Doctor of Education in the fields of:
Counselor Education, Educational Administration, Educational Psychology, Elementary Education, Higher Education Administration, Instructional Leadership, School Psychology, Secondary Education, and Special Education

Doctor of Musical Arts

Doctor of Philosophy in the fields of:
4.2 CONFERRING OF DEGREES

Advanced degrees are conferred in commencement exercises at the close of each semester. Each candidate for a graduate degree must submit a completed application for advanced degree to the Office of the Graduate School at the time of registration for the semester or the first term of the summer session in which requirements for a degree are to be completed. (A student must have submitted a plan of study and must have been approved for candidacy for a degree well in advance of filing the application for a degree. Please refer to the Catalog’s sections on plan of study and candidacy for master’s, educational specialist, and doctoral degrees.)

At least one week before commencement, the candidate’s record must have been cleared for graduation. A candidate for the doctoral degree must be present at a scheduled commencement to receive the degree, unless excused by the graduate dean. The University of Alabama reserves the right to withhold or withdraw an advanced degree on the recommendation of the graduate faculty.

ACADEMIC MISCONDUCT

All acts of dishonesty in any work constitute academic misconduct. This includes, but is not limited to, cheating, plagiarism, fabrication of information, misrepresentation, and abetting any of the above. The Academic Misconduct Disciplinary Policy will be followed in the event that academic misconduct occurs. Students should refer to the online Student Handbook at http://www.sa.ua.edu/campusactivities/Handbook1.htm
4.3 APPLICATION

Required Materials for All Applicants
Please apply online for graduate study at The University of Alabama at http://graduate.ua.edu. Interested persons with restrictions that prevent the use of our online application or who have questions about applications should contact The University of Alabama, Graduate School, Box 870118, Tuscaloosa, AL 35487-0118; telephone (205) 348-5921 or 1-877-UAGRADS; fax (205) 348-0400; or e-mail usgradapply@aalan.ua.edu (U.S. citizens and U.S. permanent residents) or intergradapply@aalan.ua.edu (international applicants).

All applicants, including U.S. citizens, permanent residents, and international applicants, must submit the following materials to the Graduate School using the online application:

- Applicant data sheet and statement of purpose
- Two official copies of all college or university transcripts sent at the applicant's request to the Graduate School directly from the registrar of each postsecondary institution attended (including The University of Alabama)
- Admissions test scores less than five years old (if required by the department; see previous section on "Admissions Examination Criteria" for departments that do not require a test) mailed to the Graduate School directly by the testing service
- The application fee is $30.00 for electronic submissions and $35.00 for paper submission. You may submit your credit card information online or mail the completed Application Fee Form (.pdf version) along with your check or money order (drawn on U.S. banks and made payable to The University of Alabama) directly to the Graduate School. Application fees are non-refundable.
- Three letters of recommendation (on professional letterhead) with original signatures. These should be submitted directly to the department to which the applicant is applying (not to the Graduate School).
- Additional application materials (e.g., portfolios, writing samples, responses to essay questions, etc.) required by individual departments. Applicants should contact departments directly for more information.

All of the above materials must be received by the Graduate School before an application will be considered. To ensure that no materials are missing, applicants should periodically check the status of their applications online or by telephoning the Graduate School.

Application may be made to only two programs at a time. A person holding a bachelor's degree from a U.S. regionally accredited institution (or the foreign equivalent for an international applicant) is eligible for consideration for admission to the Graduate School of The University of Alabama. Seniors who have completed at least 91 undergraduate credits at regionally accredited institutions are also eligible to apply.

Additional Materials for International Students
A student, whether an international or a permanent resident, whose first language is not English, must submit an official score report from one of the following proficiency examinations:

- Test of English as a Foreign Language (TOEFL). The minimum score for admission to a degree program or for non-degree admission is 550 on the paper-based TOEFL, 213 on the computerized TOEFL, or 79 iBT.
- International English Language Testing System (IELTS). The minimum score for admission to a degree program or for non-degree admission is 6.5.

The TOEFL or IELTS scores must be less than two years old at the time of the student's intended enrollment at The University of Alabama. The TOEFL or IELTS will not be required from any applicant who has earned a degree from an accredited U.S. college or university within the past three years. The Test of Spoken English (TSE) is recommended for international students who wish to be considered for teaching assistantships. Information on registering for the TOEFL or TSE is available worldwide at http://www.ets.org/toefl/ and for the IELTS at http://www.ielts.org or at U.S. embassies, consulates, USIS offices, Institute of International Education offices, AMIDEAST offices, and other organizations concerned with international education. Computer administration of the TOEFL is offered at many sites as will IELTS in the near future. International applicants must submit two certified copies in the native language along with certified English translations of all transcripts, diplomas, and certificates of degree.
Application Deadlines
To ensure adequate time for review, applications must be completed at least six weeks before the desired date of registration. International applicants must submit their applications at least four months prior to expected enrollment. However, many departments establish earlier deadlines for receipt of application materials. (Applicants should contact their proposed departments for deadline information.) In those cases, completed applications must be in the Graduate School six weeks prior to the departmental deadline. Requirements and deadlines for submitting applications are subject to change; applicants should review the specific instructions on the application forms for current requirements and deadlines.

Alabama Residency Status
Questions regarding resident and nonresident status should be directed to Mary Ellen Hanna in Office of Academic Records and University Registrar, Box 870134, Tuscaloosa, AL 35487-0134; telephone (205) 348-4886; http://www.registrar.ua.edu/residency.html. (Note. This is not the same as the "residency" requirement for master's, educational specialist, or doctoral degrees. Please refer to those degrees' respective sections of the Catalog for details.)

Immunizations
New students who were born after January 1957 are required to provide proof of immunization against measles, mumps, and rubella (MMR) and other diseases before being officially enrolled at The University of Alabama. For students without proof of all required immunizations, the Health Center may assess a fine, and registration may be blocked. Also, new students are encouraged to complete a medical history form, which may be obtained from The University of Alabama, Russell Student Health Center, Box 870360, Tuscaloosa, AL 35487-0360; http://rshc.ua.edu.

Readmission
Applicants for readmission who are in good standing should write to The University of Alabama, Graduate School, Box 870118, Tuscaloosa, AL 35487-0118 or e-mail gradreg@aalan.ua.edu, at least six weeks in advance of the desired date of registration to request registration materials. Some departments may have earlier deadlines; applicants should contact their departments for specific deadlines. For students without proof of all required immunizations, the Health Center may access a fine, and registration may be blocked.

Change of Major or Purpose
All students changing their majors or degree levels will be required to submit new applications. Students pursuing doctorates in the College of Education should consult the College of Education section of this catalog for additional requirements. Graduate courses taken by a senior cannot also be applied to the undergraduate career.

Application Fees
A nonrefundable fee of $30 for electronic submission and $35 for paper submission must accompany each new application for admission before it will be processed.* Credit card payments may be made with online applications at http://graduate.ua.edu. After admission, no fee will be assessed for subsequent applications requesting a change of program area, change of degree objective within the program of study, or change of status from a nondegree to a degree program. If a student applies but does not enroll within 12 months of the requested entrance date, a new application and an accompanying nonrefundable $30 fee for electronic submission or $35 fee or paper submission must be submitted.

*Under certain circumstances, a refund and cancellation of the application can be requested within 48 hours (two business days) of receipt in the Graduate School office.

Number of Applications
Application may be made to up to two programs at a time. If a student applies to two programs, he or she must submit two separate and complete sets of application materials (applicant data sheet, statement of purpose, letters of recommendation, transcripts) and two application fees. Each set of application materials must clearly identify the program to which the applicant is applying.


4.4 ADMISSION CRITERIA

Admission decisions are made by the Graduate School based on a composite of qualitative and quantitative information, including the applicant's statement of purpose and letters of recommendation, the academic standing of the programs in which the applicant has studied, relevant professional activities and achievements, admissions test scores, previous grades, and the recommendation of the faculty in the area to which the applicant is seeking admission. Each application is considered in the context of other applications to the same area, with due consideration given to the availability of space in the program, the need to maintain a pool of students of superior potential, and the diversity goals of the program. A department may set higher admission standards for doctoral students. Not every student whose credentials meet stated quantitative standards is admitted.

Application may be made to only two programs at a time. A person holding a bachelor's degree (or who is a senior) from a U.S. regionally accredited institution (or the foreign equivalent for an international applicant) is eligible for consideration for admission to the Graduate School of The University of Alabama.

Persons are admitted to a specific program of study as specified on the application. A request for a change of program or continuation beyond an original purpose is viewed as a new application subject to current procedures and standards.

Admission to graduate studies at The University of Alabama is valid for 12 months after the requested entrance date. In some departments, students must seek pre-approval if they wish to change the entrance date initially requested on their applications. International students requesting a change in their entrance date should also be aware that their TOEFL or IELTS scores must be less than two years old at the time of initial enrollment at the University. Should the TOEFL or IELTS become more than two years old prior to enrollment, the student will be required to retest and submit an acceptable score prior to enrolling. If an applicant has not enrolled within 12 months after the requested entrance date, reapplication must be made. If a student enrolls for classes but then fails to register for three consecutive years, the student must reapply for admission.

The dean of the Graduate School is the only person authorized to waive any requirement, admit applicants to the Graduate School, or otherwise notify applicants of the disposition of their applications.

Additional requirements may be stated in the divisional and departmental sections of this catalog.

Admission requirements are subject to change without prior notice. Being admitted to a graduate program does not mean that each course required in the student's program of study will be available each semester or in a specific semester.

Regular Admission

An applicant whose credentials meet both of the following minimum requirements may be considered for regular admission:

1. **GPA requirement:** The applicant must have an undergraduate grade point average, based on a 4.0 system, of 3.0 overall, 3.0 for the last 60 semester hours in a degree program, or 3.0 for a completed graduate degree program.

2. **Entrance exam score requirement:** The applicant must have a 1000 on the GRE general test, a score at the 50th percentile on the MAT, or a 500 on the GMAT, if required by the department or degree program to which the applicant is seeking admission. (See the departmental sections of this Catalog or contact the Graduate School for specific information.) Admission test scores must be less than five years old. An applicant who wishes to be nominated by his or her department for a Graduate Council Fellowship is strongly encouraged to submit a score on the Graduate Record Examination (GRE) General Test or entrance examination appropriate to the graduate program of interest.

These are minimum requirements; divisions or departments may set higher standards.
Conditional Admission

An applicant may be considered for conditional admission if he or she meets either the GPA requirement for regular admission (GPA of 3.0) or the entrance examination score requirement for regular admission.

These are minimum requirements. Divisions or departments may set higher standards or may not consider students for conditional admission.

A graduate student removes the condition by earning an average of "B" or better in the first 12 semester hours of graduate-level work completed and by satisfying any other conditions specified by the department or the Graduate School at the time of admission. If the 12 hours are completed in a term in which the total credits exceed 12, the evaluation is made on the basis of all graduate-level work completed at the end of that term of enrollment. Failure to remove the condition within the first 12 hours of graduate work will result in the student's being dropped from the program. A student who satisfies the condition will assume automatically the status of a regularly admitted graduate student.

ADMISSIONS EXAMINATION CRITERIA

Graduate admission examinations are required for applicants to most programs and must be less than five year old. Most departments require a score of 1000 on the Graduate Record Examination (GRE). Some departments may allow substitution of the Miller Analogies Test (MAT) for the GRE. Applicants to the Manderson Graduate School of Business are required to submit acceptable scores on the Graduate Management Admissions Test (GMAT) although some departments allow the use of the GRE. Applicants should consult the department descriptions in this catalog or contact departments directly for more specific information about admissions examination requirements.

The following departments have received approval to eliminate or modify criteria for graduate admissions test scores:

- The M.S.W. program in the School of Social Work, the M.S.N. program in the Capstone College of Nursing, and the master’s degree programs in health studies, human nutrition, and general human environmental sciences in the College of Human Environmental Sciences do not require an admissions examination if the applicant's GPA is 3.0 or higher. An admissions examination is required for all applicants with GPAs lower than 3.0.
- The College of Engineering does not require a graduate admissions examination if the applicant’s baccalaureate degree is from an ABET-accredited engineering program or, for the Department of Computer Science, if the applicant's baccalaureate degree is from an ABET-accredited or CSAB-accredited program. An admissions examination is required if the applicant's baccalaureate degree is from a program not accredited by ABET or CSAB.
- The School of Music, Department of Theatre, the studio art degrees in the Department of Art, and the Department of Modern Languages and Classics do not require an admissions examination for applicants. However, additional requirements must be met. Contact the department for more information.
- The Department of Criminal Justice requires an admission test of all applicants; however, the minimum score requirement is waived for regular admission of applicants with a 3.0 GPA. Applicants with GPAs of 2.5 and above, but less than 3.0, will be eligible for conditional admission upon submission of a minimum score at the 50th percentile on the MAT or 1500 on the GRE for scores earned prior to October 1, 2002, and 1000 for scores earned after October 1, 2002.
- The Department of Physics requires the GRE but will accept either the general test or the subject portion of the examination for admission purposes.
- Applicants to the M.B.A. program in the Manderson Graduate School of Business who have already completed a postbaccalaureate degree or who have seven years or more of appropriate full-time postbaccalaureate work experience may request a GMAT waiver.
- Applicants to the Ed.D. in Higher Education in the College of Education who have been employed in a position with significant administrative responsibilities related to the field of higher education administration or who have five or more years of appropriate full-time post-baccalaureate work experience may request an admissions test waiver.

Information concerning the GRE is available from the Educational Testing Service, Princeton, NJ 08540. The GMAT and MAT are given by the testing services of most colleges and universities and may be taken by appointment. For more information about tests administered at The University of Alabama's, visit http://testing.ua.edu. Applicants should plan well in advance so the results of the required examination will be available when needed to support an application for admission. Braille editions of both the GRE and MAT can be obtained from The University of Alabama, Testing and Data Management Services, Box 870108, Tuscaloosa, AL 35487-0108.
Interested persons with restrictions that prevent the use of our online application should contact The University of Alabama, Graduate School, Box 870118, Tuscaloosa, AL 35487-0118 or 1-877-UAGRADS; telephone (205) 348-5921; e-mail usgradapply@aalan.ua.edu (U.S. applicants), or intergradapply@aalan.ua.edu (international applicants).

Other Types of Admission

Admission to doctoral or Ed.S. programs from master's programs in the same department at The University of Alabama. In participating departments, master's students enrolled at The University of Alabama may apply for admission to doctoral or Ed.S. programs in the same program by completing a simplified application described at http://graduate.ua.edu. Departments determine if submission of a statement of purpose, a new test score, or a new transcript is required. Interested students should contact their departments to ask if they accept the simplified application and if there are any additional departmental requirements.

Expedited admission for University of Alabama seniors. Undergraduate seniors in participating departments enrolled at The University of Alabama who have completed at least 91 hours, have overall GPAs of 3.0 or better, are recommended by the faculty in their departments, and wish to apply for admission to graduate study in their current fields may be eligible for a simplified admission process, described at http://graduate.ua.edu. Students should contact the department or program for details. Students who plan to seek scholarships or fellowships are strongly encouraged to follow the application procedures outlined under "Regular Admission."

Irregular postgraduate (IPG) admission. A person who makes application and is not admitted to the Graduate School may, on the recommendation of the department or division concerned and with the approval of the dean of the Graduate School, seek admission as an irregular postgraduate (IPG) student, for the purpose of attempting to qualify for admission to the Graduate School. An applicant who is denied admission must not assume that this procedure is available to all; specific instructions will be given to those who are eligible.

Work taken as an irregular postgraduate cannot be counted as graduate credit at the time it is taken or at a later date. IPG students register as undergraduates and receive undergraduate credit for all work completed. Upon completion of the required program of IPG studies (no less than 12 semester hours of advanced-level undergraduate credit taken from full-time graduate faculty of The University of Alabama), the student must request a review of the application for admission to the Graduate School within 12 months of the initial requested entrance date, or a new application accompanied by a nonrefundable $30 online application fee or $35 paper fee must be submitted.

The University Scholars Program. The University Scholars Program is intended for gifted and highly motivated candidates for B.A. and B.S. degrees at The University of Alabama whose objectives include degrees at the master's or doctoral level. In participating University Scholars departments, with a closely integrated undergraduate and graduate program, qualified students begin graduate study in their senior year; such a program may lead to simultaneous completion of requirements for both master's and bachelor's degrees, each within its specified framework.

Students in the University Scholars Program are classified as undergraduates until they complete requirements for their undergraduate degrees and therefore may not hold graduate assistantships until their classifications are changed to graduate status. At that time, University Scholars will also become eligible for graduate fellowships and scholarships.

Any department that offers a graduate program may, with the approval of the dean of the Graduate School, participate in the University Scholars Program. The following programs currently are approved to participate in the University Scholars Program: aerospace engineering and mechanics, banking and finance, biological sciences, chemical engineering, chemistry, civil and environmental engineering, communication studies, computer science, consumer sciences, economics (College of Commerce and Business Administration), economics (College of Arts and Sciences), English, electrical and computer engineering, French, geography, German, health studies (sports medicine concentration), human nutrition and hospitality management (food and nutrition concentration) mathematics, mechanical engineering, metallurgical and materials engineering, and operations management.

The following are minimum requirements; divisions or departments may set higher standards:

Phase I: Admission to Phase I is by invitation of the department and the dean of the Graduate School. Admission is chiefly determined by the faculty's estimate of a student's talents, motivation, and potential for graduate study. Students may also apply for admission to Phase I through their major department during the second semester of the sophomore year. Contingent upon completion of 61 semester hours of study and with a grade point average in all courses taken of not less than 3.3, students are admitted to Phase I at the beginning of their junior year on recommendation of the departments to which they have applied. During the junior year, students will take between four and six courses in their major field, as advised by their departments, to prepare them for the work of Phase II.
Students seeking admission to Phase I will be informed by their departments if their admission requirements differ from those specified here.

**Phase II: Admission to graduate study is also by invitation and is facilitated by, but not dependent upon, participation in Phase I.** On completion of no fewer than 91 hours (ordinarily at the end of the junior year), students may apply for and be accepted for admission to the Graduate School. They must have grade point averages of not less than 3.3 in all courses. Transfer students are subject to the published residence regulations and must have completed the last 30 hours in residence. Admission to the Graduate School will be granted if the student has (a) met all the criteria above as well as other minimum requirements for graduate admission (see “Admission Criteria” in this Catalog), (b) completed three-fourths of the hours required for the major and the minor, (c) met all requirements for the core curriculum, and (d) been recommended by the department to which he or she is seeking admission. (In special circumstances, departments may elect to invite an application and recommend acceptance of an applicant with a GPA of 3.0 or higher.)

Upon admission to the Graduate School, the student will begin a program of study leading to the master's or doctoral degree as approved by his or her department and by the dean of the Graduate School. The program of study must be submitted to the Graduate School prior to the student's enrollment in graduate classes.

The bachelor's degree normally will be awarded at the commencement immediately following satisfactory completion of the first year of graduate study and attainment of a total of 128 semester hours of credit or the minimum required by the college. Those courses taken in the senior year/first year of graduate study may count toward both the bachelor's and graduate degrees. No more than 15 hours may be dual counted towards both the bachelor's and graduate degree. Interested students should check with their departments for specific coursework requirements. Participants in the University Scholars Program are exempt from the degree limit of 36 hours in a single department. The master’s or doctoral degree will be awarded upon satisfactory completion of the requirements for these degrees. In some cases, the bachelor's and master's degrees may be awarded simultaneously; the completion of the master's degree, however, may require an additional time period.

**Nondegree admission.** An individual who is interested in earning graduate credit but who is not an applicant for a graduate degree at The University of Alabama may be admitted for nondegree studies with the recommendation of the department or program in which the course is offered and approval of the Graduate School dean. Admission may be granted to a qualified student holding a bachelor's degree from a U.S. regionally accredited institution or the equivalent for international applicants, or to a graduate student in good standing at another U.S. regionally accredited graduate school. Nondegree application forms are available at [http://graduate.ua.edu](http://graduate.ua.edu).

International applicants for nondegree status must submit transcripts (with English translations) and a diploma showing degree earned, and also have TOEFL scores of at least 550 on the paper-based version, 213 on the computerized version, 79 iBT, or 6.5 on the IELTS and meet all current immigration requirements.

Nondegree admission is granted for attending special institutes and workshops, for meeting professional training requirements, for taking off-campus courses, or for special conditions approved by the dean of the Graduate School. Departments may set restrictions on the number or type of classes in which nondegree students may enroll, may limit nondegree enrollment to one semester only, or may prohibit nondegree admission. A maximum of 12 semester hours of graduate work may be taken as a nondegree student and later applied to the credit-hour requirements for a degree, if the student is later admitted to a degree program. Individuals enrolled as nondegree students cannot register for more than 12 hours without providing written verification to the Graduate School that they do not plan to pursue graduate degrees at the University. No more than 12 semester hours of this nondegree coursework can be evaluated for degree credit. Application of any nondegree credit toward an advanced degree will be contingent upon an evaluation made after the student has been admitted to the Graduate School to pursue a degree program. Responsibility rests with the student to observe the limitations imposed on credit hours, coursework, and transfer of credit. Procedures and online application for this type of admission are available at [http://graduate.ua.edu](http://graduate.ua.edu). Students who have had an application to a degree program formally rejected are not eligible for nondegree status.

If a student is not eligible for consideration for conditional or regular admission to a degree program, the grades the student earns as a nondegree student will not make the student admissible for the degree program.

Each student taking nondegree courses through the University's programs offered at international sites must submit an official transcript (with an English translation) and a diploma showing a bachelor's degree from a U.S. regionally accredited institution (or the equivalent for an international applicant).

Nondegree students are not permitted to hold graduate assistantships. Nondegree students may not be eligible for federal financial aid and loan programs. For more information, contact the Office of Student Financial Aid, Box 870162, Tuscaloosa, AL, 35487-0162; telephone (205) 348-6756.

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[http://graduate.ua.edu/catalog/14300.html](http://graduate.ua.edu/catalog/14300.html)
Admission of International Students

Applicants who are citizens of countries other than the United States are welcome at The University of Alabama. Highly qualified students from around the world have been extremely successful in our graduate programs, and the contributions made by our international students in the areas of teaching, research, and general cultural enrichment have been great. Standards for admission and financial aid are extremely competitive, ensuring academic excellence.

Interested students should visit our online application center at http://graduate.ua.edu to apply electronically. Applicants with restrictions that prevent the use of our online application should contact the Graduate School, Box 870118, Tuscaloosa, AL 35487-0118, U.S.A, e-mail intergradapply@aalan.ua.edu. The request should contain information on the student’s citizenship, formal academic preparation, English language ability, standardized test scores, financial situation, proposed major, and date of entry. Requests for application materials receive initial reviews from the Graduate School dean’s office.

The fall semester begins in August and is considered the beginning of the academic year, and international students are strongly advised to plan to begin their studies then. Many of our departments and programs will consider applications for the spring semester, which starts in January, but fewer openings for new students are available at that time.

The University of Alabama recognizes that, to be accurately evaluated, applications from international students require more time and more supporting information than do domestic applications. For this reason, international applicants applying from outside the U.S. are encouraged to have complete applications, with all supporting documents, at least 180 days before the beginning of the semester for which application is made. All applications must be complete at least 120 days before the beginning of the semester for which application is made. Some departments have earlier deadlines; applicants should contact the departments in which they are interested to obtain information about department deadlines and other requirements. Applications completed after the deadline will automatically be considered for the following semester. The student whose application is completed well in advance of our deadlines is more likely to be admitted and to receive admission and immigration materials in time to make travel arrangements.

Each international applicant must hold the equivalent of a four-year bachelor's degree from an accredited institution to be eligible for graduate admission.

A student whose first language is not English must submit an official score report for the Test of English as a Foreign Language (TOEFL) or the International English Testing System (IELTS). The minimum score for admission to a degree program or for nondegree admission is 550 on the paper-based TOEFL, 213 on the computerized TOEFL, or 79 iBT. The minimum IELTS score for admission to a degree program or for non-degree admission is 6.5. TOEFL and IELTS scores must be less than two years old at the time of intended initial enrollment at The University of Alabama. Should TOEFL or IELTS scores become more than two years old prior to enrollment, the student will be required to retest and submit an acceptable score before enrolling. The TOEFL or IELTS will not be required from any applicant who has earned a degree from an accredited U.S. college or university within the past three years. The Test of Spoken English (TSE) is recommended for international students who wish to be considered for teaching assistantships. Information on registering for the TOEFL, or TSE is available worldwide at http://www.ets.org/toefl/ and IELTS at http://www.ielts.org, or at U.S. embassies, consulates, USIS offices, Institute of International Education offices, AMIDEAST offices, and other organizations concerned with international education.

The University of Alabama offers intensive English language instruction to prepare students for further academic study at colleges and universities in the United States. In addition, the University maintains (through the English Language Institute) the International Teaching Assistant Program (ITAP), a program that all graduate assistants with any teaching or instructional activities who are non-native speakers of English must successfully complete before they are allowed to teach. Students are recommended for ITAP by their departments. For information about these programs write to the Director, English Language Institute, Box 870250, Tuscaloosa, AL 35487-0250, U.S.A. Admission to the English Language Institute does not constitute admission to a graduate program at The University of Alabama.

Students whose applications to the Graduate School are approved will receive housing and health-service information, a letter of admission, and an immigration document (usually Form I-20 or DS-2019). Upon arrival in Tuscaloosa, students should report to Capstone International Programs and Services in order to obtain registration materials and information on the special orientation session for international students that is held prior to the beginning of each semester.

Nonresident foreign students who are offered graduate assistantships are limited to a maximum.50 FTE (half-time) assistantship. Additional employment outside the University is not permitted.
Students are encouraged to direct any questions they may have concerning immigration, housing, or the health service to the Director, Office of International Student and Scholar Services, Box 870304, Tuscaloosa, AL 35487-0304, U.S.A. Questions concerning admission procedures should be directed to the Graduate School.

Requirements and deadlines for submitting applications are subject to change; applicants should review the specific instructions on the application forms for current requirements and deadlines.

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Provisional Language Admission for International Graduate Students

An international graduate applicant to The University of Alabama may be considered for provisional language admission if he or she does not meet the minimum TOEFL score requirement of 550 on the paper-based TOEFL, 213 on the computerized TOEFL, 79 iBT, or IELTS requirement of 6.5. An applicant may be reviewed for consideration for possible provisional language admission if he or she has a lower TOEFL or IELTS score or has not taken the TOEFL or IELTS. The applicant must meet all other admission criteria as stated for regular or conditional admission earlier in this Catalog, meet all financial and immigration requirements, and be recommended by the individual University of Alabama graduate department to receive provisional language admission. A student holding provisional language admission may not hold an internally funded graduate assistantship.

Students who have provisional language admission are accepted to the Graduate School but must attend full-time intensive English language instruction at the English Language Institute (ELI). The student must complete the ELI’s Intensive English Program with a minimum GPA of 3.5 in the advanced levels (levels 4, 5, and 6) or earn a score of at least 550 on the paper-based TOEFL, 213 on the computerized TOEFL, 79 iBT, or 6.5 on the IELTS before he or she will be allowed to enroll in graduate courses, hold teaching assistantships, or hold internally funded research assistantships. Students who have provisional language admission are eligible to hold only externally funded research assistantships.

NOTE: In special circumstances, a student may initiate the following requests to his or her department chair. The student’s request and the specific course to be taken must be approved by student’s department, advisor, course instructor, ELI, and the Graduate School:

a. If a student has a TOEFL score of at least 500 (or equivalent score on the TOEFL computer based test or the iBT) or IELTS score of at least 6.0 or initially places in ELI level 5 or 6 after official evaluation by ELI staff, he or she can be considered for approval to take one carefully selected graduate level course per semester for a maximum of two semesters while completing ELI, or
b. If student has enrolled in and completed ELI Level 4, 5, or 6 with a 3.5 GPA, he or she can be considered for approval to take one carefully selected graduate level course per semester for a maximum of two semesters while completing ELI.

When a student with provisional language admission begins enrollment in graduate courses, he or she must meet all other requirements for conditional admission, as in the Admission Criteria section of this Catalog.

International graduate applicants should inform the Graduate School that they wish to be considered for provisional language admission, when they submit their graduate application forms.

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International Bridge Program

According to current University of Alabama graduate policy, "each international applicant must hold the equivalent of a four-year bachelor's degree from an accredited institution to be eligible for graduate admission." The University of Alabama International Bridge Program is intended for the international graduate applicant who holds a three-year bachelor's degree from a country where that credential is not deemed equivalent to the four-year U.S. bachelor's degree. By completing a fourth year, or bridge year of undergraduate study at The University of Alabama, an international student from a recognized foreign institution with a three-year bachelor's degree will have the opportunity to enter graduate study without completing a separate four-year bachelor's degree. The student will complete a "bridge year" of University of Alabama undergraduate coursework and then begin the graduate degree program.

International applicants interested in the International Bridge Program should consult the list of participating departments that are approved to accept applications for the bridge program. If the intended major is listed as participating, then the international applicant will apply for the International Bridge Program following the same graduate application process as other international graduate applicants to the degree program. International applicants may apply electronically using the Graduate School’s website http://graduate.ua.edu or the print application forms. International applicants meeting the Graduate School’s and department’s minimum GPA, GRE, and
TOEFL requirements for regular admission to a graduate degree program and who receive the department's recommendation will be considered for admission in the International Bridge Program. Students admitted into the International Bridge Program will hold a regular graduate admission for a degree program, but will first complete the bridge year of University of Alabama undergraduate coursework and then begin graduate study to complete their graduate degree program.

Each department that participates in the International Bridge Program will provide a written description and specific departmental requirements for their bridge students. Bridge year requirements include the following, at a minimum:

- A student in the International Bridge Program will be classified as an international bridge student while he or she completes the bridge year. The bridge year is defined as a 30 semester hour undergraduate curriculum designed to meet basic core curriculum requirements missing from the three-year international degree. A student's course load during the bridge year may not exceed a total of 15 hours per semester.
- Each graduate program participating in the bridge year program will provide a list of specific undergraduate courses required for their international bridge students. Each department's program will include 6 undergraduate credits of specific courses in each of the following five general curriculum areas: (a) written English proficiency, (b) information technology or mathematics, (c) humanities and fine arts, (d) history and social-behavioral sciences, and (e) natural sciences.
- During the time the student is classified as an international bridge student, he or she will be eligible to hold only externally funded research assistantships, and departments will provide careful review of the student's course load and academic progress before granting assistantships. An international bridge student may not hold an internally funded graduate assistantship or fellowship.
- International bridge students must complete the bridge year and earn at least a 3.0 GPA for all coursework completed during the bridge year before progressing into the graduate degree program.
- All courses for the bridge program must be completed through The University of Alabama (no transfer credit). Courses completed as part of the student's three-year international degree may not be repeated for credit in the bridge program at the University.
- Upon successful completion of all bridge year coursework and other department requirements, the department will consider the student for approval to take coursework in the graduate degree program and for possible graduate assistantships and fellowships. The graduate degree will be awarded upon satisfactory completion of the graduate degree requirements.

Admission of Faculty Members for Graduate Work

The University normally does not permit members of its own faculty to earn advanced degrees from the University. A faculty member who wants an exception to this rule must present an extremely compelling case and must receive prior approval from the dean of the Graduate School, from the dean of the division in which the faculty member holds appointment, from the dean of the division in which the faculty member wants to study, and from the provost/vice president for academic affairs. A faculty member seeking an exception to the rule should begin by arranging an appointment with the dean of the Graduate School.

Seniors at The University of Alabama Taking Graduate Credit

A senior at The University of Alabama who has at least a 3.0 grade point average overall may petition to take graduate courses toward a graduate career. Permission to take a particular course is granted based on approval by the instructor, the instructor's department chairperson, the dean of the student's division, and the graduate dean. The total course load for an undergraduate taking graduate courses should not exceed 15 hours a semester. A senior may accumulate no more than 9 hours of graduate credit. With the exception of seniors officially admitted to the University Scholars Program, graduate courses taken by a senior cannot also be applied to the undergraduate career.
4.5 REGISTRATION

General Requirements
Any graduate student utilizing the assistance of a faculty member or any facility of The University of Alabama in relation to a degree program must be registered in an appropriate course reflecting that activity. This includes such activities as coursework, thesis and dissertation advising and reading, comprehensive examinations, and other degree requirements. Registration in courses numbered 599 (Thesis Research), 699 (Dissertation Research), 598 (Master’s Research), and 698 (Doctoral Research) may be repeated.

Prerequisites
If the student’s undergraduate preparation in either the major or minor subject is considered inadequate, certain preliminary (undergraduate and/or graduate) courses will be prescribed by the department or school concerned. These courses become prerequisites and do not carry graduate credit. They must be taken, if possible, during the first semester of enrollment.

Course of Study
The student’s course of study (i.e., plan of study) is selected in consultation with the head of the major department or the chairperson of the graduate committee, and approved by that person and the dean of the Graduate School.

Course Loads
The normal course load for a fall or spring semester is 12 credit hours; the maximum course load for a semester is 15 credit hours. Full-time enrollment for graduate students is 9–15 hours per regular semester.

Students may register for a maximum of 6 semester hours in a summer term or 12 hours during an entire summer dual session. No more than 3 semester hours may be taken during the Interim session. Taking more than 12 semester hours in a summer dual term can be justified only in extraordinary circumstances and requires written approval of the Graduate School. A student who is employed part-time is expected to take a reduced load. The course load of a fully employed student will be evaluated according to the individual graduate program. Fully employed students should be registered in no more than one course plus thesis or dissertation research.

Failure to Register for Three Years
If a student fails to register for three consecutive years, the student must reapply for admission. If readmission is granted, previous credit earned may be out of date and therefore not applicable toward a degree. See sections titled “Time Limits” for each degree in this catalog.

Assistantships: Admission Status, Class Hours, and FTE Level
Students with regular or conditional admission status may hold graduate assistantships. A minimum GPA of 3.0 must be maintained while holding any assistantship, except during the first 12 graduate semester hours earned at UA.

Students who have earned academic warning or are in non-degree status may not hold graduate assistantships.

A conditionally admitted student whose graduate GPA falls below 3.0 at any time during the conditional status will not be allowed to hold a graduate teaching assistantship until such time as the GPA has increased to 3.0 or better. A student with provisional language admission status may hold only an assistantship that is externally funded through a contract or grant; he or she may not hold a permanently budgeted UA assistantship.

Each graduate assistant must be a full-time graduate student. Full-time status here means 12 or more graduate semester hours of classes; however, the level of FTE (Full-Time Equivalent) of the assistantship assignment is converted to equivalent credit hours and is combined with actual class hours in order to meet the full-time requirement. A quarter-time assistantship (0.25 FTE) equates to 3 class hours; a half-time assistantship (0.50 FTE) equates to 6 class hours; and a three-quarter time assistantship (0.75 FTE) equates to 9 class hours. This means that a student who has, for example, the typical 0.50 FTE assistantship needs to register for only 6 class hours in order to meet the full-time requirement (6 assistantship equivalent hours plus 6 actual class hours).

Students may hold up to 1.00 FTE assistantship plus up to 3 semester class hours without Graduate School approval. However, formal approval of the Graduate School is required when class hours exceed 3 at the 1.00 FTE level. Please note that combined FTES approaching 1.00 may negatively affect a student’s full-time status with the IRS, funding agencies, health insurance carriers or others.

The FTE from ALL assistantships, plus any other on-campus employment, must be combined when determining full-
time equivalent status.

The table below is a guide to determine whether or not Graduate School approval is required for typical combinations of FTE (assistantship) hours plus course hours the student is taking.

<table>
<thead>
<tr>
<th>Combined FTE of All Assistantships</th>
<th>Class Hours the Graduate Student is Taking</th>
<th>Is Graduate School Approval Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>.25</td>
<td>3-15</td>
<td>NO</td>
</tr>
<tr>
<td>.50</td>
<td>3-12</td>
<td>NO</td>
</tr>
<tr>
<td>.50</td>
<td>13 or more</td>
<td>YES</td>
</tr>
<tr>
<td>.75</td>
<td>3-6</td>
<td>NO</td>
</tr>
<tr>
<td>.75</td>
<td>7 or more</td>
<td>YES</td>
</tr>
<tr>
<td>1.00</td>
<td>1-3</td>
<td>NO</td>
</tr>
<tr>
<td>1.00</td>
<td>4 or more</td>
<td>YES</td>
</tr>
</tbody>
</table>

For fall and spring semesters, a graduate student must be enrolled in classes to hold an assistantship. For interim and/or summer, it is not required that a graduate student be enrolled in classes to hold an assistantship.

Please note that full-time status here is not the same as that required for other registration and financial situations. For example, fellowships, financial aid regulations, resident visa rules, UA System Cooperative Exchange Program, INS and IRS regulations, and other academic policies use different status definitions with regard to full-time. For more information, please refer to the department(s) administering these other programs.

The Southern Association of Colleges and Schools requires that all graduate teaching assistants with primary responsibility for teaching an undergraduate course for credit and/or assigning grades must first complete a minimum of 18 graduate semester hours in the teaching discipline, must have direct supervision by a faculty member experienced in the teaching discipline, regular in-service training, and planned and periodic evaluations. SACS guidelines and UA policy do not permit graduate students to teach graduate students; only members of the graduate faculty may teach courses numbered 500 and above.

Part-Time Temporary Instructors

A graduate student employed as a part-time temporary instructor (PTTI) to teach a credit-bearing course must meet the SACS 18-hour requirement. Such PTTIs do not receive tuition waivers, must pay taxes on the income they earn as PTTIs, and must comply with "Personnel Policies for Student Employees of The University of Alabama" (http://graduate.ua.edu/publications/ga/)

Class Attendance

Graduate students are subject to the same rules regarding class attendance, the performance of assigned tasks, and course examinations as undergraduate students. Since graduate work presupposes specialization and thorough investigation, students will not be permitted to overload themselves with courses.

Continuous Registration for Doctoral Students

Once a student has met the requirements for admission to candidacy, received approval for the dissertation research proposal, or initiated enrollment in 699 (dissertation research for a doctoral degree), the student must pursue completion of the dissertation without interruption by enrolling each fall and spring semester of the academic year for at least 3 hours of dissertation research. This is true whether or not the student has submitted an Application for
Admission to Candidacy (http://graduate.ua.edu/academics/forms/). The only exception is for D.M.A. students who complete a document rather than a dissertation. D.M.A. students may register for one hour of document research during a semester but must maintain continuous enrollment. A Ph.D. student must have completed a minimum of 24 hours of dissertation research credits upon completion of the dissertation. An Ed.D. student must have completed a minimum of 12 dissertation research credits upon completion of the dissertation. The amount of dissertation research for which a student enrolls in any given semester should be commensurate with the progress a student is expected to make on the dissertation, as well as reflective of the extent to which University facilities and faculty time are invested in the proposed activities.

To assist faculty and students in determining the appropriate registration for doctoral research, the following guidelines are recommended.

**Three semester hours.** No substantial progress will be made on the dissertation, only minimal use of University facilities will be involved, and/or there will be only slight faculty contact with the student; the work and writing of the dissertation are complete and only final grammatical corrections and the oral examination on the dissertation remain to be accomplished.

**Six semester hours.** The student will be devoting approximately one-half of a full-time academic load to the dissertation. Moderate progress on the dissertation is expected of the candidate, only limited use of University facilities will be involved, and/or faculty contact with the student will be limited.

**Nine semester hours.** The student will be devoting approximately three-fourths of a full-time load to the dissertation. Substantial progress on the dissertation is expected of the student, there will be major use of University facilities, and/or considerable faculty contact with the candidate is anticipated.

**Twelve semester hours.** The student will be working full-time academic on the dissertation. Extensive progress on the dissertation is expected, there will be considerable use of University facilities, and/or faculty contact with the student will be extensive.

**Graduate Credit**
A student must be admitted to the Graduate School and must register as a graduate student in order to receive graduate credit. **Approval for graduate registration must be obtained from program advisors prior to registration.** No graduate credit may be earned by correspondence study or for experiential learning not conducted under the direct supervision of The University of Alabama.

**Withdrawal from a Course**
A graduate student who desires to withdraw from a course may do so, with the approval of the student's advisor or department head, during the period allowed for dropping a class. It is the student's responsibility to consult the Graduate School's deadline sheet for the specific date by which one may drop a course (http://graduate.ua.edu/deadlines).

No notation of courses attempted will be made on the permanent record of a student who withdraws from the University during the first week of a regular semester or the first week of a summer session. After the first week of classes, the fact of withdrawal from a course will be noted on the student's permanent record. It is the student's responsibility to consult the semester's schedule of classes for the specific date by which one may withdraw without receiving a grade notation. From the end of that period until the end of the tenth week of a regular semester or the equivalent in a five-week summer session or three-week Interim session, a student may withdraw from a course, and a grade of "W" will be assigned. Normally, graduate students are not permitted to drop a course after the tenth week. In extraordinary circumstances beyond the student's control a student may petition the graduate dean to drop a course after the tenth week of class. After the tenth week, the student's academic status at the time of the withdrawal will be noted on the record ("W" for courses passing, "F" for courses failing).

http://graduate.ua.edu/catalog/14400.html
Withdrawal from a course may affect several elements linked to registration and class loads, including (but not limited to) graduate fellowships, assistantships, tuition awards, financial aid, withholding taxes, etc. For more information regarding withdrawing from a course, please contact the Graduate School.

Withdrawal from All Courses
For information on a non-medical or medical withdrawal from all courses, please refer to the earlier section of the Catalog entitled, "Withdrawal from the University."

Leave of Absence
Under compelling circumstances beyond the student’s control, a graduate student may request that the department petition the Graduate School with the rationale for granting a leave of absence. If granted by the Graduate School, a leave of absence will cover one or more upcoming semesters rather than any prior semester(s). A leave is not a method of avoiding continuous registration requirements, and it does not lengthen the time limit. When a student returns from a leave of absence, the Graduate School must be notified and will work with the department and student to determine the number of semesters remaining on the time limit and the degree requirements that remain.

Active Military Duty
Students called for active military duty will receive an extension to time limits equal to the term of active duty, plus reasonable time to reacclimate to academia. A copy of pertinent military orders must be provided to the Graduate School in order to receive an extension.

Satisfactory Academic Progress Requirements for Federal Financial Aid Recipients
All students at The University of Alabama who receive federal financial aid must make satisfactory academic progress toward completion of their degrees within a reasonable period of time. Satisfactory academic progress criteria may be obtained from the Office of Student Financial Aid, Box 870162, 106 Student Services Center, Tuscaloosa, AL 35487-0162; phone (205) 348-6756, fax (205) 348-2989; website http://financialaid.ua.edu/progress.html.
4.6 SCHOLASTIC REQUIREMENTS

Many departments and programs produce manuals, procedures and policy guides, graduate student handbooks, and other publications for their students and faculty in graduate programs. These statements are designed to provide detailed and useful information; however, they are not statements of official policy of The University of Alabama. In all matters, the graduate catalog of The University of Alabama contains official policies as passed by the graduate faculty’s Graduate Council and shall supersede departmental, program, or college publications.

Degree requirements and academic performance standards outlined in this section are the minimum required. Satisfying these general requirements and standards, however, does not imply that all degree and program requirements have been met. Many departments, colleges, and schools establish additional requirements for their students. Accordingly, students may be dismissed from their programs for failure to meet departmental, college, or school standards. Such requirements are included in individual program descriptions in this catalog and/or in departmental and program manuals or policy statements. These special requirements shall not be considered in conflict with this catalog and shall have the same force as this catalog.

Academic Progress

A graduate student must have a cumulative grade point average of not less than 3.0 on all graduate work undertaken at The University of Alabama in order to be in good standing.

Academic warning. A graduate student with regular status in a graduate program who drops below a "B" average (at any time after earning 12 semester hours) will have earned academic warning. While the academic warning status is in place, the student will not be permitted to apply for admission to candidacy and may not hold an assistantship without approval of the graduate dean. This status must be removed by raising the overall average to a "B" or better during the 12 hours of graduate work immediately following the period in which the status was incurred. Failure to do so will result in the student's being dropped from the Graduate School.

Incomplete grades. A grade of "I" (incomplete) is evaluated as an "F" and must be removed within four weeks during the next term of enrollment if the student's overall grade point average drops below a "B" as a result of the incomplete grade. The evaluations of academic progress of students who register with "I" grades still on their records can result in academic warning or suspension.

Repeating courses. Courses may not be repeated for graduate credit; this includes courses initially taken on an audit basis. However, a course that is required in a student's curriculum in which a "D" or "F" is earned may be repeated for credit, upon the recommendation of the major department or program area and the dean of the Graduate School. Both grades will be considered in the computation of the grade point average.

Readmission. A person seeking readmission to the Graduate School to pursue a program of study different from the one from which the person was suspended can initiate consideration for readmission by completing an application for admission in the Graduate School and communicating with the academic unit of the new program. The graduate faculty of the new academic unit will consider the request for readmission upon receipt of the new application, will identify in a written request to the dean of the Graduate School the compelling reasons for readmission to the Graduate School, and will state the conditions required of the student upon readmission if readmission is granted by the dean of the Graduate School. If readmission is granted, specific conditions of the readmission will be stipulated in the readmission letter to the student.

Reinstatement. A person seeking reinstatement to the same degree program after being suspended from the Graduate School can initiate consideration for reinstatement by communicating with the academic unit from which the person was dismissed. The graduate faculty of the academic unit will consider the request for reinstatement and, if the faculty request reinstatement, they will identify in a written request to the dean of the Graduate School the compelling reasons for reinstatement and the conditions required of the student if reinstatement is granted by the
Clinical components. In graduate programs that include clinical components, practicums, and/or internships, or other program requirements, each student's effectiveness will be given a broad-based evaluation by faculty and supervisors. Final decisions will be based on factors such as course grades, demonstrated clinical competence, personality factors, and relevant test scores. Many programs establish additional academic and/or professional requirements for their students. Failure to meet program requirements for academic progress and/or clinical components may result in the student's being suspended from the program.

Graduation Requirements

Grade point average. The student must have a cumulative average grade of not less than "B" (3.0) in all graduate courses undertaken at The University of Alabama. Grades below "C" are counted in computing scholastic averages, but they do not carry credit toward a degree.

Seventy-five percent rule. At least 75 percent of the hours taken must have been completed with grades of "A" or "B" at The University of Alabama. In applying this 75 percent rule, a maximum of 6 hours of thesis research may be counted, if appropriate.

400-level courses. A maximum of 6 semester hours of 400-level course credit may be accepted for a master's degree program, but only if conditions noted in the following section (titled "Course-Numbering System") are met. No 400-level credit (except the 6 hours accepted toward the master's degree) may be accepted for doctoral degree programs.

Pass/fail courses. A maximum of 20 percent of the student's required course credit may be taken on a pass/fail basis; 80 percent must be graded.
4.7 400-LEVEL COURSES FOR MASTER'S CREDIT

Courses numbered 400-499 are primarily for advanced undergraduate students. Under no circumstances will coursework below the 400 level be accepted for graduate credit, and master's students may use no more than 6 hours of 400-level courses for graduate credit, and only if all of the conditions below are met:

1. The department offering the courses also offers a graduate degree.
2. Approval prior to the semester in which the coursework is to be taken is obtained from the student's graduate advisor and the Graduate School. This is done using the downloadable form cited below.
3. The course is taught by a member of the graduate faculty.
4. The course is not offered at the 500 level.
5. Graduate students in such courses do appropriate extra work and demonstrate a higher level of mastery.

General, minimum guidelines for how requirements of these courses should differ for graduate students are as follows, and typically at least two or more of the four guidelines apply to a course:

1. Graduate students should submit additional papers that require more analysis, synthesis, evaluation, and application of knowledge.
2. Graduate students should complete additional, higher-level readings.
3. Graduate students' oral and written work should demonstrate greater depth of thought.
4. Graduate students should attend additional meetings with the professor to discuss course content in greater depth.

A downloadable version of the form for approval of 400-level courses is available at http://graduate.ua.edu/academics/forms.

A maximum of 6 semester hours of 400-level course credit may be accepted for a master's degree program, and only if a form for approval of 400-level coursework for graduate credit is completed and approved by the department and Graduate School prior to the semester in which the 400-level coursework will be taken. No 400-level credit (except the 6 hours accepted toward the master's degree) may be accepted for doctoral degree programs.
Application Materials
For many years, The University of Alabama has subscribed to the ethical principles for confidentiality of records of the American Association of Collegiate Registrars and Admissions Officers. Following passage of the Family Rights and Privacy Act of 1974 (the Buckley Amendments), the University established policies and procedures for implementation of that legislation. The policy statement is available upon request in the Office of Academic Records and University Registrar and is published in the class schedule each fall semester.
All application materials and records, including academic records from other institutions, become the property of The University of Alabama and **may not be returned to the applicant or forwarded to other institutions.**

The admission credentials and application materials of applicants who do not register for courses at the time for which they have been admitted; of applicants who have been rejected; of applicants who do not respond to requests for additional information; and of applicants whose applications are not completed with respect to supporting credentials will be retained for 12 months following the requested entrance date, after which time reapplication must be made.

Transcripts and other Academic Records
Official transcripts are issued and sent by the Office of Academic Records and University Registrar (ARUR) to recognized institutions and agencies that require such documents. Transcripts are issued only upon the written request of the individual involved. The ARUR will not issue official transcripts to the individual, but the student may request an unofficial transcript. A charge of $5 is made for each transcript issued, except for the first copy, which is free. Transcripts will not be issued for persons who have financial obligations to the University. The Graduate School maintains other academic records of graduate students during the course of their graduate study and typically for a period of 5 years thereafter.
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4.9 DEGREE REQUIREMENTS*

*The Graduate School reserves the right to change any provision or requirement at any time in order to fulfill its educational mission and exercise its educational responsibility. Refer to the website for master's and doctoral degree program checklists and the academic forms.

The general requirements for advanced degrees are set out below. Special divisional (i.e., college and school) and departmental requirements are given in the sections dealing with the respective divisions and departments. Each student must assume full responsibility for understanding both the general and special requirements of the division and department in which he or she pursues his or her major work.

4.9.1 Master's Degrees
4.9.2 Educational Specialist Degrees
4.9.3 Doctoral Degrees

4.9.1 MASTER'S DEGREES
Program Requirements

Two plans are offered for the master's degree:

**Plan I.** Candidates for the master's degree under Plan I must earn a minimum of 24 semester hours of credit in coursework and write a thesis (a minimum of 6 semester hours of thesis research required).

**Plan II.** Candidates for the master's degree under Plan II must earn a minimum of 30 semester hours of credit and complete a culminating or "capstone" experience as described under the Comprehensive Examinations section below.

Both plans require a minimum of 18 semester hours in the major subject. With the approval of the major department, the remainder of the coursework may be completed in either the major or a related field.

In some divisions and in many departments of the University, candidates are required to do their work under Plan I. Candidates working under Plan II may be required to participate successfully in seminar or problem courses that will give them an acquaintance with the methods of research and an appreciation of the place and function of original investigation in the field.

Residency Requirements

A student's program at the master's level must provide sufficient association with the resident faculty to permit individual evaluation of the student's capabilities and achievements.

Transfer of Credit

Courses of full graduate-level credit earned in a regionally accredited institution where a student was enrolled in the graduate school may be submitted for review for inclusion in a degree program. Evaluation of credit for transfer will not be made until after the student has enrolled in the Graduate School of The University of Alabama. Acceptance of credit requires the approval of the student’s advisory committee and the dean of the Graduate School. Credit will not be accepted for transfer from any institution at which the student failed to achieve a "B" average on all graduate work attempted.

A student initiates in the Office of the Graduate School the request for evaluation of graduate credit obtained at
another institution. It is also the student's responsibility to assure that an official transcript of the credit concerned is received by the Graduate School well in advance of the final semester and typically before or at the time of advancement to candidacy.

With the approval of the student's department and the dean of the Graduate School, the greater of 12 hours or 25 percent of the required coursework for a graduate degree may be transferred from another institution. All credit toward the master's degree, including transfer credit, must have been earned during the six years (18 fall, spring, and summer semesters) immediately preceding the date on which the degree is to be awarded.

In some cases, foreign educational credentials may not meet the Graduate School's criteria for transfer of credit. It may be necessary for students in this situation to secure an evaluation of their credentials from World Education Services Inc. (WES), an external foreign credential evaluation service. Additional information on their services can be found at their website http://www.wes.org.

400-Level Courses
A maximum of 6 semester hours of 400-level course credit may be accepted for a master's degree program, but only if a form for approval of 400-level coursework for graduate credit is completed and approved by the Graduate School prior to the semester in which the 400-level coursework will be taken.

Time Limit
All requirements for the master's degree must be completed during the six years (18 fall, spring, and summer semesters) immediately preceding the date on which the degree is to be awarded.

Admission to Candidacy
Admission to the Graduate School does not imply admission of a student to candidacy for a degree. Admission to candidacy is contingent upon the recommendation of the student's department and the approval of the graduate dean, after the student has met the formal requirements for candidacy listed below and demonstrated sufficient preparation to pursue the graduate study and research required for the degree sought.

The application for admission to candidacy for the master's degree should be filed after 12 semester hours of graduate credit have been earned at The University of Alabama. It must be approved by the time of registration for the semester in which requirements for the degree are completed. Approval will depend on (a) the quality of the applicant's graduate work prior to the time the application is made (see "Scholastic Requirements" ); (b) the removal of any special conditions; and (c) the certification of the major department or school that the student is well qualified to continue work toward a degree. Application forms will be supplied by the Graduate School office.

Thesis
A thesis evidencing research capacity, independent thought, and the ability to interpret materials is required of all master's degree candidates who pursue Plan I. The subject chosen must be in the major field and must be approved by the graduate committee of the major department or school and by the head of the student's major department or division.

The University does not permit article-style theses to be presented for the master's degree. The thesis committee must consist of at least three members appointed by the dean of the Graduate School. A form appointing a thesis committee is available at the Graduate School’s website. All members of a thesis committee must be members of the Graduate Faculty. One member must be from outside the student's major department.

The candidate must give members of the examining committee a minimum of two weeks to read the thesis before the date of the final oral examination. The oral examination is required of all students completing a thesis and requires all members of the thesis committee to be in attendance unless there are extraordinary circumstances warranting approval of the graduate dean prior to the defense meeting.

A completed copy of the thesis must be submitted to the major department at least eight weeks before the date the
A student expects to receive the degree. At least six weeks before graduation, two copies of the thesis, approved by the thesis committee and the head of the major department or division, must be submitted to the Graduate School office, along with an abstract not exceeding 350 words and a receipt for the binding fee. Theses must comply with the regulations set out in *A Student Guide to Preparing Theses and Dissertations*, available on the Graduate School’s website. Approval of the thesis by the graduate dean is necessary before graduation.

The thesis should be completed, if possible, while the student is in residence at the University. To request permission to complete a thesis in absentia, the student must, before leaving the University, submit a satisfactory outline of the thesis, as well as evidence that adequate facilities are available where the work will be done, to the head of the major department or school.

**Protection of Human Subjects for Research**

Scientific research involving human subjects has produced substantial benefits for society, but it also has posed troubling ethical questions. The mission of the University’s Institutional Review Board for Protection of Human Subjects is to ensure that research involving human subjects is conducted ethically. University and federal policies require that review and approval to use human subjects in research precede the research. In the case of thesis research that involves the use of human subjects, the principal investigator is responsible for contacting the college Human Research Review Committee to obtain approval for the planned research. The request form for IRB approval can be seen at [http://osp.ua.edu/IRB.html](http://osp.ua.edu/IRB.html).

**Comprehensive Examinations**

In addition to the regular course examinations, a final comprehensive examination representing a "culminating" or "capstone" experience for a degree is **required** of all candidates for the master's degree (except for those candidates pursuing the master of accountancy, the master of business administration, the master of library and information studies, the master of social work, and the master of tax accounting). The comprehensive examination is a culminating experience in which the student is expected to integrate prior learning. Each department, with approval of the Graduate Council, determines the most appropriate format. The various exams may consist of one or more of the following:

1. a written and/or oral examination based on the content of the degree program;
2. a thesis and final oral defense;
3. a course requiring interpretation and integration of information from previous courses;
4. a research paper, a "policy and practice" paper, or equivalent experience;
5. a public performance or exhibition along with a contextualizing paper; and/or
6. a practicum or internship.

If the comprehensive exam requirement is met with option 1 and/or 2 (above), then the examining committee for comprehensive examinations must consist of at least three members of the graduate faculty appointed by the dean of the Graduate School. The examination must be given at least six weeks before the date of graduation (two weeks before for Plan II) and reported promptly to the dean of the Graduate School on appropriate forms. A final report, on forms available from the Graduate School ([http://graduate.ua.edu/forms/msexamfrm.pdf](http://graduate.ua.edu/forms/msexamfrm.pdf)) should be submitted to the Graduate School when all examinations are completed. **A student may take the final oral or written examination only twice.**

**Application for Graduation**

Each candidate for a master’s degree must apply for graduation through the Office of the Graduate School no later than the registration period for the semester or the first session of the summer term in which requirements for the degree are to be completed. The form "Application for Degree" is available on the Web, is required for this purpose, and must be completed in duplicate.

**Second Master’s Degree**

Six semester hours of eligible credit from one master’s degree at The University of Alabama **may** be applied to the
requirements for a second master's degree, but only if the department of the second master's agrees to the courses in the plan of study. Any hours from the previous master's degree must have been earned during the six years (18 fall, spring, and summer semesters) immediately preceding the date on which the second degree is to be awarded.

4.9.2 EDUCATIONAL SPECIALIST DEGREES

The educational specialist degree (Ed.S.) is offered in some departments of the College of Education that offer doctoral degrees. Students interested in the Ed.S. degree should contact the department involved regarding availability of the degree.

The Ed.S. degree normally is granted at the end of the sixth year of collegiate study and falls in time between the master's degree and the doctorate. However, it is not necessarily viewed as intermediate between the master's and doctoral degrees. In the College of Education, some Ed.S. degrees lead to a teaching certification for P–12 education fields. In some teaching fields, the purpose of the degree is to prepare undergraduate-college teachers, especially those who will be employed in junior colleges, small private and state colleges, and the group of colleges labeled as “developing” institutions. The primary goals of the Ed.S. degree are teaching and acquiring professional proficiency.

Because the purposes of the Ed.S. degree may differ from those of either the Ed.D. or Ph.D., credit earned in an Ed.S. program is not automatically transferable to a doctoral program. Instead, if a holder of an Ed.S. degree enters a doctoral program at a later date, the doctoral advisory committee will decide how much of the credit earned in the Ed.S. program will be counted toward the doctorate.

Program Requirements

The Ed.S. degree requires a minimum of 30 semester hours of study beyond the master's degree. (Students completing an Ed.S. program who also expect to receive an Alabama Class AA certificate for service in the public schools must complete a minimum of 33 semester hours and achieve a minimum 3.25 grade point average on all work attempted.) Generally, the following requirements will hold for the degree:

1. If a student enters a program with a master's degree in the same field, a minimum of 12 additional semester hours in the field must be taken. (A minimum total of 36 graduate semester hours in the field is required for graduation.) Some departments may require more than these minimums.
2. If a student enters a program with a master's degree in a field different from the one in which he or she plans to study, sufficient work in the Ed.S. major field must be taken so that the total graduate semester hours in the field is at least 36. Some departments require more than this minimum.
3. Since one of the goals of the Ed.S. degree is to prepare undergraduate-college teachers, certain courses in higher education may be necessary, if required by the major department. A faculty advisor in the program in higher education administration will advise students on the appropriate courses to complete this requirement.
4. Candidates for the Ed.S. degree will be required to complete all coursework at the 500 and 600 levels.

Residency Requirement

A student's program at the Ed.S. level must provide sufficient association with the resident faculty to permit individual evaluation of the student's capabilities and achievements.

Transfer of Credit

The greater of 9 semester hours or 25 percent of appropriate post-master's-degree credit, earned through a regionally accredited institution approved to offer graduate programs beyond the master's level in the field of study where the credits were earned, may be transferred to apply toward an Ed.S. degree. Previous and appropriate post-master's-degree credit earned at The University of Alabama before a student applies for admission to the Ed.S. program can be applied toward the Ed.S. degree, provided it meets the program requirements of the particular department and the time limitation stated below.

A student in his or her last semester of work toward the master's degree who does not need a full load to complete the course requirements of his or her master's program may register for work toward the Ed.S. degree, in the
amount needed to complete full registration loads.

In some cases, foreign educational credentials may not meet the Graduate School’s criteria for transfer of credit. It may be necessary for students in this situation to secure an evaluation of their credentials from World Education Services Inc., (WES), an external foreign credential evaluation service. Additional information on their services can be found at their website [www.wes.org](http://www.wes.org).

**Time Limit**

All requirements for the Ed.S. degree must be completed during the six years (18 fall, spring, and summer semesters) immediately preceding the date on which the degree is to be awarded.

**Plan of Study**

Each department or program participating in the Ed.S. degree has established a framework of requirements for the degree that indicates the general structure of its program. At or before initial registration, each student will develop a formal plan of study for the degree, designating all courses he or she plans to take in the program. In reaching decisions, the student should consult with the program director. The student will file a completed plan with the program director who, upon approving the plan, will distribute copies to the Graduate School and to the student, retaining one copy for departmental files.

A plan of study may be amended at any time using appropriate forms and following the procedure described above. Until formal approval of an amended plan of study is made, the original or current modification of the plan will be in effect.

**Admission to Candidacy**

Requirements for admission to candidacy for the Ed.S. degree are the same as those for the master’s degree in the same area. A student should note any foreign language requirement. Application forms and instructions for applying for admission to candidacy may be obtained from the Graduate School office and on the Web. A plan of study must be filed in the Graduate School prior to admission to candidacy.

**Examinations**

In addition to the regular course examinations, a final comprehensive examination will be required. The examination may be written or oral or both, at the discretion of the major department, and can be changed at any time. No candidate is eligible for the final examination until approved by the appropriate program director. A student may take the final oral or written examination only twice.

The examination will be prepared and conducted by a committee of at least three people, including the program director in the major area of study and a designee (or two or more people from the major area of study, designated by the program director) and the program director (or a designee) from the minor field of study, if one has been included in a program. No candidate will be judged to have completed the examination(s) satisfactorily who has not satisfied the major department. Committees will be appointed by the dean of the Graduate School on request of the major program director.

If a candidate receives failing marks in both the minor area of study and the professional education field, the candidate will be judged to have failed the examination. If a candidate fails either the minor examination or the professional education examination, the committee as a whole will reach a decision about the satisfactory or unsatisfactory nature of the candidate’s performance on the examination. If a candidate does not have a minor field, the committee members will meet and will reach a decision in the event the student fails the professional education examination.

All written examinations will be kept on file by the program directors for one year following the date of the examination, and students will have the right to confer with their program directors regarding the strengths and weaknesses shown on the examinations.
**Application for Graduation**

Each candidate for an educational specialist degree must apply for the degree through the Office of the Graduate School no later than the registration period of the semester or the first term of the summer session in which requirements for the degree are to be completed. The form "Application for Degree" is required for this purpose and must be completed in duplicate.

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**4.9.3 DOCTORAL DEGREES**

The University offers two types of doctorates. One is for students who intend to become researchers in a given field. The other is for students who intend to become highly skilled practitioners, but not researchers.

The doctor of philosophy degree is regarded as the researcher’s degree. Program requirements may include the acquisition of special skills that would be useful in conducting scholarly investigation—traditionally, a working knowledge of one or more foreign languages or, currently, a number of alternatives approved by departments. Ph.D. candidates are expected to demonstrate their potential for careers as publishing scholars by writing and defending a dissertation of publishable quality.

When departmental requirements are more stringent than those of the Graduate School, the department may terminate a student’s doctoral admission when unsatisfactory progress toward completion of the degree requirements is evident.

**Admission**

Admission is limited to those whose scholastic records show distinct promise of success in doctoral study. Admission to the Graduate School and the earning of a master's degree from The University of Alabama do not guarantee acceptance into a doctoral program. A student obtaining the master's degree at the University must submit to the dean of the Graduate School written permission from the department head or division dean to be eligible to work toward the doctoral degree. Students in doubt about their acceptance into doctoral programs should consult with departmental advisors and the Graduate School.

**Residency Requirements**

A substantial period of residence must be included in a doctoral program to provide significant faculty-student interaction, opportunities for student exposure to and engagement with cognate disciplines and research scholars working in those disciplines, and significant face-to-face peer interaction among graduate students. It should provide the opportunity for a mentor-apprentice relationship between faculty and students as well as adequate time for in-depth and direct faculty evaluation of students. Thus, the intent of the residency requirement is to ensure that doctoral students contribute to and benefit from the complete spectrum of educational, professional, and enrichment opportunities provided on the campus of The University of Alabama.

The minimum period in which the doctoral degree can be earned is three full academic years of graduate study after completion of a baccalaureate degree. Instructors, fellows, and assistants who teach more than 3 hours should expect to spend more than the minimum period in residence.

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**Revised Policy on Residency Requirement:**

The student must spend an academic year in continuous residence on the campus of The University of Alabama as a full-time student in the Graduate School or, if specifically approved by the faculty concerned, (a) one spring semester as a full-time doctoral student and the following fall semester as a full-time doctoral student, or (b) a summer (consisting of two terms as a full-time doctoral student), with immediately preceding spring or immediately following fall semester as full-time doctoral student. This requirement can be satisfied only by enrolling in coursework; dissertation or thesis research cannot be used. Courses delivered via IITS, GOALS, or QUEST formats may not be used to satisfy residency requirements.

(The Graduate Council revised the above paragraph. Effective date: September 25, 2007)
Transfer of Credit

Acceptable graduate credit, earned in a regionally accredited institution in which the student was enrolled in the graduate school, may be transferred and applied to the requirements for a doctoral degree. Only credit that was earned during the six-year period (18 fall, spring, and summer semesters) preceding admission to the doctoral program may be considered for transfer. Revalidation (recertification) of credits more than 18 semesters old at the time of admission to a doctoral program is not an option.

Consideration of credit does not guarantee its transfer. Evaluation of credit for transfer will not be made until after the student has enrolled in the Graduate School of The University of Alabama. Credit will not be accepted from any institution at which the student failed to achieve a "B" average on all graduate work attempted. A student initiates at the Office of the Graduate School the request for evaluation of graduate credit obtained at another institution. The student must also ensure that the Office of the Graduate School has an official (not faxed or copied) transcript of the credit involved. Students should be aware that planning to transfer a course in the final semester will typically delay commencement by a semester if the UA Graduate Registrar does not receive official notice of completion of the course by at least two weeks prior to commencement.

With the approval of the student's department and the dean of the Graduate School, up to one-half of the required coursework (exclusive of dissertation research hours) for a doctoral degree may be transferred from another institution.

In some cases, foreign educational credentials may not meet the Graduate School's criteria for transfer of credit. It may be necessary for students in this situation to secure an evaluation of their credentials from World Education Services Inc. (WES), an external foreign credential evaluation service. Additional information on their services can be found at their website www.wes.org.

Time Limits

All requirements for the doctoral degree must be completed within the seven-year period (21 fall, spring, and summer semesters) following admission to the doctoral program, with the following specific exceptions: psychology, modern languages and classics, and English (eight years if entering the doctoral program with a baccalaureate, not master's, degree). Previous graduate credit may be applied to the doctoral degree if the credit was earned during the six-year period prior to admission to the doctoral program. Such credit must be identified clearly on the "Outline of Ph.D. Program ("Plan of Study") form and requires Graduate School approval. The form is available at the "Web Forms" icon on the Graduate School's home page, http://graduate.ua.edu. Only those students graduating within the time limit for their doctoral program may apply previous graduate credit to the doctoral degree if the credit was earned during the six-year period prior to admission to the doctoral program.

Time Limits Extension Request

Under compelling circumstances beyond the student's control, a student may petition for a one-semester extension to the seven-year time limit (or eight-year time limit for the selected programs noted above). If the one-semester extension is recommended by the department head and college dean (if required by the college dean), and subsequently approved by the graduate dean, the extension will not require the student to validate any out-of-date UA or transfer courses previously approved for the plan of study.

Previous Policy:
The student must spend an academic year in continuous residence on the campus of The University of Alabama as a full-time student in the Graduate School (or, if specifically approved by the faculty concerned, one full summer consisting of two terms, preceded by or followed by one regular semester). Practically speaking, the academic year of continuous residence is defined as two contiguous semesters of full-time enrollment. This requirement can be satisfied only by enrolling in coursework; dissertation or thesis research cannot be used. Courses delivered via IITS, GOALS, or QUEST formats may not be used to satisfy residency requirements.
If a student fails to complete all degree requirements within the time limit for the student’s doctoral program or within a one-semester extension approved as noted above, the student will be dropped from the doctoral program. To complete a doctoral degree, the student must reapply for admission. Graduate Council policies do not provide the option to revalidate either UA or transfer courses completed more than six years prior to the date of admission. A readmitted student therefore would be able to apply to the new admission only those courses approved by the department and Graduate School and completed within the prior 6 years (18 fall, spring, and summer semesters).

**Repeating Courses When Given an Extension**

When requests are made for extensions of the doctoral time limits, and it is deemed that an out-of-date course is integral to the degree program, the college dean may request permission of the Graduate School for such a course to be repeated. In this case, both grades shall be used in calculation of the GPA.

**Plan of Study**

Early in the graduate program, each student must confer with the appropriate departmental adviser or major professor to select courses, discuss when doctoral residency will be completed, discuss research interests, and so forth. Then a Plan of Study must be prepared and submitted to the Graduate School.

The Plan of Study (for the Ph.D. and DMA) is available at the Graduate School’s home page ([http://graduate.ua.edu](http://graduate.ua.edu)) at the "Graduate Forms" icon. The Plan of Study must be submitted no later than the semester during which the student will complete 30 semester hours of UA and/or transfer credit toward the doctoral degree. Otherwise, a “hold” may be placed on future registrations.

An amended Plan of Study (if needed) must be submitted to the Graduate School when the student submits the Application for Admission to Candidacy for the Doctoral Degree and (if needed) when the student submits the Application for Degree.

**Preliminary or Comprehensive Examination**

A preliminary or comprehensive qualifying examination is required of all doctoral candidates. This examination is given after (a) any foreign language/research skill requirements are met (for Ph.D. students only); (b) two full years of graduate study are completed; and (c) the supervisory committee deems the student to have adequate preparation in the major and minor fields of study.

The examination is conducted by the student’s supervisory committee or other committee established in the program area. Since one of the purposes of the preliminary examination is to determine the student’s research competence, the examination should be completed at least nine months before the degree is to be awarded. The preliminary or comprehensive qualifying examination may be taken only twice.

**Admission to Candidacy**

The requirements for advancing to candidacy include passing the qualifying (major or preliminary) examination; receiving departmental approval of the dissertation subject (although some departments require the defense of a dissertation proposal and/or writing one or more preliminary sections of the dissertation as well); and having the committee recommend the student for candidacy.

The student completes and submits the “Application for Admission to Candidacy for the Doctoral Degree” form, available at the web forms icon of the Graduate School’s homepage.

**Continuous Registration**

Once a student has met the requirements for admission to candidacy for a doctoral degree, the student (except for those in the D.M.A. program) must pursue completion of the dissertation without interruption by enrolling each semester for at least 3 hours of dissertation research. This is true whether or not the student has submitted an Application for Admission to Candidacy ([http://graduate.ua.edu/forms/formidx.html](http://graduate.ua.edu/forms/formidx.html)). A Ph.D. student must have completed a minimum of 24 hours of such work upon completion of the dissertation. The amount of dissertation research for which a student enrolls in any given semester should be commensurate with the progress a student is expected to make on the dissertation, as well as reflective of the extent to which University facilities and faculty time are invested in the proposed activities.
**Dissertation**

A dissertation showing ability to conduct independent research and skill in organization and presentation must be prepared on a topic in the major field. It must constitute an original contribution to knowledge. The subject of the dissertation must be approved by the dissertation committee of the major department or division and by the dean of the Graduate School.

A dissertation committee, with the director of the dissertation as its chairperson, supervises the preparation of the dissertation. The committee shall have no fewer than five members, appointed by the dean of the Graduate School. The graduate dean's approval of the proposed dissertation committee is expected to be obtained before significant progress is made on the dissertation. The form for "Appointment/Change of a Doctoral Committee" is available at the "Web Forms" icon of the Graduate School’s home page at [http://graduate.ua.edu](http://graduate.ua.edu). All members of a dissertation committee must be members of the Graduate Faculty. The committee chair must be a full member of the graduate faculty, as described in the Catalog’s section on “Qualifications of the Graduate Faculty. One member must be from outside the student's major department. Unless there are extraordinary circumstances meriting approval by the graduate dean beforehand, all members of the dissertation committee must attend the final oral defense of the dissertation.

The dissertation must comply with the regulations in *A Student Guide to Preparing Theses and Dissertations*. The *Guide* may be obtained from the Graduate School’s website. Deadlines and other information useful to doctoral students are also contained in the *Guide*.

The Catalog section on "Continuous Registration" states that once a student qualifies for doctoral candidacy, the student must enroll each semester for at least 3 hours of dissertation (699) research. If certain conditions are met for the student's final semester, however, the student may qualify to enroll for fewer than 3 hours of 699 dissertation research, but only in that final semester. (see table below)

### Final Semester Dissertation (699) Minimum Registration Hours for Doctoral Students

<table>
<thead>
<tr>
<th>When was the *completed dissertation delivered to the Graduate School ?</th>
<th>Minimum hours of 699 registration required in the final semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>By 4:45 p.m. on the last-possible day for instructors to post grades for the semester before the student’s final semester (date published in the <strong>University Academic Calendar)</strong></td>
<td>0</td>
</tr>
<tr>
<td>After 4:45 p.m. on the last-possible day for instructors to post grades for the semester before the student’s final semester, but before 4:45 p.m. on the last-possible day to register or add a course for the student’s final semester (both dates published in the University Academic Calendar)</td>
<td>1</td>
</tr>
<tr>
<td>After 4:45 p.m. on the last-possible day to register or add a course for the student’s final semester (date published in the University Academic Calendar)</td>
<td>3</td>
</tr>
</tbody>
</table>

* A "completed" dissertation is one that has been successfully defended, signed by all committee members and the department chairperson, and carefully edited before being submitted to the Graduate School. All three conditions must be met to be considered "completed."

**University Academic Calendar available at: [http://registrar.ua.edu/calendar/](http://registrar.ua.edu/calendar/)

**Article-Style Dissertations.** This approach is intended primarily for those doctoral students whose final, completed dissertation will consist of a number of journal-style manuscripts or articles. It is an option available only to students in certain fields. A complete list of these fields is available from the Graduate School and at the Graduate School’s website.

Article-style dissertations must be based upon research completed while the student is enrolled at The University of Alabama. For each article used, the student must be the first author, or equivalent, as defined by the discipline.

As with traditional dissertations, the article-style dissertation must be the student’s original idea. It must be a unified work and include a sequence of articles of publishable quality around a cohesive theme, with a comprehensive review
of literature demonstrating an in-depth understanding of the unifying framework.

There will be introductory material to describe the studies, show how they are related, and explain their significance. There will be connecting language to bridge each study to the next, as well as a summary making clear the importance of the studies, integrating the major findings, and discussing the implications for the overall topic. These components do not have to be separate sections or chapters. They may be parts of the manuscripts or may be accomplished in an abstract.

All parts of both traditional and article-style dissertations must conform to the provisions set forth in *A Student Guide to Preparing Theses and Dissertations*, except when the circumstances of a specific project or discipline's style manual require deviation. Students considering the article-style approach should contact the Graduate School before beginning their work if they have questions concerning specific problems or deviations from traditional procedure.

All doctoral candidates must give members of the dissertation committee a minimum of two weeks to read the dissertation before the date of the final oral examination. After successful defense of the dissertation, and at least six weeks before graduation, the candidate must deposit in the Office of the Graduate School two copies of the dissertation (reproduced in an acceptable manner on 100-percent rag bond paper) approved by the head of the major department or division and the members of the dissertation committee. The dissertation must be accompanied by a receipt for the binding fee.

The student must also deposit with the dean of the Graduate School two copies of an abstract of the dissertation, consisting of not more than 350 words, approved by the head of the major department or division and the chairperson of the dissertation committee. The abstract must include not only background information and a description of the conduct of the study, but also major results and conclusions. Approval of the dissertation by the graduate dean is necessary before graduation.

Candidates must satisfy publication requirements by having their dissertations microfilmed by University Microfilms Inc. of Ann Arbor, Michigan, and by publishing the abstract in University Microfilms's *Dissertation Abstracts International*. The charge for these services is paid to the Office of Student Receivables, and a receipt for payment must be delivered to the Graduate School. A copyright may be obtained through University Microfilms for a nominal fee.

**Protection of Human Subjects for Research**

Scientific research involving human subjects has produced substantial benefits for society, but it also has posed troubling ethical questions. The mission of the University's Institutional Review Board for Protection of Human Subjects is to ensure that research involving human subjects is conducted ethically. University and federal policies require that review and approval to use human subjects in research precede the research. In the case of dissertation research that involves the use of human subjects, the principal investigator is responsible for contacting the college Human Research Review Committee to obtain approval for the planned research. The request form for IRB approval can be seen at [http://irb.ua.edu/forms.html](http://irb.ua.edu/forms.html).

**Final Examinations**

When the dissertation has been completed, the candidate will be given a final oral examination by a committee of not fewer than five members, one of whom must be from outside the student's major department or, for students in the College of Education, outside the student’s area (not program), and appointed by the dean of the Graduate School. This examination will focus primarily on the candidate's research work, as embodied in the dissertation, and the field in which the dissertation lies, but it may encompass the complete program for the degree. The results of the examination must be reported to the Office of the Graduate School at least six weeks before the commencement at which the degree is to be conferred.

**Application for Graduation**

Each candidate for a doctoral degree must apply for the degree through the Office of the Graduate School no later
than the registration period of the semester or the first term of the summer session in which requirements for the degree are to be completed. The form "Application for Degree" is available on the Graduate School's website, is required for this purpose, and must be completed in duplicate.

Doctor of Philosophy Degree
The doctor of philosophy degree is regarded as a research degree and is granted on the basis of scholarly proficiency, distinctive achievement in a special field, and capacity for independent, original investigation. The first two criteria will be tested in coursework and a comprehensive examination, the last in a dissertation that must present clearly and effectively the results of substantial research. A combination of these accomplishments, rather than the mere accumulation of residence and course credits, is the essential consideration in awarding the Ph.D. degree.

The following are specific requirements pertaining only to the Ph.D. degree:

Field of specialization. A defined field of specialization is required of all candidates for the doctor of philosophy degree. A minimum of 48 semester hours of course credit is required. Candidates should consult their departments or the appropriate section of this Catalog for additional requirements. The doctoral course as a whole must be unified, and all its parts must contribute to an organized program of study and research. In addition, a student must complete a minimum of 24 hours of dissertation research.

Research skill/language requirements. There is no University-wide foreign language/research skill requirement for doctoral students; each college or department offering the Ph.D. degree may set its own requirements. This policy reaffirms the importance of research skills and foreign languages in the highest academic degree granted by American universities, but it also recognizes that the departments offering the degrees are in the best position to determine the number and nature of such requirements in the interests of their students. For further information about Ph.D. foreign language/research skill requirements, students may contact their departments or the Graduate School office.

Interdisciplinary Studies
The doctor of philosophy degree is also offered in interdisciplinary studies. This degree program is administered by the Graduate School. In addition to the general requirements for the Ph.D. degree, the program of study and the supervisory committee for the prospective interdisciplinary degree candidate must be approved by the dean of the Graduate School before the student is admitted to the program. Specific regulations governing the Ph.D. in Interdisciplinary Studies are described at [http://graduate.ua.edu/academics/ids.html](http://graduate.ua.edu/academics/ids.html)

Doctor of Education Degree
A minimum of two years of graduate study beyond the master's degree is required for the completion of the Ed.D. program. The student is required to complete 60 semester hours in approved graduate courses beyond the master’s degree, or 90 semester hours of approved graduate courses, and to defend a dissertation. Specific regulations governing the Ed.D. program are described in the "College of Education" section of this Catalog.

Doctor of Musical Arts Degree
The D.M.A. degree requires a minimum of 46 semester hours beyond the master of music degree, plus recitals and other examinations as appropriate. Specific requirements for each major area are outlined in the "College of Arts and Sciences" section of this Catalog.
4.10 JOINT, COOPERATIVE, AND SHARED GRADUATE PROGRAMS

To utilize more effectively the educational resources of the state and to prevent excessive duplication of graduate programs, The University of Alabama, the University of Alabama at Birmingham, and the University of Alabama in Huntsville have agreed to the establishment of several joint, cooperative, and shared graduate programs. (These three terms are defined by the Alabama Commission on Higher Education.) Inquiries regarding available cooperative programs should be directed to specific departments and to the admissions staff of the Graduate School of The University of Alabama.
5.1 COURSE-NUMBERING SYSTEM

Courses numbered 400–499 are primarily for advanced undergraduate students. Courses numbered 500–599 are primarily at the master's level. Courses numbered 600–699 are primarily at the doctoral level.

As noted in the section on “400-Level Courses for Master’s Credit,” a maximum of 6 semester hours of 400-level course credit may be accepted for a master's degree program if approval has been obtained in the semester prior to taking the 400-level coursework.

Courses with numbers connected by a colon (e.g., "EN 533:534") are courses for which credit is given separately for each semester. In some cases, credit is given for the first semester separately, but not for the second semester unless the first semester has been previously completed.

Courses with numbers connected by a slash (e.g., "COM 415/515") are courses for which credit is given separately for undergraduate vs. graduate students. The syllabi for such courses are required to specify the higher quality and greater quantity of work that must be produced by graduate students to receive graduate credit. Such quality and quantity are described in this Catalog’s section on “400-Level Courses for Master’s Credit.”

Unless otherwise indicated, all statements of numbers of hours included in the course descriptions refer to semester hours of credit. In the case of courses connected by a colon, the credit indicated is for each semester.
6.1 DEPARTMENT OF AMERICAN STUDIES (AMS)
Professor Lynne Adrian, Chairperson
Office: 101 ten Hoor Hall

The master of arts program in American studies is designed to enable students to study American culture from a broad, interdisciplinary perspective, combining basic cultural studies with advanced professional training. Drawing upon the graduate resources of the University at large, students develop individually tailored programs of coursework that reflect their own special interests. Students may pursue an academic track or a professional track. Our graduates have used the M.A. in American studies as preparation for positions in journalism, public relations, library service, historical preservation, community organizing, private foundations, law, and education.

Admission Requirements
A student interested in pursuing a master's degree in American studies must first apply for admission to the Graduate School and satisfy the school's minimum requirements as stated in this catalog. Each applicant should submit an acceptable score on either the general test of the Graduate Record Examination or the Miller Analogies Test in support of his or her application.

The dean of the Graduate School will then forward the student's records and application to the Department of American Studies for evaluation. Although a basic undergraduate background in American culture (literature, history, and political thought) is preferable, it is not a prerequisite for admission to the program.

General Degree Requirements
Students should refer to the Graduate Handbook of the Department of American Studies for additional information.

Plan I. The student earns a minimum of 24 semester hours of credit in coursework and completes a thesis.

Plan II. The student earns a minimum of 30 semester hours of credit in coursework.

Under either plan, the student's program must include the following 21 hours of American studies courses: AMS 585, AMS 586, AMS 587, AMS 595, AMS 596, AMS 597, and 6 hours of seminars. A student may take up to 9 hours outside the department, choosing a single disciplinary or cognate area (literature, history, broadcast and film, women's studies, journalism, the South, etc.) or two minor areas. Most students, however, choose a focus within American studies.

Comprehensive Examinations
Under either Plan I or Plan II, each candidate for the master of arts degree in American studies will write a comprehensive examination designed to reflect the individual's program. The comprehensive examination is intended as an integrating, synthesizing experience that enables the student to draw together the various component areas of his or her course of study. The results of the examination should attest to the student's acquisition of an interdisciplinary perspective, as well as an understanding of American culture as a whole.

Course Descriptions

AMS 500 Internship. Three hours. Pass/fail.
An internship opportunity that combines independent study and practical field work focusing on a particular problem or topic related to American culture and experience. Recent examples include internships in museum management, historic preservation, archaeological research, television production, category fiction, promotion of academic programs, documentary television, academic public relations, with Alabama Heritage and Louisville magazines, and with the Paul Bryant Museum.

An investigation of the influence of Africa and the people of African descent on the development of American cultural experience, from the emergence of the Atlantic world and the slave trade to the freedom struggles of the late 20th century. The course will explore insights from various disciplines and examine several kinds of cultural artifacts (for example, music such as gospel, blues, jazz, and hip hop; the written and spoken word; sculpture, painting, and photography; the built environment in rural and urban contexts; religious and political economic ideas and phenomena) as well as engage canonical and cutting-edge works of cultural scholarship related to Africans in the Americas. Topics covered include the establishment of plantation societies and racialized chattel enslavement; the
creation of African-American culture within the USA; Afro-centricity and the theory of African-Americans as Omni-American; the South as black national territory; and late capitalist challenges to black identity. Offered spring semester.

**AMS 502 Special Topics in African-American Studies.** Three hours.
Research and discussion of selected African-American topics.

**AMS 505:506 Directed Study.** One to three hours each semester.
Prerequisite: Sponsorship by a faculty member.

**AMS 530 Special Topics.** One to three hours.
Selected American topics in American studies offered by AMS faculty members or Americanists from related departments. Recent example: Women in America.

**AMS 531 Studies in Popular Culture.** Three hours.
Research and discussion of selected topics in American popular culture: literature, music, network broadcasting, advertising, film, and drama.

**AMS 532 Studies in the Arts.** Three hours.
Research and discussion of selected topics in literature, film, painting, photography, and architecture, and the role of the artist in 19th- and 20th-century America.

**AMS 533 Studies in American Thought.** Three hours.
Research and discussion of selected topics in American intellectual history: the law, nature and the city, religion and the state, liberalism and conservatism, Utopianism, and science and society.

**AMS 534 Studies in the South.** Three hours.
Research and discussion of selected topics in Southern culture: ethnicity, regional consciousness, women in the South, and change and continuity.

**AMS 535 Studies in Ethnicity, Class, and Gender.** Three hours.
Research and discussion of selected topics in ethnicity, class, and gender in America.

**AMS 536 Studies in Social Experience.** Three hours.
Research and discussion of selected topics in the American social experience.

**AMS 537 Studies in the West.** Three hours.
Research and discussion of selected topics in the American West as period, place, experience, and imagination: discovery and exploration; physical and cultural transformation; and value, ethic, and ideal.

**AMS 538 Studies in African-American Culture.** Three hours.
Research and discussion of selected topics in African-American culture.

**AMS 540 Sexuality and Culture.** Three hours.
This course examines sexuality as a category of historical and cultural analysis. With an interdisciplinary focus on representation in film, science, visual culture, literature, and politics, we will investigate how sexual categories and identities are produced and contested over time. The course emphasizes the complex intersection of sexuality with race, gender, class, and region to reveal the deep linkages among them as locations of power, oppression, and resistance. Students will become familiar with a range of theoretical and methodological approaches to the study of sexuality, including cultural studies, history, and critical theory.

**AMS 550 Women in America.** Three hours.
A lecture/discussion course on the role of women in American culture which concentrates on the major social and cultural contributions of women from all backgrounds and walks of life. Key questions involve the historic role of women in America and how their status reflects the structure of society as a whole. Most of the readings focus on the twentieth century and the relationships between individual women and the cultural networks in which they participate and help create.

**AMS 585 American Experience, 1620–1865.** Four hours.
An exploration of the formative years of the American cultural experience, from early European encounters with the New World to the attainment of continental nationhood. The course will draw upon insights from many disciplines and will include several kinds of cultural evidence (for example: literature, art, and photography; religious, political, and social thought and behavior; and economic, technological, and geographical development) as well as consideration of recent major synthetic works of cultural scholarship. Topics covered include the growth of colonial societies; the Revolutionary movement and the political foundations of the American Republic; the Market Revolution and the rise of middle-class culture; the antebellum South and the emerging West; and the origins and evolution of American cultural diversity. Offered fall semester.

**AMS 586 American Experience, 1865–1960.** Four hours.
An exploration of the development of the American cultural experience since 1865, focusing on the major material
forces and intellectual currents that helped shape American attitudes, assumptions, institutions, behavior, and values. The course will draw upon insights from many disciplines and will include several kinds of cultural evidence (for example: literature, art, and photography; religious, political, and social thought and behavior; and economic, technological, and geographical development) as well as consideration of recent major synthetic works of cultural scholarship. Topics addressed and readings assigned are chosen to enlarge awareness of the transformation of America to a diverse, metropolitan, industrial society. These will include the relationship between nature and the city; the industrial revolution and changes in the workplace; immigration; changing class and gender relationships; the rise of leisure; and the development and triumph of modern corporate/consumer culture. Offered spring semester.

**AMS 587 Methodology and Scholarly Writing.** Three hours.
Preparing manuscripts for the academic/scholarly journal marketplace.

**AMS 588 Teaching Internship.** One hour. Pass/fail.
Required of all American studies graduate teaching assistants assigned to AMS 150. Includes administrative techniques and test construction.

**AMS 589 Approaches to Teaching American Studies.** Three hours.
Prerequisite: Permission of the department.
A study of basic approaches to interdisciplinary teaching in American culture at the college level, along with supervised teaching experience.

**AMS 591 American Period Seminar.** Three hours.
In-depth study of a particular period or era in American historical experience. Recent examples include the Ragtime Era, the Jazz Age, the Great Depression, the Season of 1954–55, the '60s, contemporary America, the Postwar Period, the Romantic Revolutionaries (1905–14), the American Avant Garde (1893–1920), World War II: the Good War, the South and '30s Expression, the Civil Rights movement, the '50s, America between the Wars, the Colonial Period, the Aspirin Age, Postmodern America, Contemporary America, and Writing West.

**AMS 592 American Topics Seminar.** Three hours.
Study of special topics within the American cultural experience. Recent examples include American literary realism, women in America, the Civil Rights movement, the picture press, music and ethnicity, the politics of culture, regionalism in American culture, the changing American family, homelessness in America, American autobiography, American monuments, contemporary American folklore, Southern popular culture, Southern iconoclasts, politics and culture, historical memory, America by design, the other in America, women in America, race in America, 19th-century popular culture, and slavery and the Civil War in historic memory.

**AMS 595 American Studies Colloquium, 1620–1865.** One hour.
Corequisite: AMS 585.
Discussion of methodological and theoretical issues in American studies.

**AMS 596 American Studies Colloquium, 1865–1960.** Two hours.
Corequisite: AMS 586.
Presentation of research and methods.

**AMS 597 Topics in American Cultural Analysis.** One hour.
Coordinating course required of M.A. candidates in their final semester.

**AMS 598 Research Not Related to Thesis.** One to three hours. Pass/fail.

**AMS 599 Thesis Research.** Three hours. Pass/fail.
The Department of Anthropology of The University of Alabama offers programs leading to the master of arts degree and the doctor of philosophy degree. These programs seek to furnish a balanced view of anthropological inquiry by means of intensive training in the literature, methods, techniques, and skills required for research in anthropology. The M.A. builds on the inherent strengths of medium-sized departments—the ability to provide necessary background through small lecture courses and specialized training through the tutorial format of seminars and individually directed research projects. In short, the M.A. program provides students with a scholarly comprehension of the discipline, practical experiences in anthropological research situations, and the initial competency required of a professional anthropologist. Additionally, an inter-institutional program leading to the master's degree is offered in cooperation with the Department of Anthropology of The University of Alabama at Birmingham. See specific details at the UA departmental website: http://www.as.ua.edu/ant.

The Ph.D. curriculum builds on the strengths of the master's degree program by concentrating on two emphases: 1) the archaeology of complex societies, pertaining to the emergence and spread of early civilizations in the Americas, and 2) medical anthropology, the study of the influence of social relations and culture on psychological and biological adaption. The doctoral program is designed to prepare graduates with the skills needed to move easily into either academic or non-academic positions.

Admission Requirements
Students seeking M.A. degrees in anthropology at The University of Alabama must satisfy departmental entrance and examination requirements. An acceptable score on the Graduate Record Examination general test is required for admission. Students seeking Ph.D. degrees must have already completed an M.A. in anthropology, either at Alabama or elsewhere, before undertaking doctoral work. Students are required to have taken graduate-level coursework in at least three of the four subdisciplines in anthropology before being admitted to the Ph.D. program.

General Degree Requirements
For the M.A. degree, each student must complete a minimum of 30 credit hours in courses numbered 500 or above. Without special prior approval of the student's advisor, the student's committee, and the director of graduate studies, neither ANT 598 Individual Investigations nor ANT 599 Thesis Research will count toward the 30 hours. All M.A. graduate students must successfully complete a core program consisting of one graduate course in at least three of the four fields of anthropology: ANT 636 Social Structure or ANT 641 Culture, ANT 501 Anthropological Linguistics, ANT 670 Principles of Physical Anthropology, and ANT 625 Survey of the History of Archaeology. In addition, the seminar course ANT 600 Research Methodology is required. Additional requirements include a comprehensive examination to be taken following the second semester in residence, and reading knowledge of a foreign language or demonstration of a research skill such as statistical analysis. Thesis and non-thesis options are available and the specific requirements for these options are published on the department's website: http://www.as.ua.edu/ant. The M.A. degree will be conferred by The University of Alabama.

For the Ph.D. program each student must complete 48 credit hours in courses numbered 500 or above. No more than 24 hours can be transferred from an M.A. program to the Ph.D. program. A reading facility in one foreign language appropriate to the research topic must be demonstrated. Knowledge of quantitative methods and other advanced research skills must also be obtained through the required seminar ANT 601 Advanced Research Methods in Anthropology. Additional requirements include two core courses, each of which are specific to the doctoral tracks. For the archaeology of complex societies, these seminars are ANT 603 Theory and Method in Archaeology and ANT 604 Seminar in the Archaeology of Complex Societies. For biocultural medical anthropology, these seminars are ANT 610 Theory and Method in Medical Anthropology and ANT 612 Seminar in Biocultural Anthropology. A preliminary examination must be passed before undertaking dissertation research. Six to 12 months of ethnographic or archaeological field work is expected, followed by analysis and the writing of the dissertation. The dissertation itself will then be presented and defended before the student's committee and other interested faculty.

Course Descriptions
Prerequisites: Twelve hours in anthropology and graduate standing, or permission of the instructor.

ANT 501 Anthropological Linguistics. Three hours.
The scientific study of natural language; phonology and grammar, lexicon, and meaning; and the role of linguistics in anthropological research. Offered once a year. Maxwell.

**ANT 504 Analysis of Kinship Systems.** Three hours. Techniques, methods, and theories bearing on the analysis of kinship semantics. Firsthand experience with the analysis of a particular kinship system. Offered according to demand. Maxwell.

**ANT 505 Culture, Mind, and Behavior.** Three hours. The cultural and linguistic basis of cognitive organization, local systems of folk classification, and the collection and analysis of data of shared cultural and social information. Offered according to demand. Maxwell.

**ANT 507 Sexual Stratification in Society.** Three hours. An examination of the various roles women play in society, including their relationships to the family, the economy, political organizations, and the religious system. The analysis juxtaposes women and men at all times. Offered according to demand. Maxwell.

**ANT 508 Ancient Civilizations of Mesoamerica.** Three hours. A survey of the origin and development of Mesoamerican civilizations. Offered according to demand. LeCount.

**ANT 509 Ancient Maya Civilizations.** Three hours. Ancient Maya civilizations in Mexico and Central America from the earliest inhabitants until the Spanish Conquest. Jacobi, LeCount.

**ANT 511 Culture, Health, and Healing.** Three hours. Provides the student with an overview of health, illness, and healing as they vary between and within cultural systems. DeCaro, Dressler, Jacobi, Oths.

**ANT 512 Peoples of Europe.** Three hours. A survey of the standards, customs, and beliefs that typify European cultures. Offered according to demand. Galbraith, Murphy.

**ANT 513 Peoples of Latin America.** Three hours. A survey of the standards, customs, and beliefs that typify Latin American cultures. Offered according to demand. Dressler, Murphy, Oths.

**ANT 514 Peoples of Africa.** Three hours. A survey of the standards, customs, and beliefs that typify African cultures. Offered according to demand. Singer.

**ANT 515 Peoples of East Asia.** Three hours. A survey of the standards, customs, and beliefs that typify East Asian cultures. Offered according to demand. Maxwell.

**ANT 516 Peoples of Southeast Asia.** Three hours. A survey of the standards, customs, and beliefs that typify Southeast Asian cultures. Offered according to demand. Maxwell.

**ANT 517 Peoples of the Pacific.** Three hours. A survey of the standards, customs, and beliefs that typify the cultures of Oceania. Offered according to demand.

**ANT 518 Development in Non-Western Cultures.** Three hours. A theoretical and descriptive study of social change and development in non-Western societies. Major emphasis will be on the effect of change on indigenous institutions. Offered according to demand. Singer.

**ANT 519 Myth, Ritual, and Magic.** Three hours. A survey of the anthropological literature on religion, including such topics as myth, ritual, magic, witchcraft, totemism, shamanism, and trance states. Offered according to demand. Murphy.

**ANT 520 Background of Anthropological Thought.** Three hours. An intensive review of the work of several early figures in the development of social theory (e.g., Marx, Freud, Durkheim, and Weber), emphasizing their relevance for modern anthropology. Offered according to demand. Murphy.

**ANT 521 Ethnography.** Three hours. Planning, preparing, and executing ethnographic field work. Problems of health, logistics, data recording, obtaining support, and ethics. Observation and interviewing exercises. Offered according to demand. Maxwell.

**ANT 522 Topics in Cultural Anthropology: Political Anthropology.** Three hours. An examination of the structure and organization of the political process and the sources of political power in nonindustrial societies. Offered according to demand. Singer.
ANT 523 Topics in Cultural Anthropology: Legal Anthropology. Three hours.
An examination of legal theory and legal processes from an anthropological perspective. Offered according to demand. Singer.

ANT 524 Topics in Cultural Anthropology: Economic Anthropology. Three hours.
An examination of the economic structure and organization of nonindustrial societies. Offered according to demand. Maxwell, Singer.

ANT 526 The Archaeology of Eastern North America. Three hours.
An examination of the origin and development of pre-Columbian and early historic cultures of eastern North America. Offered according to demand. Brown, Knight.

ANT 527 The Archaeology of Western North America. Three hours.
An examination of the origin and development of pre-Columbian and early historic cultures of western North America. Offered according to demand.

ANT 528 Analytical Archaeology. Three hours.
Contemporary issues in concept formation, theory construction, methods, and techniques. Offered according to demand. Brown, Knight.

ANT 529 The Archaeology of Europe. Three hours.
An examination of the origin and development of prehistoric and early historic European cultures. Offered according to demand.

ANT 530 The Archaeology of Africa. Three hours.
An examination of the origin and development of prehistoric and early historic cultures of sub-Saharan Africa. Offered according to demand.

ANT 536 Social Anthropology. Three hours.
Social organization and structure, social life and institutions, especially in nonliterate societies; and kinship, descent groups, marriage, residence, and local group composition. Offered every third semester. Dressler, Maxwell, Murphy, Oths.

ANT 537 Topics in Social Anthropology: The Analysis of Kinship. Three hours.
Contemporary issues in the study of kinship, emphasizing semantics, typology, lexicon, the psychological reality of kin terms, the extensional hypothesis, and formal accounts. Offered according to demand. Maxwell.

ANT 538 Topics in Social Anthropology: Social Structure. Three hours.
An examination of contemporary issues in the study of descent groups, marriage, residence, and local group composition in nonindustrial societies. Offered according to demand. Dressler, Krause, Maxwell, Murphy.

ANT 543 Advanced Field Investigations in Archaeology. Three to twelve hours.
Directed field study in the excavation and analysis of archaeological deposits. Each student must design and conduct a research project, then adequately report the results. Off campus. Brown, Knight.

ANT 550 Problems in Anthropology. Three to six hours.
Devoted to issues not covered in other courses. Offered according to demand.

ANT 560 Anthropology and Natural History Museums. Three hours.
Examines the historical connections between anthropology and natural history museums in the U.S. Explores the present operation of such museums and develops exhibits based on collection studies. Brown.

ANT 571 Fossil Man and Human Evolution. Three hours.
A survey of the discoveries, methods, and theories that provide the background for modern research in macroevolution. Jacobi.

ANT 572 Seminar in Human Evolution. Three hours.
A combined lecture and seminar course that explores various theories of hominid phylogeny, the theorists responsible, and the considerations that influenced their thoughts. DeCaro, Jacobi.

ANT 573 Human Osteology. Four hours. Two hours' lecture, two hours' laboratory.
A detailed introduction to human osteology, emphasizing the identification of fragmentary remains and the criteria for determination of age, sex, and race. Offered according to demand. Jacobi.

ANT 575 Human Adaptability. Three hours.
An introduction to the biological bases of human adaptability. Offered according to demand. Bindon, DeCaro, Jacobi.

ANT 576 Nutritional Anthropology. Three hours.
An introduction to anthropological inquiries in nutrition—including food habits, food systems, and dietary variability—from a cross-cultural perspective. Offered every fourth semester. Bindon.
ANT 598 Individual Investigations. Three hours. Directed nonthesis research in archaeology, cultural anthropology, anthropological linguistics, or physical anthropology.

ANT 599 Thesis Research. One to three hours.

ANT 600 Research Methodology. Three hours. Prepares students in the scientific method and research skills used in anthropology. Instruction emphasizes grant writing, study design, interview and observation techniques, and the collection, management, and analysis of data using a statistical software package. Oths.

ANT 601 Advanced Research Methods in Anthropology. Three hours. This seminar is designed to refine doctoral students' background in qualitative and quantitative research methods necessary for dissertation research. Emphasis is placed on the integration of qualitative and quantitative methods for students doing ethnographic research, and techniques of numerical induction for archaeology students. Dressler.

ANT 603 Theory and Method in Archaeology. Three hours. An examination of contemporary archaeological theory and method and their development during the 19th and 20th centuries. Blitz, Brown, Knight, LeCount.

ANT 604 Seminar in the Archaeology of Complex Societies. Three hours. Contemporary issues in the archaeology of complex societies, including different aspects of complexity and attempts to classify and measure them. Blitz, Brown, Knight, LeCount.

ANT 610 Theory and Method in Medical Anthropology. Three hours. A detailed introduction to theory and method in medical anthropology. Approaches include adaptation, biocultural, psychoanalytic, stress, and other theoretical perspectives. Bindon, Dressler, Jacobi, Murphy, Oths.

ANT 612 Seminar in Biocultural Anthropology. Three hours. A biocultural overview of the anthropology of health. Topics include biological and cultural approaches to various dimensions of human health and illness. Bindon, Dressler, Jacobi, Murphy, Oths.

ANT 620 Prehistory of North America. Three hours. An in-depth examination of the prehistory of the various areas of North America, focusing on environmental and cultural influences that affected ways of life. Blitz, Brown, Knight.

ANT 621 Native Americans in Ethnohistorical Perspective. Three hours. An examination of Indians and Eskimos of North America during the historical period, focusing on the impact of European contact on culture and society. Blitz, Brown, Knight.

ANT 625 Survey of the History of Archaeology. Three hours. A critical examination of archaeology's history as a science, with emphasis on intellectual trends, changes in method and theory, and recent developments. Offered once a year. Blitz, Brown, Knight, LeCount.

ANT 636 Social Structure. Three hours. Social organization and structure, social life and institutions, especially in nonliterate societies; and kinship, descent groups, marriage, residence, and local group composition. Offered every third semester. Dressler, Maxwell, Murphy, Oths.

ANT 640 Landmarks in Anthropological Research. Three hours. This course examines seminal works in the history of anthropology. Works may include books or smaller publications that exemplify important developments in theory and method. Staff.

ANT 641 Culture. Three hours. This seminar reviews past and contemporary theories and approaches used in cultural anthropology. Dressler, Galbraith, Murphy, Oths.

ANT 667 Methods in Prehistoric Iconography. Three hours. An exploration of anthropological and art-historical concepts as applied to the problem of meaning in prehistoric representational art. Knight.

ANT 670 Principles of Physical Anthropology. Three hours. A series of seminars and lectures designed to refine the student's knowledge of research on nonhuman primates, fossil hominids, population genetics, and human variation and adaptation. Offered once a year. Bindon, DeCaro, Jacobi.

ANT 698 Individual Investigations. One to nine hours. Directed dissertation research in archaeology, cultural anthropology, anthropological linguistics, or physical anthropology.
ANT 699 Dissertation Research. Three to fifteen hours.

UAB Course Descriptions

ANTH 600 Medical Anthropology.
Seminar addressing health care systems and theories cross-culturally, including historical changes and examination of a wide variety of simpler and more complex systems. (Taylor, Wheatley)

ANTH 601 Forensic Approaches to Osteology.
Applied human osteology, emphasizing ability to identify age, sex, and population type of skeletal material. Effects of disease and behavior on bones. (Wheatley)

ANTH 602 Classics in Anthropology.
Close reading of major classics in anthropological literature; to include one each from the four main subfields of anthropology.

ANTH 603 As Others. See Us.
Joint American studies/international studies seminar that surveys international perceptions of U.S. culture.

ANTH 605 Advanced Cultural Anthropology.
Critical review of theoretical approaches in cultural anthropology. (Taylor)

ANTH 606 World Ethnography.
Kinship, economy, social control, religion, and ritual for peoples in North America, South America, Africa, or Asia. Focus on one area. (Taylor)

ANTH 607 Social Structure.
Theoretical works in political anthropology, economic anthropology, or kinship. Emphasis varies according to the instructor.

ANTH 609 Advanced Archaeological Anthropology.
Principal theoretical approaches in 19th- and 20th-century archaeology; historical, processual, and postprocessual.

ANTH 610 Advanced Physical Anthropology.
Human evolution, primatology, race, human genetics. Tasks performed by physical anthropologists. (Wheatley)

ANTH 611 Field Archaeology. One to six hours.
Archaeological field and laboratory techniques, including excavation, surveying, and artifact analysis and description; general problems of archaeological interpretation.

ANTH 614 Geoarchaeology.
Survey of geological methods as applied to archaeological questions. Practicum in geoarchaeological laboratory and analytic methods using samples from archaeological sites in Alabama and the Middle East. (Brande)

ANTH 615 Ethnographic Field Methods. Three to six hours.
Classroom instruction and practical experience in techniques of ethnographic fieldwork, including participant observation, household surveys, structured and unstructured interviewing, and genealogies.

ANTH 621 Field School in Industrial Anthropology.
Students will be introduced to field excavation techniques, field reconnaissance, and much of the technology used in this subfield of historical anthropology. Field measurements will be taken using a total station surveying instrument and GPS unit. Drawings and a large area map of the survey area will be produced using civil engineering software (PacSoft), CAD (AutoDesk Mini CAD), and GIS (ArcView).

ANTH 630 Animal Bone Archaeology. Three to six hours.
Introduction to methods and theories of zooarchaeological research. Practical experience in processing, identification, and interpretation of animal bone remains from archaeological sites.

ANTH 635 Ethnomedicine and Ethnopsychiatry.
Approaches and contributions of anthropology to the study of health, sickness, and healing. Physical environment and human adaptations as key determinants of health systems; culturally defined concepts of sickness, health, and healing; healing as social, as well as physiological, activity. Topics may include life stages, medical knowledge among different human groups, impact of culture contact on medical systems, ecological balance and population control, cultural definitions and treatment of abnormal behavior, healers, health and supernatural, social roles of the sick, and illness and social control. (Taylor)

ANTH 642 Archaeology of the American Industrial Revolution.
Techniques for interpreting and documenting the archaeological and other material remains of the American industrial revolution with a particular emphasis on the blast furnaces, mines, and other sites in the mineral region of central Alabama.

ANTH 650 Nationalism, Ethnicity, and Violence.
Social and cultural analysis of ethnicity and nationalist ideologies particularly where these have led to violent confrontations within modern nation-states. Considers primordialist versus constructionist theories of difference; the varying weight to be attributed to political, historical, and cultural factors in the study of nationalism; and the politics of culture versus the culture of politics. (Taylor)

ANTH 653 Primatology.
Biology, behavior, and distribution of living nonhuman primates with emphasis on field studies of old-world monkeys and apes. (Wheatley)

ANTH 655 Archaeology of Alabama.

ANTH 664 Political Anthropology.
The comparative analysis of political structures and process throughout the world, focusing especially on non-Western forms; a survey of anthropological attempts to understand the complex interplay of culture and power in human societies.

ANTH 675 Human Adaptability.
Introduction to the study of how humans adapt to their physical, biological, and social environment. Reviews ecological, demographic, nutritional, physiological, and health-related concepts and considers applications to case studies. (Wheatley)

ANTH 680 Anthropology of Slavery and Servitude.
Slavery as a social and cultural phenomenon in context of a broader investigation of relations of domination and exploitation in human social life.

ANTH 691 Special Problems in Cultural Anthropology. Two to six hours.
Supervised study of specified topic area; defined problem explored in depth. Topics determined by student and instructor interest in cultural anthropology.

ANTH 692 Special Problems in Archaeology. Two to six hours.
Supervised study of specified topic area; defined problem explored in depth. Topics determined by student and instructor interest in archaeology.

ANTH 693 Special Problems in Linguistics. Two to six hours.
Supervised study of specified topic area; defined problem explored in depth. Topics determined by student and instructor interest in linguistics.

ANTH 694 Special Problems in Physical Anthropology. Two to six hours.
Supervised study of specified topic area; defined problem explored in depth. Topics determined by student and instructor interest in physical anthropology.

ANTH 699 Thesis Research. One to three hours.
Independent development of research project. Admission to candidacy.
6.3 DEPARTMENT OF ART (ART)
Associate Professor William Dooley, Chairperson
Office: 103 Garland Hall

The Department of Art offers programs leading to the master of arts (studio), the master of arts (art history), and the master of fine arts (studio). The major studio areas in the department are ceramics, painting, photography, printmaking, and sculpture. (The content of individual courses may be diverse and vary from traditional designations.) Concentrations within art history are offered in Renaissance, Baroque, 19th-century, 20th-century/contemporary, and Asian art.

Credits earned at accredited institutions may be transferred. Such transfers will be determined after completion at this university of at least 12 semester hours, or one term in residence, and upon review by the student’s faculty committee. Graduate courses in both art history and art studio are normally taught only in the fall and spring semesters.

Admission Requirements
Applicants to all graduate programs must satisfy admission policies established by the Graduate School of The University of Alabama, listed earlier in this catalog. (The Graduate School does not require the MAT or GRE for admission to the graduate program in studio art; the GRE general test is required for admission to the graduate program in art history.) All application materials should be sent to the dean of the Graduate School at the time of application. Letters of recommendation should be sent to the Graduate Coordinator of the program to which the student is applying. Each studio program applicant must submit a comprehensive portfolio of work directly to the art department. The portfolio should include a minimum of 20 works of art in the proposed major (chosen from the areas listed above). Only CDs containing the applicant’s artwork are to be accepted. It is recommended that a prospective graduate student hold a degree in art, having maintained a "B" average in art. Conditional acceptance into the program is possible. Upon completion of cited deficiencies the student would be granted full admission. All studio art students enter the M.A.-level graduate program. Residency is required of all studio art students.

Prospective graduate students in art history should hold the B.A. degree with a major in art history. The M.A. degree in art history is offered jointly by The University of Alabama and The University of Alabama at Birmingham. Application for admission may be made through the graduate school at either university. An applicant should have completed 24 semester hours in undergraduate art history courses and courses in related subjects, having maintained a "B" average. An applicant may be offered conditional acceptance into the program.

Degree Requirements

Master of Arts Degree in Studio Art
All new studio art students enter the M.A. program. The M.A. degree in studio art requires completion of a minimum of 30 semester hours of graduate work, including at least 6 hours in art history, 15 hours in a major studio field, 3 hours of graduate seminar, 3 hours of graduate critiques, and 3 hours of art studio electives. Candidacy for the degree is determined by a review at the completion of 18–24 semester hours. A thesis exhibition, written statement, and an oral review are required for successful completion of the program. The degree program must be completed within six years.

Master of Fine Arts Degree in Studio Art
Admission to the master of fine arts program is by recommendation of a faculty review committee, which meets at the time of the candidate's M.A. thesis exhibition. The committee will recommend that the candidate continue within the M.F.A. program or finalize studies at the University with a completed M.A. degree.

The M.F.A. degree requires the completion of a minimum of 60 semester hours of graduate work, including at least 9 hours of art history, 30 hours in a major studio area, 6 hours Graduate Seminar, 6 hours Graduate Critiques, and 9 hours in art history or art studio electives. The degree must be completed within six years studio graduate program. A graduate student may select a minor studio concentration of study or choose a variety of graduate-level classes offered within the art department or approved graduate-level elective courses. Admission to candidacy for the M.F.A. degree is based on the delivery of a public lecture by the candidate addressing his or her research in visual arts. Successful candidacy is achieved when the candidate has proven able to defend his or her research clearly and coherently. The candidate must demonstrate proficiency in addition to displaying personal direction in his or her chosen area of study.

A thesis exhibition is presented at the end of the candidate's final term. During the exhibition, an oral examination is conducted by the student's faculty committee. At that time, the candidate defends their exhibition and written statement.
Review procedure. A graduate review committee is established by each graduate student. The committee consists of no fewer than four faculty members but may have an unlimited number of approved graduate faculty. Required appointees to this committee include the department chairperson (director of graduate studies), the major area professor, an art historian, and another art studio faculty member. The chairperson of the committee is the student’s major area professor.

Master of Arts Degree in Art History
The M.A. in art history requires completion of 24 semester hours in art history, of which 6 hours may be taken in a related field. Courses are grouped into five general areas: Renaissance, Baroque, 19th-century, 20th-century/contemporary, and Asian art. Students must take courses in three of the six areas, as well as ARH 550 Literature of Art. Students registered on The University of Alabama campus must take at least 6 hours of coursework at The University of Alabama at Birmingham.

Further requirements include (a) a reading knowledge of French, German, or another approved language, tested by examination; (b) a general written examination in art history prepared and read by the joint faculty; and (c) a written thesis (minimum of 6 hours).

The M.A. degree must be completed within a six-year period to avoid loss of graduate credit for completed coursework.

Course Descriptions

Art, Studio (ART)

ART 502 Studio Art. Three hours.
Prerequisites: Twelve undergraduate hours in the specific studio field requested, review of portfolio, and permission of the department chairperson.
This course is open only to graduate students who are not enrolled in a graduate program in the Department of Art.

The prerequisite for the following 500-level courses is graduate standing in art in the specific studio field (as determined by a review of the faculty committee and the permission of the department chairperson and instructor). Courses are offered for 3–6 hours each semester, except for ART 506 and ART 508, which are offered for 3 hours each semester.

ART 506 Independent Studies. Three hours (each semester).
Students may make proposals for projects not taught in the regular curriculum. These must be approved by a faculty sponsor and the chairperson of the department.

ART 508 Special Projects. Three hours.

ART 510 Advanced Drawing Seminar. Three hours.
The focus of this course will be the study and production of drawings as an activity that documents our memories, examines and explains the world around us, transforms our perceptions of time and space, and helps us invent new ways of seeing and thinking.

ART 511 Graduate Seminar. Three hours.
A critical examination of contemporary issues, philosophies, criteria, and ideas in art.

ART 525/ART 625 Graduate Critiques. Three hours.
This course examines the studio practice through critical discourse, defending and discussing aesthetic philosophy and its application to research in the visual arts.

ART 530 Problems and Techniques for Teaching Studio Foundations. Three hours.
Graduate students will acquire expertise with teaching concepts and techniques relative to studio foundations teaching.

ART 602 Studio Art. Three hours.
Prerequisite: Six hours of ART 502. Open only to graduate students who are not enrolled in a graduate program in the Department of Art.

ART 606 Independent Studies. Three hours.
Prerequisite: Six hours of ART 506. Students may make proposals for projects not taught in the regular curriculum.

http://graduate.ua.edu/catalog/15300.html
These must be approved by a faculty sponsor and the chairperson of the department.

The studio courses listed below carry 2–6 hours of credit each semester; credit for more than 3 hours, however, requires permission of a faculty sponsor and the department chairperson. 500-level courses are repeatable in preparation for the M.A. degree. 600-level courses are repeatable in preparation for the M.F.A. degree.

**ART 512/ART 612 Ceramics.**
The ceramics program has a fully equipped facility with a complete inventory of clay and glaze materials. Facilities include equipment for clay mixing and preparation; workstations for forming and throwing; gas, wood fire, raku, and electric kilns; and materials for experimental kiln construction. Personal instruction is given in all forming techniques, glaze calculations, and firings. Students are encouraged to experiment with the medium and explore new processes. Emphasis is placed on the student's development of concepts and forms.

**ART 516/ART 616 Painting.**
The primary goal of the painting program is to enhance the student's ability in conceiving of a strong personal vision. The program defines painting as a complex and vital art form that exists in a state of constant flux, a tradition that is both mired in history and capable of regularly redefining itself. It equally embraces students who define painting as a practice that goes far beyond the brush, and those who employ more traditional methodologies.

**ART 518/ART 618 Photography.**
Photography is viewed as a means of personal expression and exploration, emphasizing development of the student's vision. Instruction is individually tailored and, although the facilities are designed for black and white printing, the exploration of alternative applications is encouraged. Graduate students are expected to increase their knowledge of the history of photography and contemporary art, and participate in teaching undergraduates. Facilities include a film developing area, two darkrooms, and a critique space. Computers are accessed through the digital media area.

**ART 520/ART 620 Printmaking.**
Graduate printmaking is conducted in a workshop situation, including group critiques and technical demonstrations. The program philosophy embraces a broad spectrum of activities relating to the idea of the multiple and the history of printed material. Students are expected to master traditional techniques and encouraged to work in an interdisciplinary manner, exploring the boundaries of the media area. The facility comprises equipment for intaglio and relief printing, stone and plate lithography, screen printing, and photo-based/digital printmaking.

**ART 522/ART 622 Sculpture.**
The sculpture program allows students to work with an extensive range of media and processes while emphasizing conceptual development and refined technical ability. Sculpture encompasses traditional media, methods, and processes as well as technologies that can be adapted to sculptural activities, idioms, and forms. Facilities include a full wood shop, metal fabrication shop, foundry, critique/installation room, and graduate studio space.

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**Art History (ARH)**

A maximum of 6 semester hours of 400-level courses may be taken for graduate credit in the art history master's degree program. The remainder of the coursework for the M.A. must be taken at the 500 level. In addition, 6 hours of courses must be taken at The University of Alabama at Birmingham. Any 400-level course may be taken for graduate credit at either institution. See The University of Alabama at Birmingham’s graduate catalog for that institution's course listings.

The following 400-level courses are taught at The University of Alabama.

**ARH 455 Topics in Asian Art.** Three hours. Selected topics in the art of Asia.

**ARH 467 Topics in Renaissance Art.** Three hours. Selected artists, monuments, and patrons of the Renaissance period.

**ARH 470 Topics in Baroque Art.** Three hours. Selected problems in the visual discourse of the 17th century.

**ARH 481 Topics in 20th-Century Painting and Sculpture.** Three hours. Selected problems in modern and contemporary art.

**ARH 483 Topics in American Architecture.** Three hours. Selected topics in American architecture.

**ARH 491 Special Projects.** Three hours. This course number may be used for special projects determined by the instructor, or for independent research projects proposed by students. In the latter case, the project must be approved by a sponsoring faculty member and
the chairperson of the department. The course may be taken for 3 hours a semester and for a maximum of 6 hours' credit.

Courses at the 500 level are taught at The University of Alabama and The University of Alabama at Birmingham and may be taken at either institution. The following courses (except for ARH 598 and ARH 599) are seminars; the content of each seminar will vary with the instructor. A student may take any seminar twice for credit. Two-thirds of the coursework for the M.A. must be taken at the 500 level.

ARH 550 Literature of Art. Three hours. Principles and methodology of the discipline as described in the writing of its founders and chief makers; bibliographical research method and mastery. Required of all art history M.A. students.

ARH 554 Research in Art History. Three hours.

ARH 555 Asian Seminar. Three hours.

ARH 556 The Arts of Buddhism. Three hours.

ARH 561 Critical Theory. Three hours.

ARH 565 Renaissance Seminar. Three hours.

ARH 570 Baroque Seminar. Three hours.

ARH 575 19th-Century Seminar. Three hours.

ARH 580 20th-Century/Contemporary Seminar. Three hours.

ARH 598 Independent Study. Three hours.

ARH 599 Thesis Research. One to three hours.
DEPARTMENT OF BIOLOGICAL SCIENCES (BSC)
Chairperson: Professor Harriett Smith-Somerville, Office: 319 Biology Building.

The department offers programs leading to the master of science, master of science in marine science (biological sciences), and doctor of philosophy degrees. The graduate program is designed to make available to students a broad basic training in the biological sciences, with a specialization in the field of the research problem. Research problems are available in the following fields: aquatic entomology, biochemistry, coastal oceanography, comparative animal physiology, developmental genetics, estuarine processes, ichthyology, immunology, limnology, marine and freshwater biology, microbial ecology, microbial genetics, microbial physiology, molecular and cellular biology, plant and animal ecology, plant and animal physiological ecology, plant taxonomy, stream ecology, systematics, virology, and wetlands ecology.

The J. Nicholene Bishop Biological Station (480 acres in Hale County), the University of Alabama Arboretum (60 acres in Tuscaloosa County), the Dauphin Island Sea Lab (Dauphin Island), the Point Aux Pins Marsh Lab, and extensive plant and animal collections are available to students for study and research.

Admission Requirements
Before entering graduate study in the biological sciences, the student is expected to have a substantial knowledge of chemistry, mathematics, and physics, and to have completed basic courses in the biological sciences with high standards of scholarship. In general, a curriculum equivalent to that required of undergraduate majors in the Department of Biological Sciences is expected. Students admitted without this background may be required to make up course deficiencies without receiving graduate credit.

Two types of admission to the graduate program in the biological sciences are possible: regular admission and conditional admission. In general, to be considered for regular admission, a student must have an overall scholastic average of 3.0 (based on a 4.0 system), including a 3.0 grade point average for the last 60 hours attempted and a 3.0 average in all biological sciences courses attempted. In addition, the applicant must have received a combined score of at least 1200 on the verbal and quantitative portions on the general test of the Graduate Record Examination.

Consideration for conditional admission requires an overall scholastic average of 2.5 (based on a 4.0 system), including a 3.0 average for the last 60 hours attempted and a 3.0 average in all biological sciences courses attempted. Also required is a combined score of at least 1000 on the verbal and quantitative portions on the general test of the Graduate Record Examination. Each student admitted conditionally to the biological sciences graduate program must maintain a 3.0 average for his or her first 12 hours in the Department of Biological Sciences at The University of Alabama. All hours taken in the semester in which the student reaches 12 hours will be considered, even if by so doing the total exceeds 12 hours. If this requirement is not met, the student will be automatically dismissed without appeal following the semester in which these 12 hours are earned, except in those cases that are obviously beyond the student's control.

Degree Requirements
Students should refer to the Graduate Student Handbook of the Department of Biological Sciences for additional information.

Master of science. Two plans, I and II, are available for the M.S. degree. A student pursuing an M.S. degree under either plan is expected to submit a formal research proposal by his or her second semester in residence, and to take final written and oral examinations before the degree is granted. Plan I requires 24 hours of coursework and a formal thesis; Plan II requires 30 hours of coursework and a written research report approved by the student's graduate committee. A "B" average must be maintained in all coursework.

Doctor of philosophy. A minimum of 48 semester hours of graduate course credit is required for the Ph.D. degree. A "B" average must be maintained in all coursework. Students are also required to take at least 24 hours in BSC 699 Dissertation Research. All requirements for the Ph.D. must be completed within a period of seven years following admission to the doctoral program. There is no general requirement for a foreign language, although individual graduate committees may require a language. A formal dissertation is required, in addition to preliminary written and oral examinations and a final oral examination.

Additional information on the various degree programs is available on request from The University of Alabama, Department of Biological Sciences, Box 870344, Tuscaloosa, AL 35487-0344; or visit our website:
Course Descriptions

Prerequisite: Graduate standing. Courses at the 500 level are not open to students who have received credit for the same courses at the 400 level.

BSC 500 Vertebrate Functional Morphology. Four hours. Three lectures and one three-hour laboratory period. Prerequisites: BSC 114:115, BSC 116:117, BSC 300, or permission of the instructor. Morphology of animals, primarily vertebrates, with emphasis on functional aspects of anatomy. Laboratory deals mainly with comparative anatomy of the vertebrates. Offered fall semester.

BSC 503/ BSC 504 Introduction to Biological Sciences Instruction. Two hours. Prerequisites: Strong background in biological sciences, formal application, and interview. Students in the M.S. program who are not teaching assistants may receive up to 2 hours' credit. Students in the Ph.D. program who are not teaching assistants may receive up to 4 hours' credit provided they teach two different laboratories. Offered fall and spring semesters.

BSC 506 Introduction to Research in Biological Sciences. One hour. Corequisite: Student must be in the first year of the graduate program. Surveys research programs in biological sciences. Offered fall and spring semesters.

BSC 507 Research Techniques in Biology. One to six hours. Individualized instruction and the application of research techniques to specific problems for graduate students in the department. Offered fall and spring semesters.

BSC 512 Limnology. Three hours. May be taken separately or with BSC 513. A study of freshwater environments and organisms living in lakes, ponds, and streams. Offered fall semester. A. Ward.

BSC 513 Limnology Laboratory. Two hours. One laboratory period. An optional laboratory accompanying BSC 512. Offered fall semester. A. Ward.

BSC 514 Dendrology. Three hours. One lecture and one four-hour laboratory period. Identification, classification, characteristics, and distribution of the principal forest trees of the United States. Two weekend field trips are required. Offered alternate fall semesters. Haynes.

BSC 516 Aquatic Vascular Plants. Four hours. Two lectures and one four-hour laboratory period. Prerequisite: BSC 434 or BSC 534. Identification, classification, characteristics, and distribution of aquatic plant species. One weekend field trip is required. Offered alternate fall semesters.

BSC 517 Environmental Modeling. Three hours. Two lectures and one discussion period. Prerequisites: BSC 114:115, BSC 116:117, CH 101, CH 102, and MATH 125 (or equivalent). An integrated survey of quantitative principles and computer-based solution techniques important for understanding environmental systems and for environmental problem solving. Offered alternate fall semesters.

BSC 520 Principles of Systematic Zoology. Three hours. Three lectures. Prerequisites: BSC 373 or permission of the instructor. An introduction to the principles, methods, and applications of systematic zoology and the zoological classifications. Offered alternate fall semesters. Harris, Lydeard.

BSC 521 Geomicrobiology. Three hours. Prerequisites: One year of chemistry (CH 101:102); either physical science (GEO 101:102), ecology (BSC 385), microbiology (BSC 310), or permission of the instructor. This interdisciplinary course examines the interrelationships between microorganisms and earth processes and environments. Topics will focus on microorganismal involvement in mineral precipitation and dissolution and processes that control distribution of elements at and below the surface of the earth, as well as geochemical and mineralogical factors that exert important controls on microbial evolution and the structure of microbial communities. A. Ward, Findlay.

BSC 522 Climate Dynamics. Three hours. Prerequisites: PH 101:102, MATH 125, GY 101:102. This course will provide students with a quantitative introduction to the earth's climate on global and regional scales, including interaction between atmosphere, ocean, and biosphere. Offered alternate fall semesters. M. Ward.

BSC 523 Freshwater Ecosystems. Three hours. Prerequisites: CH 101:102, CH 231:232 recommended, MATH 125, BSC 412/BSC 512 or equivalent. This course addresses the integration of physical and chemical components of drainage basins with biological metabolism, growth and reproduction along functional gradients of river, wetland, reservoir, and lake ecosystems. Offered alternate
spring semesters.

**BSC 524 Human Physiology.** Three hours. Three lectures.  
Prerequisite: BSC 300. May be taken with BSC 525 or separately.  
Examines the cardiovascular, digestive, endocrine, muscular, neural, renal, reproductive and respiratory systems.  
Offered spring semesters. Secor.

**BSC 525 Human Physiology Laboratory.** One hour. One four-hour laboratory period.  
Prerequisite: BSC 424.  
Corequisite: BSC 524.  
Centers on principles of physiology and instrumentation for physiology. Offered alternate fall semesters.

**BSC 528 Biology of Fishes.** Three hours. Two lectures and one laboratory period.  
Prerequisite: BSC 373 or permission of the instructor.  
A survey of the structure, function, ecology, and classification of fishes. Offered alternate spring semesters. Harris.

**BSC 531 Pathogenic Microbiology.** Three hours. Three lectures.  
A study of microorganisms related to health and disease. Offered spring semester. Winters.

**BSC 532 Pathogenic Microbiology Laboratory.** Three hours. One lecture and two laboratory periods.  
Prerequisite: BSC 313 or permission of the instructor.  
Prerequisite or corequisite: BSC 531 or permission of the instructor.  
Practical experience in the isolation, characterization, and identification of pathogenic microorganisms. Offered alternate spring semesters. LeBlanc.

**BSC 534 Plant Taxonomy.** Four hours. Two lectures and one four-hour laboratory period.  
Characteristics and distribution of the major families of vascular plants, and practice in the collection and identification of flowering plants. One weekend field trip is required. Offered alternate spring semesters. Haynes.

**BSC 535 Immunology.** Four hours. Three lectures.  
Prerequisite: BSC 310 or permission of the instructor.  
Thorough exploration of various aspects of modern immunology at the molecular and cellular levels. Offered fall semester. LeBlanc.

**BSC 536 Immunology Laboratory.** Three hours. One lecture and two laboratory periods.  
Prerequisite: BSC 435, BSC 535, or permission of the instructor.  
Practical experience in modern immunological techniques. Offered alternate spring semesters. LeBlanc.

**BSC 539 Molecular Biology Laboratory.** Three hours. One lecture and one four-hour laboratory period.  
Prerequisites: CH 337 and either BSC 450 or BSC 550; or permission of the instructor.  
A survey of the common analytical techniques used in molecular biology. Topics include protein purification and characterization, enzymology, DNA isolation and restriction endonuclease mapping, and gene cloning. Offered spring semester. Heath.

**BSC 541 Developmental Biology.** Three hours. Three lectures.  
Prerequisites: BSC 300 and BSC 315, or permission of the instructor.  
The course provides basic information about events in developing animal systems, emphasizing cellular, molecular, and genetic research approaches to the study of development. Offered spring semester. O'Donnell, Johnson.

**BSC 544 General Virology.** Three hours. Three lectures.  
Prerequisites: BSC 300 or BSC 311, and BSC 450 or BSC 550; or permission of the instructor.  
The molecular biology of bacterial, animal, and plant virus replication, including the biophysical, biochemical, and biological properties of virus particles. Offered spring semester. Winters.

**BSC 550 Fundamentals of Biochemistry.** Three hours. Three lectures.  
Prerequisite: CH 332 or permission of the instructor.  

**BSC 551 Molecular Biology.** Three hours. Three lectures.  
Prerequisite or corequisite: BSC 550 or permission of the instructor.  
A one-semester survey of the synthesis, processing, and degradation of DNA, RNA, and protein and the regulation of these processes. Offered spring semester. Churchill, Johnson, O'Donnell.

**BSC 555 Laboratory Animal Science.** Two hours. One lecture and one laboratory period.  
Prerequisite: Permission of the instructor.  
A study of the husbandry and use of animals in research, including handling, housing, breeding, nutrition, diseases and parasites, basic techniques of anesthesia and surgery, and administration of drugs and medication.
BSC 556 Microbial Ecology. Three hours. Three lectures.  
Prerequisite: BSC 311 or permission of the instructor.  
A study of microorganisms in the environment, with emphasis on their roles in energy transformations, biogeochemical cycles, and biotic interactions. Offered alternate fall semesters. Findlay, Olson.

BSC 557 Microbial Ecology Laboratory. Two hours. One four-hour laboratory period.  
Prerequisite: BSC 311 or permission of the instructor.  
Corequisite: BSC 556.  
A laboratory course that provides training in techniques for examination of the abundance, diversity, and activity of microorganisms in natural water, soil, and sediment environments. Offered alternate fall semesters. Roden, Olson.

BSC 560 Human Developmental Biology. Three hours. Three lectures.  
Prerequisites: BSC 300 and either BSC 400 or BSC 500 are recommended.  
Development of the human embryo and fetus, including molecular, physiological, and structural aspects of morphogenesis and functional development. Offered irregularly.

BSC 564 Biology of Algae. Four hours. Two lectures and one four-hour laboratory period.  
Freshwater and marine algae and their structure, development, taxonomy, and distribution. Offered irregularly. Lopez-Bautista.

BSC 572 Mycology. Three hours. Two lectures and two laboratory periods.  
Prerequisite: BSC 310 or permission of the instructor.  
An introduction to the fungi and their biology, including aspects of their structure and function, taxonomy, genetics, and ecology. Suberkropp.

BSC 575 General Entomology. Four hours. Two lectures and one four-hour laboratory period.  
Prerequisite: BSC 376 or permission of the instructor.  
A survey of the structure, function, classification, and habits of insects. Offered irregularly. Huryn.

BSC 576 Aquatic Insects. Four hours. Two lectures and one four-hour laboratory period.  
Prerequisite: BSC 475, BSC 575, or permission of the instructor.  

BSC 582 Conservation Biology. Three hours. Three lectures.  
A thorough examination of the principles of conservation biology. Offered alternate spring semesters. Lydeard.

BSC 584 Aquatic Biology Seminar. One hour.  
Review and discussion of current topics in aquatic biology. Offered spring semester.

BSC 587 Biogeography. Three hours. Three lectures.  
Prerequisite: BSC 385 or permission of the instructor.  
Examination of the ecological and historical factors influencing the geographic distribution of plants and animals. Offered alternate fall semesters. Harris.

BSC 590 Stream Ecology. Four hours. Two lectures and one laboratory period.  
Prerequisite: BSC 385.  
A thorough study of the structural (physical and biological) and functional (energy flow, nutrient cycling, community structure) attributes characteristic of stream and river ecosystems. Offered alternate spring semesters. Huryn.

BSC 594 Signal Transduction in Neurobiology. Three hours.  
Prerequisites: Undergraduate-level genetics and cell biology or developmental biology. Seminar on current topics related to signal transduction, as it pertains to the molecular basis of neurobiology and development. Offered alternate fall semesters. Caldwell.

BSC 595 Advanced Cell Biology. Three hours. Three lectures.  
Prerequisite: BSC 300 or permission of the instructor.  
Presents the structures, functions, and relationships of cellular organelles and the cytoskeleton. Offered fall semester. Smith-Somerville.

BSC 596 Bioremediation. Three hours. Three lectures.  
Prerequisite: BSC 450 or BSC 550, and CH 321; or permission of the instructor.  
Study of the biological degradation of toxic chemicals in the environment. Offered irregularly. Churchill.

BSC 598 Research Not Related to Thesis. One to fifteen hours. Pass/fail.  
Offered fall and spring semesters.

Offered fall and spring semesters.
Student presentations of research background and current results. Students may enroll each semester. Offered fall and spring semesters. O'Donnell.

BSC 603 Current Topics in Molecular Biology. One hour. Pass/fail.
Student presentations of current research literature. Offered fall and spring semesters. Johnson.

Offered irregularly.

Offered fall and spring semesters.

Students attend and participate in a one-hour weekly seminar and present a 45-minute seminar during the semester. The seminar presented should be a synthesis of research on a particular topic in ecology or systematics, requires a practice session, and includes written evaluations by the faculty. Offered fall and spring semesters.

BSC 607 Advanced Research Techniques in Biology. One to six hours.
Individualized instruction and the application of research techniques to specific problems at an advanced level for graduate students in the department. Offered fall and spring semesters.

BSC 612 Aquatic Secondary Production. Three hours. Three lectures.
A study of the population and production dynamics of aquatic animals, including theory, methods, and interpretation of the role of animals in ecosystem bioenergetics. Offered alternate fall semesters. Benke.

BSC 613 Aquatic Ecosystem Ecology. Two hours. Seminar/discussion.
Prerequisite: BSC 412, BSC 512, or permission of the instructor.
Analysis of the structure of and functional interactions and fluxes among physical, chemical, and biological components of aquatic ecosystems. Functional commonalities are sought among diverse ecosystems (lakes, rivers, reservoirs, shallow waters, land-water interfaces). Offered irregularly.

BSC 631 Molecular Genetics of Lower Eukaryotes. Three hours.
Prerequisites: BSC 300, BSC 315.
Survey of lower eukaryotic model systems using current and historical literature with an emphasis on the usefulness of these organisms to address particular biological questions. Offered alternate fall semesters. Johnson, Smith-Somerville.

BSC 632 Higher Eukaryotic Genetic Model Systems. Three hours.
Critical analysis of higher eukaryotic genetic model systems used in modern molecular research. Offered alternate spring semesters. O'Donnell.

BSC 633 Critique of Research in Molecular Biology. Three hours.
Prerequisites: Any two graduate courses in molecular and cellular biology.
Critical analysis of current research in molecular biology. Narrow topics from rapidly moving fields will be selected for detailed reading and class discussion. Offered alternate fall semesters. Stephenson, Johnson.

BSC 634 Practical Molecular Biology. Three hours.
Prerequisites: Undergraduate-level biochemistry and genetics courses.
This course presents the theoretical basis for commonly used molecular biology procedures that are in general use in all fields of biology. Offered spring semester. Churchill, O'Donnell.

BSC 635 Developmental Genetics. Three hours. Two lectures and one discussion period.
Prerequisite: BSC 441, BSC 541, or equivalent.
A course in the genetic and molecular mechanisms of development for graduate students. Offered alternate fall semesters. Stephenson.

BSC 651 Population Ecology. Three hours.
Prerequisites: BSC 385 or equivalent and MATH 125 or equivalent.
Theory and practice of population ecology (plants and animals); sampling, population processes, regulation, interspecific interactions, age structure analysis, and applications in resource management. Offered alternate fall semesters. Benke.

BSC 652 Community Ecology. Three hours.
Prerequisites: BSC 385 or equivalent; MATH 125 or equivalent; CHS 525; ST 550 or equivalent.
Thorough investigation of theory and empirical studies of ecological communities (plant, animal, microbial), including methods, community structure, diversity, succession, links to ecosystem function, resource management. Offered alternate spring semesters.
BSC 656 Microscopical Techniques. Four hours. 
Prerequisite: Permission of the instructor.
An introduction to the methods and applications of electron microscopy in biological research, including techniques for preparation of biological specimens, operation of the transmission and scanning electron microscopes, and photography. Offered irregularly. Smith-Somerville.

BSC 660 Protein Structure and Function. Three hours. Three lectures. 
Prerequisite: BSC 439, BSC 539, CH 462, or CH 562.

BSC 695 Special Topics in Biological Sciences. One to four hours.
Courses with this number may address any biological topic not covered by existing courses. The credit hours and format are arranged as appropriate to each topic. The specific course title is added at the time the course is taught. Offered irregularly.

BSC 696 Resident Study at an Approved Biological Station. Two to six hours.
Prerequisite: Written approval from the department must be received in advance.
Credit for the course is determined by the extent of the coursework. Offered fall and spring semesters.

BSC 698 Research Not Related to Dissertation. One to fifteen hours. Pass/fail.
Offered fall and spring semesters.

Offered fall and spring semesters.
6.5 DEPARTMENT OF CHEMISTRY (CH)
Interim Chairperson: Professor David Dixon, Office: 206 Shelby Hall

The Department of Chemistry offers programs in the four traditional areas of chemistry (analytical, inorganic, organic, and physical) as well as biochemistry leading to the master of science in chemistry (Plan I or Plan II, as outlined in the "Academic Policies" section of this catalog) and the doctor of philosophy in chemistry. The completion of a master's degree is optional for students enrolled in the Ph.D. program.

Admission Requirements
In addition to meeting the general requirements of the Graduate School, entering graduate students should have completed, with an average grade of "B" or better, undergraduate coursework equivalent to a major in chemistry. Applicants may qualify for regular or conditional admission. To be considered for regular admission, an applicant must have a verbal and quantitative score of at least 1000 on the general test of the Graduate Record Examination. A score at the 50th percentile on the Miller Analogies Test may be substituted for the GRE score.

An applicant whose credentials do not meet the requirements for regular admission may be considered for conditional admission if the applicant has a grade point average of 2.5 overall and an acceptable score on the appropriate admission examination for conditional admission. An applicant may be considered for conditional admission if he or she meets either the 3.0 GPA requirement for regular admission or the entrance examination requirement for regular admission. A student admitted conditionally must remove any undergraduate deficiencies during the first year of graduate study and must remove the condition by earning an average of "B" or better in the first 12 hours of graduate-level work.

Diagnostic examinations covering the traditional areas of chemistry are required of all entering graduate students. These examinations are given a few days prior to registration for the first semester so that the results may be used by the departmental graduate committee in planning the student's coursework for the first year.

Degree Requirements
The requirements for the master of science in chemistry are the same as the Graduate School's general requirements. The Ph.D. degree requirements also follow the general policy outlined for the Graduate School. The comprehensive examination usually consists of a number of written cumulative examinations plus the oral defense of an original research proposal. In addition, acceptable literature and research seminars must be presented to the chemistry faculty and graduate students. The Ph.D. student's research performance is evaluated by his or her research advisor with concurrences of the student's dissertation committee. Normally, the student is expected to be an author or coauthor of at least one publication in a refereed scientific journal prior to the awarding of the degree.

Financial Assistance
Financial assistance for graduate students in chemistry is available through fellowships, graduate teaching assistantships, and graduate research assistantships.

Course Descriptions: Analytical Chemistry

CH 521 Introduction to Graduate Analytical Chemistry. Three hours. Generally, this course is for entering students whose undergraduate training in analytical chemistry is insufficient.

CH 524 Advanced Analytical Chemistry I: Spectroscopic Methods of Analysis. Three hours. Prerequisite: CH 521 or equivalent. Incorporates both a theoretical and a practical component. The separations theory will be developed and applied to gas chromatography and high pressure liquid chromatography/planar chromatography. Hyphenated techniques are emphasized. Students must master a GC/MS tutorial and carry out a project on analysis of an unknown.

CH 525 Advanced Analytical Chemistry II: Chromatography. Three hours. Prerequisite: CH 521 or equivalent. Provides graduate students with knowledge of the fundamental aspects of various modern methods of spectroscopic analysis. Reference to analytical applications and experimental methods is made, where relevant.

CH 526 Chemometrics. Three hours. Prerequisite: CH 521 or equivalent or permission of the instructor. Chemometrics involves the application of statistical and mathematical methods to chemistry. Areas of emphasis will be data and error analysis, calibration, experimental design, signal processing and transform procedures, and data
description and enhancement.

**CH 552 Research Techniques in Analytical Chemistry.** One to six hours.

**CH 621/ CH 622 Current Trends in Analytical Chemistry.** Three hours.

**CH 626 Surface Analytical Techniques.** Three hours.
Prerequisite: CH 521 or equivalent.
Introduces the student to the instrumentation and techniques used to study surfaces and interfaces. Spectroscopic, microscopic, desorption, and vacuum techniques are covered.

**CH 627 Mass Spectrometry.** Three hours.
Prerequisite: CH 521 or equivalent or permission of the instructor.
Deals with all areas of mass spectrometry (MS), including single and multiple stage MS and chromatography/MS. The emphasis is on fundamental principles and instrumentation, as well as applications and data interpretation.

**CH 652/CH 653 Advanced Research Techniques in Analytical Chemistry.** One to six hours.

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Course Descriptions: Biochemistry

**CH 554 Research Techniques in Biochemistry.** One to six hours.

**CH 561 Biochemistry I.** Three hours.
Prerequisites: CH 232 or CH 336, and CH 237.
First-semester course in basic biochemistry. Structure and properties of biological molecules, including proteins, DNA, RNA, carbohydrates, lipids, and enzyme cofactors and prosthetic groups. Introduction to intermediary metabolism and glycolysis. Offered fall semester.

**CH 562 Biochemistry II.** Three hours.
Prerequisite: CH 561 or permission of the instructor.
Continuation of basic one-year course in biochemistry. Intermediary metabolism, TCA cycle, oxidative phosphorylation, and catabolism of biomolecules. Biosynthesis of amino acids, nucleotides, carbohydrates, and lipids. DNA and RNA replication, with introduction to recombinant technology. Protein biosynthesis and membrane transport. Offered spring semester.

**CH 563 Biochemistry Laboratory.** Three hours.
Prerequisite or corequisite: CH 561.
One lecture and one six-hour laboratory. Biochemical techniques within the structure of a semester-long research project. Topics include protein purification and chromatography, spectroscopy, electrophoresis, kinetics, and DNA manipulation.

**CH 564 Advanced Biophysical Chemistry.** Three hours.
Prerequisites: CH 341 and CH 561, or permission of the instructor.
The study of physical techniques applied to the development and experimental verification of biochemical hypotheses. Examples include forms of spectroscopy, treatment of multiple equilibria, and enzyme kinetics. Examples of applications are drawn from such areas as oxygen transport, oxidative phosphorylation, and photosynthesis.

**CH 565 Advanced Bio-Inorganic Chemistry.** Three hours.
Prerequisite: CH 401, CH 561, or permission of the instructor.
Study of current knowledge on the roles of metal ions in biological systems, including structural and catalytic functions. Topics include bio-coordination chemistry, spectroscopic and magnetic methods, and kinetics.

**CH 566 Advanced Bio-Organic Chemistry.** Three hours.
Prerequisite: CH 232, CH 561, or permission of the instructor.
Application of organic chemical concepts to biochemical systems. Topics include enzyme mechanisms at the molecular level, the chemistry of biomolecules including nucleic acids, peptides, and saccharides, and the development of chemical methods for the manipulation of biochemical systems.

**CH 654/CH 655 Advanced Research Techniques in Biochemistry.** One to six hours.

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Course Descriptions: Inorganic Chemistry

**CH 501 Introduction to Graduate Inorganic Chemistry.** Three hours. Three lectures.
Generally, this course is for entering graduate students whose undergraduate training in inorganic chemistry is insufficient.

**CH 556 Research Techniques in Inorganic Chemistry.** One to six hours.
CH 601 Advanced Inorganic Chemistry I: Structural Methods in Inorganic Chemistry. Three hours.

CH 602 Chemistry of Coordination Compounds. Three hours. Three lectures.

CH 603 Chemistry of the Solid State. Three hours. Three lectures.

CH 604 Chemistry of the Main Group Elements. Three hours. Three lectures.

CH 605 Special Topics in Inorganic Chemistry. Three hours. Three lectures.

CH 606 X-Ray Crystallography. Three hours. Three lectures.

CH 609 Organometallic Chemistry. Three hours.
Prerequisite: CH 402 or CH 601.

CH 611 Inclusion and Molecular Recognition. Three hours. Three lectures.
Prerequisite: CH 601.

CH 656/CH 657 Advanced Research Techniques in Inorganic Chemistry. One to six hours.

Course Descriptions: Organic Chemistry

CH 530 Introduction to Graduate Organic Chemistry. Three hours. Three lectures.
Generally, this course is for entering graduate students whose undergraduate training in organic chemistry is insufficient.

CH 531 Advanced Organic Chemistry I: Physical Organic. Three hours.
Theory and mechanism of organic transformations, detailed evaluation of organic structure, molecular dynamics, molecular orbital interactions, molecular symmetry, stereochemistry of reactions, and energetics of reaction paths.

CH 532 Advanced Organic Chemistry II: Advanced Synthesis. Three hours.
Fundamentals of organic transformations and advanced synthetic methodology with application to the synthesis of complex organic structures.

CH 558 Research Techniques in Organic Chemistry. One to six hours.

CH 566 Advanced Bio-Organic Chemistry. Three hours.
Prerequisite: CH 231, CH 561, or permission of the instructor.
Application of organic chemical concepts to biochemical systems; enzymatic mechanisms; chemistry and biochemistry of nucleic acids, peptides, and saccharides.

CH 609 Organometallic Chemistry. Three hours.
Structure, bonding, and reactivity of organotransition metallic compounds, mechanisms of transformations and fundamental reaction types, applications to catalysis and organic synthesis.

CH 635 Selected Topics in Organic Chemistry. Three hours.

CH 637 Spectroscopic Techniques in Organic Chemistry. Three hours.
Fundamentals of spectroscopic techniques for structure determination of organic molecules. Theory and application of IR, NMR, and MS in organic chemistry.

CH 658/CH 659 Advanced Research Techniques in Organic Chemistry. One to six hours.

Course Descriptions: Physical Chemistry

CH 540 Introduction to Graduate Physical Chemistry. Three hours. Three lectures.
Generally, this course is for entering graduate students whose undergraduate training in physical chemistry is insufficient.

CH 541 Advanced Physical Chemistry I: Kinetics and Statistical Thermodynamics. Three hours. Three lectures.
Prerequisite: CH 540 or equivalent.

CH 549 Advanced Physical Chemistry II: Atomic and Molecular Structure. Three hours.
Prerequisites: CH 336, CH 338, CH 342, and CH 348.
CH 570 Research Techniques in Physical Chemistry. One to six hours.

CH 643 Quantum Mechanics. Three hours.  
Prerequisite: CH 541 or CH 549.

CH 645 Selected Topics in Physical Chemistry. Three hours.

CH 660 Advanced Research Techniques in Physical Chemistry. One to six hours.

Course Descriptions: Miscellaneous

CH 585/CH 586 Chemistry Seminars. Two hours.

CH 599 Thesis in Chemistry. Credit to be arranged.

CH 699 Dissertation. Credit to be arranged. Three-hour minimum.
The Department of Communicative Disorders offers a graduate program leading to the master of science degree in speech-language pathology. The program is accredited by the Council on Academic Accreditation through the American Speech-Language-Hearing Association.

The program combines coursework, observation, and practicums to familiarize students with communicative disorders and to develop their skills in assessment and rehabilitation. Most students with undergraduate degrees in communicative disorders will complete the degree requirements in five semesters of full-time study. Students who complete the master's degree will also have met the academic and practicum requirements for the Certificate of Clinical Competence from the American Speech-Language-Hearing Association and for a license from the State of Alabama. These credentials enable graduates to be employed in clinical settings as well as in the public schools of Alabama and many other states, depending upon their certification requirements.

Practicum sites include UA's Speech and Hearing Center, public schools, DCH Regional Medical Center, University Medical Center, West Alabama Rehabilitation Center, Bryce Hospital, RISE Program, VA Medical Centers in Tuscaloosa and Birmingham, and other sites in the Birmingham area. Certified and/or licensed professionals supervise at all sites.

Admission Requirements
Applicants must submit scores on the Graduate Record Examination general test or the Miller Analogies Test. After admission to a program, each student's effectiveness will be given a broad-based evaluation by faculty and supervisors. Decisions on clinical placement, completion of the program, or termination of the student from the program will be based on factors such as course grades, demonstrated clinical competence, and personality factors. See the "Academic Policies" portion of this catalog for more information.

Degree Requirements
The requirements for the master of science degree follow the general policies outlined in the Graduate School portion of this catalog under "Degree Requirements."

Course Descriptions
Students may not receive credit at both the 400 and 500 levels for courses of equivalent content. Graduate students enrolled in 500-level courses that are also offered at the 400 level will be expected to perform extra work of an appropriate nature. Graduate credit will not be granted at the 400 level.

CD 501 Introduction to Research Methods. Three hours.

CD 502 Language Diagnosis and Intervention: School Aged. Two hours.

CD 506 Sociolinguistics in Speech-Language Pathology. Two hours.
A framework for systematically analyzing cultural similarities and differences. Examination of cultural differences, verbal and nonverbal, in the clinical setting.

CD 509 Language Development. Two hours.
Advanced study of normal language and communication development. Presentation and discussion of theories, individual differences, and cultural differences in typically developing children.

CD 512 Language Diagnosis and Intervention: Birth to Five. Two hours.
Presentation and discussion of theories, practices, and methods of differential diagnosis and language intervention for language-impaired children ages birth to five.

CD 515 Professional Issues. One hour.
Study of professional issues in the field of communicative sciences and disorders. Includes current issues, practice standards, certification, licensure, ethics, employment, and professional organizations.

CD 516 Multicultural Issues. Two hours.
Study of multicultural issues and how they affect speech and language. Presentation and discussion of American
cultures and communicative differences.

**CD 517 Advanced Clinical Practicum, Speech.** One to three hours. Individual assignments in selected areas of speech and language therapy. Clinical practice and scholarly investigation, with regular staff consultation.

**CD 520 Special Topics in Communicative Disorders.** One to three hours. Graduate students will enroll in special topics one or more times depending upon offerings and student program interests. Topics will vary annually to reflect students’ needs for educational experiences within the profession appropriate at the time.


**CD 553 Acquired Language and Related Disorders in Adults.** Three hours. Advanced study of the nature, assessment, and treatment of language and cognitive disorders associated with acquired brain injury, such as stroke, TBI, and dementia.

**CD 554 Fluency Disorders.** Two hours. The study of the nature, assessment, and treatment of stuttering. Emphasis on understanding the different onset and developmental theories and different approaches to treatment.

**CD 555 Voice Disorders.** Two hours. Advanced study of the physiological, acoustical, and psychological factors underlying voice disorders, methods of rehabilitation, and problems in research.

**CD 556 Acquired Motor Speech Disorders: Adults.** Two hours. Advanced study of the nature, assessment, and treatment of acquired speech disorders including dysarthria and apraxia. Underlying neuroanatomy and neurophysiology will be included.

**CD 557 Language Diagnosis and Intervention: Special Populations.** Two hours. Theories, practices, and methods of differential diagnosis and intervention for language and phonology in multicultural, behaviorally disordered, severely multi-handicapped, mentally retarded, and learning disabled populations.

**CD 575 Dysphagia in Children.** One hour. Advanced study of the nature, assessment, and treatment of swallowing disorders in children. Special populations (tracheostomized, ventilator) will be included.

**CD 576 Dysphagia in Adults.** Two hours. Advanced study of the nature, assessment, and treatment of swallowing disorders in adults. Special populations (tracheostomized, ventilator-dependent) will be included.


**CD 578 Laryngectomy Rehabilitation.** One hour. Advanced study of the etiology/surgical removal of the larynx, with emphasis on methods of speech rehabilitation including prosthetic speech, esophageal speech, and the electrolarynx.

**CD 579 Introduction to Diagnostics in Speech-Language Pathology.** One hour. Diagnostic techniques that cross disorder areas: case histories, oral peripheral exams, hearing screenings, interview techniques, etc.

**CD 597 Case Studies in Speech-Language Pathology.** One hour. Multidimensional case studies are presented for discussion and case management. Strategies for successful completion of comprehensive and PRAXIS exams are discussed.

**CD 598 Research Not Related to Thesis.** One to six hours. Planning, executing, and evaluating research. For students following Plan II.

**CD 599 Thesis Research.** One to six hours. All aspects of the thesis, from selecting a problem to writing the results and conclusions.
**6.7 DEPARTMENT OF CRIMINAL JUSTICE (CJ)**
Chairperson: Professor Celia Lo, Office: 432-C Farrah Hall

**Mission Statement.** The mission of the Department of Criminal Justice is to develop and disseminate knowledge about crime, criminal justice, deviance, and social organization through research, teaching, and service to the community. Grounded in the social sciences, and governed by the College of Arts and Sciences of The University of Alabama, the department respects liberal values, encourages open-mindedness, and pursues in its programs both demographic and curricular diversity.

Concerning students at the master's level, the department's mission is development of research skills and the expansion of conceptual and practical knowledge critical to fulfillment of leadership roles in criminal justice or in the social services. Master's degree students planning to proceed to Ph.D. programs can expect from the department thorough training in the theories, methodologies, and empirical findings that promote understanding of deviance, crime, criminal justice, and social organization.

**Admission Requirements**
Admission into the master of science program is limited. An applicant should hold a bachelor's degree from an accredited college or university. An undergraduate major in the social sciences is desirable, but students with superior undergraduate records in other fields are encouraged to apply.

It is the policy of the criminal justice faculty to admit those students who demonstrate potential for successfully completing the master's degree program. Primary consideration is given to the applicant's scholastic record and test scores. Admission decisions for the master of science program are made in April.

**Degree Requirements**
Requirements for the degree consist of 24 hours of coursework, 6 hours of thesis research, and successful completion and defense of a thesis; or, 24 hours of coursework and successful completion and defense of a 6-semester-hour policy and practice research project. Students must also pass public oral defense of their thesis/p & p. Comprehensive exams are conducted during the defense of the thesis or policy and practice paper. Up to 6 hours of approved coursework may be transferred from other universities. Up to 6 hours of approved coursework may be taken in other departments and may be applied to the degree when it is consistent with the student's degree plan. The department does not accept 400-level courses toward degree requirements for the master of science in criminal justice.

The section below outlines the requirements for the degree. In addition to the required courses, at least 9 semester hours of elective courses with a CJ designation must be taken. CJ 599 or CJ 598 should be taken after all other requirements have been completed.

**Core Course Requirements**
CJ 581 Application of Statistics in Criminal Justice 3  
CJ 584 Seminar in Criminological Theory 3  
CJ 586 Research in the Criminal Justice Process 3

Comprehensive Exams

**Additional Requirements**
CJ 599 Thesis Research in Criminal Justice or  
CJ 598 Criminal Justice Policy and Practice 6  
Electives 15

Students can generally complete degree requirements in 18–24 months.

**Course Descriptions**

**CJ503 Organized Crime** (Three hours)
Focus on organized crime in the United States and examination of organized crime groups around the world.

**CJ 504 Health and Crime** (Three hours)
The health consequences of social deviance and the impact of criminalization for individual and societal wellbeing. Seminar discussions cover the criminalization of mental and physical illness and illnesses arising from criminal behavior and incarceration.

**CJ 510 Seminar in Community Corrections.** Three hours.
Development, organization, operation, and evaluation of community corrections systems as intermediate sanctions and alternatives to incarceration.

**CJ 520 Seminar in Current Law Enforcement Problems.** Three hours.
Analysis of selected areas of law enforcement. Emphasis is on currently developing trends.

**CJ 530 Seminar in Criminal Justice Organization and Management.** Three hours.

**CJ 540 Seminar in Juvenile Delinquency.** Three hours.
The nature and extent of delinquency; competing explanatory models and theories. Evaluation of control and treatment modalities.

**CJ 550 Seminar in the Judicial Process and Social Policy.** Three hours.
Examination of the American legal system from a political science and socio-legal perspective. Seminar covers the "rights revolution," the process of dispute settlement, judicial decision making, public opinion and the courts, and the United States Supreme Court.

**CJ 560 Seminar in Correctional Policy.** Three hours.
Examines the historical and contemporary policy trends in institutional and community corrections.

**CJ 570 Seminar in Criminological Theory.** Three hours.
Examination of classical, neoclassical, positive, and social-defense theories of criminality and their interrelation with the broader problems of crime control. Offered spring semester.

**CJ 580 Research in the Criminal Justice Process.** Three hours.
Prepares the student to develop and to implement basic research designs. Offered fall semester.

**CJ 590 Special Topics in Criminal Justice.** Three hours.
Offers an opportunity for faculty and students to explore in depth topics of contemporary interest that are not generally covered in the standard courses. Course content will vary from section to section.

**CJ 591 Practicum in Research and Program Evaluation.** Three to six hours.
Allows students to develop and implement an evaluation of an innovative or existing program in criminal justice, with faculty guidance.

**CJ 592 Independent Study.** Three hours.
Research under faculty supervision in any area of interest to the student. Content may not relate to thesis or policy and practice project.

**CJ 598 Criminal Justice Policy and Practice.** One to six hours. Pass/fail.
Provides credit for a major written project completed under the supervision of two faculty members. Research may be directed by any member of the faculty who accepts responsibility for supervising the thesis.

**CJ 599 Thesis Research in Criminal Justice.** One to six hours. Pass/fail.
Research may be directed by any member of the faculty who accepts responsibility for supervising the thesis.
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6.8 DEPARTMENT OF ENGLISH (EN)
Director of Graduate Studies: Professor Catherine Evans Davies, Office: 211 Morgan Hall

The department offers programs leading to the master of arts, the master of arts in teaching English to speakers of other languages (Applied Linguistics/TESOL), the master of fine arts in creative writing, and the doctor of philosophy.

Requirements for the M.A. Degree in English

Admission Requirements
Applicants for graduate work in English are required to take the Graduate Record Examination general test and the writing test. Each applicant should submit a sample of his or her critical writing (normally an essay of 10–20 pages written for an upper-level English course or an excerpt from a senior thesis). Unconditional admission to the M.A. degree program in English is dependent upon the student's having completed the requirements for an undergraduate major in English with a grade point average of at least 3.0 and having satisfied the general requirements for admission to the Graduate School. Conditional admission may be allowed under the stipulations outlined in the general admission policy of the Graduate School. Application materials should be received by February 1 to ensure full consideration for admission for the following fall term.

Degree Requirements
With the exception of students admitted into the master's program to pursue a concentration in Renaissance studies, composition-rhetoric, or applied linguistics /TESOL (requirements for those programs follow), all candidates for the master's degree are required to take the following: 3 hours in bibliography and research (EN 537 Introduction to Graduate Studies, which is normally offered every fall and which students are encouraged to take in their first semester, for maximum benefit); 3 hours of critical theory (EN 535 Literary Criticism, EN 536 Advanced Modern Criticism, or EN 635 Seminar in Literary Criticism); 3 hours of writing workshop (EN 538 Research and Critical Prose Workshop, which is offered every spring, and which students take in their fourth semester); 3 hours of composition pedagogy (EN 532 Approaches to Teaching Composition); and 3 hours of coursework in each of the following four areas of English/American literature: medieval-16th century, 17th-18th centuries, 19th century, and 20th century. All master's students must take at least three courses at the 600 level. Students not writing the thesis (Plan II) will take 6 credits of electives to acquire the 30 credits for completion. Students writing a thesis (Plan I) will take 6 thesis hours. Students with teaching assistantships must take the summer practicum before their first semester of service and the practicum courses EN 533 and EN 534 during the year in which they begin teaching.

Plan I (thesis plan) students must complete at least 24 semester hours of coursework in English before writing the thesis, which must be a historical, critical, or otherwise analytical treatise. Thesis-plan students must take 6 semester hours of thesis research (EN 599) in addition to their 24 hours of coursework for a total of 30 hours. At least three of these courses must be at the 600 level. (See the general requirements for a master's thesis listed under "Academic Policies" in this catalog. For additional information regarding the master's thesis in English, visit the departmental website and contact the director of graduate studies in the English department.)

Plan II (nonthesis plan) students must take at least 30 semester hours of coursework in English. At least three of these courses must be at the 600 level. See the course requirements for all master's students cited above.

Degree requirements for the M.A. in English with a concentration in Renaissance studies. Students admitted as candidates for the master of arts in English with a concentration in Renaissance studies are required to take the following: 3 hours in bibliography and research (EN 537 Introduction to Graduate Studies); 3 hours of critical theory (EN 535 Literary Criticism, EN 536 Advanced Modern Criticism, or EN 635 Seminar in Literary Criticism); 3 hours in medieval literature; 3 hours of Shakespeare (EN 566); 3 hours in interdisciplinary coursework subject to the approval of the Strode committee; 3 hours of a Renaissance seminar; 3 hours in the Shakespeare in Performance Practicum (a course offered every other spring, in years when there is not a Strode seminar); 3 hours of composition pedagogy (EN 532 Approaches to Teaching Composition); and 3 hours of writing workshop (EN 538 Research and Critical Prose Workshop, which is offered every spring, and which students take in their fourth semester). Each student pursuing this concentration must also take 3 courses at the 600 level. A student writing a thesis (Plan I) will take 6 thesis hours (EN 599) and in consultation with the director of the Strode Program, drop 3 hours of coursework from his or her Renaissance concentration.

Degree requirements for the M.A. in English with a concentration in Composition, Rhetoric, and English Studies (CRES). Students admitted as candidates for the master of arts in English with a concentration in composition-rhetoric are required to take the following for a total of 30-32 hours: 3 hours in bibliography and
research (EN 537: Introduction to Graduate Studies); 3 hours of writing workshop (EN 538: Research and Critical
Prose Workshop, which is offered every spring, and which students take in their fourth semester); 3 hours in EN 620
or other linguistics; 3 hours in EN 532: Approaches to Teaching Composition; 3 hours in history of composition-
rhetoric (EN 638: History of Rhetoric-Composition Part I or EN 658: History of Rhetoric-Composition Part II); 3 hours
in EN 512: Computers and Writing; 12 hours in approved general electives; and (for teaching assistants) 2 hours in
teaching practicum (EN 533/534). Students must take at least three courses at the 600-level. A student writing a
thesis (Plan I) will take 6 thesis hours (EN 599) and in consultation with the field advisor, drop 6 hours of coursework
from his or her concentration. A student not writing a thesis (Plan II) will satisfy the graduation requirement by
completing EN 538 with an oral defense of the paper generated in that course (See Master’s comprehensive exam,
below).

**Master’s comprehensive oral exam.** The master's comprehensive exam is an oral examination and defense of the
paper generated in EN 538. The professor in whose class the paper originated, or the specialist advisor chosen by the
student, will work with the student to construct a list of reading material relevant to the paper’s subject matter. This
list will contain approximately 20–25 items; it may include articles as well as books, primary as well as secondary
texts, works used in the essay as well as works that supplement the essay. This list should be designed to place the
paper's focus in the broader context of English literary studies. The student will then be responsible for these works
in a one-hour oral defense of the paper staged before a faculty committee of no fewer than three members. Failure of
the defense and exam for the second time will normally result in the student's dismissal from the program. If the
second defense is successful, the student will be awarded a master of arts in English but will not be allowed to work
toward the doctoral degree in this program.

**Foreign language requirement.** A reading knowledge of one foreign language is required. The foreign language
requirement may be satisfied by one of the following: (a) the certification through the appropriate department of a
"B" average or the equivalent of two years of undergraduate- or graduate-level study in a single foreign language,
completed within five years of admission to the master's program; or (b) passing the foreign language reading
examination prepared by the Department of Modern Languages and Classics;
or (c) completing a specially-designed two course sequence (Fall + Spring) in either French, Spanish, or German, for
the purpose of reading comprehension. Students who are not native speakers of English may use their native
language to fulfill this requirement.

**Requirements for the M.A. in Teaching English to Speakers of Other Languages (Applied Linguistics / TESOL) Degree**

**Admission Requirements**
A candidate for admission to the M.A.-TESOL degree program must satisfy the minimum conditions for regular
admission to the Graduate School (including a grade point average of 3.0 overall and an acceptable score on the
general test of the Graduate Record Examination). Each applicant must also submit a sample of his or her academic
writing. In addition, those who are not native speakers of English must submit a TOEFL score of at least 100 (IBT),
250 (CBT), or 600 (PBT); and must submit an audiotape demonstrating their speaking proficiency in English. For
those who took the PBT TOEFL, scores on the Test of Spoken English (TSE) and Test of Written English (TWE) are
also desirable as part of the application. Students may be required to take appropriate courses in speaking and
writing at the English Language Institute. Application materials should be received by February 1 to ensure full
consideration for admission for the following fall term.

**Degree Requirements**
Students will be required to complete 30 semester hours for the degree: 24 hours of required courses and 6 hours of
department-approved electives or of thesis research.

Students will be required to pass a comprehensive examination at the end of their coursework; the examination is
normally given once a year, in February. The examination will cover all the major areas of study.

An optional thesis may be written under the guidance of the TESOL faculty. Please see the Graduate School’s general
requirements for the master's thesis, outlined under "Academic Policies" earlier in this catalog.

To earn the degree, native speakers of English must demonstrate proficiency in a second language; students whose
native language is not English must demonstrate satisfactory proficiency in spoken and written English.

For further details about the program, visit the departmental website and contact the coordinator of the Applied
Linguistics/TESOL program.

**Requirements for the M.F.A. Degree in Creative Writing**
The program leading to the master of fine arts (M.F.A.) degree in creative writing is a studio/academic course of
study. Imaginative writers enroll in writing workshops, forms courses, and literature classes, gaining exposure to a
broad range of writing models and experimenting with a variety of strategies and forms. Guided development of each
writer's talents culminates in a complete, carefully conceived final project (the thesis), typically a book-length
manuscript. Most writers focus their studies on either poetry or fiction, with minor studies in one or more additional
genres. Coursework is offered in hypertext, nonfiction, screenwriting, and autobiography, as well as poetry and
fellowships. Support is available for up to four years, subject to satisfactory performance.

**Admission Requirements**

Applicants to the M.F.A. program in creative writing must submit either the general portion of the Graduate Record Examination or the Miller Analogies Test in support of their applications for admission. They must apply to the Graduate School for admission to the Department of English, and must submit portfolios of their writing and three letters of recommendation directly to the following address: Director, Program in Creative Writing, Department of English, Box 870244, University of Alabama, Tuscaloosa, AL 35487-0244. Application materials should be received by January 3 to ensure full consideration for admission for the following fall term.

Portfolios should include a maximum of 20 pages of prose, or 10–20 pages of poetry, or a substantial sampling of work in several forms. Writing that incorporates hypertextual linking may also be submitted as—or as a part of—the portfolio.

**Degree Requirements**

Candidates for the M.F.A. degree are required to spend a minimum of two semesters in residence and to complete 42 hours of graduate-level coursework and 6 hours of thesis direction (EN 699), distributed as follows (half of all coursework must be at the 600 level):

- 9–15 hours in graduate-level writing workshops in at least two genres (workshops include EN 509 Writing for Film, EN 601 Fiction Workshop, EN 603 Poetry Workshop, and EN 605 Nonfiction Writing Workshop: Special Topics; an EN 608 Tour of Poetry or Tour of Prose may be substituted for a workshop in the second genre)
- 9–15 hours in EN 608 Forms (Sample topics: Tour of Poetry or Tour of Prose, Prosody, The Long Poem, Characterization Across Genre, Short Short Fiction and the Prose Poem, Autobiography, Reiterations, Uses of History, Public Poetry)
- 6 hours in EN 609: Writers at Work: Form. Theory. Practice. (Sample topics for this 1-hour course: Profession of Authorship, Teaching Creative Writing, Writing Internship, Publishing: A Brief History, Poetry and Dance)
- 12 hours in literature, criticism, or linguistics courses in the Department of English at the 500 or 600 level
- 3 hours in any elective course at the 500 or 600 level (in English, a foreign language or literature, the program in book arts, women's studies, American studies, or other departments)
- Students with teaching assistantships must take the summer practicum before their first semester of service, EN 532 (Approaches to Teaching Composition) during their first year, and the practicum courses EN 533 and EN 534 during the year in which they begin teaching
- 6 hours in EN 699 (thesis preparation)

**Plan I Final Project.** A thesis, typically a book-length manuscript, is prepared in consultation with a thesis advisor, usually a member of the resident creative writing faculty. A Plan I candidate for the M.F.A. is examined on his or her thesis by a committee of four faculty members (including the thesis advisor): three total from the Department of English and one graduate faculty member from outside the department. Plan I students also give a public reading from work produced while in residence; this reading fulfills the comprehensive exam requirement.

**Plan II Final Project.** Imaginative writing projects designed for display in forms other than the book (public installations, digital media, etc.) are prepared in consultation with a thesis advisor, usually a member of the resident creative writing faculty. A Plan II candidate for the M.F.A. is examined on his or her final project by a committee of five faculty members (including the project advisor): four total from the Department of English and one graduate faculty member from outside the department. Plan II students also give a public reading/performance from work produced while in residence; this reading fulfills the comprehensive exam requirement.

**Requirements for the Ph.D. Degree in English**

In addition to the Graduate School’s general requirements for the Ph.D. degree, the Department of English has the following specific requirements:

**Admission.** Applicants for admission to the Ph.D. program in English are required to take the general test and the written test of the Graduate Record Examination. Each applicant must submit a sample of his or her critical writing (normally an essay of some 20 pages written for a course, or a portion of a master’s thesis) and must normally have a grade point average of 3.5 or better for his or her master’s courses or equivalent graduate work. Application materials should be received by February 1 to ensure full consideration for admission for the following fall term.

**Courses.** There is a minimum requirement of 30 hours beyond the master’s degree (earned here or elsewhere), of which no more than 15 hours can be at the 500 level. To meet University requirements, doctoral students must have 48 credit hours. This means that 18 credit hours earned at the master’s level must be formally transferred and

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applied to the requirements for the doctoral degree. Only credit earned during the six-year period preceding admission to the doctoral program may be considered for transfer. If a student's master's degree is more than six years old at admission, therefore, that student may have to complete up to 18 additional hours of coursework. (See the "Transfer of Credit" section for doctoral degrees under "Academic Policies" in this catalog.) Doctoral students whose work at the master's level does not meet the course distribution requirements of the department's M.A. program (see "Requirements for the M.A. Degree in English") may be required to complete those distribution requirements with courses taken toward the Ph.D. in addition to their regular coursework. Twenty-four hours of dissertation research are also required.

To be formally admitted to candidacy for the Ph.D. degree, all students must receive a pass in EN 637 Workshop in Academic Writing, which will normally be taken in the final year of coursework.

**Foreign languages.** The foreign language requirement may be satisfied by one of the following options:

**A reading knowledge of two foreign languages:** This reading knowledge can be demonstrated by either of the following: (a) the certification of at least a "B" average or the equivalent in two years of study of a single foreign language completed, as either an undergraduate or graduate student, within five years of admission to the Ph.D. program; or (b) passing the foreign language reading examination prepared by the Department of Modern Languages and Classics; or (c) completing a specially-designed two course sequence (Fall + Spring) in either French, Spanish, or German, for the purpose of reading comprehension. The language used to satisfy the M.A. language requirement—whether gained here or at another school—can satisfy one of the languages required for the Ph.D. program. Students who are not native speakers of English may use their native language as one of the two required languages.

**Advanced proficiency in one foreign language:** Advanced proficiency can be demonstrated by (a) an undergraduate major in the language completed within five years of admission to the Ph.D. program; (b) the certification of at least a "B" in two advanced literature courses (400-level or higher) taught in the foreign language. Students who are not native speakers of English may use their native language to fulfill this requirement.

**Preliminary examination.** After finishing coursework, the student must apply to the Graduate School to be formally admitted to candidacy for the degree. To meet this requirement, each student must pass a written preliminary examination, and engage with his or her dissertation committee in a one-hour conference concerning the dissertation prospectus. The written preliminary examination will be given at a date agreed upon by the student and his or her examination committee in consultation with the director of graduate studies. The oral conference concerning the dissertation prospectus can be scheduled after the student passes the written examination, when the student and dissertation director agree that the prospectus is ready (date to be arranged by the student in consultation with the graduate studies director and the dissertation committee). The examination and conference will be governed by the following guidelines:

**A. Written preliminary examination** (see specific procedures for rhetoric and composition): The written preliminary examination will be of two to four hours in duration in the field or genre of the dissertation. The examination committee will consist of three faculty members from the English department chosen by the student for their expertise in the field. The precise nature of the examination—its length, the type and number of the questions to be asked and answered—will be negotiated between the student and the committee. The fields and genres from which students normally choose the examination specialty include the following:

**Fields:** Old and Middle English, Renaissance (including Shakespeare), 17th century, Restoration/18th century, 19th-century British, modern British, early American, late American, rhetoric and composition.

**Genres:** drama, fiction, poetry, intellectual prose, literary theory (e.g., deconstruction, new criticism, new historicism, psychoanalytical criticism).

At the beginning of the semester prior to the semester in which the written preliminary examination is to be taken, the student—working with his or her committee—will formulate a reading list of 30–40 works from which questions will be drawn.

The purpose of the written preliminary examination is to demonstrate competence in the student's area of specialization.

Students who fail the written preliminary examination may take it a second time. Students who fail the examination a second time will not be allowed to continue doctoral work.

**B. Dissertation prospectus conference and dissertation defense:** The conference concerning the dissertation prospectus will be a one-hour discussion between the student and his or her dissertation committee. Generally, that committee will be composed of the dissertation director, plus three other graduate faculty members from the department and one graduate faculty member from outside the department.

The conference will focus on both the soundness of the prospectus and the student's readiness to undertake the
The dissertation must be received at least six weeks before graduation. The student and his or her dissertation committee must complete an application for candidacy and submit it to the Graduate School. The graduate studies director will notify the Graduate School that the written preliminary examination has been passed and the dissertation prospectus conference completed.

Once the dissertation has been completed, the student may proceed to the dissertation. The dissertation committee consists of an oral defense of the dissertation before four English department graduate faculty members (including the director) and an external graduate faculty member. Normally, the members of this committee are those faculty members who formed the dissertation prospectus conference committee. They will be appointed by the chair of the graduate studies committee in consultation with the student, who will have a clear understanding with the faculty members involved of whether they will be able to read the dissertation and conduct the final oral examination during summer months or during sabbatical leave if necessary. Faculty members have the prerogative to serve on a committee when they are not teaching; it is the student's responsibility to schedule investigation, writing, and examination in time periods acceptable to members of the committee. All five members of the dissertation committee must have time to read and analyze the dissertation before the oral examination on the dissertation; final approval of the dissertation must be received at least six weeks before graduation.

Teaching experience. All candidates for the Ph.D. degree are required to have college or university teaching experience in English composition or literature before they graduate. Teaching assistants in all programs must enroll in EN 532 Approaches to Teaching Composition, unless they have taken the course or its equivalent previously. They must also complete the summer practicum before their first semester of service and enroll in EN 533 and EN 534 during their first year of teaching service.

Admission into the doctoral program with a B.A. degree. Those who wish to apply for admission directly into the doctoral program after completing a B.A. in English must have shown superior aptitude for English at the undergraduate level and satisfy the Graduate School’s normal requirements for admission.

The Ph.D. (except for CRES; see below) will consist of 48 hours of coursework. Twenty-four of those hours are required. The first 24 hours must be satisfied by coursework specified below in section A. While completing those 24 hours, the student will be given an oral examination (in EN 538), passage of which determines whether the student continues in the program.

A. The first 24 hours: 3 hours in bibliography and research (EN 537 Introduction to Graduate Studies, which is normally offered every fall and which students are encouraged to take in the first semester, for maximum benefit); 3 hours of critical theory (EN 535 Literary Criticism, EN 536 Advanced Modern Criticism, or EN 635 Seminar in Literary Criticism); 3 hours of writing workshop (EN 538 Research and Critical Prose Workshop, which is offered every spring and which students take in their fourth semester); 3 hours of composition pedagogy (EN 532 Approaches to Teaching Composition); and 3 hours of coursework in each of the following areas of English/American literature: medieval–16th century, 17th–18th century, 19th century, 20th century.

The comprehensive oral exam. The comprehensive exam is an oral examination and defense of the paper generated in EN 538. The professor in whose class the paper originated, or the specialist advisor chosen by the student, will work with the student to construct a list of reading material relevant to the paper's subject matter. This list will contain approximately 20–25 items; it may include articles as well as books, primary as well as secondary texts, works used in the essay as well as works that supplement the essay. This list should be designed to place the paper’s focus in the broader context of literary studies. The student will then be responsible for these works in a one-hour oral defense of the paper. Failure of the defense and exam for the second time will normally result in the student's dismissal from the program. If the second defense is successful, the student will be awarded a master of arts in English and will not be allowed to work toward the doctoral degree in this program.

B. The second 24 hours: These hours will consist of elective courses, except for EN 637 Workshop in Academic Writing. To be formally admitted to candidacy for the Ph.D. degree, all students must receive a pass in this course, which will normally be taken in the final year of coursework.

C. Other requirements: Of the 48 hours taken, 24 must be at the 600 level. The foreign language requirements, written and oral preliminary examination requirements, dissertation and dissertation research hour requirements are the same as those for students who enter the program with master's degrees.

CRES (Composition, Rhetoric, and English Studies) Degree Requirements. The CRES Ph.D. Specialization requires 48 hours of coursework, 24 dissertation hours, 2 hours of teaching practicum (for teaching assistants), and successful completion of the written and oral components of the CRES exam. Students who have prior graduate degrees or coursework may transfer up to 18 hours.

http://graduate.ua.edu/catalog/15900.html
A. The CRES curriculum: CRES students must take 12 hours of core English requirements: 3 hours in EN 537: Introduction to Graduate Studies, 3 hours of critical theory (normally EN 535, 536, or 635), 3 hours in EN 538: Research & Critical Prose Workshop, and 3 hours in EN 637: Workshop in Academic Writing. Students must take 15 hours in core CRES requirements: 3 hours in EN 532: Approaches to Teaching Composition, 3 hours in EN 652: Theories of Teaching Composition, 3 hours in EN 653: Composition-Rhetoric Research Methodology, 3 hours in the history of composition-rhetoric (EN 638 or EN 658), and 3 additional hours in either EN 512: Computers and Writing or an additional history (EN 638 or EN 658). Students will take 9 hours in CRES electives, 9 hours in approved general electives, and 3 hours in linguistics (EN 620: English Linguistics or other). Students who have a teaching assistantship will take EN 533 and EN 534.

B. The CRES preliminary examination. A doctoral student wishing to write a dissertation in CRES must pass both the written and oral components of the preliminary examination. The written preliminary examination for candidates in CRES will be four hours in duration and will require candidates to respond to two of four topics prepared according to the guidelines available in the office of the CRES director.

If the candidate passes the written preliminary examination, the CRES faculty will conduct an oral examination of the candidate at the first convenient opportunity for both the candidate and the faculty. For the oral examination, the candidate will be responsible for material from all four topics—the two not covered on the written examinations as well as the two that were. Candidates intending to write a dissertation in composition studies must pass the oral examination. Students who fail the written preliminary examination may take it a second time. Students who fail the examination a second time will not be allowed to finish doctoral work.

C. CRES dissertation and prospectus defense. CRES students who have passed the preliminary examination are free to form a dissertation committee consisting of a director from the CRES faculty, three other faculty members of the English department, and a faculty member from outside the department. The candidate's dissertation prospectus must be approved by his or her dissertation committee and then defended in an oral examination conducted by this same committee. (For more information, see the description for the dissertation and prospectus under the general Ph.D. requirements, above).

D. Other requirements: Of the 48 hours taken, 24 must be at the 600 level. The foreign language requirements, written and oral preliminary examination requirements, dissertation and dissertation research hour requirements are the same for students who enter with a B.A. and those who enter with master's degrees.

Graduate Credit for 500-Level Courses
Graduate students enrolled in 500-level courses that are also offered at the 400 level are expected to perform extra work of an appropriate nature. Graduate credit will not be granted at the 400 level.

Time Limit for All Degrees
All requirements for the M.A., M.A. in Applied Linguistics / TESOL, and M.F.A. degrees must be completed within six years. The Ph.D. degree must be completed within seven years, beginning with the first semester in which the student registers for courses in the program of study. Students enrolling in the B.A. to Ph.D. program have eight years in which to complete their degrees.

Course Descriptions

EN 500 Special Topics. Three hours. Offered every year.

EN 501 Fiction Writing. Three hours.
Enrollment limited to M.F.A. students; other graduate students admitted on the basis of portfolios (see creative writing director during advising period). Focus will be a discussion of original student writing; other reading and writing may be assigned. Offered spring semester.

EN 503 Poetry Writing. Three hours.
Enrollment limited to M.F.A. students; other graduate students admitted on the basis of portfolios (see creative writing director during advising period). Focus will be a discussion of original student writing; other reading and writing may be assigned. Offered fall semester.

EN 509 Writing for Film. Three hours.
An introduction to the craft of writing for film and television.

EN 510 Nonfiction Writing. Three hours.
Focus will be a discussion of original student writing; other reading and writing may be assigned. An introduction to the variety of nonfiction forms including memoir, reportage, the essay, travel writing, reviewing, and the interview.

EN 511 Writing: Special Topics. Three hours.
Enrollment limited to M.F.A. students; other graduate students admitted on the basis of portfolios (see creative writing director during advising). Focus will be a discussion of original student writing; other reading and writing may be assigned. Sample topics: hypertext; the prose poem.

**EN 512 Computers and Writing.** Three hours.
A survey of how computers can be used to help students improve their writing and to help teachers improve their writing instruction.

**EN 520 The Development of English Grammar.** Three hours.
A coherent examination of the changing methods and theories for describing the English language. A desirable prerequisite for this course is EN 320 or EN 321.

**EN 523 History of the English Language.** Three hours.
An introduction to the external history of the English language along with the study of the accompanying internal changes in structure. A desirable prerequisite for this course is EN 320 or EN 321.

**EN 524 The Structure of English.** Three hours.
An intensive investigation of the structures in the English language, including phonology, morphology, syntax, and semantics. A desirable prerequisite for this course is EN 320 or EN 321.

**EN 525 Dialectology.** Three hours.
The study of the experience of the English language in America, with particular emphasis on its development and dialects. A desirable prerequisite for this course is EN 320 or EN 321.

**EN 528 Directed Readings Abroad.** One to three hours.
Designed for graduate students who wish to take an independent studies course during international summer programs. Reading list and requirements will be negotiated between student and faculty member. No more than three credits can be counted toward a degree program.

**EN 529 Directed Readings.** One to three hours. By arrangement.

**EN 530 Feminist Theory (same as WS 530).** Three hours.

**EN 532 Approaches to Teaching Composition.** Three hours.
A study of the basic pedagogical approaches to teaching expository writing in secondary and higher education, along with examination of traditional conventions as well as innovative pedagogical approaches used in such instruction. Work with course goals, objectives, and writing outcomes, syllabus and writing assignment construction, training in assessing student writing. Required of all graduate assistants in English.

**EN 533 Practicum in Teaching College English 101.** One hour.
Fall semester only. Required of all graduate assistants teaching EN 101 for the first time. Training in reaching EN 101 course goals and writing outcomes. Please note: EN 533 begins with a required one-week orientation session immediately prior to the start of the fall semester. Orientation attendance is mandatory for retaining a graduate assistantship.

**EN 534 Practicum in Teaching College English 102.** One hour.
Spring semester only. Required of all graduate assistants teaching EN 102 for the first time. Training in reaching EN 102 course goals and writing outcomes. Further instruction in teaching formal argumentation and advanced research techniques.

**EN 535 Literary Criticism.** Three hours.
A study of selected major critics and critical trends from the classical period into the 20th century.

**EN 536 Advanced Modern Criticism.** Three hours.
A study of 20th-century literary criticism, with attention both to selected major critics and to contemporary critical trends and movements.

**EN 537 Introduction to Graduate Studies.** Three hours.
A study of selected bibliographical resources and of some of the important method approaches employed in literary study, including an introduction to critical approaches, scholarly writing, and issues in the profession.

**EN 538 Research and Critical Prose Workshop.** Three hours.
A writing workshop normally taken after 18 hours, this course is designed to encourage the student to draft and revise a substantial critical paper with the benefit of peer critiques.

**EN 539 Approaches to Teaching the Sophomore EN Survey.** One hour, pass/fail.
A teaching practicum required of first-time teachers of sophomore surveys of literature.

**EN 540 Early American Literature.** Three hours.
A survey of the major literary figures prominent in the development of literature in America through the early
National period.

**EN 542 American Novel to 1900.** Three hours.
Emphasis is on the development of the American novel through 1900, with particular attention given to Hawthorne, Melville, Cooper, Twain, Chopin, Crane, James, and others.

**EN 543 American Novel, 1900 to 1945.** Three hours.
Emphasis is on the development of the American novel from 1900 to 1945, with particular emphasis on such writers as Hemingway, Fitzgerald, Faulkner, Steinbeck, Wolfe, Dreiser, Cather, Norris, Wright, and others.

**EN 544 American Novel since 1945.** Three hours.
Emphasis is on the development of the American novel since 1945, with particular emphasis on such writers as Ellison, Kerouac, Bellow, Mailer, Didion, Morrison, O'Connor, Pynchon, Percy, and others.

**EN 547 American Poetry to 1900.** Three hours.
A critical examination of the works of several major American poets before 1900, with emphasis on the poetry of Bradstreet, Taylor, Poe, Whitman, and Dickinson.

**EN 548 American Poetry, 1900 to 1945.** Three hours.
An analysis of the sources, themes, and directions of Modernist American poetry, 1900–45, through the work of Pound, Eliot, Williams, Stein, Stevens, Frost, and others.

**EN 549 American Poetry since World War II.** Three hours.
A survey of major postwar poets, with an emphasis on contemporary poetry and poetics.

**EN 553 Studies in American Fiction.** Three hours.
Advanced study of American fiction, focusing on a body of work or authors covered in depth using a variety of methodological or theoretical approaches. Topics announced each semester.

**EN 554 Studies in American Poetry.** Three hours.
Advanced study of American poetry, focusing on a body of work or authors covered in depth using a variety of methodological or theoretical approaches. Topics announced each semester.

**EN 561 Chaucer: The Canterbury Tales, Troilus and Criseyde.** Three hours.
Includes study of Chaucer's language and the 14th-century milieu.

**EN 563 Studies in 16th-Century English Literature.** Three hours.
A survey of the nondramatic literature of the Elizabethan period. Readings in major and minor writers in verse and prose.

**EN 564 Renaissance Women Writers.** Three hours.
A survey of women writers in English in the 16th and 17th centuries, including poetry, drama, fiction, and life-writing.

**EN 565 Renaissance Drama.** Three hours.
An exploration of the plays of Shakespeare's contemporaries (1580–1642).

**EN 566 Shakespeare.** Three hours.
Topics vary, but the course normally considers a broader selection of Shakespeare's works than is included in a typical undergraduate course.

**EN 568 Studies in 17th-Century English Literature.** Three hours.
A close reading of the most important and interesting works of Donne, Herbert, Bacon, Browne, Jonson, Marvell, Herrick, and selected minor metaphysical and cavalier poets.

**EN 570 Spenser/Milton.** Three hours.
At any given time, this course will focus either on Spenser (with emphasis on The Faerie Queene ) or on Milton (with emphasis on Paradise Lost ).

**EN 571 Topics in Restoration and 18th-Century Literature.** Three hours.
Designed not only to introduce graduate students to the literature and history of 1600–1785, but to connect that period to the periods which preceded and followed it. Topics will vary from semester to semester.

**EN 573 Problems in Enlightenment Literature.** Three hours.
Designed to introduce graduate students to new directions in scholarship on the literature of the European Enlightenment, or what is sometimes called "the Long 18th Century," 1650–1850.

**EN 582 Romantic Literature.** Three hours.
Advanced introduction to Romantic literature and to current developments in Romantic studies.
EN 589 Victorian Literature. Three hours.
Advanced introduction to Victorian literature and to current developments in Victorian studies.

EN 591 Modern British Fiction. Three hours.
An advanced survey of major British novels from the 1890s to the present. Included are works by Hardy, Conrad, Joyce, Lawrence, Woolf, Forster, and others.

EN 593 Modern British Poetry. Three hours.
A study of major British poets from Hardy to Ted Hughes. The emphasis is on the poetry of Yeats, Auden, and Dylan Thomas.

EN 594 Contemporary British Writing. Three hours.
Advanced introduction to trends and issues in British writing from 1945 to the present.

EN 595 Modern British Drama. Three hours.
A survey of British plays from Black-ey'd Susan to contemporary productions.


EN 600 Special Topics Seminar in British Literature. Three hours.
A recent topic was Joyce and his contemporaries.

EN 601 Fiction Workshop. Three hours.
Enrollment limited to students with approved portfolios (approval secured upon admission to the M.F.A. program or during advising period—see creative writing director). Focus will be discussion of original student writing; other reading and writing may be assigned.

EN 603 Poetry Workshop. Three hours.
Enrollment limited to students with approved portfolios (approval secured upon admission to the M.F.A. program or during advising period—see creative writing director). Focus will be discussion of original student writing; other reading and writing may be assigned.

EN 605 Writing Workshop: Special Topics. Three hours.
Enrollment limited to students with approved portfolios (approval secured upon admission to the M.F.A. program or during advising period—see creative writing director). Focus will be discussion of original student writing; other reading and writing may be assigned.

EN 608 Forms: Special Topics. Three hours.
Through readings of primary works and theory by writers in a particular genre or form, this course examines the traditional and contemporary practice of that genre's aesthetics. Sample topics: Prosody, Short Short Fiction and the Prose Poem, Characterization Across Genres.

Short course in specialized topic of interest to creative writers. Sample topics: Teaching Creative Writing, Profession of Authorship, Writing Internship, Publishing: A Brief History, Poetry and Dance, Episodic Form.

EN 610 Methods in TESOL. Three hours.
A detailed account of language teaching approaches and methods according to their underlying theories of language and language learning.

EN 612 Topics in Applied Linguistics. Three hours.
Rotating topics in applied linguistics.

EN 613 Second Language Development. Three hours.
A study of psycholinguistic, sociolinguistic, neurolinguistic, and other approaches to understanding how people develop skill in a second language.

EN 617 Teaching Academic Language Skills to Non-Native English Speakers. Three hours.
A course focusing on the teaching of academic writing skills in the context of an American university.

EN 618 Language in Cultural Context. Three hours.
A course focusing on language learning and use in cultural context.

EN 620 English Linguistics. Three hours.
An advanced introductory linguistics course that focuses on the English language and which has relevance for students in the applied linguistics/TESOL, literature, rhetoric and composition, and M.F.A. programs.

EN 622 Old English. Three hours.
Study of the language and reading of representative prose and poetry.

**EN 625 Seminar in English Linguistics.** Three hours. The application of specific linguistic techniques to a variety of problems in the description of the English language; the course has a different focus each time it is taught.

**EN 627 Seminar in the History of the English Language.** Three hours. The close analysis of diachronic issues in the English language; a different set of issues is explored each semester the course is taught.

**EN 630 Directed Readings.** One to three hours. By arrangement.

**EN 631 Classical Backgrounds of English Literature.** Three hours. An analytical study of selections from ancient Greek, Roman, and Hebrew literature, with special emphasis on its influence upon English and American authors.

**EN 635 Seminar in Literary Criticism.** Three hours. Intensive study in the writings of one critic or exploration of a topic involving works by several critics. Recent topics have included feminist criticism and psychoanalytic criticism.

**EN 637 Workshop in Academic Writing.** Three hours. A writing workshop normally taken in the student’s final year of coursework. To pass this course, the doctoral student will be required to revise a paper and submit it for publication.

**EN 638 History of Rhetoric and Composition I: Ancient Greece to the Renaissance.** Three hours. This seminar covers rhetorical texts from ancient Greece to the Renaissance, particularly texts having influence on today’s field of composition.

**EN 639 Seminar in Special Topics in Rhetoric and Composition.** Three hours. Topics to be proposed by faculty each semester. Typical topics include literacy theory, theoretical perspectives on basic writers, and computers and literacy.

**EN 640 Special Topics Seminar in American Literature.** Three hours. Recent topics have included “American Madness: the Literary Figurations of Unreason”; and Thoreau, Dickinson, and related contemporary writings.

**EN 641 Seminar in American Literature before 1850.** Three hours. Intensive literary and historical study of writing by one or more American authors. A recent topic was the making, recording, and remaking of history in 19th-century American literature.

**EN 642 Seminar in American Literature, 1850–1900.** Three hours. Intensive literary and historical study of writing by one or more American authors. A recent topic was the mythologizing of Mark Twain.

**EN 643 Seminar in 20th-Century American Literature.** Three hours. Intensive literary and historical study of writing by one or more American authors. Recent topics have included the American 1960s and Hemingway.

**EN 647 Seminar in Southern Literature.** Three hours. An intensive look at a major aspect of Southern American drama, poetry, and/or prose. Recent topics have included a study of race and gender in writings of Southern women; Faulkner and his legacy; and Tennessee Williams.

**EN 648 Seminar in African-American Literature.** Three hours. A critical exploration of African-American literature—culturally, historically, politically, and aesthetically—with efforts to define and contextualize the African-American experience.

**EN 651 Politics and Writing Pedagogy.** Three hours. An introduction to the theories and practices of pedagogical politics as they impact teaching, learning, and power relations in the composition classroom.

**EN 652 Theories of Teaching Composition.** Three hours. A survey of major theories in composition studies, exploring philosophical underpinnings and major issues in the field.

**EN 653 Composition/Rhetoric Research Methodology.** Three hours. The study of empirical research methods as well as practice using methodological frameworks employed in composition/rhetoric research reports and designs.

**EN 654 Seminar in Visual and Digital Rhetoric.** Three hours. This seminar focuses on understanding what rhetoric is and how to identify it in visual and digital “texts.” It explores how to use rhetoric as a pedagogical tool for incorporating visual elements into composition classes.
EN 658 History of Rhetoric and Composition II: The Renaissance to the Postmodern Era. Three hours. This seminar covers rhetorical texts from the Renaissance to the Postmodern era, particularly texts having influence on today’s field of composition.

EN 659 Writing Program Administration. Three hours. Introduction to the intellectual work of Writing Program Administration, including methodologies, rhetorical strategies, and analytic tools used in running a Writing Program.

EN 660 Seminar in Old English Literature. Three hours. Prerequisite: EN 622 Old English. Intensive study of Old English literature and culture. Recent topics have included Beowulf and contemporary criticism.

EN 661 Chaucer. Three hours. The Canterbury Tales, Troilus and Criseyde, and selected minor poems. Includes advanced study of Chaucer’s language and the 14th-century milieu.

EN 662 Middle English Literature Exclusive of Chaucer. Three hours. A survey of the period with emphasis on types of literature, allegory, and satire. The opinions and attitudes of the Middle Ages are examined.

EN 665 Seminar in Renaissance Literature I. Three hours. Recent topics have included Elizabethan drama and friendship in Renaissance literature.

EN 666 Seminar in Renaissance Literature II. Three hours. Recent topics have included Jacobean and Caroline drama and Shakespearean tragedy.

EN 667 Shakespeare in Performance Practicum. Three hours. Shakespeare wrote his plays to be performed, and this course investigates conditions and implications of performance on stage and in film, present and past.

EN 668 Seminar in Renaissance Literature III. Three hours. Recent topics have included John Donne’s poetry and mourning and the elegy.

EN 669 Strode Seminar in the Age of Shakespeare. Three hours. This seminar is based around part-time residence of distinguished faculty from other universities. Recent topics have included constructing gender and Milton and Shakespeare in literary history.

EN 673 Seminar in Restoration Literature. Three hours. An analytical study of a major aspect of the literature of Britain between 1660 and 1700. Emphasis varies; a recent topic was “The Romance of Conquest.”

EN 674 Seminar in 18th-Century British Literature. Three hours. Emphasis is on a major figure (Fielding, Pope, Swift) and/or groups of writers (The Age of Johnson) and/or form (the novel, biography, drama). Specific topics are announced prior to registration.

EN 683 Seminar in Romantic Literature. Three hours. Intensive study of English Romantic poetry and prose. Recent topics have included Wordsworth and Coleridge, and the Shelley circle.

EN 685 Seminar in Victorian Literature. Three hours. Intensive study of Victorian literature. Recent topics have included Browning and Hopkins, and "Anatomies of Pleasure and Pain."

EN 690 Seminar in Modern British Literature. Three hours. A study of some major aspect or aspects of the literature from 1890 to 1945. Recent topics have included Modernism; Woolf, psychoanalysis, and feminism; and Dylan Thomas, D. H. Lawrence, and Ted Hughes.

EN 691 Seminar in Contemporary British Writing. Three hours. Investigation of issues in British writing from 1945 to the present. A recent topic was "Representing Africa."


EN 699 Dissertation Research (M.F.A./Ph.D.). Variable credit. (Three-hour minimum enrollment required for Ph.D. students.)
6.9 DEPARTMENT OF GEOGRAPHY (GY)
Chairperson: Professor Luoheng Han, Office: 202 Farrah Hall

The department offers a program leading to the master of science degree in geography. Study in geography prepares students to work in a broad range of positions related to foreign area analysis, land-use management, planning, urban and economic development, environmental analysis, and geographic techniques including computer cartography, geographic information systems, and remote sensing. These positions are found in federal, state, and local governments, as well as in private industry.

Among several close associations with other disciplines, the graduate program in geography has traditionally been closely related to regional and urban planning. The program has assisted various city and regional planning agencies throughout the state, providing expertise in computer graphics, geographic information systems, remote sensing, land-use planning, redistricting, and urban-industrial location analysis.

Admission Requirements
Applicants must submit an acceptable score on the Graduate Record Examination in support of the application. General admission requirements are outlined in the "Academic Policies" section of this catalog.

Degree Requirements
The graduate program in geography includes a thesis or a nonthesis option. Under both options, the student has considerable latitude to design a program to fit particular needs. All entering students must specify one of the two options during the second semester of academic work. Both options have prerequisite courses, including two introductory courses in physical geography, an introductory course in human geography, a course in world regional geography, a course in map interpretation, and a basic statistics course.

All graduate geography students are required to pass a comprehensive examination for admission to candidacy (after having taken a minimum of 18 hours of graduate-level courses).

M.S. in geography, thesis option. This option requires a total of 30 credit hours including 3 of program requirements and 6 for thesis research. A minimum of 12 credit hours must be taken from coursework in human geography, physical geography, and/or planning. The remaining 9 credit hours may consist of courses from any area of departmental offerings including geographic techniques, planning, human geography, and physical geography, or be selected from those courses offered in other disciplines with departmental approval.

M.S. in applied geography, nonthesis option. This option requires a total of 39 credit hours including 3 of program requirements and 3 for nonthesis projects. Students selecting this option must take a minimum of 8 hours of geographic techniques, but may count up to 15 credit hours of such coursework toward their programs. A minimum of 18 credit hours must be taken in physical geography, human geography, and/or planning. With departmental approval, this option allows students to include up to 6 hours of coursework in other disciplines or 6 hours of experiential courses in their programs.

Course Descriptions

GY 500 Research Traditions and Methodology in Geography. Three hours. An investigation of the historical development of geography, including its changing philosophies and prominent contributors. Students are also introduced to various approaches for conducting research in geography and must develop a written research proposal in an area of their interest.

GY 504 Physical Geography of the Southeastern United States. Three hours. A study of the physical landscapes in the southeastern United States. Emphasis is on the geological setting, geomorphic features, climate, soils, and vegetation, and the interrelationships of these conditions that shape the landscape in this region.

GY 505 Directed Research: Physical Geography. Variable credit.

GY 506 Directed Research: Human Geography. Variable credit.

GY 507 Boundary Layer Climates. Three hours.
This course is designed to introduce the nature of the atmosphere near the ground and the interactions these processes have with the physical, biological, and human systems on Earth.

**GY 508 Advanced Climatology.** Three hours.
An examination of the interaction of climate and basic climatic elements with their environmental processes and particularly human activities.

**GY 510 Water Resources.** Three hours.
Examination of the resource characteristics of water, including its natural occurrence, uses, history of development, allocation law, management and planning, and quality.

**GY 520 Remote Sensing I.** Four hours.
Focuses on basic principles behind remote sensing physics, techniques, and technology and introduces new sensor systems and digital image processing. Major topics include electromagnetic radiation principles, airborne remote sensing, microwave remote sensing, satellite remote sensing, and digital image processing.

**GY 530 Introduction to Geographic Information Systems.** Four hours.
Introduces the basic concepts of GIS, including definition and components of GIS, spatial data structures, data sources, data input, manipulation and analysis, applications of GIS, and managing GIS.

**GY 532 Special Research in Geography.** Two to four hours.

**GY 535 Remote Sensing II.** Four hours.
Focuses on the quantitative analysis of non-photographic remote sensor data, providing students with hands-on experience using a digital image processing software package. Topics include preprocessing, image enhancement, classification, digital change detection, and remote sensing and GIS.

**GY 536 Advanced Geographic Information Systems.** Four hours.
Focuses on the analytical use of spatial information as well as GIS applications. Topics include spatial aspects of geographic information, attribute data structure, error and uncertainty, spatial analysis theories, GIS modeling, and GIS design.

**GY 538 Application Issues in GIS.** Four hours.
Provides an in-depth discussion on various topics in the application and technical issues of geographic information systems.

**GY 539 Natural Resource and Environmental Planning.** Three hours.
An examination of human activities that directly affect the physical environment, and of environmental constraints imposed on human activities. Major topics include natural resource administration and policy, problems in environmental planning, and environmental impact assessment.

**GY 540 Community Facilities Planning.** Three hours.
A study of concepts and processes that underlie (a) the provision of public goods and services and (b) the spatial organization of publicly owned facilities. Topics range from theory to practical methods of conflict resolution.

**GY 541 Land Use Regulations.** Three hours.
The course explores the legal standards by which land is regulated and controlled in the U.S. It is designed for students who wish to become actively involved or exposed to land management and the planning profession.

**GY 544 Field Studies in Africa.** Six hours.
Experiential learning course. It explores how different cultural groups in Africa relate to the natural environment.

**GY 547 Environmental Modeling and Mapping.** Four hours.
Focuses on the principles and applications of environmental modeling using geographic information technologies.

**GY 552 Environmental Decision Making.** Three hours.
Designed to help students develop both the tools and the personal philosophy necessary to analyze and manage scarce resources. A review of current environmental topics is followed by a survey of different paradigms and techniques that contribute to environmental decision making.

**GY 553 Environment and Society.** Three hours.
Explores the linkages between the biophysical environmental and human social systems. Public-policy implications are viewed from a social science perspective.

**GY 558 Urban Analysis Planning.** Three hours.
A thorough examination of the literature in economics, political science, and sociology that is relevant to the geographical study of contemporary urban structure, power, and conflict.

**GY 560 Environmental Management.** Three hours.
Introduces students to the impact of humans on the planet and the patterns of human behavior necessary to
preserve and manage the environment in a self-sustaining manner. Emphasis is on writing and speaking.

**GY 561 Social Impact Assessment.** Three hours. Focuses on the theories, philosophies, and methodologies of assessing the social consequences of environmental change.

**GY 565 Regional Planning and Analysis.** Three hours. Principles and processes of regional planning and the analytical methods appropriate for solving regional planning problems. Case studies and the role of the planner in the regional planning process are discussed.

**GY 566 Regional and Urban Transportation Systems.** Four hours. Examines location and function of the multimodal North American transportation system, the urban transport planning process, and the political and environmental contexts of transport systems, including impacts of continued reliance on the automobile.

**GY 567 Topics in Global Environmental Change.** Three hours. Review and discussion of natural and human-induced changes in the physical environment with emphasis on deforestation, changing land use, and recent climate change.

**GY 568 Topics in Global Environmental Change.** Three hours. Review and discussion of natural and human-induced changes in the physical environment with emphasis on deforestation, changing land use, and recent climate change.

**GY 570 Special Studies in Geography.** Three hours.

**GY 571 Special Studies in Planning.** Three hours.

**GY 572 Soil Science.** Four hours. Introduction to the scientific study of soils. Covers soil physical properties, morphology, development, classification, environmental functions and uses, and resource degradation.

**GY 573 Settlement History of the South.** Three hours. Explores topics and themes in the historical settlement of the U.S. South, with particular emphasis on the 18th and 19th centuries.

**GY 574 Cartography Practicum.** Three hours. Individual work experience in cartography supervised by the faculty and staff of the University.

**GY 575 Cartography Internship.** Three hours. Individual work experience in cartography, supervised by the staff of an off-campus agency.

**GY 576 GIS Practicum.** Three hours. Individual work experience in GIS supervised by the faculty and staff of the University.

**GY 577 GIS Internship.** Three hours. Individual work experience in GIS supervised by the staff of an off-campus agency.

**GY 578 Planning Practicum.** Three hours. Individual work experience in planning supervised by the faculty and staff of the University.

**GY 579 Planning Internship.** Three hours. Individual work experience in planning supervised by the staff of an off-campus planning agency.

**GY 586 Drainage Basin Dynamics.** Three hours. An examination of the physical operation of drainage basins (watersheds), focusing on surface water hydrology, erosion, and sedimentation.

**GY 587 Biogeography.** Three hours. Examination of ecological and historical factors influencing the geographic distribution of plants and animals.

**GY 589 Forest Ecology and Vegetation Analysis.** Three hours. A study of the relationship of trees to the environment, and the interrelationship of organisms that compose the forest community.

**GY 590 Internship.** Three hours. Individual work experience with agency involved in geographical research, analysis, and reporting.

**GY 598 Nonthesis Research.** Three hours.

**GY 599 Thesis Research.** One to twelve hours.
Admission Requirements
Admission to the graduate program in geology is competitive. Applicants must satisfy the minimum admission requirements established by the Graduate School. An applicant to the M.S. program is normally required to have a bachelor's degree in geology or a related discipline (e.g., chemistry, mathematics, physics, or geological engineering) and to have completed at least one year each of college-level calculus, chemistry, and physics. Applicants with degrees in disciplines other than geology or with ancillary background deficiencies may be required to complete certain undergraduate requirements. An applicant to the Ph.D. program is normally required to have a master's degree; however, an applicant with exceptional credentials may be admitted directly into the Ph.D. program.

Degree Requirements

Master of science. The M.S. program requires a minimum of 24 credit hours of coursework, participation in the graduate seminar (two semesters), and a thesis. A maximum of 3 credit hours of nonthesis research may be applied toward the 24-hour total. A thesis committee should be established by the end of the first semester of residence and a thesis project must be proposed by the end of the second semester of residence. Each M.S. candidate must pass a combined oral thesis defense and final examination. Additional information is given in the Department of Geological Sciences Graduate Handbook.

Doctor of philosophy. The Ph.D. program requires a minimum of 48 hours of coursework beyond the baccalaureate degree (including a maximum of 24 credit hours of approved graduate-level coursework transferred from a master's program and a maximum of 12 hours of nonthesis or nondissertation research), participation in the graduate seminar (four semesters), and a dissertation. A dissertation committee should be established by the end of the first semester of residence and a dissertation project should be established by the end of the third semester of residence. Each Ph.D. candidate must also pass an oral dissertation proposal, an oral preliminary examination (after completion of all coursework), and an oral dissertation defense. Additional information is given in the Department of Geological Sciences Graduate Handbook.

Course Descriptions

GEO 501 Climate Change. Three hours.
Prerequisite: MATH 126 and PH 102 or permission of the instructor.
Survey of the variability of global climate through geologic time and investigation of the mechanisms of change. Andrus.

GEO 506 Hydrogeology. Three hours. (Not open to students who have earned credit for GEO 406.)
Prerequisite: GEO 365 and GEO 367, or permission of the instructor.
Introduction to groundwater hydrology, including the theory of groundwater flow, groundwater exploration, and groundwater contamination. Offered fall semester. Zheng.

GEO 512 Sedimentary Petrology: Carbonates. Four hours. Two lectures, one laboratory.
Prerequisite: GEO 210 or permission of the instructor.
Study of the depositional and diagenetic history of carbonate rocks. Offered on demand.

GEO 513 Sedimentary Petrology: Clastics. Four hours. Two lectures, one laboratory.
Prerequisite: GEO 210 or permission of the instructor.
Study of the depositional and diagenetic history of clastic rocks. Offered on demand.

GEO 514 Advanced Igneous Petrology. Three hours.
Study of igneous processes, with emphasis on phase relations, geochemical evolution, and physicochemical conditions. Offered fall semester.

GEO 515 Metamorphic Petrology. Three hours.
Study of metamorphic processes, types, textures, and petrogenesis and the use of metamorphic rocks for understanding tectonism. Offered on demand. Stowell.

GEO 516 Volcanology. Three hours. Not open to students who have earned credit for GEO 416.
Rheologic properties of magmatic systems and application of these principles to the understanding of volcanic processes. Offered on demand.

GEO 521 Well-Log Analysis. Three hours. Two lectures, one laboratory.
Prerequisite: GEO 314 and GEO 367.
Analysis and interpretation of geophysical log data, including resistivity, porosity, gamma, and other newly developed logs. Geologic uses of log data and shaly sand interpretation are also discussed. Offered on demand.

**GEO 522 Sedimentary Basin Analysis.** Three hours.  
Prerequisite: GEO 365 or GEO 367.  
Examination of the evolution and development of sedimentary basins. Emphasis is on sedimentary, tectonic, and geochemical processes and their influence in petroleum generation, accumulation, and preservation. Offered on demand. Mancini.

**GEO 525 Advanced Topics in Geology.** One to Six credits.  
Advanced topics in the following areas: economic geology, geochemistry, geohydrology, geophysics, geomorphology, mineralogy, paleontology, petrology, sedimentation, stratigraphy, structural geology, and tectonics. Offered on demand.

**GEO 530 Ore Deposits.** Three hours.  
Introduction to sedimentary, hydrothermal, metasomatic, and magmatic ore deposits, including geologic setting and genesis. Offered on demand.

**GEO 534 Seminar in Tectonics.** One hour.  
Prerequisite: Permission of the Instructor.  
Discussion of current research in Tectonics and related subjects. May be repeated for credit. Offered fall and spring semesters.

**GEO 535/GEO 536 Graduate Seminar in Geology.** One hour.  
Oral presentations on current geological topics. Offered fall and spring semesters.

**GEO 541 Applied Geophysics.** Three hours.  
Prerequisite: MATH 126 and PH 102:104 or equivalent.  
The use of physical measurements to infer subsurface structure. Includes seismic reflection and refraction profiling, gravity and magnetic anomalies, electric and electromagnetic prospecting, and borehole geophysics. Offered fall semester.

**GEO 542 Geodynamics.** Three hours.  
Prerequisite: PH 102, PH 104, MATH 126, GEO 314, GEO 365, or permission of the instructor.  
Introduction to the structure of the earth’s interior and theory of plate tectonics. Quantitative analysis of the physical processes governing the formation of major tectonic and magmatic features on the earth. Emphasis is on understanding geodynamic processes in orogenic belts, volcanic arcs, intraplate magmatism, sedimentary basins, and continental extensional provinces. Offered spring semester. Masterlark.

**GEO 544 Multichannel Seismic Processing.** Four hours.  
Prerequisite: Math 126 and PH 102:104.  
Introduction to multi-channel seismic data acquisition, processing and interpretation. Includes the theory of wave propagation, time series analysis, and filtering. Problem-based lab using real-world data & examples. Goodliffe.

**GEO 546 Scientific Computing.** Three hours.  
Prerequisite: two 200 or 300 geoscience courses or by permission of the instructor.  
This course covers a broad range of computational methods used in the geosciences. Topics include data analysis, manipulation and image processing, using a variety of software packages. Goodliffe.

**GEO 555 Advanced Paleontology.** Three hours.  
Prerequisite: GEO 355.  
Detailed examination of selected fossil groups. Offered on demand. Stock.

**GEO 557 Geologic History of the Vertebrates and Land Plants.** Three hours.  
Prerequisite: GEO 102 or permission of the instructor.  
Not open to students who have earned credit for GEO 457.  
Geologic history of vertebrates, invertebrates, and plants as they invaded the land and evolved through time. Offered alternate years. Stock.

**GEO 559 Paleoeology.** Three hours.  
Prerequisite: GEO 355 or permission of the instructor.  
Examination of the relationships between fossil organisms and their depositional environments. Offered on demand. Mancini, Stock.

**GEO 560 Watershed Hydrology.** Three hours.  
Not open to students who have earned credit for GEO 460.  
Prerequisite: GEO 363 or permission of the instructor.  
Analysis of hydrological processes in a watershed. Emphasis on applying hydrology concepts to evaluate runoff, erosion, fluvial processes, channel stability, ecological impact, and flood prediction in natural and altered watersheds. Offered alternate spring semesters or on demand.

**GEO 561 Sequence and Seismic Stratigraphy.** Three hours. Offered on demand.
A review of lithostratigraphic principles and an examination of the sequence stratigraphic paradigm. Students also study methods of using lateral and vertical changes in seismic facies to interpret the lithology and depositional history of subsurface stratigraphic units.

**GEO 562 Quaternary Environments.** Three hours.
Prerequisite: GEO 363 or permission of the instructor.
Examination of quaternary glaciations and environmental changes. Emphasis on sedimentologic, geomorphic, and biogeographic evidence of changes in geological, hydrological, and biological processes in response to climatic variations. Not open to students who have earned credit for GEO 462. Offered alternate spring semesters or on demand.

**GEO 564 Structural Validation and Modeling.** Three hours. Offered on demand.
Theory and techniques for validating and modeling maps and cross-sections. Includes balance and restoration of cross-sections, and derivation and use of predictive geometric and kinematic models. Practical problem solving is emphasized.

**GEO 565 Comparative Structural Geology.** Three hours. Offered on demand.
Analysis of the original literature on structural families and deformation-mechanism associations, emphasizing the low-temperature environment.

**GEO 567 Clastic Depositional Environments: Processes and Facies.** Three hours.
Prerequisite: GEO 367.
An examination of the relationships between sedimentary processes and facies. Emphasis is on use of lateral and vertical changes in sediment composition, texture, and structures to identify environments of deposition within the various clastic depositional systems. Offered on demand.

**GEO 570 General Geochemistry.** 4 credits.
Prerequisite: GEO 314 or permission of the instructor. Not open to students who have earned credit for GEO 470.
Overview of the field of geochemistry (elementary chemical equilibria and thermodynamics, organic geochemistry, isotope geochemistry), with an emphasis on solving geologic problems. Offered fall semester. Donahoe.

**GEO 571 Thermodynamics for Geologists.** Three hours.
Prerequisite: MATH 126 or permissions of the instructor.
Semi-derivational approach to understanding the thermodynamic relations most useful to geologists. Emphasis is on using the derived relations to solve common geologic problems. Offered alternate fall semesters. Donahoe.

**GEO 575 Petrochemistry.** Three hours.
Prerequisite: Permission of the instructor.
Principles and techniques in geochemical modeling of magmatic, hydrothermal, and metamorphic processes. Offered on demand. Stowell.

**GEO 576 Analytical Geochemistry.** Three hours.
Theory, techniques, and applications of geochemical methods for the analysis of rocks, ores, and aqueous fluids. Offered on demand. Stowell, Donahoe.

**GEO 582 Advanced Stratigraphy.** Three hours.
Examines stratigraphic nomenclature, principles, and concepts. Lithostratigraphy, biostratigraphy, allostratigraphy, chronostratigraphy, and geochronology are studied. Offered on demand. Mancini.

**GEO 583 Global Tectonics.** Three hours.
Study of tectonics, plate motions, and tectonic environments. Includes discussion of controlling factors, driving forces, and resulting structures with emphasis on island arcs, trenches, backarc basins, transform boundaries, and continental margins. Offered alternate spring semesters or on demand. Robinson.

**GEO 590 Seminar in Regional Geology.** One hour.
Prerequisite: GEO 314, GEO 365, and GEO 367.
Literature and field study of the geology of selected areas. Offered on demand.

**GEO 598 Research Not Related to Thesis.** Variable credit. Offered on demand.
**GEO 599 Thesis Research.** Variable credit. Offered on demand.

**GEO 607 Introduction to Groundwater Modeling.** Three hours.
Prerequisite: GEO 506, MATH 253, and CS 226; or permission of the instructor.

http://graduate.ua.edu/catalog/16100.html
**GEO 608 Contaminant Hydrogeology and Modeling.** Three hours.  
Prerequisite: GEO 607 or permission of the instructor.  
Introduction to concepts and models in contaminant hydrogeology. Offered Fall. Zheng.

**GEO 610 Fluvial Geomorphology.** Three hours.  
Analysis of fluvial processes, channel morphology, and channel responses. Emphasis on flow hydraulics, sediment transport, depositional mechanics, geomorphic effectiveness, and channel form adjustment. Offered fall semester.

**GEO 626 Advanced Topics in Geology.** Variable credit.  
Advanced topics in the following areas: economic geology, geochemistry, geohydrology, geophysics, geomorphology, mineralogy, paleontology, petrology, sedimentation, stratigraphy, structural geology, and tectonics. Offered on demand.

**GEO 634 Seminar in Tectonics.** One hour.  
Prerequisite: Permission of the instructor.  
Discussion of current research in Tectonics and related subjects. May be repeated for credit. Offered fall and spring semesters.

**GEO 635/GEO 636 Graduate Seminar in Geology.** One hour.  
Oral presentations on current geological topics. Offered fall and spring semesters.

**GEO 650 Isotope Geology.** Three hours.  
Prerequisite: Permission of the instructor.  
Principles of stable and radiogenic isotope geochemistry, and applications to economic geology, geochronology, petrology, and tectonics. Offered on demand. Stowell.

**GEO 652 Isotope Hydrology.** Three hours. Offered on demand.  
Prerequisite: GEO 570.  
Study of the distribution, production, and usage of naturally occurring and anthropogenically introduced stable and radioactive isotopes in the earth's surficial environment. Emphasis introduced stable and radioactive isotopes in the earth's surficial environment. Emphasis will be place on the application of isotopes in solving hydrologic and geomorphic problems.

**GEO 663 Structural Geology Seminar.** Three hours. May be repeated for credit.  
Prerequisite: GEO 564, GEO 565, or permission of the instructor.  
Topics in quantitative structural geology. Offered on demand.

**GEO 669 Carbonate Depositional Environments.** Three hours.  
Prerequisite: GEO 512 or permission of the instructor.  
Study of modern and ancient carbonate depositional systems, with emphasis on facies analysis and depositional modeling.

**GEO 673 Aqueous Environmental Geochemistry.** Three hours.  
Prerequisite: GEO 570.  
Advanced treatment of the topics of low-temperature aqueous geochemistry important for understanding inorganic processes controlling the chemical quality of surface and subsurface waters. Emphasis is on solving problems in environmental geochemistry. Offered alternate spring semesters. Donahoe.

**GEO 674 Organic Geochemistry.** Three hours.  
Prerequisite: Permission of the instructor.  
Study of the distribution, fate, and geochemical interactions of both natural and anthropogenic organic compounds in the environment.

**GEO 676 Chemical Diagenesis.** Three hours.  
Study of chemical processes controlling diagenetic changes in carbonate and clastic rocks. Topics include dissolution/precipitation, porosity modification, secondary porosity, biologic diagenesis, pressure solution, mineral alternation, dolomitization, artificial diagenesis, and applications to oil exploration and production. Offered on demand. Donahoe.

**GEO 681 Biostratigraphy and Paleobiogeography.** Three hours.  
Prerequisite: GEO 582 or permission of the instructor.  
Examination of the principles and techniques of biostratigraphy and paleobiogeography using examples from the Paleozoic Era. Offered on demand. Stock.

**GEO 698 Research Not Related to Dissertation.** Variable credit. Offered on demand.  
**GEO 699 Dissertation Research.** Variable credit. Offered on demand.
6.11 DEPARTMENT OF HISTORY (HY)
Interim Chairperson: Professor Michael Mendle, Office: 202 ten Hoor Hall

Admission Requirements

General requirements for all history degree programs. Admission decisions for all graduate history programs at The University of Alabama are made by the Graduate School based on a composite of subjective and quantitative information, including the applicant's statement of purpose and letters of recommendation, the academic standing of the programs in which the applicant has studied, evidence of appropriate college or graduate-level work in history courses, test scores, previous grades, and the recommendation of the Graduate Committee. Each application is considered in the context of other applications to the program, with due consideration given to the availability of space in the program, the need to maintain a pool of students of superior potential, and the need to encourage minority applications. Not every student whose credentials meet stated quantitative standards is admitted.

Quantitative requirements for unconditional admission to M.A. program. The applicant must have a grade point average, based on a 4.0 system, of 3.0 overall or 3.0 for the last 60 semester hours in a degree program, and a score of at least 1500 on the combined verbal, quantitative, and analytical portions of the Graduate Record Examination. Applicants who take the GRE after October 1, 2002, must score at least 1000 on the combined verbal and quantitative portions and at least 4 on the analytical writing section.

Quantitative requirements for conditional admission to M.A. program. An applicant whose credentials do not meet the requirements for regular admission may be considered for conditional admission if he or she has a quality point average of at least 2.5 overall and a score of 1400 on the GRE. For applicants who take the GRE after October 1, 2002, conditional admission will require a score of 930 on the combined verbal and quantitative portions and at least 4 on the analytical writing portion. Conditional admission is rare and requires a special recommendation by the Graduate Committee. Students admitted conditionally must maintain a 3.0 average for the first 12 semester hours attempted. Failure to do so will result in dismissal from the program.

Special requirements for admission to Ph.D. program. Students applying to the Ph.D. program are expected to have GRE scores substantially above the minimum acceptable for M.A. applicants, a GPA in previous graduate work of 3.5 or better, and strong recommendations. Normally a successful applicant must also be endorsed by a faculty member prepared to serve as chairperson of the student's dissertation committee.

General Degree Requirements

Course load. Resident students are expected to register for full loads each semester—at least 9 hours, except in the case of .50 FTE teaching assistants, who must take at least 6 hours. All courses must be numbered 500 or above, but HY 699 Dissertation Research does not count toward the course hour requirement for any graduate degree.

Historiography requirement. All incoming graduate students (M.A. or Ph.D.), unless specifically exempted by the Graduate Committee, must take at least two of the basic historiography courses (HY 601/HY 602 Literature of American History, HY 603 Literature of European history, and HY 605 Literature of Latin American History) as part of their degree program. They are encouraged to take these courses as early as possible in their program.

Seminar requirement. All M.A. students who choose Plan II (described under "Requirements for the M.A. Program" below) must take at least one research seminar. All doctoral students must complete two research seminars.

Language requirement. Unless specified to the contrary, all graduate degree programs in history require that each student demonstrate reading proficiency in one or more foreign languages. These languages should be selected from the standard research languages (Spanish, French, German, and Russian), but other languages relevant to the student’s program may be substituted with the recommendation of the student's advisor and the permission of the Graduate Committee. The student must fulfill this requirement by passing the examination administered by the relevant language department at The University of Alabama. Completion of any of the various "language for reading proficiency" courses offered at The University of Alabama with a final grade of "B" or above also meets the language requirement.

Requirements for the M.A. Program

http://graduate.ua.edu/catalog/16200.html
Plan I:

Coursework. Coursework totaling 24 credit hours in history and a thesis (an additional 6 credit hours of HY 599) are required, and the student must demonstrate reading proficiency in one foreign language before taking the final oral examination.

Thesis. The topic of the thesis will be selected by the student in consultation with his or her advisor. After the topic has been agreed upon, the student will prepare a prospectus describing the topic and the proposed plan of approach, including the principal sources to be used. Copies of the prospectus will be distributed to the student's advisory committee, which shall consist of three members, all of whom must indicate their acceptance of the topic.

Oral exam. The Plan I oral exam is on the M.A. coursework and the thesis. The examination committee consists of the three professors who served as readers on the thesis, plus at least one additional history professor and the representative of an outside department—if possible, someone who is familiar with the thesis subject area. The M.A. thesis must be submitted to the student’s primary advisor no later than six weeks before the scheduled defense, and the revised thesis must be submitted to the remaining members of the student's advisory committee at least three weeks before the scheduled defense. The examining committee files with the director of graduate studies a written opinion regarding the student's suitability for further graduate work in history.

Plan II:

Coursework. Coursework totaling 30 credit hours in history is required, and the student must demonstrate proficiency in reading one foreign language before taking the final oral examination.

Oral exam. Plan II students must take an oral examination on their history courses and on a revised seminar paper, copies of which must be furnished to the members of the examining committee at least 10 days before the date of the oral examination. The examining committee consists of at least five history professors, including as many as possible with whom the student has taken courses. The examining committee files with the director of Graduate Studies a written opinion regarding the student's suitability for further graduate work in history.

Special note on M.A. oral exams. In all of the M.A. oral examinations, two negative votes constitute failure of the examination. History graduate students may repeat failed oral examinations one time only, after an interval specified by the examining committee. Two negative votes constitute denial of admission to the doctoral program. The use of faculty from outside the department to serve on M.A. examination committees (except in cases where faculty from other disciplines are prescribed by the graduate regulations) must be approved well in advance by the Graduate Committee.

Requirements for the Ph.D. Program

History field requirements. The Ph.D. degree is offered in United States history, history of the South, modern British and European history, Latin American history, and military and naval history. The four general divisions are separated into the following fields:

- United States history to 1877
- United States history since 1877
- History of the South
- British and European history, 1485 to 1815
- British and European history, 1815 to present
- Latin American history to 1810
- Latin American history since 1810
- Military and naval history

The Ph.D. requires a total of 54 hours of graduate coursework. M.A. hours, including those accepted for transfer from other institutions, are included in this total. Ph.D. students will offer four fields of history, with at least two, but not more than three, related to the same geographic area (U.S., Europe, or Latin America). The student must earn at least 12 hours of graduate credit in each of the four fields.

Beyond the 48 hours of history distributed in fields, the student must earn 6 additional hours of graduate credit (a) in a field outside the history department; (b) in history, but in fields not presented for the Ph.D.; or (c) in history, but as additional hours in one or more of the fields presented for the Ph.D.

Language requirement. Each student is expected to demonstrate a reading knowledge of two foreign languages, with the exception of those whose major fields are in American history. Those working primarily in American history must demonstrate a knowledge of only one foreign language, although any advisor may require his or her student to continue to fulfill the two-language requirement if it seems necessary to the area of the student's research. For those who must satisfy the two-language requirement, a special skill pertinent to the candidate’s doctoral dissertation may be substituted for one language on the recommendation of the student’s advisor and with the permission of the Graduate Committee. The language and special skill requirements must be met before the scheduling of the comprehensive examinations.
Comprehensive examinations. The comprehensive examinations for admission to candidacy for the Ph.D. consist of a four-hour written examination in each of three fields of history offered by the candidate, each administered by a committee of two or more professors representing the respective field. An oral examination will be administered subsequently by a committee consisting of not less than five professors who administered the written examinations. The comprehensive examinations are to be completed in a two-week period, with the written exams given the first week and the oral exam given the following week. The exam schedule must allow at least five days between the last written exam and the date of the oral exam. The written and oral exams in each field are considered a unit, which the student will pass or fail as a whole. Two negative votes constitute failure. A minimum of six months must elapse before the student may repeat a failed examination, the time of which will be set by the examining committee. A student is permitted to repeat a failed examination one time only.

Dissertation. Dissertations are to be based upon research in history and make an original contribution to knowledge. Each doctoral student will select and obtain approval for a dissertation topic before scheduling his or her comprehensive examinations. Students will select dissertation topics in consultation with their advisors. After the topic has been agreed upon, the student will prepare a prospectus describing the topic and the proposed plan of approach, including the principal sources to be pursued.

Copies of the prospectus will be distributed to the members of the student’s comprehensive exam committee in advance of the oral examination. The prospectus is accepted or rejected at the time of the oral comprehensive examination.

The Graduate School requires each student admitted to candidacy for the Ph.D. to pursue completion of the dissertation without interruption by enrolling each semester in HY 699 for at least 3 credit hours. The student must register for a total of at least 24 hours of dissertation research.

Final oral examination. The candidate must pass an oral examination on the dissertation and the field of the dissertation in accordance with the rules of the Graduate School. The examination committee consists of the three professors who served as readers on the dissertation, plus at least one additional history professor and a representative of an outside department. Two negative votes constitute failure of the examination, which the student may repeat one time only, after an interval specified by the examining committee.

Using outside faculty on Ph.D. examinations. Except in cases where faculty from other disciplines are prescribed by the graduate regulations, the use of faculty from outside the department to serve on Ph.D. comprehensive or oral examinations must be approved well in advance by the Graduate Committee.

Scholastic Requirements
Any student who receives 6 hours of "C" grades or 3 hours of "D" or "F" grades in history courses shall be dismissed from the program, although the student dismissed may petition the Graduate Committee for reinstatement. A student on probation or whose transcript carries a grade of "I" will ordinarily be ineligible for a teaching assistantship or other departmental financial support.

Transfer of Credit
Courses of full-graduate level credit earned in an accredited institution where a student was enrolled in the graduate school may be submitted for review for inclusion in a History degree program. Evaluation of credit for transfer will not be made until the student has enrolled in the Graduate School of The University of Alabama. Acceptance of credit requires the approval of the student’s advisor, the Graduate Committee of the Department of History, and the Dean of the Graduate School. Credit will not be accepted for transfer from any institution at which the student failed to achieve a “B” average on all of the graduate work attempted.

A student initiates with the Graduate School a request for evaluation of graduate credit obtained at another institution. The form is available at the “Web Forms” icon of the Graduate School’s homepage. It is also the student’s responsibility to ensure than an official transcript of the credit concerned is received by the Graduate School. All credit toward the M.A. degree must have been earned during the six years immediately preceding the date on which the degree is awarded. All credit toward the Ph.D. must have been earned in the six years immediately preceding admission to the doctoral program.

The history department usually allows the transfer of 6 semester hours of credit toward the M.A. degree, although in exceptional cases up to 12 hours may be accepted. No more than one-half of Ph.D. coursework hours (not including HY 699) may be transferred from another institution.

Course Descriptions

HY 500 Special Studies in History. Three hours.
HY 501 Japanese Civilization to 1550. Three hours.
Survey of Japanese history from the beginning through the 16th century. Major emphasis is on the period after A.D.
400.

HY 502 Modern Japan since 1550. Three hours.
Major emphasis is on the end of the Tokugawa Period (1800–68) and the rise of modernized Japan in the Meiji Period
(1868–1912) and the 20th century.

HY 503 Chinese Civilization to 1600. Three hours.
Survey of Chinese culture from the Shang Period through the Ming Period. Robel.

HY 504 Modern China since 1600. Three hours.
Survey of Chinese history in the Ch'ing Dynasty and the 20th century. Major emphasis is on 19th- and 20th-century
events. Robel.

HY 508 Colonial United States to 1763. Three hours.
Topical survey of major themes in U.S. colonial history, with particular emphasis on Anglo-American developments.
Selesky.

HY 509 American Revolution and the Founding of the Nation, 1763–1815. Three hours.
The development of revolutionary sentiment in the North American colonies, the resulting revolution, and the
subsequent efforts to establish the new nation.

HY 513 From the Mexican War through the Civil War. Three hours.
Examines how Americans made war in the middle of the 19th century and how waging war affected the evolution of
politics and society. Selesky.

HY 516 U.S. from Reconstruction to World War I. Three hours.
Selected topics relating to the development of the U.S., especially domestic affairs and the growth of important
institutions. Beito.

HY 517 U.S. from World War I through World War II. Three hours.
Covers the participation of the U.S. in two world wars and the events of the intervening years. Government,
commerce, and industry receive attention and analysis.

HY 521 American Legal History (same as LAW 772). Three hours.
Critical history of American law and institutions, emphasizing the period since 1750. Freyer, Holt.

HY 522 History of American Labor Law (same as LAW 617). Three hours.
Problems in the legal history of U.S. labor movements, including slavery law, the law and the American worker, the
labor conspiracy doctrine, the labor injunction, and the growth of federal labor legislation and case law. Holt.

HY 523 Constitutional History of the U.S. to 1877. Three hours.
Deals with evolution of U.S. constitutional law and the nature and process of judicial review, including 18th-century
constitutional theory and Supreme Court decisions. Freyer.

HY 524 Constitutional History of the U.S. since 1877. Three hours.
Continuation of HY 523. Freyer.

HY 525 Rise of America to World Power. Three hours.

HY 526 U.S. as a World Power, 1898 to the Present. Three hours.

HY 529 American South and Southwest, 1513–1821. Three hours.
History of the Spanish advance into the present-day borders of the U.S., explaining how Spain fought and finally
succumbed to the more dynamic and aggressive French and English. Clayton.

HY 530 U.S. Economic History since the Colonial Period. Three hours.
A survey of U.S. economic history from the colonial period to the present. Emphasis will be placed on the role of
business, social, and voluntary organizations. Beito.

HY 534 U.S. Social History to 1865. Three hours.
Topical survey of major social forces in the U.S., emphasizing the colonial experience of Americans and its impact on
future generations. Beito.

HY 535 U.S. Social History since 1865. Three hours.
Topical survey of major social forces, with particular emphasis on immigration, voluntary association, and
suburbanization. Beito.

HY 542 The Middle Ages. Three hours. Foundations of the modern world in barbarian Europe: retreat into the countryside and private government, recovery of public institutions, money economy, and cultural vitality.

HY 543 Renaissance. Three hours. Intellectual movements associated with the Renaissance, with readings in Machiavelli’s Prince, More’s Utopia, and other humanist writings; social and economic life, religion, politics, and statecraft. McClure.

HY 544 Reformation and Counter-Reformation. Three hours. History of the separation of Catholic and Protestant churches from the ideal of the universal Christian church; late-Medieval religious practice. McClure.

HY 545 17th-Century Europe. Three hours. Troubled times, dominated by wars, depressions, harvest failures, and epidemics, but also the times of Baroque art, classical literature, critical philosophy, and scientific revolution. Ultee.

HY 546 Age of Reason, 1715–89. Three hours. The Enlightenment of Voltaire, Diderot, Rousseau, Franklin, Hume, Goethe, and Kant, whose writings exalted individual reason, tolerance, liberalism, science, and public service and set the stage for the French Revolution. Ultee.

HY 547 French Revolution and Napoleon. Three hours. Causes, course, and effects of the revolution, from the storming of the Bastille to Napoleon’s seizure of power, conquests, and final defeat at Waterloo. Ultee.

HY 548 Europe, 1815–50. Three hours. Europe in the first half of the 19th century: industrial expansion, changes in social structure, and the new ideologies of romanticism, nationalism, socialism, and liberalism.

HY 549 Europe, 1850–1914. Three hours. Culture and history of Europe to World War I: major institutions, values, and ideas, as well as the social environment in which Europeans lived.

HY 551 Europe since 1914. Three hours. Zenith and decline of the great imperial powers of Europe through World Wars I and II; tensions of the Cold War, the Common Market, and European unity.

HY 554 German History to 1740. Three hours. A survey of the Germanies from the early migrations to the rise of Prussia under the Hohenzollern dynasty, with emphasis on the development of German particularism and distinctive characteristics.

HY 555 German History since 1740. Three hours. A survey of German history from Frederick the Great to Adolph Hitler, with emphasis on the Austro-Prussian conflict, the Bismarckian Empire, and the two world wars.

HY 557 World War I. Three hours. “The War to End All Wars,” from the European crises culminating at Sarajevo in 1914 to peacemaking at Versailles in 1919. Major emphasis is on the western and eastern fronts and on the war at sea. Beeler.

HY 558 World War II. Three hours. The global conflict—or series of conflicts—from Manchukuo in 1931 to Tokyo Bay in 1945. Battles on land, at sea, and in the air; life on the home fronts and in enemy-occupied areas; and the war’s legacy to future generations. Selesky.

HY 561 Russia to 1894. Three hours. Conventional political history of Russia from the ninth century to the 19th century, followed by the social and cultural history of the Russian revolutionary movement. Hagenloh.

HY 562 History of Russia since 1894. Three hours. Crisis in Russian society and the coming of the revolution; emergence of Stalinism; and political developments since World War II, including the post-Cold War era. Hagenloh.

HY 570 Spanish Viceroyalties of America. Three hours. The conquest and colonization of America by Spain, from the voyages of Columbus to the Wars of Independence in the early 19th century. Clayton.
HY 571 The Age of Exploration and Conquest. Three hours.
A history of exploration from ancient times to the 16th and 17th centuries, when European nations expanded by sea voyages and conquest, penetrating the Americas, Africa, and Asia and basically completing the geographical knowledge of the earth. Clayton.

HY 572 Modernization of South America. Three hours.
Survey of political, economic, and social trends in the major nations since 1930. Delpar.

HY 573 The Andean Nations. Three hours.
Examines the political, economic, social, and cultural history of the Andean nations since independence, with emphasis on Colombia, Peru, and Venezuela. Delpar, Clayton.

HY 574 Relations of the U.S. and Latin America. Three hours.
Chronological survey of diplomatic, economic, and cultural relations, with emphasis on the 20th century. Delpar.

HY 575 Caribbean Basin, 1492 to the Present. Three hours.
Traces the evolution of the nations of the Caribbean and Central America from the first European settlements in the 16th century to the present. Delpar.

HY 580 Survey of Military History. Three hours.
Introduction to the field of military history and to the writing of military history from ancient times to the present, with an emphasis on the 19th and 20th centuries. Selesky.

HY 583 Comparative Revolutions in the Modern World. Three hours.
Comparative study of revolutionary movements in the Western and non-Western worlds.

HY 590 England under the Tudors. Three hours.
Development of an early modern state: establishment of strong central monarchy, religious crises from the Reformation to the Puritan movement, and exuberance and excess of an expanding society. Mendle.

HY 591 England under the Stuarts. Three hours.
How Englishmen of the 17th century worked out the great questions of their day: Was liberty compatible with strong and effective government? Could English elites share their power without destroying it? Finally, what did God want for England? Mendle.

HY 593 Britain in the 18th Century. Three hours.
From the Hanoverian Succession in 1714 to victory at Waterloo in 1815: political development, agrarian and industrial revolutions, John Wesley, Samuel Johnson, and an apparently endless succession of wars. Beeler.

HY 594 Britain in the Victorian Age. Three hours.
Britain at her apogee: possessor of the empire on which the sun never set; world economic leader; nation of Peel and Palmerston, Gladstone and Disraeli, Dickens and Trollope, Tennyson and Browning, Turner and Constable, and Victoria and Albert. Beeler.

HY 595 Britain in the 20th Century. Three hours.
The course looks at Britain from the death of Queen Victoria to Mrs. Thatcher: the decline of the British Empire, the two World Wars, the rise of the welfare state, the Common Market, and economic resurgence.

HY 599 Thesis Research. One to six hours.

HY 600 Teaching History. One hour.

Group I—Historiography Courses

HY 601 Literature of American History to 1865. Four hours.

HY 602 Literature of American History since 1865. Four hours.

HY 603 Literature of European History. Four hours.

HY 605 Literature of Latin American History. Four hours.

Group II—Proseminars

HY 606 Proseminar in United States History to 1877. Four hours.

HY 607 Proseminar in United States History since 1877. Four hours.
HY 608 Proseminar in Southern History. Four hours.

HY 620 Proseminar in Latin American History. Four hours.

HY 631 Proseminar in Early Modern British and European History. Four hours.

HY 635 Proseminar in Recent British and European History. Four hours.

HY 639 Proseminar in Military and Naval History. Four hours.

Group III—Seminars

HY 651 Seminar in United States History to 1877. Four hours.

HY 657 Seminar in United States History since 1877. Four hours.

HY 658 Seminar in Southern History. Four hours.

HY 660 Seminar in State and Local History. Four hours.

HY 665 Special Studies Seminar. Four hours.

HY 670 Seminar in Latin American History. Four hours.

HY 682 Seminar in British and European History. Four hours.

HY 684 Seminar in Military and Naval History. Four hours.

Group IV—Directed Study

HY 697 Directed Readings. One to four hours.
Prerequisite: Written permission of the director of graduate studies.

HY 698 Directed Research not Related to Dissertation. One to four hours.
Written permission of the director of graduate studies is required for admission.

HY 699 Dissertation Research. Three to twelve hours.
Not to be counted for required credit for advanced degrees.
6.12 MARINE SCIENCE PROGRAM (MS)
Coordinator: Professor W. W. Schroeder, Office: Dauphin Island Sea Lab

The graduate Marine Science Program (MSP) is a dual-campus program of the Department of Biological Sciences at The University of Alabama and University programs at the Dauphin Island Sea Lab (DISL), a facility of the Alabama Marine Environmental Sciences Consortium (MESC). Both sites provide unique facilities to support education and research in the field of marine science. The main campus facilities include a marine algae and marine invertebrate collection. At DISL, there is a diversely trained resident faculty available year-round to teach graduate-level courses that are part of the MSP curriculum, to serve as thesis advisors, to provide support space, and to employ resident students in funded extramural research projects. The library at DISL specializes in publications that focus on the marine environment.

In addition, DISL provides support for University programs by way of a research facility containing offices, laboratories, and support facilities for the resident graduate faculty; three lecture-room/teaching-laboratory buildings; and two dormitories, an efficiency apartment building, and a dining hall. Access to the bay and Gulf waters is available via scheduled use of the 65-foot steel-hull R/V *A. E. Verrill* and by a variety of outboard-motor-powered craft that can be towed to different sites for launching.

Courses offered at DISL carry the same credit toward graduate degrees as those taught on the University of Alabama campus by the Department of Biological Sciences.

Admission Requirements
Students seeking admission to the Marine Science Program must satisfy the general admission requirements of the Graduate School. For further specific information, please contact Dr. William W. Schroeder, Coordinator of Graduate Studies, the University of Alabama Marine Science Program, 101 Bienville Boulevard, Dauphin Island, AL 36528; telephone (334) 861-7528; fax (334) 861-7540; e-mail wschroeder@disl.org.

Degree Requirements
Each candidate will be guided by a graduate committee consisting of at least three members appointed by the dean of the Graduate School. Usually, one member of the committee will be a qualified member of the faculty in residence on the Tuscaloosa campus.

Each student must complete a minimum of 8 hours of graduate credit on the Tuscaloosa campus. Normally, this occurs during the student’s first calendar year in the Graduate School. No foreign language is required.

Each student will undergo a preliminary examination prepared by the student’s graduate committee and designed to be answered in about four hours a day over three consecutive days. The examination will be administered by the committee chairperson no later than the third semester of enrollment. Prior to the examination, it is expected that the student will discuss preparation and subject matter with committee members. Each student will participate in an interdisciplinary effort (e.g., cruise or field exercise) at some time during residence at the Dauphin Island Sea Lab.

Each student, upon completion of the coursework and thesis, will present a faculty- and peer-review seminar on the thesis content. Additionally, the graduate committee will administer a final oral examination. The master of science in marine science degree requires at least 24 hours of graduate credit. Both Plans I and II (see "Academic Policies" in this catalog) are acceptable.

Financial Support
The Marine Science Program cannot commit funds to prospective students. However, there are sources of funds—both within the University and at DISL. On campus, qualified students may compete for available departmental graduate teaching assistantships, when funds are available. Consideration is based on a combination of composite GRE scores and most recent degree GPA. Additional consideration may be given to students possessing special skills. At DISL, resident students may be supported by DISL fellowships or assistantships, faculty research grants or contracts, or extramural funding.

Courses in Marine Science (MS)
Most marine science courses are offered year-round at the Dauphin Island Sea Lab. The following courses are also available at the 400 level; students enrolling at the 500 level must complete additional work and may be required to...
participate in or conduct a research project, to be presented both orally and visually and accompanied by a written professional report.

**Course Descriptions**

Students may not receive credit at both the graduate and undergraduate levels for courses having the same name and number.

**MS 501 Phytoplankton Ecology and Physiology.** Three hours.
Prerequisites: General biology and marine ecology.
Phytoplankton ecology, with emphasis on physiological adaptations promoting growth and distribution.

**MS 505 Marine Biogeochemical Cycles.** Three hours.
Prerequisite: Oceanography, marine biology, or marine ecology.
Marine elemental cycles, with emphasis on biological and geochemical processes that regulate them.

**MS 506 Marine Biology for Teachers.** Six hours.
Prerequisites: Graduate standing in the College of Education and permission of the instructor. Not open to graduate students in biology or to any student who has taken MS 306.
A survey of marine organisms and communities and physical and chemical factors that influence their lives. Also covered are materials and methods of marine science instruction.

**MS 511 Marsh Ecology.** Four hours.
Prerequisites: Graduate standing in a science and permission of the instructor.
A study of the floral and faunal elements of various marine marsh communities. Interaction of physical and biological factors is emphasized. The course is structured to provide actual field experience in addition to lecture material. Trips are scheduled to acquaint students with regional examples of marsh types.

**MS 519 Marine Ecology.** Four hours.
Prerequisites: Graduate standing in a science and permission of the instructor.
Bioenergetics, community structure, population dynamics, predation, competition, and speciation in marine ecosystems.

**MS 521 Coastal Ornithology.** Four hours.
Prerequisites: Graduate standing in a science and permission of the instructor.
Study of coastal and pelagic birds, with emphasis on ecology, taxonomy, and distribution.

**MS 522 Field Marine Science.** Two hours.
Prerequisite: Graduate standing.
A field research and habitat-exploration course.

**MS 533 Coastal Zone Management.** Two hours.
Review of ecological features and a set of physical management policies for coastal communities, and a description of relevant federal and state programs.

**MS 538 Marine Zoogeography.** Four hours.
Prerequisites: Graduate standing in a science and permission of the instructor.
A study of physical, chemical, and biological factors influencing the distribution of marine organisms. Emphasis is on the western North Atlantic ocean.

**MS 541 Benthic Community Structure.** Three hours.
Prerequisites: Graduate standing in a science and permission of the instructor.
A comprehensive examination of benthic faunal populations with respect to major taxa, community composition, diversity, and limiting environmental factors; emphasis is on local habitats.

**MS 543 Plankton.** Four hours.
For graduates and advanced undergraduates. A study of physical, chemical, and biological factors influencing the distribution of marine organisms. Emphasis is placed on the western North Atlantic ocean.

**MS 548 Introduction to Oceanography.** Four hours.
Prerequisites: General physics, general biology, MATH 125, and permission of the instructor.
A general introduction to the oceans, with emphasis on chemical, physical, and geological processes and the relationship of these processes to biological systems.

**MS 552 Marine Vertebrate Zoology.** Four hours.
Prerequisites: Graduate standing in a science and permission of the instructor.
Systematics, zoogeography, and ecology of marine fishes, reptiles, and mammals.

**MS 553 Marine Botany.** Four hours.  
Prerequisites: Graduate standing in a science and permission of the instructor.  
Reproduction, taxonomy, systematics, distribution, and ecology of the major plant groups in the marine environment.

**MS 584 Marine Science Seminar.** One hour.

**MS 594 Oceanology of the Gulf of Mexico.** Two hours.  
Prerequisites: Graduate standing in a science and permission of the instructor.  
Detailed descriptive study of the oceanology of the Gulf of Mexico and adjacent waters. The areas of study will include the coastal zone, continental shelf, and deep gulf.

**MS 597 Special Topics in Marine Science.** One to four hours.  
May deal with any marine science topic not covered by existing courses. The credit hours and format are arranged as appropriate to each topic. The specific course title is added at the time each course is taught. Offered according to demand.
The Department of Mathematics (MATH) 
Chairperson: Professor Zhijian Wu, Office: 345 Gordon Palmer Hall

The department offers programs leading to the master of arts and the doctor of philosophy degrees. The department offers courses in the following areas: algebra, analysis, topology, differential equations, mathematical methods for engineering, mathematics for finance, mathematical statistics, numerical analysis, fluid dynamics, control theory, and optimization theory.

Admission Requirements
To be admitted for a graduate degree, students are expected to satisfy the general requirements of the Graduate School, as stated in the "Academic Policies" section of this catalog. In support of the application, each applicant must submit scores on the general test of the Graduate Record Examination; the advanced portion is desirable but not required.

Degree Requirements

Master of arts. Each student's program for the master's degree must be approved by the department and the Graduate School. Students need to follow all policies found in the master's degree policies section of the Graduate Catalog.

A total of 30 graduate hours is required to obtain a master's degree in mathematics. Candidates for the master's degree may choose either of two plans. One plan (Plan I) requires successful completion of 24 semester hours of coursework, plus a thesis. The other plan (Plan II) requires no thesis, but requires successful completion of 27 semester hours of coursework plus 3 hours of work devoted to a project supervised by a member of the graduate faculty in mathematics. At least 21 of the course hours must be taken in mathematics; courses in related areas, such as physics, finance, or computer science, may be taken with the approval of the graduate advisory committee. An oral examination is required for completion of the degree. Candidates for the master's degree must complete three of the following four core courses: MATH 510 Numerical Linear Algebra, MATH 532 Graph Theory and Applications, MATH 580 Real Analysis I, and MATH 585 Introduction to Complex Calculus.

Doctor of philosophy. The student's program for the Ph.D. degree in mathematics must be approved by the department and the Graduate School by the time the student completes 30 graduate semester hours of UA and/or transfer coursework. Students also need to follow all policies found in the doctoral degree policies section of the Graduate Catalog.

Ph.D. students in mathematics normally take three two-course sequences in mathematics/applied mathematics. A total of at least 48 hours of coursework is required. Dissertations for the Ph.D. degree in mathematics may be written in any one of several areas approved by the department. A total of at least 24 hours of dissertation research must be taken. Before officially becoming a Ph.D. candidate, the student must pass qualifying examinations in two areas within three years of becoming a full-time graduate student. One of the passes obtained should normally be in the area of the dissertation.

Joint Ph.D. program in applied mathematics is a program with the UA System campuses in Birmingham and Huntsville. Admission to the program is obtained by passing the joint program examination in linear algebra, numerical linear algebra, and real analysis. Each program of study requires a minimum of 54 semester hours of coursework approved by the student's joint graduate study supervisory committee. Those hours must include a major area concentration consisting of at least six courses in addition to the courses needed to prepare for the joint program examination, and an application minor consisting of at least four related graduate courses in some area outside the department. Before officially becoming a Ph.D. candidate in this program, a student must pass the comprehensive qualifying examination that covers the entire program of study. Neither the joint program examination nor the comprehensive qualifying examination can be taken more than twice.

Course Descriptions

MATH 500 Mathematical Methods of Physics I. Three hours. 
Prerequisite: MATH 238. 
Vector calculus, tensors and matrices, functions of a complex variable, and special functions.

MATH 501 Mathematical Methods of Physics II. Three hours. 
Prerequisite: MATH 500. 
Special functions, Fourier series and integral transforms, Green's functions, and group theory.
MATH 502 History of Mathematics. Three hours.
Prerequisite: Permission of the department.
Designed to increase awareness of the historical roots of the subject and its universal applications in a variety of settings, showing how mathematics has played a critical role in the evolution of cultures over both time and space.

MATH 504 Topics in Modern Mathematics for Teachers. Three hours.
Prerequisite: Permission of the department.
Diverse mathematical topics designed to enhance skills and broaden knowledge in mathematics for secondary mathematics teachers.

MATH 505 Geometry for Teachers. Three hours.
Prerequisite: MATH 125 or permission of the department.
A survey of the main features of Euclidean geometry, including the axiomatic structure of geometry and the historical development of the subject. Some elements of projective and non-Euclidean geometry are also discussed.

MATH 506 Curriculum in Secondary Mathematics. Three hours.
Prerequisite: Admission to Teacher Education Program in secondary mathematics or permission of the department.

MATH 507 Theory of Numbers. Three hours.
Prerequisite: Permission of the department.
Designed for graduate students not majoring in mathematics. Familiarity with the types of arguments to prove facts about divisibility of integers, prime numbers, and modular congruencies. Other topics, such as the Fermat theorem, Euler's theorem, and the law of quadratic reciprocity, will be discussed.

MATH 508 Topics in Algebra. Three hours.
Prerequisite: Permission of the department.
Content changes from semester to semester to meet the needs of students. Designed for graduate students not majoring in mathematics.

MATH 509 Discrete Mathematics for Computer Science. Three hours.
Prerequisite: Graduate standing.
Develops students' abilities to think abstractly and logically by applying techniques of discrete mathematics to computer science problems.

MATH 510 Numerical Linear Algebra. Three hours.
Prerequisites: MATH 237 (or MATH 257) or equivalent.
Direct solution of linear algebraic systems, analysis of errors in numerical methods for solutions of linear systems, linear least-squares problems, orthogonal and unitary transformations, eigen values and eigenvectors, and singular value decomposition.

MATH 511 Numerical Analysis I. Three hours.
Prerequisites: MATH 237, MATH 238 or MATH 257, and CS 226; or equivalent.
Numerical methods for solving nonlinear equations; iterative methods for solving linear systems of equations; approximations and interpolations; numerical differentiation and integration; and numerical methods for solving initial-value problems for ordinary differential equations.

MATH 512 Numerical Analysis II. Three hours.
Prerequisite: MATH 411, MATH 511, or equivalent.
Continuation of MATH 511 with emphasis on traditional constrained and unconstrained nonlinear programming methods, with an introduction to modern search algorithms.

MATH 513 Finite-Element Methods. Three hours.
Prerequisites: MATH 343 and MATH 382.
Corequisite: MATH 510.
Quadratic functional on finite dimensional vector spaces, variational formulation of boundary value problems, the Ritz-Galerkin method, the finite-element method, and direct and iterative methods for solving finite-element equations.

MATH 520 Linear Optimization. Three hours.
Prerequisite: MATH 237.
Topics include formulation of linear programs, simplex methods and duality, sensitivity analysis, transportation and networks, and various geometric concepts.

MATH 521 Optimization Theory II. Three hours.
Prerequisite: MATH 321 or MATH 520.
Corequisite: MATH 510 or permission of the instructor.
Emphasis on traditional constrained and unconstrained nonlinear programming methods, with an introduction to modern search algorithms.
MATH 522 Mathematics for Finance I. Three hours.
Prerequisites: MATH 227 and MATH 355 or with permission of the instructor.
An introduction to financial engineering and mathematical model in finance. This course covers basic no-arbitrage principle, binomial model, time value of money, money market, risky assets such as stocks, portfolio management, forward and future contracts and interest rates.

MATH 523 Convex Analysis I. Three hours.
Prerequisites: MATH 257 and MATH 380, or permission of the department.
Introduction to convex analysis. Topics include basic concepts, topological properties, duality correspondences, and representation and inequalities of convex sets and functions.

MATH 528 Introduction to Optimal Control. Three hours.
Prerequisite: MATH 238.
Corequisite: MATH 510 or permission of the department.
Introduction to the theory and applications of deterministic systems and their controls. Major topics include calculus of variations, the Pontryagin maximum principle, dynamic programming, stability, controllability, and numerical aspects of control problems.

MATH 532 Graph Theory and Applications. Three hours.
Prerequisites: MATH 237 or MATH 257, and MATH 382 or permission of the instructor.
Survey of several of the main ideas of general graph theory with applications to network theory. Topics include oriented and nonoriented linear graphs, spanning trees, branchings and connectivity, accessibility, planar graphs, networks and flows, matchings, and applications.

MATH 537 Special Topics in Applied Mathematics I. Three hours.
Prerequisite: Permission of the department.

MATH 538 Special Topics in Applied Mathematics II. Three hours.
Prerequisite: Permission of the department.

MATH 541 Boundary Value Problems. Three hours.
Prerequisites: MATH 343 and MATH 382, or permission of the department.
Emphasis on boundary-value problems for classical partial differential equations of physical sciences and engineering. Other topics include boundary-value problems for ordinary differential equations and for systems of partial differential equations.

MATH 542 Integral Transforms and Asymptotics. Three hours.
Prerequisite: MATH 441, MATH 541, or permission of the department.
Introduction to complex variable methods, integral transforms, asymptotic expansions, WKB method, matched asymptotics, and boundary layers.

MATH 544 Singular Perturbations. Three hours.
Prerequisites: MATH 382 and MATH 441 (or MATH 541), or permission of the department.
Topics include regular perturbation methods for solving partial differential equations, matched asymptotic methods for differential equations, and the methods of strained coordinates and multiple scales, with applications to problems in combustion theory, fluid dynamics, and biology.

MATH 545 Theoretical Foundations of Fluid Dynamics I. Three hours.
Prerequisite: MATH 343, AEM 264 or equivalent, or permission of the department.

MATH 546 Theoretical Foundations of Fluid Dynamics II. Three hours.
Prerequisite: MATH 545 or equivalent, or permission of the department.
Introduction to asymptotic methods and other approximate methods applied to classical problems in boundary-layer theory, low Reynolds number flows, surface gravity waves, shallow-water theory, and hydrodynamic stability.

MATH 551 Mathematical Statistics with Applications I. Three hours.
Prerequisites: MATH 237 and MATH 355.
Introduction to mathematical statistics. Topics include bivariate and multivariate probability distributions; functions of random variables; sampling distributions and the central limit theorem; concepts and properties of point estimators; various methods of point estimation; interval estimation; tests of hypotheses; and Neyman-Pearson lemma with some applications. Credit for this course will not be counted toward an advanced degree in mathematics.

MATH 552 Mathematical Statistics with Applications II. Three hours.
Prerequisite: MATH 551.
Considers further applications of the Neyman-Pearson lemma, likelihood ratio tests, chi-square test for goodness of fit, estimation and test of hypothesis for linear statistical models, the analysis of variance, analysis of enumerative data, and some topics in nonparametric statistics. Credit for this course will not be counted toward an advanced degree in mathematics.
MATH 554 Mathematical Statistics I (equivalent to ST 554). Three hours. 
Prerequisites: MATH 237 and MATH 382. 
Distributions of random variables, moments of random variables, probability distributions, joint distributions, and change of variable techniques.

MATH 555 Mathematical Statistics II (equivalent to ST 555). Three hours. 
Prerequisite: MATH 554. 
Order statistics, asymptotic distributions, point estimation, interval estimation, and hypothesis testing.

MATH 556 Mathematical Statistics III (equivalent to ST 610). Three hours. 
Prerequisite: MATH 555. 
Generalized inverse matrices; distribution of quadratic forms; regression analysis when the model is of full rank; regression using dummy variables and analysis of variance models; and regression analysis when the model is not of full rank.

MATH 557 Stochastic Processes with Applications I. Three hours. 
Prerequisite: MATH 554 or ST 554. 
Introduction to the basic concepts and applications of stochastic processes. Markov chains, continuous-time Markov processes, Poisson and renewal processes, and Brownian motion. Applications of stochastic processes including queueing theory and probabilistic analysis of computational algorithms.

MATH 559 Stochastic Processes with Applications II. Three hours. 
Prerequisite: MATH 355 or permission of the department. 
Continuation of MATH 557. Advanced topics of stochastic processes including Martingales, Brownian motion and diffusion processes, advanced queueing theory, stochastic simulation, and probabilistic search algorithms (simulated annealing).

MATH 560 Introduction to Differential Geometry. Three hours. 
Prerequisites: MATH 380 or MATH 382, and permission of the department. 
Introduction to basic classical notions in differential geometry: curvature, torsion, geodesic curves, geodesic parallelism, differential manifold, tangent space, vector field, Lie derivative, Lie algebra, Lie group, exponential map, and representation of a Lie group.

MATH 565 Introduction to General Topology. Three hours. 
Prerequisite: MATH 380. 
Basic notions in topology that can be used in other disciplines in mathematics. Topics include topological spaces, open sets, closed sets, basis for a topology, continuous functions, separation axioms, compactness, connectedness, product spaces, quotient spaces, and metric spaces.

MATH 566 Introduction to Algebraic Topology. Three hours. 
Prerequisites: MATH 565 and a course in abstract algebra. 
Homotopy, fundamental groups, covering spaces, covering maps, and basic homology theory, including the Eilenberg Steenrod axioms.

MATH 570 Principles of Modern Algebra I. Three hours. 
Prerequisite: MATH 257. 
Designed for graduate students not majoring in mathematics. A first course in abstract algebra. Topics include groups, permutations groups, Cayley's theorem, finite Abelian groups, isomorphism theorems, rings, polynomial rings, ideals, integral domains, and unique factorization domains.

MATH 571 Principles of Modern Algebra II. Three hours. 
Prerequisite: MATH 470 or equivalent. 
The basic principles of Galois theory are introduced in this course. Topics covered are rings, polynomial rings, fields, algebraic extensions, normal extensions, and the fundamental theorem of Galois theory.

MATH 573 Abstract Algebra I. Three hours. 
Prerequisite: MATH 470 or equivalent. 
Fundamental aspects of group theory are covered. Topics include Sylow theorems, semi-direct products, free groups, composition series, nilpotent and solvable groups, and infinite groups.

MATH 574 Cryptography. Three hours. 
Prerequisite: MATH 307, MATH 470/MATH 570, or permission of department. 
Introduction to a rapidly growing area of cryptography, an application of algebra, especially number theory.

MATH 580 Real Analysis I. Three hours. 
Prerequisites: MATH 380 and permission of the department. 
Topics covered include measure theory, Lebesgue integration, convergence theorems, Fubini's theorem, and LP spaces.
MATH 583 Complex Analysis I. Three hours. 
Prerequisites: MATH 380 and permission of the department. 
The basic principles of complex variable theory are discussed. Topics include Cauchy-Riemann equations, Cauchy's integral formula, Goursat's theorem, the theory of residues, the maximum principle, and Schwarz's lemma.

MATH 585 Introduction to Complex Calculus. Three hours. 
Prerequisite: MATH 227. 
Some basic notions in complex analysis. Topics include analytic functions, complex integration, infinite series, contour integration, and conformal mappings.

MATH 588 Theory of Differential Equations I. Three hours. 
Prerequisites: MATH 238 and MATH 380. 
Topics covered include existence and uniqueness of solutions, Picard theorem, homogenous linear equations, Floquet theory, properties of autonomous systems, Poincare-Bendixson theory, stability, and bifurcations.

MATH 589 Theory of Differential Equations II. Three hours. 
Prerequisite: MATH 588. 
Typical topics covered include principal Lyapunov stability and instability theorems; invariance theory; perturbation of linear systems including stable and unstable manifolds; periodic solutions of systems; Hopf bifurcations; and degree theory.

MATH 591 Teaching College-Level Mathematics. Three hours. 
Prerequisite: Permission of the instructor or the department. 
Provides a basic foundation for teaching college-level mathematics; to be taken by graduate students being considered to teach undergraduate-level mathematics courses.

MATH 592 Introduction to Graduate Mathematics. Three hours. 
Prerequisite: MATH 237, MATH 257, or permission of the department. 
Should prepare beginning graduate students for graduate-level mathematics. Dependent on students' backgrounds, analysis and linear algebra topics will be covered. Proofs and examples will form major course components.

MATH 598 Research Not Related to Thesis. Three to nine hours.

MATH 599 Thesis Research. Three to six hours.

MATH 610 Iterative Methods for Linear Systems. Three hours. 
Prerequisite: MATH 511. 
Corequisite: MATH 512. 
Describes some of the best iterative techniques for solving large sparse linear systems.

MATH 623 Convex Analysis II. Three hours. 
Prerequisite: MATH 523 or permission of the department. 
Second course in convex analysis. Topics include differential theory, constrained extremum problems, and saddle functions and minimax theory for convex functions.

MATH 625 Optimization by Vector Space Methods. Three hours. 
Prerequisite: MATH 580 or permission of the department. 
Involves applications of geometric principles of linear vector space theory to complex infinite-dimensional optimization problems. Topics include linear spaces, Hilbert spaces, least-square estimation, dual spaces, linear operators and adjoints, optimization of functionals, global and local theory of optimization, and interactive methods of optimization.

MATH 639 Seminar: Topics in Applied Mathematics. One to three hours.

MATH 640 Waves in Fluids. Three hours. 
Prerequisites: MATH 545 (or AEM 500) and MATH 542, or permission of the department. 
Analysis of various wave motions and development of fundamental ideas of general application to waves in fluids. Sound waves, water waves, and internal waves.

MATH 642 Viscous Flows. Three hours. 
Prerequisites: MATH 545 (or AEM 500) and MATH 541, or permission of the department. 
Review of equations of fluid motion, tensors, and the Navier-Stokes equation. The role of viscosity in creeping flows and boundary layers.

MATH 644 Hydrodynamic Stability. Three hours. 
Prerequisite: MATH 545 or AEM 500. 
Fundamental ideas, methods, results, and applications of hydrodynamic stability. Introduction to some current research topics.

MATH 659 Seminar: Probability Models. One to three hours.

http://graduate.ua.edu/catalog/16400.html
MATH 661 Algebraic Topology I. Three hours.
Prerequisite: MATH 566 or equivalent.
In-depth study of homotopy and homology. The theory of cohomology is also introduced as are characteristic classes.

MATH 663 General Topology I. Three hours.
Prerequisite: MATH 565 or permission of the department.
Typical topics covered in this course include countable and uncountable sets; axiom of choice; well-ordered sets; connectedness and compactness; countability and separation axioms; Tychonoff's theorem; fundamental group; and covering spaces.

MATH 664 General Topology II. Three hours.
Prerequisite: MATH 663.
Topics of interest to the instructor will be introduced.

MATH 665 Topological Structures I. Three hours.
Prerequisite: Permission of the department.
Topics covered in previous courses include selected works of Pontryagin.

MATH 669 Seminar: Topics in Topology. One to three hours.

MATH 674 Abstract Algebra II. Three hours.
Prerequisite: MATH 573 or equivalent.
Fundamental aspects of ring theory are covered. Topics include Artinian rings, Wedderburn's theorem, idempotents, polynomial rings, matrix rings, Noetherian rings, free and projective modules, and invariant basis number.

MATH 677 Topics in Algebra I. Three hours.
Prerequisite: Permission of the department.
Content decided by instructor. Recent topics covered include linear groups, representation theory, commutative algebra and algebraic geometry, algebraic K-theory, and theory of polycyclic groups.

MATH 679 Seminar: Topics in Algebra. One to three hours.

MATH 681 Real Analysis II. Three hours.
Prerequisite: MATH 580.
Topics covered include basic theory of LP spaces, convolutions, Hahn decomposition, the Radon-Nikodym theorem, Riesz representation theorem, and introduction to Banach spaces.

MATH 684 Complex Analysis II. Three hours.
Prerequisite: MATH 583 or permission of the department.
Typical topics covered include analytic functions, the Riemann mapping theorem, harmonic and subharmonic functions, the Dirichlet problem, Bloch's theorem, Schottley's theorem, and Picard's theorems.

MATH 686 Functional Analysis I. Three hours.
Prerequisites: MATH 681 and a course in complex analysis.
Topics covered in recent courses include Hilbert spaces, Riesz theorem, orthonormal bases, Banach spaces, Hahn-Banach theorem, open-mapping theorem, bounded operators, and locally convex spaces.

MATH 687 Functional Analysis II. Three hours.
Prerequisite: MATH 686.
Topics covered in recent courses include spectral theory, Banach algebras, C* algebras, nest algebras, Sobolev spaces, linear p.d.e.'s, interpolation theory, and approximation theory.

MATH 688 Seminar: Topics in Analysis. One to three hours.

MATH 689 Seminar: Topics in Functional Analysis. One to three hours.

MATH 698 Research Not Related to Dissertation. Three to nine hours.

MATH 699 Dissertation Research. Three to twelve hours.
Admission Requirements

General requirements for admission to the Graduate School are set forth in the "Academic Policies" section of this catalog. All applicants to graduate degree programs in the Department of Modern Languages and Classics must submit a writing sample in support of the application. All applicants are considered for financial support in the form of a Graduate Teaching Assistantship. Applicants who wish to be considered for additional financial support in the form of enhanced assistantships or fellowships must take the Graduate Record Examination general test or Miller Analogies Test.

For students with deficiencies in undergraduate preparation, admission may be contingent upon completion of designated undergraduate requirements. (In particular, all three tracks of the master of arts program in German, as described below, presuppose completion of an undergraduate survey of German literature or a survey of German culture/civilization that includes a substantial literary component. Students lacking this requirement who are nevertheless admitted to the German master of arts program must make up this course concurrent with their other coursework.)

Qualified students who are holders of an appropriate undergraduate degree may be admitted directly to the doctoral program in Romance languages. However, in such circumstances completion of all requirements for the appropriate master of arts program, including comprehensive testing and subsequent awarding of the master of arts degree, will be a prerequisite for completion of the doctoral degree.

Qualified students can seek dual admission to the School of Law and to any master of arts program offered in the Department of Modern Languages and Classics. If admitted to both, the student will be exempted from at least 6 hours of coursework for the juris doctor degree.

Degree Requirements

The Department of Modern Languages and Classics offers degree programs leading to the master of arts in German, the master of arts in Romance languages, and the doctor of philosophy in Romance languages. All three degree programs incorporate a variety of options (see below).

Master of arts in German. Three concentrations are available:

German literature. Plan I (24 hours of coursework and a thesis) or Plan II (30 hours of coursework, no thesis). In addition to German literature courses, students must take GN 510 History of the German Language and 3 hours of Middle High German. With the approval of the German graduate advisor, 6 hours of graduate work in a related field may be applied to the degree.

Germanic philology. Plan I (24 hours of coursework and a thesis) or Plan II (30 hours of coursework, no thesis). In addition to philology courses, students must take 6 hours of German literature. With the approval of the German graduate advisor, 9 hours of graduate work in a related field may be applied to the degree. EN 622 Old English may count as a German course for candidates in this concentration. The concentration and courses in Germanic philology are offered subject to availability of qualified faculty.

German studies. Plan I (24 hours of coursework and a thesis) or Plan II (30 hours of coursework, no thesis). Students must take 15 hours of German literature/culture and philology courses, 3 hours in German history, and one 3-hour interdisciplinary seminar. With the approval of the German graduate advisor, 9 hours of graduate work in a related field may be applied to the degree.

Regardless of concentration, all graduate teaching assistants must enroll in the teaching practicum, currently offered under GN 551/GN 552. Upon completing coursework for any of the three concentrations in German, a student must pass a comprehensive examination based on the coursework and on a pre-established reading list. For information regarding the examination, please contact the graduate director.

A student who chooses to write a thesis will defend it orally.
**Master of Arts in Romance languages.** A single degree program incorporates a variety of options and tracks:

There are three options: the French Option, the Spanish Option, and the Romance Languages Option (which combines languages). All three options have thesis and nonthesis tracks. The French and Spanish options also allow for an applied linguistics track (thesis or nonthesis). Regardless of the option or track, all new graduate teaching assistants must enroll for the Practicum in Applied Linguistics (either FR 512 or SP 502).

**Non thesis tracks of the Master of Arts in Romance languages (Plan II).** A description of the typical configuration for the various nonthesis tracks of the master of arts in Romance language follows. Included in all nonthesis tracks of the master of arts in Romance languages is a core of five courses in the five areas listed below:

- Teaching Practicum/Topics in Linguistics
- Proseminar: Research Methodology/Critical Theory
- Topics in Culture and Civilization
- Graduate Seminar
- Special Topics/Directed Readings

All nonthesis tracks require success on comprehensive exams before granting of the degree.

**French Option, standard track without thesis (Plan II).** Curriculum requirements: 33 hours of coursework, including at least one course in five of the following six fields:

- Medieval and Renaissance
- Early modern (17th and 18th centuries)
- 19th century
- 20th and 21st centuries
- Francophone and French studies
- French linguistics

Appropriate courses taken in these fields will simultaneously fulfill the Romance languages core requirements listed above. Students must pass a comprehensive examination based on their coursework in the five fields of study. However, students may be exempted from examination in a maximum of two fields in two ways: either by writing a research paper in the field and presenting it at a professional conference or by satisfactorily completing two courses in the field, earning a grade of "A" or "B."

**French Option, applied linguistics track without thesis (Plan II).** Curriculum requirements: 36 hours of coursework. The applied linguistics track involves three components: language, linguistics, and applied linguistics. The language component consists of 21 hours of course credit in French language, literature, and/or culture. The linguistics component is comprised of a 3-hour descriptive linguistics course (FR 561). The applied linguistics component consists of 12 hours of coursework in second language acquisition and pedagogy (FR 512 and three of the following: FR 515, EN 610, EN 613, CIE 577, or other approved courses; for descriptions of courses bearing the EN prefix, see the Department of English section of this catalog; for a description of CIE 577, see "Curriculum and Instruction Course Descriptions" in the College of Education section). Based on the advice of the graduate advisor, appropriate courses taken in these components will simultaneously fulfill the Romance languages core requirements listed above. Degree requirements include success on a comprehensive examination, which is based on the coursework.

**Spanish Option, Hispanic literature track without thesis (Plan II).** Curriculum requirements: 30 hours of coursework, including one course in each of the following areas, and two courses in Hispanic linguistics:

- Golden Age
- 19th-century peninsular
- 20th- and 21st-century peninsular
- Colonial Latin America
- 19th-century Latin America
- 20th- and 21st-century Latin America
- US Latino

It is mandatory to earn 27 credits within the Spanish program. Optionally, three credits may be earned outside the Spanish program.

Based on the advice of the graduate advisor, appropriate courses taken in these components will simultaneously fulfill
the Romance languages core requirements listed above. A student will be held responsible for the items on the M.A. Reading List only in the field for which a prescribed course is not offered during the period of the student’s enrollment or if a student fails to enroll in one of the prescribed courses. Degree requirements include success on the written comprehensive examination. No oral component is required. The written examination will be based on the coursework. It is the student’s responsibility to keep syllabi from each course on file for reference.

Spanish Option, applied linguistics track without thesis (Plan II). Curriculum requirements: 36 hours of coursework. The applied linguistics track involves three components: language, linguistics, and applied linguistics. The language component consists of 21 hours of course credit in Spanish language, literature, and culture (a minimum of 6 hours must be in peninsular literature and 6 hours in Latin-American literature). The linguistics component is comprised of a 3-hour descriptive linguistics course (SP 556). The applied linguistics component consists of 12 hours of coursework in second language acquisition and pedagogy (SP 502 and three of the following: SP 581, EN 610, EN 613, CIE 577, or other approved courses; for descriptions of courses bearing the EN prefix, see the Department of English section of this catalog; for a description of CIE 577, see “Curriculum and Instruction Course Descriptions” in the College of Education section). Based on the advice of the graduate advisor, appropriate courses taken in these components will simultaneously fulfill the Romance languages core requirements listed above. Degree requirements include success on a comprehensive examination, which is based on the coursework.

Romance Languages Option, without thesis (Plan II). Curriculum requirements: 30-36 hours of coursework. The curriculum requires study of French and Spanish, one as the major and one as the minor. The major includes a minimum of 18 hours. The minor includes a minimum of 12 hours. More than the minimum is recommended for both the major and the minor. Graduate courses in Italian studies are also available (see the RL prefix in course listings below). Based on the advice of the graduate advisor, appropriate courses taken in these components will simultaneously fulfill the Romance languages core requirements listed above. Degree requirements include success on a comprehensive examination, which is based on the coursework.

Thesis tracks of the Master of Arts in Romance languages (Plan I). A description of the typical configuration for the various thesis tracks of the master of arts in Romance language follows. The Romance languages core requirements do not apply to thesis tracks.

French Option, standard track with thesis (Plan I). Curriculum requirements: 27 hours of coursework and a thesis, including at least one course in five of the following six fields:

Medieval and Renaissance
Early modern (17th and 18th centuries)
19th century
20th and 21st centuries
Francophone and French studies
French linguistics

Students must pass a comprehensive examination based on their coursework in the five fields of study. However, students may be exempted from examination in a maximum of two fields in three ways: first, by writing a thesis in the field; second, by writing a research paper in the field and presenting it at a professional conference; or third, by satisfactorily completing two courses in the field, earning a grade of "A" or "B."

French Option, applied linguistics track with thesis (Plan I). Curriculum requirements: 30 hours of coursework and a thesis. In addition to the thesis, the applied linguistics track involves three components: language, linguistics, and applied linguistics. The language component consists of 15 hours of course credit in French language, literature, and/or culture. The linguistics component is comprised of a 3-hour descriptive linguistics course (FR 561). The applied linguistics component consists of 12 hours of coursework in second language acquisition and pedagogy (FR 512 and three of the following: FR 515, EN 610, EN 613, CIE 577, or other approved courses; for descriptions of courses bearing the EN prefix, see the Department of English section of this catalog; for a description of CIE 577, see “Curriculum and Instruction Course Descriptions” in the College of Education section). Degree requirements include success on a comprehensive examination, which is based on the coursework.

Spanish Option, Hispanic literature track with thesis (Plan I). Curriculum requirements: 24 hours of coursework and a thesis, including at least one course in each of the following eight fields:

Golden Age
19th-century peninsular
20th- and 21st-century peninsular
A student will be held responsible for the items on the M.A. Reading List only in the field for which a prescribed course is not offered during the period of the student’s enrollment or if a student fails to enroll in one of the prescribed courses. In consultation with the Spanish graduate advisor, each student must also select a special area of interest in Hispanic literature in order to write the thesis. Degree requirements include success on the written comprehensive examination. No oral component is required.

**Spanish Option, applied linguistics version with thesis (Plan I).** Curriculum requirements: 30 hours of coursework and a thesis. In addition to the thesis, the applied linguistics track involves three components: language, linguistics, and applied linguistics. The language component consists of 15 hours of course credit in Spanish language, literature, and culture (a minimum of 6 hours must be in peninsular literature and 6 hours in Latin-American literature). The linguistics component is comprised of a 3-hour descriptive linguistics course (SP 556). The applied linguistics component consists of 12 hours of coursework in second language acquisition and pedagogy (SP 502 and three of the following: SP 581, EN 610, EN 613, CIE 577, or other approved courses; for descriptions of courses bearing the EN prefix, see the Department of English section of this catalog; for a description of CIE 577, see “Curriculum and Instruction Course Descriptions” in the College of Education section). Degree requirements include success on a comprehensive examination, which is based on the coursework.

**Romance Languages Option, with thesis (Plan I).** Curriculum requirements: 24 30 hours of coursework and a thesis. The curriculum requires study of French and Spanish, one as the major and one as the minor. The major includes a minimum of 18 hours. The minor includes a minimum of 12 hours. More than the minimum is recommended for both the major and the minor. Graduate courses in Italian studies are also available (see the RL prefix in course listings below). Degree requirements include success on written and oral comprehensive examinations. All examinations are based on the coursework.

**Doctor of Philosophy in Romance languages**

**Degree Requirements**

The student’s plan of study for the Ph.D. degree must be approved by the department and the Graduate School by the time the student completes 30 graduate semester hours of UA and/or transfer course work. In addition to the program-specific requirements presented below, all doctoral candidates, regardless of the option selected, must adhere to the following.

The minimal formal coursework required is 60 semester hours, which may include up to 30 hours of transferred credits earned at another institution. Appropriate M.A. hours earned at The University of Alabama can also count toward the total required accumulation of hours. Students who have completed a master’s thesis need accumulate only 54 hours of coursework. Once all coursework is completed, an additional 24 hours of dissertation research are required. All doctoral candidates must possess reading knowledge of one language in addition to English, their native language, and their language of specialization.

It is strongly recommended that, before the termination of studies, all doctoral candidates reside for a period in a country or location requiring constant interaction in the language of specialization.

All doctoral candidates must be careful to fulfill the residency requirement and to abide by the specified time limits (see "Academic Policies" section for doctoral degrees). Once enrolled, all doctoral candidates must submit a Plan of Study to the Office of the Graduate School and abide by all other policies of the Graduate School.

**Three options are available in the doctoral program:**

**French Option.** The curriculum is centered on French, though up to 12 hours of coursework in a related discipline is admissible. All new graduate teaching assistants must take FR 512. At the conclusion of the coursework, a qualifying examination must take place before work on the dissertation can begin. The qualifying examination includes written and oral components. The written examination is comprised of six sections. Four of the sections pertain to standard periods of French literature in which the student has had coursework. The remaining two sections are open and may pertain either to additional literary periods or to any other area(s) of study that the student has undertaken in French or in a related field, such as Francophone literature and culture, French civilization, French linguistics, etc.
**Spanish Option.** The curriculum is centered on Spanish, though up to 12 hours of coursework in a related discipline is admissible. All new graduate teaching assistants must take SP 502. At the conclusion of the coursework, a qualifying examination must take place before work on the dissertation can begin. The qualifying examination includes written and oral components. In consultation with the Spanish graduate advisor and with the approval of the Spanish faculty, the candidate will determine at least one area of primary interest, which will figure more prominently in the exam structure. It is assumed that the area(s) of primary interest will determine the area of the dissertation.

**Romance Languages Option.** The Romance languages option allows for interdisciplinary work and conforms to the following structure:
All Romance languages option students must major in either French or Spanish.
All Romance languages option students must have, in addition to the major in French or Spanish, either

a) an 18-hour minor in another discipline, or
b) a second major in French or Spanish, or
c) a second, 30-hour concentration in linguistics

All Romance languages options students choosing the 18-hour minor must also include in their coursework (above and beyond the hours earned for the M.A.) at least one additional course in each of the following main fields in their major:

**For Spanish**
- Golden Age
- 19th-century peninsular
- 20th- and 21st-century peninsular
- Colonial Latin America
- 19th-century Latin America
- 20th- and 21st-century Latin America
- US Latino

**For French (four of five)**
- Medieval and Renaissance
- Early modern (17th and 18th centuries)
- 19th century
- 20th and 21st centuries
- Francophone and French studies

The 18-hour minor can be in any field for which a feasible curriculum can be assembled (French, Spanish, German, Latin-American studies, Italian studies, Renaissance studies, English, TESOL, linguistics, etc.). A feasible curriculum is defined as any curriculum for which the appropriate coursework at The University of Alabama is readily available and accessible and for which the candidate has the commensurate background. Up to 12 of the 18 hours in the minor may be transferred from previous M.A. coursework conducted on another campus. The full 18 hours can be transferred from a previous M.A. earned at The University of Alabama.

Students opting for the double major in French and Spanish must fulfill all of the requirements for both majors and must have a minimum of 30 hours of coursework in both majors.

A 30-hour, interprogrammatic/interdepartmental concentration in linguistics, in addition to the major in French or Spanish, is an alternative option. For those students opting for the 30-hour concentration in linguistics (including transferred M.A. credits), the coursework for the major in French or Spanish, which must also comprise a minimum of 30 hours (including transferred M.A. credits), is not constrained and may include any combination of courses. The coursework for the concentration in linguistics will be determined in consultation with the appropriate graduate advisor. In most cases, however, the greater part of the linguistics curriculum will be in the area of applied linguistics because graduate coursework in that area is available on a consistent basis in the Department of Modern Languages and Classics as well as in the Department of English and in the College of Education. Some graduate courses in descriptive and theoretical linguistics are also available in the modern languages department and in the departments of English and anthropology. On occasion, appropriate linguistics coursework is also available in the Department of Communicative Disorders, the Department of Communication Studies, and elsewhere.

Some courses can be used to simultaneously satisfy requirements for both the major and the 18-hour minor. For example, a student majoring in French and minoring in Renaissance studies can use a French course on the Renaissance to satisfy requirements for both the major and the minor. Some courses can be counted as either part of the major or part of the linguistics concentration, depending upon the student’s programmatic needs. For example, a student majoring in Spanish and having a 30-hour linguistics concentration can count a course on Spanish linguistics as either part of the major or part of the linguistics concentration in order to free up additional hours in the category that best serves the student’s programmatic needs. In all cases, a minimum of 60 hours of graduate credit must be accumulated (54 hours for students with an M.A. thesis).

All new graduate teaching assistants must take either FR 512 or SP 502.
For the written portion of the qualifying examination, the student will develop a pre-prospectus and answer questions based on the pre-prospectus and on coursework as posed by the examination committee. After the student passes the written examination, he or she proceeds to the presentation and defense of the prospectus as the oral examination.

Course Descriptions

French (FR)

FR 501 Reading Proficiency in French I. Three hours, no credit awarded.
Introduction to French grammar and vocabulary, with emphasis on developing basic reading and translation skills.

FR 502 Reading Proficiency in French II. Three hours, no credit awarded.
Prerequisite: FR 501 or permission of the instructor.
Continued study of grammar and vocabulary, with emphasis on further developing reading and translation skills.

FR 511 Research Methodology. Three hours.

The analysis and various practical applications of selected teaching techniques. Lightfoot.

FR 515 Topics in Second Language Acquisition. Three hours.
Topics vary. Analysis of major issues, theories, research findings and their implications for teaching. Examples: second language reading, classroom language acquisition. May be repeated for credit. Lightfoot.

FR 521 Pronunciation and Phonetics. Three hours.
Introduction to phonetic theory and corrective phonetics through auditory discrimination exercises and contrastive analysis; emphasis on mastery of oral skills. Picone, Zupan.

FR 531 Francophone Africa. Three hours.
Prominent themes of the African experience, seen through the eyes of Francophone authors and cinematographers of the Maghreb, sub-Saharan Africa, and the immigration; dialectal and sociolinguistic considerations. Picone.

FR 533 Topics in French Culture and Civilization. Three hours.
Study of French artistic heritage and development of social and political institutions. May be repeated for credit. Edmunds, Lightfoot, Mayer-Robin, Picone, Zupan.

FR 545 17th-Century French Literature I. Three hours.
Prose writings of the 17th century, including but not limited to the philosophical works of Descartes and Pascal and the novels of Madame de Lafayette. Edmunds.

FR 546 17th-Century French Literature II. Three hours.
Verse writings of the 17th century, including but not limited to the pre-classical poets (such as Saint-Amant and de Viau) and the dramatic works in verse (such as the plays of Corneille, Molière, and Racine). Edmunds.

FR 547 Special Topics in 18th-Century French Literature. Three hours.
A selection of the important texts of the period. Lectures and discussion. May be repeated for credit. Robin.

FR 548 18th Century: The Philosophe Movement. Three hours.
Intellectual prose of the Enlightenment. Lectures and discussion. Robin.

Close readings of the novel alongside studies in Romanticism, realism, naturalism, symbolism, and Décadence. Novelists, works, and movements privileged will vary, but generally include combinations of the following: Chateaubriand, Mme de Staël, Stendhal, Balzac, Hugo, Sand, Flaubert, Zola, Huysmans. May be repeated for credit. Mayer-Robin.

FR 552 Special Topics in 19th-Century French Literature. Three hours.
Readings in poetry, theatre, and prose, either genre-specific or in combination, generally focusing on the first or latter half of the century in order to consider movements in literary thought. May be repeated for credit. Mayer-Robin.

FR 553 20th-Century French Novel. Three hours.
Major novelists of the period and their works. Reading and discussion of complete texts; lectures and reports. Zupan.

Major trends in 20th- and 21st-century French poetry, theatre, essays, and history of ideas. Lectures and reports.
Zupan.

**FR 555 Québécois Literature and Culture.** Three hours. A study of the history, culture, and literature of Québec and French Canada, with emphasis on the modern period. Zupan.

**FR 561 French Linguistics.** Three hours. Linguistic theory applied to the analysis and description of French phonological, morphological, syntactic, and lexical systems. Tendencies of change in contemporary French. Dialect areas. Picone.


**FR 564 French Language and Literature of the Middle Ages: Beginnings.** Three hours. Old French language and literature are studied through major works of the period 1000 - 1250.

**FR 565 French Language and Literature of the Middle Ages: 1250 - 1500.** Three hours. Middle French language and literature are studied through major works of the period 1250 - 1500.

**FR 590 Directed Readings /Directed Study.** Three hours. Permission of the instructor required before enrolling. Subject matter varies. May be repeated for credit. Edmunds, Lightfoot, Mayer-Robin, Picone, Robin, Zupan.

**FR 598 Nonthesis Research.** Permission of the French graduate advisor required before enrolling. Variable credit.


**FR 643 Poetry of the French Renaissance.** Three hours. Major poets of the Renaissance, with emphasis on Marot, Scève, Louise Labé, du Bellay, Ronsard.

**FR 644 Narratives of the French Renaissance.** Three hours. A study of major works, including Rabelais and Montaigne.

**FR 670 Graduate Seminar.** Three hours. Subject may be in French literature, linguistics, civilization, or a combination. Examples: Proust, French lexicology, Francophone Louisiana, French cinema. May be repeated for credit. Edmunds, Lightfoot, Mayer-Robin, Picone, Robin, Zupan.

**FR 680 Special Topics.** Variable credit. Directed reading and/or research on varying subjects. May be repeated for credit. Edmunds, Lightfoot, Mayer-Robin, Picone, Zupan.


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**German (GN)**

GN 551, GN 552, GN 571, GN 575, and GN 576 may be repeated for credit when the content varies substantially. A period course (GN 515, GN 520, GN 525, GN 530, GN 535, or GN 540) may vary in emphasis during different semesters; when this is the case, students may take the course a second time, but credit for the course may be applied only once toward the minimum hours required for the degree.

**GN 503 German Reading Proficiency I.** Three hours, no credit awarded. Introduction to German grammar and vocabulary, with emphasis on developing basic reading and translation skills.

**GN 504 German Reading Proficiency II.** Three hours, no credit awarded. Prerequisite: GN 503 or permission of the instructor. Continued study of grammar and vocabulary, with emphasis on further developing reading and translation skills.

**GN 510 History of the German Language.** Three hours. The relationship to Indo-European and to the other Germanic dialects; linguistic development from the earliest times to the present.

**GN 511 Gothic.** Three hours. Development of the Gothic language; readings from Wulfila's Gothic translation of the Bible.

**GN 512 Old Norse (Old Icelandic).** Three hours.
Old Icelandic grammar; development of the Old Icelandic language; selected readings from the Eddas and the sagas.

**GN 515 Middle High German Language and Literature.** Three hours. Introduction to the language and literature of the Middle High German period.

**GN 520 Renaissance and Baroque Literature.** Three hours. Works from the Renaissance (including literature from the Reformation and Humanism) and the Baroque (17th century).

**GN 525 Literature of the Age of Goethe.** Three hours. Includes the German Enlightenment, Sturm und Drang, Weimar Classicism, and the Romantic movement.

**GN 530 Literature of the Age of Realism.** Three hours. Includes Biedermeier, Junges Deutschland, Poetic Realism, and Naturalism.

**GN 535 Literature of the Early 20th Century.** Three hours. Includes the Jahrhundertwende, Expressionism, Neue Sachlichkeit, Exilliteratur, and literature of the Third Reich.

**GN 540 Literature after 1945.** Three hours. Literature of the German-speaking world in the post-World War II era.

**GN 551 Special Problems and Directed Readings.** Three hours. Permission of the instructor required before enrolling.

Special topics chosen by students in conference with the instructor.

**GN 552 Special Problems and Directed Readings.** Three hours. Permission of the instructor required before enrolling. Special topics chosen by students in conference with the instructor.

**GN 571 Seminar in Selected Authors.** Three hours. Students will normally give reports and write at least one research paper.

**GN 575 Seminar in a Literary Genre.** Three hours. Students will normally give reports and write at least one research paper.

**GN 576 Seminar on a Literary Theme.** Three hours. Students will normally give reports and write at least one research paper.

**GN 599 Thesis Research.** Variable credit.

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**Romance Languages (RL)**

**RL 557 Critical Theory.** Three hours. Study and critical application of literary theory. Zupan.

**RL 680 Special Topics.** Variable credit. Topics may be interdisciplinary or language-specific. A three-hour special topics course in Italian or Italian studies is offered regularly (B. Godorecci, M. Godorecci). Examples: Dante, Petrarch, Boccaccio, 19th-century Italian novel, Vico, Machiavelli, commedia dell’arte. May be repeated for credit.

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**Spanish (SP)**

**SP 501 Bibliography and Electronic Research Methodology.** One hour. Basic research tools and techniques.

**SP 502 Practicum: Applied Linguistics.** Three hours. In-depth analysis of fundamental concepts in foreign language learning and teaching. Topics include grammar and vocabulary acquisition, classroom discourse, reading and listening comprehension, writing and principles of language testing. Cipria.

**SP 503 Reading Proficiency in Spanish I.** Three hours, no credit awarded. Introduction to Spanish grammar and vocabulary, with emphasis on developing basic reading and translation skills.

**SP 504 Reading Proficiency in Spanish II.** Three hours, no credit awarded. Prerequisite: SP 503 or permission of the instructor.
Continued study of grammar and vocabulary, with emphasis on further developing reading and translation skills.

**SP 515 Latin-American Colonial Texts.** Three hours.
In-depth study of texts from the colonial period, with emphasis on colonialism and the role of writing in colonization and decolonization. Readings may vary. May be repeated for credit when the content varies substantially. Janiga-Perkins.

**SP 516 19th-Century Latin-American Literature I.** Three hours.
In-depth study of major literary works of the period, with emphasis on Romanticism, social Romanticism, and Romantic realism. Readings may vary. May be repeated for credit. Villagómez.

**SP 517 19th-Century Latin-American Literature II.** Three hours.
In-depth study of major literary works of the period, with emphasis on naturalism and modernismo (Martí, Darió, etc.). Readings may vary. May be repeated for credit. Villagómez.

**SP 518 20th- and 21st-Century Latin-American Novel.** Three hours.
A study of the Latin American novel from the Vanguard to the 21st century. Readings may vary. May be repeated for credit. Toledo.

**SP 519 20th- and 21st-Century Latin-American Poetry.** Three hours.
A study of the poetic movements since modernismo to the present, with emphasis on important poets, such as Gabriela Mistral, Pablo Neruda, and Octavio Paz. May be repeated for credit. Toledo.

**SP 520 18th-Century Spanish Literature.** Three hours.
Subject matter varies, but will consist of some combination of the following areas: poetry, theatre, and prose works representing the different literary tendencies of the 18th century as well as the ideological issues of the period.

**SP 521 19th-Century Spanish Prose.** Three hours.
Reading and discussion of complete texts representative of the literary movements of the period; lectures and reports. Schnepf.

**SP 522 19th-Century Spanish Poetry and Theatre.** Three hours.
Important dramatists and poets of the period and their works; lectures and reports. Schnepf.

**SP 525 20th-Century Spanish Literature, Pre-Civil War.** Three hours.
Reading and discussion of texts representative of the literary movements of the period. Lectures, discussions, and reports. May be repeated for credit. Corbalán.

**SP 526 20th-Century Spanish Literature, Post-Civil War.** Three hours.
Reading and discussion of texts representative of the literary movements of the period. Lectures, discussions, and reports. May be repeated for credit. Corbalán.

**SP 534 Latin-American Theatre.** Three hours.
A study of the development of the Latin-American theatre from its origins to the present, with emphasis on 20th-century authors such as Florencio Sánchez and Rodolfo Usigli.

**SP 538 Latin-American Short Story.** Three hours.
A study of the Latin American short story, with emphasis on writers from the second phase of modernismo to the present. Special emphasis on short story theory. Readings may vary. May be repeated for credit. Toledo.

**SP 541 Survey of Medieval Spanish Literature.** Three hours.
El Cantar de Mio Cid and other selected texts. Lecture, discussion, and reports.

**SP 556 Introduction to Spanish Linguistics.** Three hours.
Linguistic theory applied to the analysis of the Spanish language. Topics include phonology, morphology, syntax, semantics, and language change and variation. Cipria.

**SP 566 Spanish-American Civilization.** Three hours.
Study of Spanish-American cultural heritage and of the development of social and political institutions.

**SP 581 Topics in Second Language Acquisition.** Three hours.
Analysis of major issues, theories, research findings, and their implications for teaching. Examples: second language reading, classroom language acquisition, input/output, acquisition of pragmatics. May be repeated for credit. Cipria.

**SP 584 Spanish Phonetics and Syntax.** Three hours.
Detailed examination of Spanish phonetics and syntactic structures, including dialectical variations. Cipria.

**SP 590 Open Topics.** Three hours.
Subject matter varies. May be repeated for credit.
**SP 591 Cervantes.** Three hours. Works of Cervantes. Worden.

**SP 593 16th-Century Peninsular Literature.** Three hours. Reading and discussion of selected works of the period. Worden.

**SP 594 17th-Century Peninsular Literature.** Three hours. Reading and discussion of selected works of the period. Worden.

**SP 598 Nonthesis Research.** Variable credit. Permission of the Spanish graduate advisor required before enrolling.

**SP 599 Thesis Research.** Variable credit. May be repeated for a total of 6 hours.

**SP 600 Directed Readings or Research.** Permission of the instructor required before enrolling. May be repeated for variable credit.

**SP 605 Old Spanish: Phonology.** Three hours. Introduction to Medieval epic; El Cantar de Mio Cid.

**SP 606 Old Spanish: Morphology.** Three hours. Prerequisite: SP 605. Representative works of Medieval literature.

**SP 689 Seminar in Latin-American Literature.** Three hours. Subject matter varies. May be repeated for credit.

**SP 690 Seminar in Spanish Literature.** Three hours. Subject matter varies. May be repeated for credit.

**SP 699 Dissertation Research.** May be repeated for variable credit. Three-hour minimum. Spanish graduate faculty.
6.15 SCHOOL OF MUSIC (MUS)
Director: Professor Charles G. Snead, Office: 175 Moody Music Building

The School of Music is an accredited member of the National Association of Schools of Music, and all of its programs and policies are in accordance with NASM requirements. The School offers the doctor of musical arts degree (D.M.A.) with concentrations in composition, performance, choral conducting, and wind conducting. Secondary concentrations may be earned in conjunction with any of the D.M.A. concentrations. Descriptions of these curricula may be found in the Graduate Handbook of the School of Music. The master of music (M.M.) degree is offered with concentrations in performance, composition, musicology, theory, choral conducting, wind conducting, and church music. Program outlines are available from the School upon request.

The master of arts (M.A.) degree and the doctor of education (Ed.D.) degree are offered in music education. Information concerning these degrees will be found in this catalog in the College of Education section.

Requirements for Admission
All courses of graduate music study must meet the general requirements of the Graduate School as given in this catalog. In addition, the School of Music imposes the following special requirements:

For the M.M. Degree

The bachelor of music degree in the chosen field of study from The University of Alabama or the equivalent from another accredited institution.

In special cases, a student holding the bachelor's degree but without a formal major in the chosen field may be admitted by examination.

All students must take examinations in music history and music theory prior to initial registration. Any required courses or other work specified as a result of deficiencies revealed in these examinations must be completed by the end of the first Fall semester after matriculation. A schedule of remediation will be determined by appropriate faculty and the director of graduate studies in music and may include enrollment in MUS 395 Graduate Theory Review and/or MUS 396 Graduate History Review. Students may not earn graduate credit in theory and history until all deficiencies in the respective areas have been removed.

Any deficiencies revealed by analysis of undergraduate transcripts prior to enrollment must be removed within one year of initial enrollment.

Information about the entrance examinations may be obtained from the director of graduate studies in music.

Individual Area Requirements for the M.M. Degree

Performance. An audition on the major instrument. A complete repertoire list must be submitted, noting those works prepared for the audition.

Voice. The demonstration of a satisfactory vocal technique in the classical style and satisfactory singing diction in French, German, Italian and English.

Composition. Submission of a group of original works, including at least one in large form.

Theory. Submission of examples of work that illustrate analytical and writing skills. Students must have a reading knowledge of a foreign language (usually German, French, or Italian). Those who do not have this skill at matriculation will be required to remove the deficiency, through the completion of appropriate language courses or by examination, before they are admitted to candidacy.

Musicology. Submission of work that illustrates research and writing skills. Students must have a reading knowledge of a foreign language (usually German, French, or Italian). Those who do not have this skill at matriculation will be required to remove the deficiency, through the completion of appropriate language courses or by examination, before they are admitted to candidacy.

Conducting. An audition with a University ensemble. Two major works, in contrasting styles, must be conducted. Ear
training and sight-singing proficiency must be demonstrated.

For the D.M.A. Degree
The student's plan of study for the D.M.A. degree must be approved by the School of Music and the Graduate School by the time the student completes 30 graduate semester hours of UA and/or transfer course work.
The master of music degree from The University of Alabama or the equivalent from another accredited institution. The M.M. equivalent must include recitals and/or major creative work, as appropriate.

In the performance areas, an audition at the M.M. level that includes at least 50 minutes of performance time. It must include representative works drawn from a variety of historical periods. In composition, scores and recordings of original works, together with evidence of public performances, must be submitted.

Diagnostic entrance examinations in music history/literature, music theory, and writing skills. Any required course or other work specified as a result of deficiencies revealed in these examinations must be removed by the end of the first Fall semester after matriculation. A schedule of remediation will be determined by appropriate faculty and the director of graduate studies in music and may include enrollment in MUS 395 Graduate Theory Review, MUS 396 Graduate History Review, or MUS 510 Introduction to Graduate Studies in Music. Students may not earn graduate credit in theory or history until all deficiencies in the respective areas have been removed.

Requirements for Graduation

For the M.M. Degree:
These differ with the area of specialization; a complete outline of requirements in each field is contained in the Graduate Handbook of the School of Music, which may be secured from the director of graduate studies in music or may be viewed on the School of Music Web page at http://www.music.ua.edu.

Concentrations in musicology, theory, and composition follow Plan I, which requires a written thesis. A composition student is required to present a recital of original compositions in addition to the thesis. Concentrations in performance, choral conducting, wind conducting, and church music, follow Plan II, which does not require a written thesis but which does require additional course hours and a recital. Concentrations in musicology and theory require a public lecture.

All M.M. degrees require at least 12 hours in graduate courses in music history and music theory, with at least 6 hours in each. MUS 501 Introduction to Graduate Study in Music must be taken in the first fall semester of enrollment.

All students must pass written comprehensive examinations in theory, history, and the major area. No student may attempt the written comprehensive examination sooner than the first Fall or Spring semester after successful completion of all required MUS courses. A description of the written comprehensive examinations is included in the Graduate Handbook of the School of Music.

All students must pass an oral examination. For students under Plan I, the oral examination will be a defense of the thesis. For students under Plan II, the oral examination will be based on the student's coursework in the M.M. program and will determine the student's ability to articulate a broader perspective derived from that study. For students following Plan II, the oral examination is the final step in the completion of the degree and is administered only after all other requirements have been completed.

A minimum of 33 semester hours of graduate work is required to complete any M.M. degree.

For the D.M.A. Degree:

Course distribution (hours required beyond the M.M. degree).
Major area: 20–25 hours, including document (see below for description)
Theory/music history: 18 hours (minimum of 9 in each area)
Pedagogy: 3–6 hours
Electives: 7 hours

Recital requirements. In performance, a minimum of three recitals. In conducting, a minimum of three concerts, one of which must be a lecture-recital. In composition, a full recital, or equivalent in length, of music written at the D.M.A. level, exclusive of work done on the document.

Advisory Committee. A committee shall be appointed to supervise the student's program and progress toward the
degree. The constitution of the committee is described in the Graduate Handbook of the School of Music. Written comprehensive examinations. All students must pass written comprehensive examinations in theory, history, and the major area. No student may attempt the written comprehensive examination sooner than the first Fall or Spring semester after successful completion of all required MUS courses. A description of the written comprehensive examinations is included in the Graduate Handbook of the School of Music.

**Document.** In performance, choral conducting, and wind conducting, a written paper, the subject, content, and length of which must be approved by the student's advisory committee. Work is supervised by a document advisor and the student's advisory committee. In composition, a large original work in unspecified medium, in addition to and distinct from any work done for degree credit in the D.M.A. program. Work is supervised by the major teacher and the student's advisory committee.

**Public lecture.** In performance, choral conducting, and composition, a 50-minute lecture demonstrating the candidate’s ability to communicate about the area of specialization.

**Language requirement.** There is no specific language requirement for the D.M.A. Depending upon the student’s academic program, the advisory committee may require proficiency in a foreign language.

**Residency requirement.** A minimum of two consecutive, full-time academic semesters must be spent in residence at the University; one may consist of a full summer, if approved by the advisory committee. A minimum of 18 semester hours must be earned in residence. Only degree credit may be counted toward the 18 hours. The student must be registered full-time during each of the two semesters of residency.

**Individual area degree outlines.** Complete descriptions of the program in each area of specialization for the D.M.A. are contained in the Graduate Handbook of the School of Music; this may be secured by contacting the director of graduate studies in music or may be viewed on the School of Music Web page at [http://www.music.ua.edu](http://www.music.ua.edu).

### Course Descriptions

**Music Academics (MUS)**

**MUS 501 Introduction to Graduate Study in Music.** Three hours.
Prerequisite: Permission of the instructor.
An introduction to the basic bibliographic tools and research techniques in music. Offered fall semester. Staff.

**MUS 502 Film Scoring.** Three hours.
Prerequisite: MUS 510 or permission of the instructor.
A study of the art of scoring music for films. The course will examine aesthetics of film scoring and apply it in this course. Offered fall semester. Wolfe.

**MUS 503 Advanced Counterpoint: Canon and Fugue.** Three hours.
Prerequisite: Permission of the instructor.
The analysis and writing of fugue, ground bass, variation, and canon. Offered spring semesters of even-numbered years.

**MUS 504 Introduction to Graduate Music Analysis.** Three hours.
Analysis of literature from the 18th through 20th centuries. Analysis focuses on harmonic and contrapuntal techniques, rudimentary linear reduction concepts, harmonic reduction, and form. Offered spring semester.

**MUS 505 Studio Techniques in Arranging and Orchestration.** Three hours.
Prerequisite: MUS 510 or permission of the instructor.
This course is an approach to arranging and orchestration in both jazz and commercial settings. The emphasis will be placed on writing for the studio orchestra, MIDI instrumentation, and vocal groups with a focus on the 4- to 6-piece group (jazz and commercial). Offered fall semester. Wolfe.

**MUS 506 Advanced Piano Accompanying.** Two hours.
Accompanying advanced undergraduate or graduate vocalists and instrumentalists in studio, plus a weekly seminar.

**MUS 507 Advanced Analysis.** Three hours.
Prerequisite: MUS 307 or equivalent.
Detailed study and analysis of selected scores from 1200 to the present. Offered in summer school only. Staff.

**MUS 510 Advanced Arranging.** Three hours.
Prerequisite: MUS 310.
Study of current techniques in arranging, including use of symmetrical scales and chords, pedal points, polytonality, and planing techniques. Offered spring semester. Wolfe.

http://graduate.ua.edu/catalog/16600.html
MUS 511 Analog Electronic Music Techniques. Three hours.
Prerequisite: Permission of the instructor.
Composition using classical analog synthesis, tape recording, editing, and mixing techniques. Offered fall semesters of odd-numbered years.

MUS 512 Digital Synthesis Using C Sound. Three hours.
Prerequisite: Permission of the instructor.
Fundamental concepts of digitally synthesized sound as implemented in C Sound. Offered fall semesters of even-numbered years.

MUS 514 Advanced Electronic Music: Sampling, Analog, and Digital Synthesis. Three hours.
Prerequisite: MUS 511 or permission of the instructor.
Advanced analog recording, editing, and mixing techniques, sampling, and digital synthesizers. Offered spring semesters of even-numbered years.

MUS 515 Seminar in Musicology. Three hours.
Prerequisites: Graduate standing and permission of the instructor.
A survey of developments, methodologies, and bibliographical resources in the field of musicology. Offered according to demand. Staff.

MUS 516 Selected Topics in Music Theory and Analysis. Three hours.
Prerequisite: Permission of the instructor.
Selected analytical topics in music theory presented in seminar. Offered spring semester and according to demand.

MUS 518 Schenkerian Analysis. Three hours.
Prerequisite: Permission of the instructor.
Linear and graphic analytical and reductive techniques according to the theoretical constructs, practices, and examples of Heinrich Schenker. Offered fall semesters of odd-numbered years.

MUS 519/MUS 520 Advanced Composition. Three hours (each semester).
Creation of large-scale musical compositions. Offered fall and spring semesters and on demand.

MUS 527/MUS 528 Studies in Special Literature. Three hours (each semester).
Materials vary each semester. May be repeated for credit up to four semesters.

MUS 529 Proseminar in Chamber Music History and Literature. Three hours.
Prerequisite: MUS 307 or equivalent.
Survey of chamber music genres and styles from the 17th to the 20th centuries via discussion and analysis of selected works.

MUS 531 College Teaching: Music in Higher Education. Three hours.
Developing competencies and understandings that will contribute to one's becoming a more effective college music instructor. Offered in summer. Prickett.

MUS 533 Proseminar in Symphonic Literature. Three hours.
Prerequisite: MUS 307 or equivalent.
Survey of the symphonic music repertoire, including the symphony, the symphonic poem, and the concert overture, via discussion and analysis of selected works.

MUS 534 Proseminar in the Music of the Renaissance. Three hours.
An intensive study of the music, the composers, the diverse styles, genres, and techniques, the theoretical and aesthetic principles, and the performance practices associated with music of the Renaissance via reading, listening, and musical analysis.

MUS 535 Proseminar in the Music of the Baroque. Three hours.
An intensive study of the music, the composers, the diverse styles, genres, and techniques, the theoretical and aesthetic principles, and the performance practices associated with Baroque music via reading, listening, and musical analysis.

MUS 536 Proseminar in Opera History and Literature. Three hours.
Prerequisite: MUS 307 or equivalent.
Survey of operatic styles from the 17th to the 20th centuries via discussion and analysis of selected works.

MUS 537 Non-Serial 20th-Century Music. Three hours.
Prerequisite: Permission of the instructor.
Detailed analysis of selected non-serial works of the 20th century. Offered fall semesters of odd-numbered years.

MUS 538 Serial Music. Three hours.
Prerequisite: Permission of the instructor.
Twelve-tone serial techniques and the analysis of serial and serial-informed compositions. Offered spring semesters of odd-numbered years.

**MUS 539 Proseminar in Ethnomusicology.** Three hours.  
An introduction to the definition, theory, and methodology of ethnomusicology in the context of an examination of the music of selected world cultures.

**MUS 540 Pedagogy of Theory.** Three hours.  
A study of teaching music theory to college undergraduates and the practical application of pedagogical principles in the classroom. Offered spring semesters of odd-numbered years.

**MUS 541 The Teaching of Music History and Appreciation.** Two hours.  
Prerequisites: Two graduate prosemirans and/or seminars in music history.  
Designed to prepare students in the various music degree programs to teach music history and appreciation courses at the undergraduate level.

**MUS 542 Advanced French Diction.** Two hours.  
Prerequisite: Graduate standing or permission of the instructor.  
Advanced study of French diction for singers, including IPA and practical application. Offered on demand. Staff.

**MUS 543 Advanced German Diction.** Two hours.  
Prerequisite: Graduate standing or permission of the instructor.  
Advanced study of German diction for singers, including IPA and practical application. Offered on demand. Staff.

**MUS 544 Advanced Italian Diction.** Two hours.  
Prerequisite: Graduate standing or permission of the instructor.  
Advanced study of Italian diction for singers, including IPA and practical application. Offered on demand. Staff.

**MUS 545 Graduate Vocal Pedagogy.** Three hours.  
Prerequisites: MUS 444 or equivalent; or permission of the instructor.  
A detailed study of the historical and contemporary methods of pedagogy, and analysis of pedagogical problems.

**MUS 549 Proseminar in the Music of the Medieval Period.** Three hours.  
An intensive study of the music, theoretical and aesthetic principles, and the culture of the Medieval period via reading, listening, musical analysis, and discussion.

**MUS 550 Proseminar in the Music of the Classical Period.** Three hours.  
An intensive study of the music, the composers, the diverse styles and techniques, the theoretical and aesthetic principles, and the performance practices associated with music of the pre-classical and classical periods via reading, listening, and musical analysis.

**MUS 552 Directed Studies in Piano Pedagogy.** One to three hours.  
Prerequisite: Admission to graduate study.  
Independent research projects in piano pedagogy. Offered each semester. Staff.

**MUS 553 Proseminar in the Music of the Romantic Period.** Three hours.  
An intensive study of the music, the composers, the diverse styles and techniques, the theoretical and aesthetic principles, and the performance practices associated with music of the 19th century via reading, listening, and musical analysis.

**MUS 554 Proseminar in Jazz.** Three hours.  
Prerequisite: Permission of the instructor.  
A study of jazz history and performance practices as applied to the performing musician and educator via transcription, analysis, and research. Offered spring semester. Wolfe.

**MUS 556 Advanced Keyboard Harmony.** Three hours.  
Prerequisite: MUS 406.  
An in-depth analysis and applied study of keyboard skills: harmonization, figured-bass, transposition, and open-score reading. Offered spring semesters of odd-numbered years. W. Henderson.

**MUS 558 Proseminar in the Music of the 20th Century.** Three hours.  
An intensive study of the music, the composers, the diverse styles and techniques, the theoretical and aesthetic principles, and the performance practices associated with music composed after 1900 via reading, listening, and musical analysis.

**MUS 559 Special Topics in Musicology.** Three hours.  
Advanced study of a selected topic in musicology. Offered on demand. Staff.

**MUS 561 History of the Wind Band and Traditional Literature to 1950.** Three hours.  
Comprehensive study of band history from the Renaissance to the present, together with a survey of early and
traditional wind works of Mozart, Mendelssohn, Berlioz, Holst, Grainger, Poulenc, and others. Offered fall semesters, and during the first summer terms of even-numbered years. Welker.

MUS 562 Contemporary Wind Ensemble Literature. Three hours.
Detailed examination of wind ensemble literature since 1950, with emphasis on performance analysis and conducting techniques in the works of Schuller, Hindemith, Persichetti, Schwantner, Penderecki, Bassett, Krenek, and others. Offered spring semesters, and during the first summer terms of odd-numbered years. Welker.

MUS 563 Projects in Wind Music. Three hours.
Survey of rehearsal techniques and studies in wind performance practices and transcription. Offered fall and spring semesters and during the first summer term. Welker.

MUS 564 Wind Ensemble Practicum I. Two hours.
Students are required to participate as conducting assistants and, if assigned, as performers in an instrumental ensemble. Offered fall semester. Welker.

MUS 565 Wind Ensemble Practicum II. Two hours.
Continuation of Wind Ensemble Practicum I. Offered spring semester. Welker.

MUS 568 Seminar in Wind Literature: Chamber Forms. Two hours.
Prerequisite: Graduate standing.
An analytical survey of the content and performance practices of selected wind ensemble literature for chamber groups.

MUS 569 Seminar in Wind Literature: Large Forms. Three hours.
Prerequisite: Graduate standing.
An analytical survey of the content and performance practices of selected wind ensemble/band literature for large groups.

MUS 571 Choral Literature, 1450–1750. Two hours.
Prerequisites: Graduate standing and permission of the instructor.
In-depth survey of choral literature up to 1750. Offered spring semesters of odd-numbered years. Willetts.

MUS 572 Choral Literature, 1750–Present. Two hours.
Prerequisites: Graduate standing and permission of the instructor.
In-depth survey of choral literature since 1750. Offered spring semesters of even-numbered years.

MUS 574 Graduate Vocal Literature I. Three hours.
Prerequisite: MUS 474 and MUS 475 or equivalent.
In-depth survey of the performance criteria and historical significance of solo vocal literature of the United States, British Isles, Germany, Austria, France, Italy, Spain, and Central/South American. Offered in Alternate years.

MUS 575 Graduate Vocal Literature II. Three hours.
Prerequisite: MUS 474 and MUS 475 or equivalent.
In-depth survey of the performance criteria and historical significance of solo vocal literature of the United States, British Isles, Germany, Austria, France, Italy, Spain, and Central/South American. Offered in Alternate years.

MUS 577 Advanced Organ Literature I. Three hours.
Prerequisite: Graduate standing or permission of the instructor.
A survey of the literature of the organ from the 15th to the 18th centuries. Offered fall semesters of even-numbered years.

MUS 578 Advanced Organ Literature II. Three hours.
Prerequisite: Graduate standing or permission of the instructor.
A survey of the literature of the organ from the 18th century to the present. Offered spring semesters of odd-numbered years.

MUS 581 Liturgy and the Arts and Worship Practices. Two hours.
Prerequisite: Permission of the instructor.
A study of the relationship between liturgy, music, and other related arts, both in history and current practice.

MUS 582 Hymnody. Two hours.
Prerequisite: Graduate standing and permission of the instructor.
A study of the history and structure of hymn texts and music with special emphasis on the 20th and 21st centuries.

MUS 583 Church Music Practicum. One hour.
Prerequisite: Graduate standing and permission of the instructor.
A course intended to introduce basic materials and to review and develop service-playing skills and interpersonal skills needed by church musicians. Special emphasis given to the accompaniment of choral works, the conducting of those works from the organ console, and improvisation.
MUS 592 Advanced Choral Conducting. Three hours.
Prerequisites: Graduate standing and permission of the instructor.
Representative literature from all periods is studied and conducted. Conducting techniques, rehearsal and vocal techniques, diction, performance practice, and score analysis are emphasized. Offered each semester. May be repeated for credit with varied repertoire.

MUS 593 Advanced Orchestral Conducting. Two hours.
Both class and private sessions are held. This course is a continuation of Orchestral Conducting. More emphasis is placed on musical interpretation and technical improvements toward that end. Class meetings involve conducting piano transcriptions of major symphonic works, as well as videotaping sessions several times per semester. As part of the final examination, students conduct the University Symphony in a half-hour rehearsal/performance. Offered fall semester. Staff.

MUS 594 Advanced Instrumental Conducting. Three hours.
Prerequisite: MUS 493.
Baton technique, score reading, analysis, interpretation, rehearsal techniques, and instrumental problems in a few selected scores. Offered spring semester. Welker.

MUS 596 Comprehensive Examination. No hours.
All master of music students are required to register for this course at the beginning of the semester during which they take the comprehensive examination. A grade will be determined entirely by an assessment of the student’s performance on the comprehensive examination and will either be pass or fail. The course may be repeated once and must be passed if the student is to graduate.

MUS 597 Oral Examination. No hours.
All master of music students are required to register for this course at the beginning of the semester during which they take the oral examination. A grade will be determined entirely by an assessment of the student’s performance on the oral examination and will either be pass or fail. The course may be repeated once and must be passed if the student is to graduate.

MUS 598 Research Not Related to Thesis. One to three hours. Staff.

MUS 599 Thesis Research. One to three hours. Staff.

MUS 608 Advanced Schenkerian Analysis. Three hours.
Prerequisite: MUS 518 or permission of the instructor.
Application of Schenkerian methodologies to large-scale tonal works. Offered spring semesters of even-numbered years.

MUS 609 Atonal Music. Three hours.
Prerequisite: Permission of the instructor.
Analysis of atonal compositions through a study of pitch and pitch class set structures. Offered fall semesters of even-numbered years.

MUS 611 Advanced Digital Synthesis Using C Sound. Three hours.
Prerequisite: MUS 512 or permission of the instructor.
Instrument design and compositional issues related to digital synthesis using C Sound. Offered spring semesters of odd-numbered years.

MUS 615 Special Topics in Musicology and Ethnomusicology. Three hours.
Prerequisite: Graduate standing or permission of the instructor.
Advanced study of a selected topic in musicology or ethnomusicology.

MUS 617 History of Music Theory. Three hours.
Prerequisite: Graduate standing or permission of the instructor.
Historical survey of theoretical systems in music from the ancient Greeks to the present. Offered according to demand. Staff.

MUS 619/MUS 620 Advanced Composition. Four hours each semester.
Prerequisite: Permission of the instructor.
Offered in summer school. Staff.

MUS 622 Seminar in Medieval and Renaissance Music. Three hours.
Prerequisites: Graduate standing and MUS 501.
An intensive study of a specific topic associated with Medieval and/or Renaissance music. Topic varies.

MUS 623 Seminar in Baroque Music. Three hours.
Prerequisites: Graduate standing and MUS 501.
An intensive study of a specific topic associated with Baroque music. Topic varies.
MUS 624 Seminar in Classical Music. Three hours.
Prerequisites: Graduate standing and MUS 501.
An intensive study of a specific topic associated with the music of the classical period. Topic varies.

MUS 625 Seminar in Romantic Music. Three hours.
Prerequisites: Graduate standing and MUS 501.

MUS 626 Seminar in 20th-Century Music. Three hours.
Prerequisites: Graduate standing and MUS 501.
An intensive study of a specific topic associated with music written in the 20th century. Topic varies.

MUS 642 Advanced Vocal Pedagogy. Three hours.
Prerequisite: Graduate standing or permission of the instructor.
An analytical survey of voice teaching with emphasis on practical application. Offered on demand. Staff.

MUS 643 Brass/Woodwind/String Pedagogy. One to three hours.
Intended to teach doctoral students how to be successful in applied studio teaching at the collegiate and preparatory level. The focus of the course will be specific relative to the student's major instrument. Offered each semester. Staff.

MUS 650 Instrumental Conducting Pedagogy. Three hours.
Prerequisite: Graduate standing.
A practical and theoretical study of conducting instruction.

MUS 651 Choral Conducting Pedagogy. Three hours.
Prerequisite: Graduate standing.
A practical and theoretical study of conducting instruction.

MUS 652 Special Topics in Vocal Literature. Three hours.
Prerequisite: MUS 474 and MUS 475 or equivalent.
In-depth survey of the performance criteria and historical significance of selected repertoire from the solo vocal literature.

MUS 653 Special Topics in Vocal Literature. Three hours.
Prerequisite: MUS 474 and MUS 475 or equivalent.
In-depth survey of the performance criteria and historical significance of selected repertoire from the solo vocal literature.

MUS 671 Performance Seminar in Piano Literature. Three hours.
Prerequisite: M.M. in piano or permission of the instructor.
A consideration of performance practice in important segments of piano literature. Offered according to demand. Staff.

MUS 672 Performance Seminar in the Literature of Music for Piano and Orchestra. Three hours.
Prerequisite: M.M. in piano or permission of the instructor.
A consideration of the musical, technical, and practical aspects of playing piano concertos. Offered according to demand. Staff.

MUS 674 Topics in Choral Literature. Two hours.
Prerequisites: Graduate standing and permission of the instructor.
A thorough analysis and historical study of the repertoire for the lecture recital. May be repeated for credit.

MUS 675 Topics in Wind Literature. Two hours.
Prerequisite: Graduate standing.
A thorough analysis and historical study of the repertoire for the recital.

MUS 677 Topics in Organ Literature. Three hours.
Prerequisites: Graduate standing and permission of the instructor.
In-depth study of the organ literature of a specific period, its content and performance practice related to the organs of the period, and the performance of the literature. Offered each semester. May be repeated for credit if literature varies.

MUS 692 Advanced Choral Conducting. Three hours.
Prerequisite: Graduate standing.
Advanced conducting techniques, score analysis and preparation, performance practice and interpretation, rehearsal, and vocal techniques and diction.

MUS 694 Advanced instrumental Conducting. Three hours.
Prerequisite: Graduate standing. Advanced baton technique, score reading, interpretation, rehearsal techniques, and instrumental problems in selected scores. Welker.

**MUS 696 Comprehensive Examination.** No hours. All doctor of musical arts students are required to register for this course at the beginning of the semester during which they take the comprehensive examination. A grade will be determined entirely by an assessment of the student's performance on the comprehensive examination and will either be pass or fail. The course may be repeated once and must be passed if the student is to graduate.

**MUS 697 Oral Examination.** No hours. All doctor of musical arts students are required to register for this course at the beginning of the semester during which they take the oral examination. A grade will be determined entirely by an assessment of the student's performance on the oral examination and will either be pass or fail. The course may be repeated once and must be passed if the student is to graduate.

**MUS 698 Research Not Related to Dissertation.** One to three hours. Staff.

**MUS 699 Document Research.** One to six hours. Staff.

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**Music, Applied (MUA)**

Studio instruction. The 500 level of applied study indicates graduate standing; the 600 level indicates doctoral standing. Master's students register for applied study at the 500 level, doctoral students at the 600 level. Each instrument carries its own numerical designation. The numbering pattern follows the order found in the current UA undergraduate catalog under course listings for music, applied.

**MUA 500 Level Studio Instrumental and Vocal Study.** One, two, or four hours (each semester). Prerequisites: Graduate standing and audition. Private instruction. Staff.

**MUA 501 Secondary Applied Study.** One hour. Prerequisites: Graduate standing and audition. Private instruction. Staff.

**MUA 600 Level Studio Instrumental and Vocal Study.** One, two, or four hours (each semester). Prerequisites: Doctoral standing and audition. Private instruction. Staff.

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**Graduate Ensembles.** One hour (each semester). The ensembles listed below may be taken for graduate credit. M.M. performance majors are required to earn 2 semester hours of ensemble credit (1 hour in each of two different semesters) and, like all M.M. students may apply semester 2 hours (in addition to those required of them) as elective credits toward the degree. D.M.A. students may apply a maximum of 4 semester hours as elective credit. All graduate ensemble credits are graded pass/fail.

**MUA 550 Symphony Orchestra**
**MUA 552 Wind Ensemble**
**MUA 558 Contemporary Music Ensemble**
**MUA 559 Jazz Ensemble**
**MUA 560 Opera Workshop**
**MUA 563 University Singers**
**MUA 569 Chamber Music**
The Department of Physics and Astronomy offers programs leading to the master of science and the doctor of philosophy degrees. Research toward a degree may be conducted in either experimental or theoretical areas.

Experimental programs include magnetic materials, high-energy physics, materials science, and observational extragalactic astronomy. Theoretical programs include condensed matter, elementary particles, atomic and molecular physics, extragalactic astronomy, and astrophysics.

Admission Requirements
A student who wishes to take graduate work leading to the M.S. or Ph.D. degree should have the equivalent of an undergraduate major in physics, and mathematics through differential equations. Any undergraduate courses required to complete a student's preparation should be taken as soon as possible. A comprehensive background in general physics is considered as important as mastery of a specialized field. To be considered for regular admission, an applicant must have a verbal and quantitative score of at least 1000 on the general test of the Graduate Record Examination. A score of 650 or higher on the GRE subject exam in physics may be substituted for the general GRE score.

General requirements are stated in the "Academic Policies" section of this catalog. Specific requirements in physics follow. Note that requirements for students specializing in astronomy differ from those for students in other physics areas.

Requirements for the M.S. Degree
Plan I (with thesis). A total of 24 hours of coursework is required, 18 of which must be in physics and astronomy. Physics students must take PH 501, PH 531, PH 532, PH 541, PH 542, and 6 hours of PH 599. Students specializing in astronomy must take PH 501, PH 531, PH 541, 6 hours of PH 599, and three graduate astronomy courses other than AY 650. All full-time students must take one hour of seminar (PH 597 or AY 597) appropriate to their area of specialization each semester. PH 597 and AY 597 do not count toward the 24-hour course requirement. An oral examination covering coursework and the thesis is required for completion of the degree.

Plan II (without thesis). A total of 30 hours of coursework is required, 18 of which must be in physics and astronomy. Physics students must take PH 501, PH 531, PH 532, PH 541, PH 542, and two of the following: PH 551, PH 561, PH 571, and PH 581. Students specializing in astronomy must take PH 501, PH 531, PH 532, PH 541, and PH 542, and three graduate astronomy courses other than AY 650. All full-time students must take one hour of seminar (PH 597 or AY 597) appropriate to their area of specialization each semester. PH 597 and AY 597 do not count toward the 30-hour course requirement. An oral examination covering coursework is required for completion of the degree.

Requirements for the Ph.D. Degree
The student's program of study for the Ph.D. degree must be approved by the department and the Graduate School by the time the student completes 30 graduate semester hours of UA and/or transfer course work.

Courses. A total of 48 hours of coursework is required, 36 of which must be in physics and astronomy. All students are required to take PH 501, PH 531, PH 532, PH 541, PH 542, and PH 571. An additional 18 hours of required graduate work will be determined by the student's advisor in consultation with the student. For students specializing in astronomy, 15 of those 18 hours must include astronomy courses with at least one course at the 600 level. All full-time students must take one hour of seminar (PH 597 or AY 597) appropriate to their area of specialization each semester. Of the 48-hour requirement, a maximum of 6 hours may be a combination of PH 597 (or AY 597), PH 598, and PH 698.

Examinations. There are two separate examinations each prospective Ph.D. candidate must pass: the qualifying exam and the preliminary exam. The qualifying exam consists of a written exam on advanced undergraduate physics. Financial support may be withdrawn if a student does not pass the exam by the end of his or her second year at the University. Passing the qualifying exam is a requirement for acceptance into the Ph.D. program.

The preliminary exam is an oral exam on the student's research plan and on courses in the student's area of specialization. Passing the preliminary exam is a requirement for admission to candidacy for the Ph.D. and allows the
student to commence dissertation research. More detailed information regarding physics Ph.D. examination policies is available in the office of the Department of Physics and Astronomy.

Course Descriptions

Graduate credit will not be granted to physics students for 400-level physics or astronomy courses. Graduate students enrolled in 500-level courses that are also offered at the 400 level are expected to perform extra work of an appropriate nature.

Physics (PH)

PH 501 Classical Dynamics. Three hours.
Prerequisite: PH 301.
Variational principles and Lagrange's equations; two-body central-force problems; kinematics of rigid-body motion; rigid-body equations of motion; special relativity; Hamilton's equations of motion; and canonical transformations.

PH 505 Physics for Science Teachers. Three hours.
Prerequisite: Permission of the instructor.
Selected topics in contemporary physics for high school and post-secondary science teachers.

PH 511 Biophysics. Three hours.
Physics of biological systems: proteins, lipids, nucleic acids, supramolecular structures, and molecular motors; structure, function, energetics, thermodynamics, bionanotechnology. Emphasis on systems that are best understood in physical and molecular detail.

PH 523 Relativity. Three hours.
Special relativity, equivalence principle, tensor analysis, gravitational effects, curvature, Einstein's field equations, action principle, classic tests of Einstein's theory.

PH 531 Electromagnetic Theory. Three hours.
Prerequisite: PH 332.
Electric and magnetic fields, Green's functions, and Maxwell's equations.

PH 532 Electromagnetic Theory. Three hours.
Prerequisite: PH 531.
Electromagnetic waves, relativity, and selected topics.

PH 534 Digital Electronics and Computer Interfacing. Three hours. Two three-hour laboratories.
Prerequisite: PH 334 or permission of the instructor.
Theory and practical application of digital integrated circuits, including gates, flip flops, counters, latches, and displays. Computer data acquisition and control using LabView, A/D and D/A fundamentals. Digital communications.

PH 541 Quantum Mechanics. Three hours.
Prerequisite: PH 442.
Solution of the Schrödinger equation, matrix methods, angular momentum, and approximation methods.

PH 542 Quantum Mechanics. Three hours.
Prerequisite: PH 541.
Time-dependent perturbation theory, scattering theory, radiation, identical particles, and spin.

PH 551 Atomic and Molecular Physics. Three hours.
Prerequisite: PH 441.
A detailed study of the structure of simple atomic and molecular systems, perturbation theory, the hydrogen and helium atoms, the hydrogen molecular ion, the hydrogen molecule, and introduction to mathematical methods of molecular physics.

PH 561 Nuclear and Elementary Particle Physics. Three hours.
Prerequisite: PH 441.
Structure and properties of nuclear and subnuclear matter; conservation laws; scattering and decay processes; and fundamental interactions.

PH 571 Statistical Physics. Three hours.
Prerequisites: PH 441 and PH 471.
Ensembles, partition function, quantum statistics, Bose and Fermi systems, phase transitions and critical phenomena, and applications.

PH 581 Solid-State Physics. Three hours.
Prerequisite: PH 441.
Structure of simple crystals; thermal, electrical, and magnetic properties of solids; the free-electron model and the
band approximation; and semiconductors.

**PH 582 Selected Topics in Physics and Astronomy.** One to three hours.  
Prerequisite: Permission of the instructor.  
May deal with any physics or astronomy topic not covered by existing courses. The course title is added at the time the course is taught. Repeat credit is allowed for different course titles.

**PH 583 Magnetic Resonance.** Three hours.  
Prerequisite: Permission of the instructor.  
Classical and quantum mechanical descriptions of nuclear magnetic resonance and electron spin resonance; experimental techniques; and applications to physical, chemical, and biological problems. Offered according to demand.

**PH 585 Physical Principles of Magnetism.** Three hours.  
Prerequisite: Permission of the instructor.  
Phenomenological properties of magnetic materials including anisotropies, magnetostriction, domain walls, coercivity, reversal mechanisms, superparamagnetism, and dynamics.

**PH 586 Magnetic Materials and Devices.** Three hours.  
Prerequisite: Permission of the instructor.  
The relationships between the properties of magnetic materials and their applications; an understanding of the wide range of properties in paramagnetic, ferromagnetic, ferrimagnetic, and antiferromagnetic materials is developed and discussed in relation to a variety of devices from transformers to spin valve heads.

**PH 587 The Physics and Materials of Magnetic Recording.** Three hours.  
Prerequisite: Permission of the instructor.  
Principles of magnetic recording, write and read processes, particulate and thin film recording media, write and read heads, including magnetoresistive (AMR and GMR) heads. Emphasis will be placed on the key technologies critical to high-density recording.

**PH 591 Advanced Laboratory.** Three hours. Two three-hour laboratories weekly.  
Prerequisite: Permission of the instructor.  
Experimental work in modern physics at an advanced level.

**PH 597 Physics Seminar.** One hour.  
Prerequisite: Admission into physics graduate program.  
Required of all full-time physics graduate students each semester in residence. (Students specializing in astronomy must take AY 597.) Students are required to attend at least 10 department colloquia and/or specialty research seminars. Students in their second year and beyond are required to give one oral research presentation.

**PH 598 Nonthesis Research.** Variable credit.

**PH 599 Thesis Research.** Variable credit.

**PH 641 Relativistic Quantum Mechanics.** Three hours.  
Prerequisite: PH 542.  
The Dirac equation, Lorentz covariance, free-particle solutions of the Dirac equation, Foldy-Wouthuysen transformation, propagator theory, and applications to quantum electrodynamics.

**PH 642 Quantum Field Theory.** Three hours.  
Prerequisite: PH 641.  
Classical field theory, quantization of free fields, interacting fields, the scattering matrix, Feynman rules and diagrams, evaluation of integrals and divergences, and electroweak and strong interactions. Offered according to demand.

**PH 651 Advanced Atomic and Molecular Physics.** Three hours.  
Prerequisite: PH 551.  
Special topics course in atomic and molecular physics for advanced graduate students. Detailed coverage of topics that are arranged with the instructor. Offered according to demand.

**PH 661 High-Energy Physics.** Three hours.  
Prerequisite: PH 642.  
Gauge invariance, non-Abelian gauge theories, hidden symmetries, electroweak interactions of leptons and quarks, strong interactions among quarks, string theories, and phenomenology of high-energy interactions. Offered according to demand.

**PH 681 Advanced Solid-State Physics.** Three hours.  
Prerequisite: PH 581.  
Computational methods in solid-state physics are explored in more detail than in PH 581. Band structure calculations, Green's functions, density-functional methods, superconductivity, and disordered materials. Offered according to
PH 682 Selected Topics in Physics. One to three hours.
Prerequisite: Permission of the instructor.
May deal with any physics topic not covered by existing courses. The course title is added at the time each course is taught. Repeat credit is allowed for different course titles.

PH 698 Nondissertation Research. Variable credit.


Astronomy (AY)*
*All courses are offered according to demand.

AY 501 Celestial Mechanics and Astrodynamics. Three hours.
Prerequisite: PH 301.
Dynamics of space probes; solar system objects; stars and clusters; and galaxies and galaxy clusters.

AY 521 Theoretical Astrophysics. Three hours.
Prerequisite: PH 332.
Introduction to astrophysical processes in stars and the interstellar medium.

AY 533 Observational Techniques. Three hours.
Prerequisite: PH 333.
Theoretical and practical aspects of modern astronomical observational techniques. Photometry, spectroscopy, interferometry, and optical and radio data reduction and image processing.

AY 550 Stars and Stellar Evolution. Three hours.
Prerequisite: PH 442.
Photospheric structure, radiative processes, spectral lines, and interpretation of stellar spectra; and internal structure, evolution, nucleosynthesis, and the Hertzsprung-Russell diagram.

AY 570 Galaxy and Interstellar Medium. Three hours.
Prerequisite: PH 441.
Dynamics and evolution, stellar populations, star formation, physical processes in the interstellar medium, and spectral lines.

AY 597 Astrophysics Seminar. One hour.
Prerequisite: Admission into physics graduate program.
Required of all full-time physics graduate students specializing in astronomy each semester in residence. Students must attend weekly seminars and make one oral presentation.

AY 620 Extragalactic Astronomy. Three hours.
Prerequisite: PH 441.
Galaxies, clusters, active galaxies, quasars, distance scale, and physical processes.

AY 640 Radiation Processes in Astrophysics. Three hours.
Prerequisite: AY 521 or equivalent.
Radiation processes of importance in high-energy radio, UV-optical-IR astronomy. Emphasis is on continuum processes.

AY 650 Special Topics in Astronomy and Astrophysics. One to three hours.
Prerequisite: Permission of the instructor.
May deal with any topic in astronomy or astrophysics not covered by existing courses. The course title is added at the time each course is taught. Repeat credit is allowed for different course titles.

AY 660 Astrophysical Plasmas and Magnetodynamics. Three hours.
Prerequisites: PH 301 and PH 332.
Includes particle orbit theory, hydromagnetics, shock waves in plasmas, waves in plasmas, and macroscopic and microscopic stability of astrophysical plasmas.
6.17 DEPARTMENT OF POLITICAL SCIENCE (PSC)
Chairperson: Professor David J. Lanoue, Office: 303 ten Hoor Hall

The department offers programs leading to the master of arts (M.A.), master of public administration (M.P.A.), and doctor of philosophy (Ph.D.) degrees. Much more detailed information relating to the degrees offered by the Department of Political Science is contained in the Graduate Handbook, available at the department website at http://www.as.ua.edu/psc.gradhandbook.htm. Students and prospective students should consult these as well as this catalog.

Master of Arts

Admission Requirements
Applicants for admission to the M.A. program must submit scores from the Graduate Record Examination general test. Additional information is in the "Academic Policies" section of this catalog.

Degree Requirements

Plans I and II. M.A. students may follow either Plan I, requiring 30 semester hours of coursework, a written comprehensive examination, a thesis, and an oral examination in defense of the thesis; or Plan II, requiring 36 hours of coursework and a written comprehensive examination.

Course requirements. Under either plan, students must take courses in three of five fields, including a core seminar in each. The available fields are American politics, comparative politics, international relations, public policy and administration, and political theory. The core seminars are PSC 611 American Political Behavior, PSC 615 American National Government Executive and Legislative Institutions, PSC 631 Seminar in Comparative Politics, PSC 642 Concepts and Theories of International Relations, PSC 651 Political Theory Seminar, and PSC 565 Survey of Public Administration. Students choosing American politics as a field may take either PSC 611 or PSC 615. All students must complete PSC 521 Research Design and PSC 522 Quantitative Methods in Political Science I (or approved substitutes).

Comprehensive examination. The written comprehensive examination will cover the student's three fields and will require integration of material across courses.

Thesis. After passing the written examination, a student following Plan I should prepare a thesis prospectus, which should describe the substance and methods of the thesis research, outline the thesis itself, and provide a preliminary bibliography. Once the prospectus has been approved, the chairperson will formally appoint a committee of three faculty members to supervise the thesis. The student must submit four copies of the completed thesis and must take a final oral examination to defend it and show competence in the field in which it lies. Except in unusual circumstances, the final oral examination must be taken during the fall or spring semester and before final course examinations begin. After the examination, the student must deposit two copies of the approved thesis with the Graduate School and two copies with the department.

Master of Public Administration

Admission Requirements
The M.P.A. is a professional degree program designed primarily for those who plan a career in federal, state, or local government. Applicants for admission to the M.P.A. program must submit scores from the Graduate Record Examination general test. Scores from the Miller Analogies Test may be submitted as supplementary information, but not as a substitute for the GRE. Additional information is in the "Academic Policies" section of this catalog.

Degree Requirements
Plans I and II. M.P.A. students may follow either Plan I, requiring 30 hours of coursework, a written comprehensive examination, a thesis, and an oral examination in defense of the thesis; or Plan II, requiring 36 hours of coursework and a written comprehensive examination. Students following Plan II may receive up to 6 hours of credit for an internship, and students following Plan I may receive up to 3 hours.

Course requirements. M.P.A. students must complete at least three of the following four courses: PSC 565 Survey of Public Administration, PSC 662 Organization Theory, PSC 667 Public Budgeting, and PSC 562 Public Personnel Administration. Including the preceding, at least 18 hours must be taken from the courses listed under "Public Policy and Administration." Student must also complete PSC 522 Quantitative Methods in Political Science I.
Doctor of Philosophy

Admission Requirements
Admission to the Ph.D. program requires either a bachelor's or a master's degree. Applicants must submit scores from the Graduate Record Examination general test. All students admitted to the Ph.D. program without a master's degree will be required to undergo an evaluation of their progress in the program by the Graduate Studies Committee after the completion of 27 hours in residence.

Degree Requirements
Major and minor fields. Ph.D. students must choose and develop competence in one major and two minor fields. The fields the department offers are American politics, comparative politics, international relations, public policy and administration, and political theory. In exceptional cases, a student may choose one minor field outside the department, with special permission from the graduate studies committee.

Course requirements. The student's plan of study for the Ph.D. degree must be approved by the department and the Graduate School by the time the student completes 30 graduate semester hours of UA and/or transfer course work. Ph.D. students must complete at least 60 hours of graduate coursework. Up to 30 hours may be transferred from other institutions, with the permission of the graduate studies committee. Students must take the core seminars in their fields (see the list under “M.A. Course Requirements” above). Ph.D. students who choose American politics as their major or minor field must take both PSC 611 and PSC 615. In addition, all students must complete 9 hours of methods courses, including PSC 521 Research Design, PSC 522 Quantitative Methods in Political Science I, and either PSC 621 Quantitative Methods in Political Science II or PSC 622 Seminar in Political Science Methodology.

Students interested in pursuing a topic in greater depth than the standard course offerings allow may take up to 12 hours of PSC 595 Directed Reading and PSC 598 Individual Research, with up to 6 hours in any one field.

Language requirement. A foreign language is required of Ph.D. students if appropriate to the student's research interests. The appropriateness of the foreign language requirement shall be determined by the relevant faculty in the student's primary field of interest prior to the student's completion of 18 hours in residence in the Ph.D. program.

Comprehensive examination. Before writing a dissertation, but only after completing at least two full years of graduate study and satisfying the language requirement, Ph.D. students must take and pass written and oral comprehensive examinations in their three fields. These will be given during fall and spring semesters only.

Candidacy. Students who have fulfilled the course requirements and passed the comprehensive examination become Ph.D. candidates after the Graduate School approves the student’s formal application to candidacy for the doctoral degree.

Dissertation. As soon as possible after satisfying the requirements for candidacy, each student should submit three copies of a dissertation prospectus to the department chairperson, who will establish a dissertation committee of five faculty members, with at least three from the Department of Political Science and at least one from another department. The prospectus should contain the same information as an M.A. thesis prospectus (see above). The department chairperson will decide whether to approve the prospectus, on the recommendation of the dissertation committee. Once the prospectus has been approved, the student may begin work on the dissertation itself, under the supervision of his or her dissertation committee. When finished, the student must submit four copies of the completed dissertation and take a final oral examination to defend it and demonstrate competence in the field in which it lies. The examination, conducted by the dissertation committee, must ordinarily be held during the fall or spring semester. Following a successful defense, the student must deposit two copies of the dissertation, as finally approved, with the department, and another two with the Graduate School.

Course Descriptions
Prerequisite: Graduate standing.

American Politics

PSC 511 Public Opinion. Three hours.
The formation, distribution, structure, properties, and techniques of measuring public opinions in the United States.

PSC 512 Urban and Metropolitan Government. Three hours.
An examination of the implications of urban growth, the organization of urban and metropolitan areas, and the political forces operating at this level.

PSC 566 Urban Policy. Three hours.
An examination of urban political structure and its influence upon selected areas of public policy in contemporary urban society.
PSC 611 American Political Behavior. Three hours.
Research and methodology in the areas of social and psychological factors related to voting, party preference, and ideology.

PSC 612 Judicial Politics. Three hours.
Examines the role of the courts in political systems with primary emphasis on the United States Supreme Court.

PSC 614 State Politics. Three hours.
An investigation of electoral, executive, legislative, bureaucratic, and judicial politics in American states.

PSC 615 American National Government Executive and Legislative Institutions. Three hours.
An examination of the structure, operation, and politics of national government executive and legislative institutions.

PSC 616 Topics in American Politics. Three hours.
An examination of selected problems in American politics. Content varies.

Comparative Political Systems

PSC 531 Political Development. Three hours.
An examination of the political processes in the developing world, especially of the stress of change and impact of economic development on political life.

PSC 533 Communism, Europe 1945–89. Three hours.
The interaction of Marxist theory and practice in various national settings, with attention to the differential evolution of Communist regimes and parties.

PSC 543 Comparative Public Policy. Three hours.
An examination of the actors and processes involved in making public policy, with an emphasis on the question of what kinds of governments are responsive to popular demands.

PSC 631 Seminar in Comparative Politics. Three hours.
A survey of the theoretical literature in the field of comparative politics.

PSC 632 Topics in Comparative Politics. Three hours.
An examination of selected problems in comparative politics.

PSC 633 Soviet and Post-Soviet Politics. Three hours.
An examination of highly developed modern authoritarianism in the Soviet Union, dynamics of systemic evolution and failure, as well as patterns and sources of democratization and nondemocratic politics in Russia and the newly independent states.

PSC 634 Politics of Advanced Industrialized Democracies. Three hours.
An examination of the government and politics of the advanced industrialized democracies, including Western Europe, Japan, Canada, Australia, and New Zealand. Precise content varies.

PSC 635 Politics of the European Union. Three hours.
A survey of the literature on European integration. Theories of integration, including neofunctionalism and intergovernmentalism, will be examined. Topics will include EU institutions, political parties and the EU, democracy within the EU, and EU policies.

PSC 637 Postcommunism. Three hours.
Examination of the processes of transition from communist political systems in comparative perspective. Attention to democratization and the revival of authoritarianism in East Central Europe and Eurasia.

International Relations

PSC 513 American Foreign Policy. Three hours.
An examination of the forces and processes affecting United States foreign relations. Attention is also given to the content and problems of contemporary American foreign policy.

PSC 514 American Defense Policy. Three hours.
An investigation of the processes involved in making American defense and security policy and the substance of that policy.

PSC 542 International Conflict. Three hours.
An examination of the various kinds of violent conflict in which nation-states become involved.
**PSC 544 International Organization.** Three hours.
This course details the essential structures, actors, and processes in international organizations, by examining both governmental and non-governmental organizations and their roles in the areas of global security, economy, and social welfare.

**PSC 641 Issues in International Relations.** Three hours.
An examination of major problem areas in the international system and their effects. Content varies.

**PSC 642 Concepts and Theories of International Relations.** Three hours.
A survey of contemporary theoretical approaches to the study of international relations, providing an overview of traditional and behavioral orientations.

**PSC 643 International Political Economy.** Three hours.
This course considers mercantilist, liberal, and socialist theories of political economy. Topics include international trade and the monetary system, the consequences of interdependence for interstate conflict, the operation of multinational corporations, and economic development.

PSC 644 Interstate Conflict. Three hours.
This is an examination of the causes of interstate war and the conditions that promote peace and security. Realist and liberal theories of war are contrasted. Historical and formal analyses are considered, but emphasis is on the use of quantitative methods of analysis.

**Methodology**

**PSC 521 Research Design.** Three hours.
Includes but is not limited to the role of theory, development of hypotheses, modes of observation and analysis, and testing of hypotheses.

**PSC 522 Quantitative Methods in Political Science I.** Three hours.
Introduction to statistical techniques, including univariate and bivariate descriptive statistics and their application within the field of political science.

**PSC 523 Survey Research Methods.** Three hours.
Examination of the theory and practice of various types of surveys and different parts of the survey research process (e.g., sampling, questionnaire design, interviewing, and data reduction).

**PSC 621 Quantitative Methods in Political Science II.** Three hours.
Prerequisites: PSC 521 and PSC 522, or equivalents.
Data analysis and statistical applications in political research, including data processing, inferential statistics, correlation and regression, multivariate analysis, and other multidimensional techniques.

**PSC 622 Seminar in Political Science Methodology.** Three hours.
May be repeated for up to 6 hours of credit. Topics vary and may range from case studies and historical analysis to mathematical modeling and computer simulation.

**Political Theory**

**PSC 552 American Political Thought.** Three hours.
Investigates the origin and direction of the U.S. political ideology, including liberalism, civic republicanism, and debates condemning American exceptionalism.

**PSC 650 Ancient Political Thought.** Three hours.
A consideration of classic thinkers including Thucydides, the Presocratics, Plato, Aristotle, and Augustine. Attention will also be given to how more recent theorists have dealt with the ancients.

**PSC 651 Modern Political Thought.** Three hours.
An examination of key political theorists from the 16th to the 19th centuries. Assigned works may vary but typically include those by Machiavelli, Hobbes, Locke, Rousseau, J. S. Mill, Marx, and Nietzsche.

**PSC 653 Topics in Political Theory.** Three hours.
An examination of selected political theorists. Content varies.

**PSC 654 Twentieth-Century Political Thought: Political Judgment.** Three hours.
This course asks what political judgment is and whether or not we have lost our capacity for it. Readings include the works of Arendt, Marcuse, Oakeshott, and Nietzsche.
Public Policy and Administration

**PSC 561 Administrative Regulation.** Three hours.
The impact of legal powers and procedures of administrative agencies on public policy. Analysis of regulatory powers in American governments.

**PSC 562 Public Personnel Administration.** Three hours.
A study of the American public personnel system, with an emphasis on the political setting of government employment, equal opportunity and affirmative action, and collective bargaining.

**PSC 565 Survey of Public Administration.** Three hours.
Introduction to the scope, theory, and substantive issues of public administration.

**PSC 613 Intergovernmental Relations.** Three hours.
A study of intergovernmental relationships in selected policy areas, with attention given to grant-in-aid programs and other devices of cooperative federalism.

**PSC 661 The Environment of Public Administration.** Three hours.
An analysis of the physical, technological, legal, and political environments of administration.

**PSC 662 Organization Theory.** Three hours.
An analysis of the theories of organization and management that examines models, reviews current administrative philosophy, and presents contemporary trends in organization and management.

**PSC 663 Selected Problems in Public Administration.** Three hours.
May be repeated up to a maximum of 6 hours of credit. In-depth analysis of a policy issue or administrative problem. Specific topics vary.

**PSC 664 Problems of Public Policy.** Three hours.
Focuses on issue and policy analysis, with attention to formal and informal processes of policy development and program implementation.

**PSC 665 Urban Administration.** Three hours.
An examination of major urban problems and the administrative approach to solving these problems.

**PSC 666 Political Economy and Public Policy.** Three hours. An examination of the political economy/public choice approach to the study of public policy.

**PSC 667 Public Budgeting.** Three hours.
Problems of financial management in governmental units: revenue sources, budgeting, financial management, and control.

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Miscellaneous

**PSC 500 Department Seminar I.** Five hours.
Once-monthly information sessions required of new political science graduate students.

**PSC 501 Department Seminar II.** Five hours.
A continuation of PSC 500.

**PSC 595 Directed Reading.** One to three hours.

**PSC 598 Individual Research.** One to three hours.

**PSC 599 Thesis Research.** Variable credit.

**PSC 679 Internship and Supervised Research.** Three to six hours.
Field work and research opportunities to be supervised by departmental faculty.

**PSC 699 Dissertation Research.** Variable credit. Three-hour minimum.
6.18 DEPARTMENT OF PSYCHOLOGY (PY)
Chairperson: Professor Kenneth L. Lichstein, Office: 348 Gordon Palmer Hall
Web page: psychology.ua.edu

The department offers programs leading to the master of arts (M.A.) and the doctor of philosophy (Ph.D.) degrees. Programs are offered leading to the Ph.D. degree in clinical psychology and in experimental psychology. The clinical psychology program is accredited by the American Psychological Association. Concentrations in clinical psychology include child clinical, health psychology, Geropsychology, and psychology/law. Concentrations in experimental psychology include cognitive, social, and developmental science. The developmental science concentration is in collaboration with the Department of Human Development and Family Studies.

Areas of current faculty research interest include aging, child and adolescent behavior, youth violence, forensic psychology, behavioral intervention, memory, chronic pain, depression, public health psychology, neuropsychology, visual-spatial cognition, autism, persuasion, unconscious cognition, risk assessment, personality, reading processes, social cognition, health attitudes, dehumanization, perception, cognitive aging, cognitive neuroscience, intellectual abilities, media psychology, and creativity.

The department operates a fully staffed psychological clinic offering psychological assessment and intervention services to University students, children, and adults. These facilities are also used in the training of clinical graduate students as professional psychologists. Each candidate for the Ph.D. degree in clinical psychology takes practicum courses in the psychological clinic and must also complete a one-year internship in an accredited facility. The internship is taken after completion of coursework and passing of the doctoral preliminary exam, and is a degree requirement.

Admission Requirements
Students applying for graduate work in psychology must present at a minimum undergraduate courses in general psychology, statistics, experimental psychology (or research methods), and history and systems. In making up deficiencies in these areas, graduate work may be taken concurrently. In addition, prior coursework in laboratory science (particularly biology) and in college mathematics is desirable.

Applications for admission to graduate study must be accompanied by Graduate Record Examination general test scores (the advanced section is recommended for clinical applicants). Admission is competitive and is influenced by the overall quality of the applicant's record, including grades, GRE scores, letters of recommendation, and past experience. Application materials should be received by January 15 (by December 1 for the clinical psychology program) to ensure full consideration for admission for the following fall term.

Degree Requirements
Master of arts degree. Students earn the M.A. degree enroute to their Ph.D., and they are required to follow Plan I. The M.A. degree is awarded after twenty-four credit hours of coursework, six credit hours of thesis, and an approved completed thesis. The 24 hours of coursework may vary by concentration, but must include the following:

PY 602 Advanced Statistics I
PY 607 Research Methods in Psychology

Doctor of philosophy degree. The student's plan of study for the Ph.D. degree must be approved by the department and the Graduate School by the time the student completes 30 graduate semester hours of UA and/or transfer course work. A minimum number of credit hours required for the Ph.D. in psychology varies by concentration. All graduate students complete the General Psychology Core, the Research Skills Core, a master's thesis and a doctoral dissertation. In addition, clinical students complete the Clinical Core and a year-long clinical internship. Students in each of the clinical and experimental concentrations also complete advanced coursework in their concentration. More detailed information is available at http://psychology.ua.edu.

General Psychology Core:
PY 650 Cognition and Learning
PY 651 Physiological Psychology or PY 629 Cognitive Neuroscience
PY 695 Teaching of Psychology (optional)
Two of: PY 670 Perception, PY 652 Life-Span Developmental Psychology, PY 672 Advanced Social Psychology (some concentrations require a specific course from this set)
PY 471 History and Systems if not taken as an undergraduate

Research Skills Core:
PY 607 Research Methods in Psychology
PY 602 Advanced Statistics I
PY 603 Advanced Statistics II
PY 604 Multivariate Methods of Analysis
PY 659/BER 558 Psychometrics, BER 646 Structural Equations Modeling, or approved alternative
Advanced Coursework as applicable (see psychology.ua.edu/graduate for details):

Clinical Core
Advanced Coursework in:
Child Clinical
Clinical Health
Clinical Geropsychology
Psychology and Law
Cognitive Psychology
Social Psychology
Developmental Science

Thesis and Dissertation Hours:
PY 599 Thesis research (6 hours)
PY 699 Dissertation research (24 hours)

Graduate minor. Doctoral students in other departments may complete a graduate minor in psychology. A graduate minor in psychology shall consist of 12 graduate hours, at least 6 of which are to be selected from among PY 650 Cognition and Learning; PY 670 Perception; PY 672 Advanced Social Psychology; PY 652 Life-Span Developmental Psychology; and PY 651 Physiological Psychology or PY 629 Cognitive Neuroscience. Other courses available to minors and offered on a regular basis are PY 693 Cognitive Seminars, PY 591 Senior Seminars, and statistics courses PY 602, PY 603, PY 604, PY 659. Occasionally other courses will be offered that will count towards the minor. All courses require the permission of the director of graduate studies and the course instructor.

Students seeking a minor in psychology must be in good standing and at the second year or beyond in residency in a University of Alabama doctoral program. Students must achieve a 3.00 GPA in the minor, with only one grade of "C." No grade below "C" will count toward the minor. No more than 6 hours may be transferred from a department of psychology in another institution. The director of graduate studies shall determine who is accepted for a minor program of study and shall determine the appropriate courses to be taken in a timely manner. In addition, the director shall certify a completed minor to the Graduate School and to the home department.

Course Descriptions
Prerequisites: Graduate standing and permission of both the director of graduate studies and the instructor. Graduate students enrolled in 500-level courses that are also offered at the 400 level are expected to perform extra work of an appropriate nature.

PY 581 Readings in Psychology. One to three hours.
Prerequisite: Permission and sponsorship of an instructor.
Selected supervised readings.

PY 591 Seminar in Psychology. One to three hours.
In-depth examination of a selected contemporary psychological area. Different sections offered each semester. Section descriptions are available at registration.

PY 598 Graduate Research. One to three hours.
Prerequisite: Permission and sponsorship of an instructor.
Research conducted in apprenticeship to a graduate faculty member.

PY 599 Thesis Research. Variable credit.

PY 602 Advanced Statistics I. Three hours.
An applied course explaining how to use categorical predictor variables to explain continuous response variables. Covers t-tests, ANOVA, and nonparametric alternatives in between-, within-, and mixed-model designs.

PY 603 Advanced Statistics II. Three hours.
Prerequisite: PY 602.
An applied course explaining how to use continuous predictor variables to explain continuous response variables. Covers correlation, regression, and general linear models including both categorical and continuous predictor...
variables.

**PY 604 Multivariate Methods of Analysis.** Three hours.
Prerequisites: PY 602 and PY 603.
Multivariate analysis, with emphasis on factor analysis, discriminant analysis, canonical analysis, clustering techniques, and structural equation modeling.

**PY 607 Research Methods in Psychology.** Three hours.
Study and analysis of psychological methodology.

**PY 608 Introduction to Ethics.** Three hours.
Prerequisite: First- or second-year graduate student in psychology.
Introduction to ethical issues as they affect the practice of psychology.

**PY 609 Psychological Assessment I.** Three hours.
Principles of psychological evaluation; introduction to the clinical use of assessment techniques, with particular emphasis on intellectual assessment.

**PY 610 Psychological Assessment II.** Three hours.
The theory and application of projective techniques and personality inventories for adults.

**PY 611 Introduction to Neuropsychological Assessment.** Three hours.
An introduction to the theory, content, and practice of clinical neuropsychology.

**PY 612 Psychological Assessment III.** Three hours.
Principles of psychological evaluation, with particular emphasis on the assessment of children.

**PY 619 Principles of Psychotherapy.** Three hours.
The study of psychotherapeutic processes, outcomes, and systems, with particular attention given to the operations common to all approaches.

**PY 620 Behavior Therapy.** Three hours.
Provides a framework for conceptualizing, assessing, and treating child and adult clinical problems from the perspective of behavioral psychology.

**PY 621 Psychotherapy Laboratory.** One hour.
A skills-building seminar emphasizing interview and communications techniques. Introduction to practicum.

**PY 625 Contemporary Issues in Cognitive Research.** One to three hours.
Current issues relating to research in cognitive and individual differences are presented and discussed.

**PY 627 Developmental Disabilities.** Three hours.
An introduction to the study of deviations in development from a cognitive, behavioral, and biological perspective.

**PY 629 Cognitive Neuroscience.** Three hours.
The study of brain mechanisms of perception and thought through a variety of methodological approaches (e.g., lesions, brain imaging, and normal subject experiments).

**PY 631 Practicum in Psychology I.** One to three hours.
Prerequisites: PY 619.
Supervised experience in psychotherapeutic procedures in an approved clinical facility; seminars and case conferences.

**PY 632 Practicum in Psychology II.** One to three hours.
A continuation of PY 631.

**PY 633 Practicum in Psychology III.** Three hours.
Supervised experience in psychotherapy in groups.

**PY 634 Practicum in Psychology IV.** Three hours.
Supervised experience with emotionally and behaviorally disordered children.

**PY 635 Practicum in Psychology V.** One to three hours.
Supervised experience with children and adults with intellectual disabilities in field settings.

**PY 636 Practicum in Psychology VI.** Three hours.
Supervised training and experience in the practice of community psychology, with special reference to crisis intervention.

**PY 637 Practicum in Psychology VII.** Three hours.
Supervised field placement in forensic or criminal justice setting.

**PY 638 Practicum in Psychology VIII.** One to three hours.
Supervised placement in an industrial/organizational setting.

**PY 639 Practicum in Psychology IX.** One to three hours.
Prerequisites: PY 631 and PY 632.
Intensive experience with a variety of child and family disorders and therapy techniques. Exposure to interdisciplinary treatment settings and personnel.

**PY 640 Practicum in Psychology X.** One to three hours.
A continuation of PY 639.

**PY 641 Advanced Clinical Placement.** One to three hours.
Prerequisites: PY 631 and PY 632.
Supervised experience in an approved setting.
Primary clinical supervision by faculty or licensed psychologist at a placement facility.

**PY 642 Practicum in Psychology XI.** One to three hours.
Supervised experience in clinical geropsychology.

**PY 650 Cognition and Learning.** Three hours.
Contemporary approaches to cognition and learning. A broad survey, with in-depth looks at selected topics including attention and memory.

**PY 651 Physiological Psychology.** Three hours.
Prerequisite: One year of biology desirable.
Examination of bodily structures—nervous, muscular, and glandular—that underlie behavior.

**PY 652 Life-Span Developmental Psychology.** Three hours.
An integrated view of the development, stability, and decline of several behavioral processes rooted in the physical growth, cognition, and socialization of the individual over the span of life.

**PY 658 Psychopathology.** Three hours.
Prerequisite: PY 358.
A survey of manifestations of abnormal behavior, and the diagnosis of abnormal behavior and mental disorders.

**PY 659 Psychometrics.** Three hours.
Theoretical issues in the construction, evaluation, and application of psychological measures.

**PY 661 Advanced Theory in Human Cognition II.** Three hours.
Prerequisites: PY 650 and completion of thesis.
An in-depth analysis of current theories in cognitive psychology. Selected topics include attention, memory, and perception.

**PY 662 Child Treatment.** Three hours.
Prerequisite: PY 658.
Examines diagnosis and treatment of childhood disorders from empirical, theoretical, and practical standpoints.

**PY 668 Theory of Personality.** Three hours.
An examination of contemporary frames of reference relating to personality, with emphasis on contrasting implications of alternative personality interpretations.

**PY 669 Seminar in Clinical Child Psychology.** One hour.
Issues in research and practice of clinical child psychology.

**PY 670 Perception.** Three hours.
An introduction to issues and concepts in the study of perception. Fundamental theoretical and empirical controversies are analyzed.

**PY 671 History and Systems in Psychology.** Three hours.
Systematic points of view placed in historical perspective.

**PY 672 Advanced Social Psychology.** Three hours.
Major aspects of social psychology including attitude change, attribution theory, aggression, altruism, prejudice, interpersonal relations, and group dynamics.

**PY 676 Criminal Forensic Assessment.** Three hours.
Familiarizes students with relevant issues in criminal forensic assessment and introduces them to current forensic assessment instruments.
**PY 677 Correctional Psychology: Method, Theory, and Research.** Three hours. 
A comprehensive review of psychological principles, theory, and techniques related to problems of crime, corrections, and offenders.

**PY 678 Forensic Psychology.** Three hours. 
The application of clinical psychology to forensic and legal issues. Competency to stand trial, criminal responsibility, testamentary capacity, jury decision making and dynamics, jury selection, and expert witness testimony.

**PY 679 Seminar in Psychology/Law.** One hour. 
Issues in research and practice of psychology as related to the law.

**PY 681 Readings in Psychology.** One to three hours. 
Prerequisite: Permission and sponsorship of an instructor. 
Selected supervised readings.

**PY 687 Clinical Psychology of Aging.** Three hours. 
Prerequisite: Permission of the instructor. 
A survey of clinical geropsychology including review of major disorders experienced by older adults, assessment issues, and treatments used in work with older adults.

**PY 688 Seminar in Adult Clinical Psychology.** One hour. 
Issues in research and practice related to adult clinical psychology.

**PY 689 Seminar in Ethics and Professional Issues.** Three hours. 
Prerequisite: Third-year and beyond graduate student in psychology. 
An introduction to professional and ethical issues as they affect the practice of psychology. Focus is on the development of an ethical and professional attitude toward the practice of psychology, including teaching and research.

**PY 690 Cultural Competency.** Three hours. 
This seminar emphasizes the role of ethnicity, class, culture, gender, sexual orientation, and disability in mental health, and the impact of these factors on assessment, diagnosis, and treatment.

**PY 691 Seminar in Clinical Psychology.** One to three hours. 
Selected topics.

**PY 693 Seminar in Advanced General Psychology.** One to three hours. 
Selected topics.

**PY 695 Teaching of Psychology.** Three hours. 
Prerequisite: Permission of the department. 
Principles of teaching and supervised experience.

**PY 698 Graduate Research.** One to three hours. 
Independent research by the advanced graduate student.

**PY 699 Dissertation Research.** Variable credit. Three-hour minimum.
6.19 DEPARTMENT OF THEATRE AND DANCE (TH)
Interim Chairperson: Professor William Teague, Office: 115 Rowand-Johnson Hall

The Department of Theatre and Dance is a fully accredited member of the National Association of Schools of Theatre (NAST), and all of its programs and policies are in accordance with NAST requirements. The department offers several programs leading to the master of fine arts (M.F.A.) degree in theatre. These include programs conducted entirely on the campus in Tuscaloosa, programs with residency split between the campus and the Alabama Shakespeare Festival (ASF) in Montgomery, and a program conducted entirely at ASF. The purpose of the M.F.A. degree in theatre is to train students whose previous experience, demonstrated ability, and professional potential are sufficient to suggest a productive career in the theatre.

Admission Requirements

General. While the M.F.A. degree has several areas of specialization, admission is granted in only one area. Admission to the M.F.A. degree program in theatre requires satisfaction of all admission requirements of the Graduate School (please note that no test scores are required); and an interview, including audition, and/or portfolio review. Certain areas have specific admission requirements as noted below.

Programs on the Tuscaloosa campus. The M.F.A. degree program requires specialization in one area of production. Students in the program must be admitted to one of the following areas of study: acting pedagogy, directing, costume design/production, scene design, and lighting design/technical production. (Note: The costume design/production, scene design, and lighting design/technical production programs offer the option for a third-year residency at the Alabama Shakespeare Festival. See "Programs in conjunction with the Alabama Shakespeare Festival" below.) Other areas of concentration are available through the programs conducted in conjunction with the Alabama Shakespeare Festival.

Subject to approval by the department chairperson and the dean of the Graduate School, in specified programs, a maximum of 20 semester hours of graduate work may be transferred from another institution. These hours must be in theatre or in a closely allied subject, and they must contribute to the student's educational objective. Should deficiencies in the student's undergraduate program be perceived, appropriate undergraduate courses will be required. While these undergraduate courses may not be counted toward the graduate degree, they may be taken in addition to the maximum allowable number of graduate hours.

The M.F.A. program is normally a three-year program. Students who hold the M.A. degree in theatre upon admission to the program may expect a shortened course of study, dependent upon faculty evaluation of the previous work. Students seeking such a shortened program must apply to have previous work evaluated. Normally, a two-year minimum residency is required for students with shortened programs.

Programs in conjunction with the Alabama Shakespeare Festival. M.F.A. programs in theatre management/arts administration, stage management, scene design, lighting design/technical production, and costume design/production are available in conjunction with the Alabama Shakespeare Festival and require a residency split between Tuscaloosa and Montgomery. Admission to the joint UA/ASF programs depends heavily on an interview and portfolio review. Faculty members in each area of specialization normally attend the URTA unified auditions and the Southeastern Theatre Conference for the purpose of conducting admission interviews. Interviews may also be arranged in Tuscaloosa and Montgomery. Due to these programs' highly structured curricula, transfer of credit from other institutions is not allowed.

UA/ASF Professional Actor Training Program. In addition to the M.F.A. program in acting pedagogy conducted on the Tuscaloosa campus, the department, in conjunction with the Alabama Shakespeare Festival, offers the Professional Actor Training Program (an Equity Membership Candidacy Program), which leads to the M.F.A. degree.

Students are admitted to the program by audition only, and they must meet all Graduate School admission requirements. Due to these programs' highly structured curricula, transfer of credit from other institutions is not allowed.

Degree Requirements

General. All students must follow Plan II (see "Academic Policies" in this catalog) and complete 60 semester hours of graduate coursework for the degree. Continuation in the M.F.A. degree program is contingent upon recommendation by the theatre faculty, following an annual review of the student's academic and production work. Students may be placed on probation following the review; students placed on probation have one semester in which to reestablish their academic standing. Under no circumstances will a student be permitted to continue in the program on probation for more than one semester.
Programs on the Tuscaloosa campus. The Department of Theatre and Dance uses "contract advising," which requires each student in the department to develop a plan of study within six weeks of beginning the program, in conjunction with an assigned advisor from the student's area of specialization. The plan of study must meet the minimum requirements of the Graduate School and the Department of Theatre and Dance, and have the approval of the assigned advisor. While each plan is developed individually, examples of typical curricula are available on request from the department. A student with a 0.5 FTE departmental assistantship cannot take more than 10 hours and no less than 6 hours of graduate work during a semester or more than 6 hours in each term of the summer session.

Programs in conjunction with the Alabama Shakespeare Festival. The theatre management/arts administration program and the stage management program require two calendar years of continuous residency for completion. Students will be enrolled in a total of 60 semester hours of intense academic and applied work. These hours are divided between the University campus in Tuscaloosa and the ASF in Montgomery. At ASF, students study with both academic faculty and members of the festival's professional staff. The programs in scene design, lighting design/technical production, and costume design/production require a standard three-year program, which includes two years in Tuscaloosa and the third year in residence at ASF. That residency includes 20 semester hours of work with the festival's professional design and technical staff, as well as visiting designers. The program is planned to allow rotation through the various areas of the festival's studio operations.

UA/ASF Professional Actor Training Program. The Professional Actor Training Program requires two calendar years of continuous residency at ASF, comprising six consecutive terms (60 semester hours) of a very intensive program of academic study and performance.

Course Descriptions

Prerequisites for 500- and 600-level courses: Graduate standing and permission of the instructor

TH 521 Period Decor. Three hours.
A survey of period architecture, ornament, and furniture as applied in the stage designer's research.

TH 523 Sketching and Drafting for the Theatre. Three hours.
A studio course in drawing and painting techniques for the stage designer.

TH 525 Scene Painting. Three hours.
A studio course in the materials and techniques for painting stage scenery and properties. Lab fee, $25.00.

TH 526 Sound Production Techniques for Theatre and Dance. Three hours.
A course providing a working knowledge of sound production, with an emphasis on the creation of sound tapes for theatre and dance and the setup and maintenance of sound reproduction and modification equipment. Lab fee, $25.00.

TH 527 Computer Graphics for the Theatre. Three hours.
Prerequisite: Permission of the instructor.
A study of computer drawing programs and computer-assisted design and drafting programs used in producing technical drawings for theatre. AutoCAD will be the primary program studied.

TH 530 History of Costume for the Stage. Three hours.
A historical study of civil costume in relation to costuming for the stage.

TH 531 Costume Construction I. Three hours.
A studio course in patterning, cutting, and constructing costumes for the stage. Additional hours in related theatre activities are required. Lab fee, $25.00.

TH 533 Costume Design I. Three hours.
A studio course in costume design principles and presentation for stage costumes. Lab fee, $25.00.

TH 535 Professional Presentation for Theatre Designers. Three hours.
The study and development of professional presentations for theatre artists. This includes, but is not limited to, "hard" portfolios, digital portfolios, exhibits and personal presentations.

TH 539 Advanced Stage Makeup. Three hours.
A studio course using a variety of materials in the craft of mask making, hair ventilating, and prosthetics. Lab fee, $25.00.

TH 540 Stage Movement and Physical Acting. Three hours.
An advanced course in body awareness, alignment, breathing techniques, physicalization, and physical characterization.

TH 541 Advanced Scene Study. Three hours.
Advanced course in specific methodologies for character conception and projection.
TH 542 Careers in the Professional Theatre. Three hours.
A course focusing on audition and interview techniques, unions, résumé writing, and other skills required to apply for positions in the academic and professional theatre.

TH 543 Script Analysis and Interpretation. Three hours.
Theory and methodology of the textual analysis of playscripts for production.

TH 544 Period Acting Styles I. Three hours.
Study and practice of period acting styles.

TH 545 Period Acting Styles II. Three hours.
A continuation of TH 544, usually focusing on verse drama, especially Shakespeare.

TH 546 Advanced Voice and Speech for Performance. Three hours.
Intensive exercise and practice for acquiring acceptable use of voice and speech for performers.

TH 547 Stage Dialects. Three hours.
Prerequisite: TH 546.
Study of dialects in dramatic literature. Offered in alternate years.

TH 548 Rehearsal Process. Three hours.
Acting course in which students analyze and participate in the rehearsal process with both unpublished and published scripts.

TH 549 Advanced Stage Movement: Stage Combat. Three hours.
Students will learn to create safely the illusion of armed violence including work with the broad sword, small sword, rapier/dagger, and knife.

TH 551 History of the Theatre I. Three hours.
Beginnings to the Restoration.

TH 552 History of the Theatre II. Three hours.
Restoration to the present.

TH 553 European Theatre History. Three hours.
Special topics relating to Western theatre. Examples include the commedia dell'arte, European sources of the modern theatre, studies in Brecht, the avant-garde theatre, etc.

TH 554 Seminar in Contemporary Theatre. Three hours.
An examination of trends and developments in the theatre and drama since the Vietnam Era.

TH 555 Seminar in Theatre History and Literature: Classical. Three hours.
The theatre and drama of ancient Greece and Rome.

TH 556 Seminar in Theatre History and Literature: Elizabethan, Jacobean, and Carolinian. Three hours.
The English theatre and drama from 1558 to 1642.

TH 557 Seminar in Theatre History and Literature: American. Three hours.
Theatre and drama in the United States from its beginnings. Special focus on 19th-century developments and current post-modern adaptations of earlier plays and forms.

TH 558 Musical Theatre Performance I. Three hours.
Musical theatre scene study for the actor and director; the blending of acting, singing, and movement skills in the performance of songs and scenes.

TH 559 Musical Theatre Performance II. Three hours.
A special topics course for the actor and director, exploring such areas as musical theatre history, cabaret performance, the in-depth study of a single work, etc.

TH 560 Musical Theatre Repertoire Coaching. One to two hours.
Individual coaching in musical theatre repertoire and the preparation of material for auditions, principal roles, cabaret performances, and recordings.

TH 570 Theatre Management. Three hours.
Principles of management applied to the fields of theatre operation and production, with emphasis on marketing, development, budgeting, and organizational structure.

TH 572 Arts Administration. Three hours.
A study of fiscal, administrative, and legal principles as they apply to the performing arts, particularly theatrical productions.
TH 576 Theatre Management: Internship. Six hours.
Prerequisites: TH 570, TH 576, and completion of 20 hours in the M.F.A. program.
Professional experience with a major professional resident theatre company. Course may be repeated for a maximum of 12 hours.

TH 582 Playwriting I. Three hours.
An introduction to writing for the stage, from dramatic conception to finished script.

TH 583 Playwriting II. Three hours.
Advanced course in playwriting; concentration on various play forms, draft revision, and the script development process.

TH 584 Dramaturgy: Principles and Practices. Three hours.
Prerequisite: TH 582.
Explores dramaturgic theory, current practices, and historical foundations. Includes studies in adaptation, literary management, new play development, production, and audience-related dramaturgy.

TH 586 Dramatic Theory and Criticism. Three hours.
A survey of the major critical and performance theories, with special emphasis on Aristotelian and 20th-century approaches. Includes study and practice of reviewing dramatic productions.

TH 599 Thesis Research. Three hours.

TH 600 Advanced Practicum. One hour.
Execution of significant creative assignments in mainstage and/or A. B. Theatre productions throughout the term.

TH 602 Alabama Shakespeare Festival: Conservatory. Ten hours.
Professional, practical application of various theatre specialties in conjunction with the ASF in Montgomery, Alabama. This rubric is used for the Professional Actor Training Program, as well as the programs in stage management, theatre management and arts administration, scene design and production, and costume design and production.

TH 606 Stage Management I. Three hours.
The precepts and practice of stage management.

TH 607 Stage Management II. Three hours. Continuation of TH 606.

TH 615 Lighting Design I. Three hours.
A thorough study of the technical aspects of stage lighting, including electricity, optics, color, control theory, and light-plotting techniques.

TH 616 Lighting Design II. Three hours.
An advanced course covering the theory and practice of lighting design for the theatre, with an emphasis on script analysis and execution.

TH 618 Lighting Design III. Three hours.
A seminar involving the presentation of designs for various productions and preparation of problem-related demonstrations. May be repeated.

TH 622 Scene Design I. Three hours.
A studio course in scenic design for the theatre. Students will execute designs for several plays focusing on analysis, graphic representations, and portfolio building.

TH 623 Scene Design II. Three hours.
A continuation and intensification of the material in TH 622. Attention given to script analysis and complete design drawing, plus design for varied forms of stages.

TH 628 Problems in Theatre Arts: Design. Three hours.
An intensive study of the designer's responsibility involving design for varied forms of staging and design drafting.

TH 632 Costume Construction II. Three hours.
A studio course in advanced costume construction and costume crafts. Included topics are tailoring, corsetry, millinery, armor, wigs, masks, and jewelry, both period and modern. May be repeated. Lab fee, $25.00.

TH 634 Costume Design II. Three hours.
A continuation and intensification of the material in TH 533. Projects will address specific problems of design. May be repeated. Lab fee, $25.00.

TH 635 Costume Design III. Three hours.
Continuation of TH 634. Projects address larger and more specific problems in design.
TH 636 Costume Design IV. Three hours.
Continuation of TH 635. Projects are produced with the aid of computers.

TH 637 Period Costume Construction. Three hours.
Prerequisites: TH 531, TH 632.
A studio course in the patternmaking, fit, and construction of garments popular prior to the 20th century.

TH 638 Advanced Tailoring Techniques for Theatre. Three hours.
Prerequisite: Permission of the instructor.
A studio course in both hand and machine tailoring techniques needed to produce high quality custom tailored garments for the stage. This includes, but is not limited to hand padding, machine padding, decorative and couture techniques.

TH 639 Problems in Theatre Arts: Costuming. Three hours.
Study and studio work in a specialized area of costume design or technology.

TH 640 Problems in Theatre Arts: Stage Movement. Three hours.
Prerequisite: TH 540 or permission of the instructor.
Advanced theory and practice in stage movement topics such as anatomy, clowning, mask, stage combat, mime, etc. May be repeated for credit when the topic differs.

TH 642 Teaching Acting. Three hours.
A course to provide practical experience in teaching and coaching actors and developing methods and various approaches in teaching acting.

TH 643 Teaching Practicum. Three hours.
Prerequisites: TH 642 and permission of the instructor.
A course covering the practical aspects of teaching, including syllabi preparation, course planning, and classroom experience.

Advanced theory and practical application of performance techniques.

TH 662 History of Directing. Three hours.
Historical development of directing theory and methodology since Saxe-Meiningen.

TH 669 Problems in Theatre Arts: Directing. Three hours.
Advanced theory and practical application of directing techniques.

TH 673 Fund-raising and Financial Management. Three hours.
A study of fund-raising and financial management of nonprofit arts organizations with an emphasis on fund-raising audits, forecasting, and plans.

TH 674 Arts Advocacy, Policy, and Public Relations. Three hours.
A study of the history and manifestation of public arts policy in the United States, with emphasis placed on arts advocacy and public relations tactics and campaigns.

TH 675 Business and Legal Issues in the Arts. Three hours.
An examination of legal requirements of nonprofit arts organizations, specifically addressing tax exemption, reporting of contributions, development considerations, and contemporary legal issues affecting artists.

TH 676 Marketing the Arts. Three hours.
A study of contemporary marketing practices and how they are applied to the nonprofit arts organization. Special emphasis on marketing audits, forecasting, analysis, and campaigns.

TH 679 Problems in Theatre Arts: Management. Three hours.
Directed studies in specific management techniques and theoretical development of theatre projects.

TH 683 Problems in Theatre Arts: Playwriting. Three hours.
Specific topics such as the historical play, New Dramaturgy, and writing; workshops with visiting writers from the New Playwrights Program.

TH 684 Problems in Theatre Arts: Dramaturgy. Three hours.
TH 690 Independent Study. Three hours.
TH 698 Research not Related to Thesis. Three hours.
DEPARTMENT OF WOMEN'S STUDIES (WS)
Chairperson: Professor Ida M. Johnson, Office: 104 Manly Hall

The Department of Women's Studies offers a course of study leading to the master of arts degree in women's studies. The M.A. in women's studies is designed to support feminist research. The program emphasizes interdisciplinary and cross-cultural methodology. It provides a conceptual framework, analytical training, and bibliography and research tools for feminist studies. The program is designed for students from a variety of humanities and social science backgrounds with interest in gender studies and the status and roles of women in society, past and present.

Graduates of the M.A. program will have the skills to continue graduate work toward a Ph.D. in a humanities or social science discipline. Training in feminist studies and research methods will also enable graduates of the M.A. program to enhance their work in other careers, such as law, health care, criminology, social work, public welfare, and education.

Graduate work in women's studies is also available to students whose degree programs permit them to select courses in other programs and divisions. A master of arts concentration in women's studies may be taken through the Department of American Studies of the College of Arts and Sciences and through other cooperating departments and programs. Admission and programs of study are subject to the guidelines presented by the appropriate department or program.

Admission Requirements
The requirements for admission to the Graduate School are detailed in the "Academic Policies" section of this catalog. All applicants to the Department of Women's Studies must submit test scores from either the Graduate Record Examination or the Miller Analogies Test in support of the application. International students must submit results of the TOEFL as well. It is preferred that each applicant to the M.A. program have an undergraduate major or minor in women's studies, or the equivalent, and a major in a humanities or social science discipline. Each applicant should have a grade point average of at least 3.0 on a 4.0 scale and satisfy minimum requirements for admission to the Graduate School. Students with deficiencies in undergraduate preparation may be required to take additional credit hours. Financial assistance is available in the form of research/teaching assistantships and fellowships for qualified students. Applicants who wish to be considered for research or teaching assistantships or fellowships should file their applications by February 15.

General Degree Requirements
The M.A. in women's studies requires at least 24 semester hours of coursework, including 9 hours of core courses and 15 hours of elective courses, plus 6 hours of thesis research. A grade of "B" or better must be earned in all courses. Students must pass a written comprehensive examination and complete a thesis.

Core course requirement
- WS 530 Feminist Theory: Contemporary 3
- WS 532 Issues and Problems in Women's Studies Research 3
- WS 570 Gender, Race, and Class: Cross-Cultural Approaches 3

Additional requirements
- WS 599 Thesis Research 6
- Electives 15

Course Descriptions

WS 500:501 Independent Study in Women's Studies. One to six hours. Independent study on any subject pertaining to women. Projects are conducted under the supervision of a professor in the chosen field and must be approved in advance by the program director.

WS 502:503 Seminar in Teaching Women's Studies. Three hours. The student attends a section of WS 200 and works with one group. Meetings with other discussion leaders and supervisors are required in addition to written work.

WS 510 Special Topics. Three hours. Seminar format. The course offers an interdisciplinary approach to topics, which vary by semester. Active student engagement, such as conducting an interview, is required. Sample topic: women in the world.
WS 520 Women and Work. Three hours.
A study of women and various work relationships, through autobiographies of working women, novels, and essays.

WS 521 Women's Studies Practicum. Three hours.
The class meets for seven weeks to discuss theoretical and methodological issues concerning contemporary women, in preparation for an eight-week internship with either an organization or individual in the community.

WS 525 Feminist Theory: Major Texts. Three hours.
Seminar consists of close readings in feminist theory, with an emphasis on primary texts. Intellectual, cultural, and political theory.

WS 530 Feminist Theory: Contemporary. Three hours.
Considers major economic, social, psychological, and philosophical approaches to the study of women. Emphasis is on the formulation of theories and mastery of primary works in the field.

WS 532 Issues and Problems in Women’s Studies Research. Three hours.
This seminar focuses on interdisciplinary research and problems in methodology in women's studies.

WS 540/WS 541 Seminar in Women’s Studies. Three hours.
Topics vary each semester. Graduate students are required to conduct original research. The courses focus on such topics as language and gender, Southern women’s culture.

WS 550 Women in America. Three hours.
The cultural roles and experiences of American women; how they have been perceived and how they have perceived themselves within American life.

WS 560 Women and Public Policy. Three hours.
The systematic analysis of public policy formation at the federal, state, and local levels as it relates to the status of women. Strategies for change and the impact of the women’s movement are examined. Team and individual research projects.

WS 570 Gender, Race, and Class: Cross-Cultural Approaches. Three hours.
Prerequisite: WS 530, WS 532, or equivalent.
The major focus of this seminar is a cross-cultural approach to the study of gender, race, and class. Emphasis is placed on theories of and research on gender, race, and class.

WS 590 Women and Law. Three hours.
This seminar’s major focus is the impact of the law on the status and lives of women.

WS 592 Women in the Labor Force. Three hours.
The historic and demographic changes of women's labor force participation from colonial times to the present, and the economic and social impact of their changing work roles.

WS 594 Sex Discrimination. Three hours.
This seminar is designed to survey sex discrimination law and issues related to marriage and family life, employment, and educational opportunity.

WS 599 Thesis Research. Three to six hours.
The focus of this research may involve traditional or community-related research on the student’s approved thesis topic in women's studies.

WS 635 Seminar in Feminist Literary Criticism. Three hours.
Intensive study in the writings of one critic, or exploration of the theory and practice of feminist criticism involving works by several critics. This course is the same as EN 635 Seminar in Literary Criticism, when its subject is feminist literary criticism.
7.1 GRADUATE PROGRAMS

The Manderson Graduate School of Business is the graduate division of the Culverhouse College of Commerce and Business Administration. The mission of the College is to excel in the creation, dissemination, and application of business knowledge. The faculty of the Manderson Graduate School of Business offers six graduate degrees: the master of business administration (M.B.A.), master of accountancy (M.Acc.), master of tax accounting (M.T.A.), master of arts (M.A.), master of science (M.S.), and doctor of philosophy (Ph.D.).

The masters’ degrees may serve as terminal professional degrees; that is, they are designed primarily for people who plan professional careers in business, government, or nonprofit organizations. They may also function as preparatory programs for doctoral-level work.

The doctor of philosophy program prepares graduates for careers as college or university professors or as professional researchers. The Ph.D. requires an extensive, in-depth knowledge of the major field of study, a supporting minor field of study, and a specialized knowledge of statistical and quantitative techniques necessary for the advancement of knowledge in business and economics. A doctoral dissertation is required.

An applicant for graduate study must meet both the general requirements of the University of Alabama Graduate School and the standards set by the program to which the student is seeking admission. Successful applicants are admitted to a specific program of study as stated on the application. A student who wishes to pursue a new degree or change the major field of study is required to submit a new application.

Graduate students in business are expected to exhibit a high level of integrity and professionalism in all aspects of their programs, including relationships with other students and faculty. Students who are deemed by their program director or faculty not to exhibit these characteristics or who are deemed not to be making satisfactory progress toward completion of degree requirements may be terminated from their degree programs.

Programs offered through the Manderson Graduate School of Business are accredited by the AACSB International—The Association to Advance Collegiate Schools of Business.
7.2 FACILITIES

The Culverhouse College of Commerce and Business Administration complex consists of three buildings located in the central University campus. Mary Hewell Alston Hall, which was completed in 1991, houses faculty and administrative offices, seminar rooms, and four technologically innovative classrooms. The Angelo Bruno Business Library and Sloan Y. Bashinsky Sr. Computer Center was occupied in January 1994. This integrated business information center includes the expanded business library, three hands-on computer classrooms, and open computer labs for undergraduate and graduate students. Bidgood Hall, the traditional home of the College, reopened in January 1994 after extensive renovations. This building now houses 28 multimedia classrooms and two classrooms equipped to telecast and receive distance learning classes. The business complex is equipped with a wireless network allowing full Internet access from laptops and other equipped devices. Bidgood Hall also houses the offices of the Manderson Graduate School of Business, office space and group study facilities for graduate students, and the research centers affiliated with the College.

Angelo Bruno Business Library

The Angelo Bruno Business Library serves the business information needs of The University of Alabama and in particular the students and faculty of the Culverhouse College of Commerce and Business Administration (C&BA) and the Manderson Graduate School of Business. The library serves over 400,000 visitors each year, which represents repeated use by C&BA students, faculty, staff, and others from the University community and beyond. The 64,000 square-foot facility is conveniently located on Stadium Drive within the C&BA complex and also houses the College's Sloan Y. Bashinsky Sr. Computer Center. Combining business library services and business computer laboratory services in the same facility provides seamless access to information services for business students.

The Bruno Library's resources comprise a wide variety of online computer databases and over 190,000 volumes, including hundreds of business periodicals in electronic or print formats. The Library is a fully networked environment offering enhanced access to electronic information sources. A wireless network facilitates students' use of their laptop computers for accessing many business library databases from anywhere in the library and the C&BA complex. Library faculty and staff offer users specialized information assistance and services and individual and class instruction in library research and effective use of library databases. Special features include an electronic library instruction classroom and a variety of seating and study accommodations, including group study rooms for team assignments. The Bruno website provides convenient access to library resources, including specially licensed business databases, the library catalog, and the World Wide Web.

The Bruno Library's databases, books, journals, and special collections offer excellent support of the C&BA teaching and research fields in business, economics, finance, accounting, information systems, and statistics. Full-text access to business-related periodicals and newspapers is available through such databases as ABI/Inform, Business Source Premier, Factiva.com, and LexisNexis. Extensive worldwide data on publicly traded securities of all kinds is available from Bloomberg Financial Markets and News. Other resources provide coverage of important topics such as company financial data, industry profiles, international business, and tax regulations and cases. The Bruno Library's extensive collection of historical corporate annual reports has received national recognition.

The Angelo Bruno Business Library provides convenient access to information resources through technologically advanced as well as traditional means. User service is a major emphasis. Our goals are to tailor our collections and services to meet the needs of C&BA undergraduate and graduate students and faculty and to deliver the best possible mix of traditional and technologically advanced library services. For more information, visit the Library's website at http://brunolib.cba.ua.edu.

Technology Group

The Technology Group was established in 1984 to provide computing facilities for the College of Business Administration students and faculty. The C&BA network connects over 400 lab and desktop computers to the campus network and the Internet. Our network file servers provide access to dozens of powerful applications specific to the various disciplines of the College. There are 7 professional staff and 40 student employees available to provide technical assistance to our faculty, staff, and student users.

The Bashinsky Lab, completed in 1994, offers a 20-seat collaborative multimedia facility, two 40-workstation multimedia classrooms, a 60-workstation open lab and a 20-workstation graduate lab. The E-Commerce Lab in Bidgood Hall was completed in 2001 and provides 16 group workstations. A Special Projects Lab was also completed in 2001. This lab provides students working on class projects with 10 workstations, an LCD projector, and a conference table.

There are 27 multimedia classrooms within the College featuring high-resolution projectors, PA system, wireless
microphones, DVD, VHS, and access to all network resources. Training is available to faculty and staff on the usage of these classrooms.

The Technology Group provides support for faculty, staff, and student e-mail accounts, Web accounts, ftp, and personal network storage. They also support color laser network printing, college-wide wireless computing, and remote access for faculty and staff. Faculty can also obtain support for Web and presentation development, imaging, and video services.

Detailed information on the services offered by the Technology Group is available on the Web at http://cba.ua.edu.
7.3 RESEARCH AND SERVICE CENTERS

Center for Business and Economic Research
The Center for Business and Economic Research (CBER) in the Culverhouse College of Commerce and Business Administration serves as the central reservoir within the state of Alabama for business, economic, and demographic data. Since its creation in 1930, CBER has engaged in research programs to promote economic development within the state, while continuously expanding and refining its broad base of socioeconomic information and statistics from federal, state, local, and private sources.

CBER staff responds to queries for specific business, economic, or demographic information on Alabama, the region, and the nation. Additionally, the results of CBER-originated special projects and ongoing programs frequently are available to meet information needs.

The Alabama State Data Center, housed within CBER, provides an important link with the U.S. Bureau of the Census. The center maintains all census publications for the state of Alabama and many surrounding states. The center also provides extraction of items from census computer files that would not otherwise be available. Under the Federal-State Cooperative Programs for Local Population Estimation and Projection, CBER works with the Bureau of the Census to prepare Alabama’s intercensal population estimates and projections. Through this participation and the historic need for reliable population estimates and projections, CBER has engaged in population research for more than 30 years. This experience, coupled with the rising demand for detailed demographic data, has made CBER a leader in demographic work within the state.

As a part of the effort to track the level of economic activity in Alabama, CBER has developed an annual econometric model of the Alabama economy. The model was constructed and tested in the late 1970s and first exercised in 1980 to produce short- and long-term forecasts (by industry group) of the economy: gross state product, employment, personal income, and wages. The model is continuously revised and refined to reflect the changing structure of the state’s economy. Output from the model is published in the annual Alabama Economic Outlook.

CBER has an active publications program. Published since the 1930s, Alabama Business features analytical and tabular economic data in a concise format. CBER also publishes ASDC News and Research Notes. The center maintains a site on the World Wide Web (http://cbe.ua.edu) that contains news and announcements, as well as articles presenting and interpreting socioeconomic data. Users can read, print, or download current and historic data on Alabama’s population, employment, income, retail sales, and other economic indicators.

William R. Bennett Alabama International Trade Center
The William R. Bennett Alabama International Trade Center (AITC) is a nonprofit organization dedicated to the development of international business activity. The trade center actively seeks international opportunities to assist firms and public agencies in successfully concluding business agreements and international projects. Since its creation in 1979, under the auspices of the College of Commerce and Business Administration, AITC has served more than 4,500 firms in a variety of international marketing areas, including international market research, strategic planning, and consulting.

Internships are available at AITC for students with experience or academic training in international business.

Alabama Productivity Center
The Alabama Productivity Center is a vehicle for improving productivity in manufacturing and service firms throughout the state. One of its primary activities is to coordinate applied-research projects in which University faculty and students work jointly with a company’s management and labor to resolve specific marketing, production, or other operational problems. These projects have simultaneously a research/educational focus and a real-world mission. Academic benefits include thesis topics, scholarly articles, research assistantships, and permanent employment contacts. Other activities of the center include conducting basic research in productivity analysis and improvement technologies and administering a state productivity and quality award.

Alabama Real Estate Research and Education Center
The Alabama Real Estate Research and Education Center (AREREC) is a state of the art, comprehensive research and education facility designed to support Alabama’s real estate industry and the state’s overall economic development efforts.

The center serves as a clearinghouse for real estate expertise and a depository for local, state, and national data that
can be used to provide real estate decision makers with site selection, feasibility, and market area analyses.

The center also offers professional real estate education for practitioners and conducts academic research on real estate related topics, real estate markets, and housing policy issues that impact both real estate professionals and the consumer.

Enterprise Integration Lab
The EIL was founded by C&BA in 1996 to help business organizations seamlessly integrate business activities using information technology (IT). Confronted with global market demands and evolving IT, the EIL’s mission is to develop business best practices for sharing, managing, controlling, and coordinating business data, work practices, and networks. To accomplish this goal, the lab performs:

- basic research to expand the fundamental knowledge related to developing complex management information systems
- applied research to examine how to align theoretical concepts with constraints of the real world
- business outreach to aid business in applying accepted best practices
- education to transfer best practices using state of the art techniques and methods

Each of these areas nurtures the others. The results of the lab’s basic research is intended to provide the fundamental tenets that are used to solve real business issues for the first time (applied research). Once these tenets are used and their value substantiated, they become the basis for generalized outreach projects. Outreach projects serve a broad segment of the business community and provide experiential education to students through real-world consulting assignments.

Garner Center for Current Accounting Issues
The Garner Center was established within the Culverhouse School of Accountancy in 1988. The center has been successful in fostering and enhancing accounting research and education by providing a focal point for scholarly activities and a vehicle for faculty efforts to address accounting issues. In particular, the center hosts a speaker series to facilitate interaction among faculty, students, and professional accountants. The Garner Center also houses the International Academy of Accounting Historians.

Human Resources Institute
The Human Resources Institute, a unit of the Manderson Graduate School of Business, was organized in January 1972. Through the institute, the University seeks to contribute to the development, upgrading, and effective utilization of human resources in the state, region, and nation. The mechanisms utilized to accomplish these goals include both individual and contract research; training programs for labor, management, and governmental groups; technical assistance programs for private- and public-sector organizations; and the publication and national distribution of research monographs, papers, and proceedings. The institute houses the Alabama Chapter of the Industrial Relations Research Association.

Hess Institute for Retailing Development
The Hess Institute for Retailing Development is based in the Department of Management and Marketing. The initial contribution of funds for the establishment of the institute was made by Parisian Inc. of Birmingham.

The primary objective of the institute is to provide better quality teaching, research, and service to companies that make up the retailing industry. To accomplish this objective, faculty talent and expertise are used to address the needs of both the business and student markets. The Hess Institute sponsors three major annual events—Retailing Day, Retailing Week, and the Annual Marketing Symposium—that bring together students, academicians, and retailing practitioners so all will benefit through interaction and exchange of ideas.

Institute of Business Intelligence
The Institute of Business Intelligence (IBI) is an applied research institute partnered with the latest vendors and industry users of enterprise products covering the entire spectrum of the business intelligence process in general, and the knowledge discovery and data mining process in particular. The IBI contains an extensive suite of industry leading tools for database, data cleansing, data quality analysis, data preparation and aggregation, statistical analysis, data mining predictive modeling, and data visualization. In addition, the IBI has experienced academic and student staff extensively trained in the practical use of these technologies. The Institute serves as a key focal point for University/industry partnerships in applied research in data mining and knowledge discovery.
M.B.A. Association (M.B.A.A.)

The M.B.A. Association (M.B.A.A.) was established to assist in the professional development and program enrichment of M.B.A. students in the Manderson Graduate School of Business. Membership includes first and second-year M.B.A. students, and the association supports a learning environment of fellowship, social interaction, and program enhancement. The M.B.A.A. sponsors professional development programming, alumni and community events, corporate outreach, and philanthropic initiatives as well as coordinates social, cultural, athletic and other activities.

Small Business Development Center

The Small Business Development Center (SBDC), a service arm of the College since 1981, works to improve the economy and quality of life of West Alabama by developing new small businesses and helping existing businesses expand. Assisting 200 to 300 new or existing businesses each year, SBDC provides entrepreneurs with education and training opportunities that cover a wide range of business topics.

Specifically, SBDC is available to assist new or existing firms in devising business plans, assessing new markets, answering basic start-up questions, and addressing other needs. Counseling, workshop training, and information transfer form the core of SBDC activities.

SBDC's location within the College encourages maximum benefit from the College's extensive business resources. Faculty, graduate and undergraduate students, library holdings, and other College units (for example, the Center for Business and Economic Research) support SBDC's service mission.
7.4 MASTER’S DEGREE REQUIREMENTS

7.4.1 Admission Requirements
Master's degrees offered through the Manderson Graduate School of Business reflect a diverse range of missions and objectives. Enrollment in all master's programs is limited and competitive. Admissions are supervised by committees of the graduate faculty in each of the academic programs. The minimum admission requirements are (a) admission to the Graduate School of The University of Alabama, (b) an acceptable score on the Graduate Management Admissions Test (GMAT) or the Graduate Record Exam (GRE) and (c) completion of an appropriate undergraduate degree. A particular master's program may establish higher standards and/or specific prerequisites for admission. Further information about the requirements for admission to master's programs is included in the section of this catalog pertaining to each specific master's degree and major field or curriculum. Also, students are encouraged to visit the Manderson Graduate School web site (http://manderson.cba.ua.edu) for current information about degree programs.

7.4.2 Degree Requirements
Graduate students must meet all the general requirements of the University of Alabama Graduate School pertaining to the master's degree. Exceptions to the requirements for the master's degree may be made only with the approval of the faculty coordinator of the specific degree program or the director of graduate studies.

7.4.3 Second Degree Requirements
A student may concurrently pursue two master's degree programs when such a combination is consistent with the student's career and educational objectives. Six semester hours of eligible credits earned toward one master's degree may be applied to the requirements for a second master's degree. Accordingly, a student who is interested in combined programs is advised to meet with the faculty coordinator of each degree program before enrolling, since careful planning is required to achieve a successful combination of two degrees.
Objective. The objective of the Alabama M.B.A. program is to prepare high-achieving, high-potential students for successful business careers in a globally competitive environment. The Alabama M.B.A. is a full-time, selective admission program with a commitment to providing a high value-added experience, innovative relationship-intensive programs within a diverse and collaborative learning environment. The curriculum emphasizes fundamental business concepts, knowledge and skills through an interdisciplinary perspective. Case studies, projects, teamwork and technology contribute to a dynamic applied learning environment. A concentration selected by the student allows for specialization in an area of focus aligned with his or her desired career path.

Admission requirements. Admission to the M.B.A. program requires a bachelor's degree from a college or university of recognized academic standing. Applicants also must show evidence of career interest in management. Relevant employment experience may be considered in the admissions decision but is not a prerequisite. GMAT or GRE scores are required. Candidates who have already completed a post-baccalaureate degree or who have seven years or more of appropriate full-time post-baccalaureate work experience may request a GMAT/GRE waiver. Strong quantitative and verbal skills are required and students are encouraged to provide evidence of those skills, especially if they are not evident in other application materials. Students whose native language is not English are required to complete the Test of English as a Foreign Language (TOEFL). Following an initial review of completed application materials, qualified applicants are asked to arrange campus interviews. When campus interviews are not feasible, phone interviews may be substituted. Admission decisions are made by a faculty admissions committee after reviewing a candidate's application materials and based on an assessment of the candidate's suitability for the Manderson M.B.A. program. A strong academic record is a necessary but not a sufficient criterion for admission. Applications should be submitted by April 15 prior to the fall of the year of intended enrollment. Applications received prior to February 15 will receive priority for financial assistance. Students must begin the program in the fall semester and must be enrolled for four consecutive semesters plus the summer of the intervening year. During the summer, students are expected to be involved in meaningful internships to further enhance their professional experiences.

A student entering the M.B.A. program is expected to have a good working knowledge of word-processing and spreadsheet software.

Program and degree requirements. The M.B.A. is a full-time, two-year program in which students take core, concentration and electives courses. The number of hours required for the degree varies by concentration with a minimum of 54 hours. Students take a prescribed program of courses and cross-discipline work that blends the analytical tools of management and the functional areas of business into a general management perspective. Topics include accounting, economics, finance, management, marketing, operations, strategy, communications, information systems, and statistics. In addition, each student pursues elective courses leading to an area of concentration. All course selections for the area of concentration must be made with the advice of a designated graduate faculty member in the concentration. Teaching methods combine cases, lecture-discussion, and projects. The small size of the program allows faculty members to utilize a variety of techniques for enhancing learning.

Concentration requirements. The M.B.A. Program offers students a variety of established concentrations, as well as the opportunity to design an individualized study program. Admission to the M.B.A. program does not guarantee acceptance to a specific concentration. Admission to certain concentrations may require a student to participate in additional application procedures including faculty interviews, completion of specific degree requirements, minimum test scores/GPA, and/or specific work requirements. More information about admission to concentrations may be obtained by contacting the director of the M.B.A. Program.

J.D./M.B.A. Joint Degree Program in Law and Business. The University of Alabama School of Law and the Manderson Graduate School of Business offer students who are interested in combined business and legal career opportunities a law and M.B.A. curriculum culminating in the awarding of the juris doctor (J.D.) and M.B.A. degrees within four years. Admission is required into both programs. Further information about the Joint J.D./M.B.A. Program may be obtained by contacting the director of the M.B.A. Program and/or the Law School admissions office as well as by visiting the respective websites.

Executive M.B.A. (EMBA) Weekend Program. The Executive M.B.A. program is designed to provide working professionals with the tools, skills, and knowledge essential for expanding and/or pursuing new career options in business. Weekend classes allow students to pursue the M.B.A. degree without sacrificing current employment. Classes meet on Fridays and Saturdays usually twice a month, including an international trip/experience in the fourth term where students will visit with the senior management of global companies of a particular country. Technology is used to enhance classroom learning and to facilitate student and faculty interaction when students are away from campus. On occasion, classes may be held in nearby cities.
Admission is selective. Five years of work experience at a significant level of responsibility are recommended for applicants. Applicants should have access to a computer when away from campus and a working knowledge of electronic communication and data management. A satisfactory score on the Graduate Management Admissions Test (GMAT) or GRE, and a bachelor’s degree from a regionally accredited college or university of fully recognized standing (or equivalent) are required for admission. Candidates who have already completed a post-baccalaureate degree or who have seven years or more of appropriate full-time post-baccalaureate work experience may request a GMAT/GRE waiver. Further information may be obtained from the director of Manderson Graduate School of Business.
7.4.5 MASTER OF ACCOUNTANCY (M.Acc.) DEGREE

Admission requirements. Before final admission to the program, students should have completed the following accounting courses or their equivalents:

- AC 310 Financial Reporting and Analysis of Business Activities I
- AC 311 Financial Reporting and Analysis of Business Activities II
- AC 361 Cost Analysis for Planning and Control
- AC 371 Introduction to Taxation
- AC 389 Accounting Information Systems Development, Operation and Control
- AC 432 Introduction to Corporate Governance, Risk Assessment, and Assurance Services

Degree requirements. The master of accountancy degree program is a fifth-year professional program. The objective of the program is to provide students with greater breadth and depth of understanding in accounting and business than is possible in an undergraduate program. The program prepares students for careers as professional accountants in financial institutions, government, industry, nonprofit organizations, and public practice. Graduates are prepared to research various databases related to troublesome accounting problems, and to exercise judgment in making accounting-related decisions by drawing on their integrated, comprehensive body of accounting and business knowledge. Students are required to complete a minimum of 30 hours of approved coursework beyond the undergraduate degree. A minimum of 24 hours must be taken in courses open only to graduate students.

The following courses are required for the M.Acc. degree. A minimum of 21 hours of accounting courses (required and elective) must be completed. Electives in areas other than accounting are chosen in consultation with the student's advisor and vary based on students' backgrounds and interests.

Course requirements for M.Acc. program. Students must take a minimum of 30 hours of graduate courses, including a minimum of 21 hours of accounting courses. Electives must be approved by the coordinator of the M.Acc. program.

Required Accounting courses* (21 semester hours)
- AC 512 Advanced Financial Reporting and Analysis
- AC 523 Business Valuation and Performance Measurement
- AC 532 Advanced Governance, Risk Assessment, and Assurance
- AC 534 Fraud Risk Management
- AC 554 Professional Certification
- AC 561 Accounting for Business Management
- AC 589 Systems Analysis and Control

*Students cannot receive graduate credit for a course if they have taken an equivalent course at the undergraduate level. Another accounting course should be substituted with the approval of the coordinator of the M.Acc. program. Students who have not taken AC 456 and AC 471 or their equivalents must take AC 456 or AC 556 and AC 471 or AC 571.

M.Acc. students may take one of the following tax courses:
- AC 571 Taxation of Business Organizations
- AC 593 Research and Communication in Taxation

Other required course (3 semester hours)
- LGS 504 Legal Issues in Accounting

Electives (up to 6 semester hours)
Master of Tax Accounting (M.T.A.) degree. The master of tax accounting (M.T.A.) degree program is a multidimensional approach to the education of the modern tax specialist. The program develops an understanding of the taxation system and the interrelationships that exist between that system and accounting theory; a basic knowledge of the legal system as it relates to taxation; and the basic tools necessary for research and communication in taxation. Graduates are prepared to research various tax, legal, and accounting databases related to troublesome tax problems and to exercise judgment in making tax-related decisions by drawing on their integrated, comprehensive knowledge of accounting and taxation.

Admission requirements. Before final admission to the program, students should have completed the following courses or their equivalents:

- AC 310 Financial Reporting and Analysis of Business Activities I
- AC 311 Financial Reporting and Analysis of Business Activities II
- AC 361 Cost Analysis for Planning and Controlling
- AC 371 Introduction to Taxation
- AC 389 Accounting Information Systems Development, Operation and Control
- AC 432 Introduction to Corporate Governance, Risk Assessment, and Assurance Services
- AC 471 Taxation of Business Transactions and Organizations

Degree requirements. Students are required to complete a minimum of 30 hours of approved coursework beyond the undergraduate degree. At least 18 of these hours must be in coursework in the major field. A minimum of 24 hours must be taken in courses open only to graduate students, and 15 of these must be in courses in accounting and taxation at The University of Alabama. Students who will sit for the CPA exam in Alabama are required to take AC 456 Governmental and Nonprofit Accounting as part of their undergraduate or graduate program. To receive the master of tax accounting degree, the student must complete the required core courses with an average grade of "B" or better, and must maintain an average grade of "B" or better in all required accounting courses. The following core courses are required for the M.T.A. degree:

**Required courses** (12 hours)
- AC 575 Taxation of Corporations and Shareholders 3
- AC 576 Advanced Corporate Taxation 3
- AC 578 Partnership Taxation 3
- AC 593 Research and Communication in Taxation 3

**Electives** (18 hours)
- AC 512 Advanced Financial Reporting and Analysis or AC 523 Business Valuation and Performance Measurement 3
- AC 532 Advanced Governance, Risk Assessment, and Assurance or AC 534 Fraud Risk Management 3
- AC 556 Governmental and Nonprofit Accounting 3
- AC 572/Law 647 Estate and Gift Taxation 1-3
- AC 573/LAW 753 Advanced Income Tax 3
- AC 577/Law 641 Tax Practice and Procedure 1-3
- AC 581/Law 761 International Taxation 1-3
- AC 582/Law 650 State and Local Taxation 1-3
- AC 583/Law 732 Employee Benefits 1-3
- AC 584/Law 796 Tax-Exempt Organizations 1-3
- LGS 504 Legal Issues in Accounting 3
- Elective (approved by advisor) 3

Total semester hours: 30

Note: Two undergraduate tax courses (which may be a part of the undergraduate degree requirements) are required as prerequisites to each of the graduate tax courses. LAW & C&BA courses have additional fees.
7.4.6 Master of Arts (M.A.) and Master of Science (M.S.) Degree Programs

The M.A. and M.S. degrees are specialized master’s degrees designed to prepare students for professional positions in business, management, and related fields, and to serve as preparation for study toward a doctoral degree. The M.A. degree is offered in economics and management and the M.S. degree is offered in finance, marketing, operations management and applied statistics. Program missions and prerequisites vary by field and are described in the following sections pertaining to each curriculum.

Admission requirements. Admission requirements are outlined and under each curriculum in the following sections.

M.A. and M.S. degree requirements. The master of arts and the master of science degree with a major field of specialization is granted upon the completion of at least 30 semester hours of graduate work in accordance with the requirements of the University of Alabama Graduate School under Plan II.

A maximum of 6 hours of 400-level coursework may be accepted for an M.A. or M.S. degree program. The remaining courses must be selected from those numbered 500 or above.
7.4.7 CURRICULUM IN FINANCE

The master's in finance program offers a specialized curriculum with focused training in finance. The course of study is designed to provide insight into the following topics: (1) the important role of financial intermediaries; (2) the management of financial intermediaries and an understanding of the markets in which they participate; (3) the valuation of financial assets such as stocks, bonds, derivatives, and other specialized assets, and how they are managed in a portfolio; (4) the determination and behavior of interest rates and rates of return on assets; and (5) the incentives and determinants of corporate behavior.

The master's in finance is designed to offer advanced applied and theoretical expertise in investments, banking, corporate finance, and/or financial engineering. The financial risk strategy track within this master's program addresses modern techniques for managing financial risk. Students selecting this track will have the opportunity to be trained in state-of-the-art techniques in valuing and using derivative securities, with a particular emphasis on mortgage-backed securities, structured notes, and computer-based solution design within an object-oriented framework.

Successful completion of the master's in finance provides students with knowledge useful for pursuing careers in investments, financial management, banking, and other financial services. With the appropriate choice of courses, students can apply to transfer many of their master's courses into the doctoral program in finance.

Admission Requirements
Students accepted into the program are not required to have obtained an undergraduate degree in business. Before commencing the program, however, the student is advised to have completed the equivalent of undergraduate courses in accounting, statistics, calculus, economics, and finance. Any deficiencies should be made up by taking courses during the summer before entering the master's program.

Degree Requirements
The following courses are required for the master's degree in finance:

- **Required courses**
  - EC 508 Microeconomic Theory or EC 509 Macroeconomic Theory and Policy
  - EC 610 Seminar in Microeconomic Theory or EC 611 Seminar in Macroeconomic Theory
  - EC 570 Mathematical Economics or EC 571 Econometrics
  - EC 513 Economic Forecasting and Analysis
  - FI 510 Financial Management
  - FI 512 Money and Capital Markets
  - FI 515 Quantitative Investment Analysis
  - FI 522 Bank Administration

  Total semester hours of **common core** courses **21**

  Electives chosen with approval of advisor **9**

  Total semester hours for the **master's degree** **30**
7.4.8 CURRICULUM IN ECONOMICS

The M.A. program in economics is designed to prepare students for careers as professional economists in business, government agencies, and colleges and universities.

Admission Requirements
Entering graduate students are expected to have completed undergraduate coursework in economics, statistics, and mathematics. Students must have completed the following undergraduate courses or their equivalents:

- EC 308 Intermediate Microeconomics
- EC 309 Intermediate Macroeconomics
- ST 260 Statistical Methods I
- MATH 121 Calculus and Applications or MATH 125 Calculus I

Any deficiencies should be made up by taking courses during the summer before entering the master's program.

Degree Requirements

There are two tracks available for the M.A. degree in economics. Track I provides preparation for the Ph.D. in economics. Track II is designed for students who wish to pursue careers applying economic analysis.

Track I. The following are the requirements for the M.A. degree in economics to prepare for the Ph.D.:

**Required courses**

- EC 570 Mathematical Economics 3
- EC 610 Seminar in Microeconomic Theory 3
- EC 611 Seminar in Macroeconomic Theory 3
- EC 616 Seminar in Monetary Economics 3
- EC 660 Game Theory 3
- EC 670 Econometrics 3
- EC 671 Seminar in Econometrics 3
- ST 554 Mathematical Statistics I 3

Total semester hours of required courses 24

**Electives**

Any two graduate-level economics courses at the 500 level. These can be selected from the following areas: applied microeconomic theory, monetary economics, or public economics. 6

Minimum total semester hours for Track I 30

Track II. The following are the requirements for the M.A. degree in applied economics:

**Required courses**

- EC 513 Economic Forecasting and Analysis 3
- EC 571 Econometrics 3
- EC 508 Microeconomic Theory 3
- EC 509 Macroeconomic Theory and Policy 3
- EC 570 Introduction to Mathematical Economics 3

http://graduate.ua.edu/catalog/18000.html
ST 521 Statistical Data Management 3
ST 522 Advanced Statistical Data Management 3
ST 531 Data Mining I 3
ST 532 Advanced Data Mining II 3

Total semester hours of required courses 27

Elective courses
One additional course at the graduate level is needed to complete the total hours required for the M.A. degree, Track II. Students may select one course from the list below. Students who wish to avoid taking a comprehensive exam may choose EC 597. The purpose of this class is to provide students an opportunity to complete projects using economics analysis. This would provide a capstone experience for students in the program.

EC 516 Monetary Theory and Policy
EC 531 International Finance
EC 550 Survey of Development of Economic Thought
EC 581 Public Expenditure and Policy Analysis
EC 597 Special Topics
FI 510 Financial Management
FI 512 Money and Capital Markets
FI 514 Investments

Total semester hours of elective courses 3

Other courses may be substituted as electives with permission of the graduate program committee. For Track II students, the EC 597 class will generally be offered in the summer to allow students to complete their program within one calendar year.

Minimum total semester hours for Track II 30

*Students who have taken EC 470 or its equivalent (with a grade of "B" or above) will be allowed to waive this requirement. All students who have not taken this course are very strongly urged to take it in the summer prior to entry into the program in the fall semester.
7.4.9 CURRICULUM IN MANAGEMENT

The M.A. in management is a 30-credit-hour degree program offering two concentrations, General Management and Project Management.

**General Management.** The General Management concentration is designed as a part-time curriculum for lower- to mid-level managers. Its primary objective is to provide graduates with the increasingly specialized skills and knowledge required for effectively managing the human issues of organizations. The practicing managers who graduate from the program are trained to solve the growing array of problems that are faced by organizations as they strive to succeed in an increasingly competitive world. This program is structured to prepare students to be more effective managers of their human resources as they work in their current positions as well as into the future.

**Project Management.** The Project Management concentration is designed for either students possessing an undergraduate degree in business who may be interested in technical business and project management careers, or students possessing or completing degrees in technical, non-business disciplines, such as engineering, and who are interested in business and project management. The program provides intensive coursework in management, marketing, operations management, and engineering management. The students who graduate from this program are trained to work in organizations that routinely engage in projects and require professional managers of these processes. Students are trained to be effective business managers for technically-oriented firms.

Each student who completes the master's program is expected to have a basic knowledge of the concepts, processes, and practices associated with the management of organizations. For someone with a non-business undergraduate degree and no work experience, this would include microeconomics, principles of accounting, production, management, and finance—or having a minor in business.

**Global Business Management.** The online Master of Arts in Management, with a concentration in Global Business Management, offers students the opportunity to develop the skills necessary to be successful in a global business environment. Students in this program will learn the complexities of managing businesses in a global arena, including the challenge of managing in a culturally diverse environment. Graduates of this program will understand the degree to which globalization has changed the way management is practiced in today’s society. In addition, graduates will have a broad knowledge of subjects that are key to effective global management, including but not limited to: managerial economics, managerial finance, accounting for global management, economics for global management, international marketing, global leadership and ethics, managerial statistics, and global business.

This flexible, online program is designed for supervisors, administrators, coordinators, managers, military personnel, and others who seek to advance their awareness of the impact of global issues in the workplace or who have developed the need for more advanced management skills in their current positions. The program is designed for students who do not have substantial prior education in business. All courses are offered online. The program consists of 30 hours of coursework, which students can complete in 18-24 months. A thesis is not required.

Details about program requirements are available on the College website: [http://manderson.cba.ua.edu/](http://manderson.cba.ua.edu/)

**Degree Requirements**

Students admitted to the M.A. program in management complete a minimum of 30 hours of approved coursework beyond the requirements for an undergraduate degree. For students in the General Management concentration, the normal course load is 6 hours per semester, while students in the Project Management concentration are typically full time students.
In addition to the course requirements, the candidate must successfully complete a final oral examination. This examination covers issues raised in a research paper completed by the student under the guidance of a faculty member. All students who complete a master’s program are expected to have a basic understanding of the concepts, processes, and institutions associated with the management of business organizations.

CONCENTRATION IN GENERAL MANAGEMENT

**Required courses**

- MGT 510 Research Methods in Management 3
- MGT 511 Employee Recruitment, Selection, and Placement 3
- MGT 520 Change Management 3
- MGT 527 Strategic Human Resources Management 3
- MGT 532 Employee Relations 3
- MGT 542 Management Communication 3
- MGT 597 Contemporary Issues in Performance Management 3
- BER 540 Statistical Methods 3
- MGT 598 Research in Management 3

Total semester hours of **required courses** 27

**Elective**

*Any graduate level course with consent of advisor* 3

Total semester hours 30

CONCENTRATION IN PROJECT MANAGEMENT

**Required courses**

- MKT 519 Marketing Management 3
- MKT 581 Project Management in Marketing 3
- MGT 520 Change Management 3
- MGT 597 Contemporary Issues in Performance Management 3
- OM 525 Effective Quality Management 3
- CE 567 Construction Administration and Finance 3
- MGT 582 New Venture Development 3

Total semester hours of **required courses** 21

**Elective** (Any three of the following):

- MKT 511 Supply Chain Management 3
- MKT 522 Strategic Logistics Management 3
- MGT 542 Strategic Communication 3
- MGT 527 Strategic Human Resource Management 3
- OM 506 Spreadsheet Modeling 3
- OM 516 Production Management 3
- CE 568 Construction Management 3
- IE 517 Project Management 3
- IE 518 Engineering Management 3

*Any graduate level course with consent of advisor*

Total semester hours 30
7.4.10 CURRICULUM IN APPLIED STATISTICS

The program described below leads to the M.S. degree in applied statistics. It provides a broad yet thorough training in the methodology and theory of statistics, as well as an appreciation for the application of statistics in a variety of disciplines. For more detailed information and recommendations, students are encouraged to consult the Applied Statistics Program Graduate Handbook, available at http://cba.ua.edu.

Admission Requirements

The requirements for admission to the Graduate School are detailed in an earlier section of this catalog. The candidate for a graduate degree in applied statistics is normally expected to have completed courses in mathematics equivalent to three semesters of undergraduate calculus, and to have a working knowledge of computer programming and linear or matrix algebra. The Graduate Record Examination (GRE) or the Graduate Management Aptitude Test (GMAT) is required of all applicants.

Degree Requirements

The M.S. degree in applied statistics requires 30 hours, 12 of which are electives. There are five different tracks within this degree to allow different specializations. These tracks are traditional, quality and six sigma, data mining, actuarial science, and biostatistics. All of these tracks have 6 required courses and 4 elective courses with 6 common courses for all tracks. The requirements of these tracks are summarized below. The electives may be earned in additional coursework in statistics or related areas, with the approval of a faculty advisor. The program of related courses may vary from student to student, and depends on the student's interests and academic background. When most of the coursework is completed, the student must pass a written comprehensive examination.

The following are required courses common to all tracks:

Required courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 552</td>
<td>Applied Regression Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ST 553</td>
<td>Applied Multivariate Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ST 554</td>
<td>Mathematical Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>ST 555</td>
<td>Mathematical Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>ST 560</td>
<td>Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>ST 561</td>
<td>Applied Design of Experiments</td>
<td>3</td>
</tr>
</tbody>
</table>

Total semester hours of in-common required courses 18

Track I: Traditional. The following are the requirements for the traditional specialization in applied statistics:

Required courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 535</td>
<td>Nonparametric Statistics</td>
<td>3</td>
</tr>
<tr>
<td>ST 575</td>
<td>Statistical Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

Total semester hours of required courses for Track I 12

Track II: Quality and Six Sigma. The following are the requirements for the quality and six sigma specialization:

Required courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 575</td>
<td>Statistical Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>IE 521</td>
<td>Reliability, Maintainability, and Total Productive Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>IE 622</td>
<td>Quality Engineering</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total semester hours of required courses for Track II 12

Track III: Data Mining. The following are the requirements for the data mining specialization:

Required courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 521</td>
<td>Statistical Data Management</td>
<td>3</td>
</tr>
<tr>
<td>ST 522</td>
<td>Advanced Data Management</td>
<td>3</td>
</tr>
<tr>
<td>ST 531</td>
<td>Knowledge Discovery and Data Mining</td>
<td>3</td>
</tr>
</tbody>
</table>
**Track IV: Actuarial Science.** The following are the requirements for the actuarial science specialization:

**Required courses**
- ST 521 Statistical Data Management 3
- ST 535 Nonparametric Statistics 3
- FI 443 Property and Liability Insurance 3
- FI 444 Life and Health Insurance 3

Total semester hours of **required** courses for **Track IV** 12

**Track V: Biostatistics.** The following are the requirements for the biostatistics specialization:

**Required courses**
- ST 521 Statistical Data Management 3
- ST 522 Advanced Data Management 3
- CHS 520 Basic Epidemiology 3
- CHS 625 Advanced Epidemiology 3

Total semester hours of **required** courses for **Track V** 12
7.4.11 CURRICULUM IN OPERATIONS MANAGEMENT

Operations management focuses on the analysis, design, and management of the operations that produce and deliver the goods and services. It applies structured, quantitative techniques to analyze and design business operations and to support effective business decision making. Operations management helps evaluate and select actions based on information, process analysis, and quantitative modeling. There are tremendous opportunities for the effective application of these tools, techniques, and methods in a wide range of business operations including service operations, manufacturing, distribution, transportation, logistics, supply chain management, revenue management, quality management, finance, human resources, information systems, marketing, and strategic planning. Operations management can be effectively applied to virtually every component of an organization. The OM master's degree program features two tracks—operations management and enterprise integration.

Degree Requirements

Track I: Operations Management. Entering students should have strong quantitative skills and good written and oral communication skills. The program consists of 30 hours of coursework which students can complete in 18 to 24 months starting in the fall semester. All students are expected to complete the program within 24 months. No thesis is required. The track in operations management (OM) is designed to prepare students for the practice of operations management. The program is structured to provide instruction in materials management, scheduling and control, supply chain management, and quality control as well as topics in applied quantitative methods such as optimization, statistics, and simulation. The elective courses allow students to obtain additional instruction in other subjects such as project management, supply chain strategy, and quality management.

Required courses
Prerequisite:
At least one semester of calculus equivalent to MATH 121 or higher.
OM 500 Linear and Network Optimization 3
OM 517 Supply Chain Modeling and Analysis 3
OM 522 Production Scheduling Problems 3
OM 523 Inventory Management 3
OM 524 Manufacturing Scheduling and Control Systems 3
OM 540 Systems Simulation 3
OM 592 Practicum in Operations Management 3
ST 560 Statistical Methods I 3
ST 575 Statistical Quality Control 3
Electives (approved by the program coordinator) 3

Total semester hours 30

More information about this track is available at http://cba.ua.edu/omms/

Track II: Enterprise Integration. The enterprise integration systems (EI) track is designed as the counterpart to the M.B.A.–MIS program. Collectively these dual degrees provide students a comprehensive education covering the breadth of business through the M.B.A. program and the depth of knowledge in information systems project management and delivery through the EI track. The EI track combines classroom and experiential learning techniques to prepare its graduates for careers involving the management of large-scale complex information systems projects. The program reinforces leading IS project and process management concepts through experiential learning.
Entering students are expected to possess strong organizational and communication skills and strong interest in using business processes, project management and information technology to deliver organizational value. Students will learn and apply leading practices to analyze, design, construct, and effectively deploy cross-functional systems, and integrate business data and process improvements into existing business enterprises.

**Required courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIS 516</td>
<td>Practicum*</td>
<td>3</td>
</tr>
<tr>
<td>MIS 525</td>
<td>Information Systems Project Management</td>
<td>3</td>
</tr>
<tr>
<td>MIS 527</td>
<td>Emerging Information Technologies Seminar*</td>
<td>3</td>
</tr>
<tr>
<td>MIS 535</td>
<td>Information Systems Consulting</td>
<td>3</td>
</tr>
<tr>
<td>MIS 560</td>
<td>Enterprise Integration Methods</td>
<td>3</td>
</tr>
<tr>
<td>MIS 562</td>
<td>Enterprise Integration Development*</td>
<td>3</td>
</tr>
<tr>
<td>MIS 598</td>
<td>Research in Management Information Systems</td>
<td>6</td>
</tr>
<tr>
<td>OM 516</td>
<td>Operations Management</td>
<td>3</td>
</tr>
<tr>
<td>ST 509</td>
<td>Statistics for Business Applications*</td>
<td>3</td>
</tr>
</tbody>
</table>

Total semester hours **30**

*Restricted Elective—EIS track advisor’s prior approval is required.

More information is available at [http://cba.ua.edu/mis/](http://cba.ua.edu/mis/)
Marketing is the field of business concerned with (a) the identification and analysis of consumer and business market needs and (b) the development and management of marketing programs to satisfy those needs. Marketers are responsible for product development and management, promotional programs, distribution systems, and appropriate pricing for targeted market opportunities. The Master of Science in Marketing (MSM) degree program is based on an intensive 30-hour curriculum designed to provide students with advanced analytical skills and hands-on experience to prepare them for fast-track jobs in such fields as:

- product or brand management
- marketing research
- supply chain management
- professional selling
- services marketing
- purchasing
- retail management

**Admission Requirements**

Students accepted into the Master of Science in Marketing degree program must have strong academic and professional potential as evidenced by Grade Point Average (GPA), scores on the Graduate Management Aptitude Test (GMAT) or Graduate Record Examination (GRE), information in letters of recommendation, and professional or analytical experience.

GPA of 3.00 and GMAT score of 550 (GRE of 1100) are minimum requirements for admission to the program. However, meeting the minimum requirements is no guarantee of acceptance. Students completing the MSM program will

- earn a graduate business degree (Master of Science)
- enhance their employment opportunities and upward mobility through a program of advanced marketing coursework and hands-on project experience

The program is also appropriate for persons who wish to earn a master's degree en route to a Ph.D. in marketing. Typical applicants will be

- seniors in all business majors
- seniors with non-business majors
- persons with non-business graduate degrees seeking employment in marketing
- individuals currently working in the private or public sector

Prior study of business is not required. Students with liberal arts, engineering, science, communications, as well as business undergraduate backgrounds are encouraged to consider this program.

**Degree Requirements**

Coursework in the Master of Science degree program in marketing is designed to provide students with

- a solid understanding of contemporary marketing issues
experience in advanced analytical and marketing research techniques necessary for sound marketing decisions.

The MSM program requires 30 hours of coursework, with the expectation that the degree will be completed in two semesters. Entrance is limited to the fall semester.

The first semester (fall) coursework involves an in-depth immersion into marketing issues and decision-making, marketing strategy, marketing research tools, statistics, and an overview of project management.

The second semester (spring) coursework involves the use of many of the research and project management tools to complete a specific team-based comprehensive marketing research/strategy project for a company or other organization. Clients for the team-based marketing projects and internships have included Fortune 500 companies, national and regional firms, local businesses, public sector organizations, and start-ups. Other courses are graduate electives, selected by the student from a set of options based on his or her areas of interest.

Six hours of internship allow students in the MSM program to gain valuable marketing project or employment experience.

**Fall semester course schedule**
- MKT 518 Survey of Marketing 3
- ST 550 Introduction to Statistics 3
- MKT 530 Advanced Marketing Analysis 3
- MKT 592 Marketing Internship 3
- Specialization Elective 3

**Spring semester course schedule**
- MKT 581 Project Management 3
- MKT 592 Marketing Internship 3
- Specialization Elective 3
- Two classes from the following:
  - MKT 531 Services Marketing 3
  - MKT 510 New Product Development 3
  - MKT 522 Logistics Strategy 3

__Total semester hours 30__

**Faculty**
The marketing faculty at The University of Alabama is nationally recognized for high quality teaching, research, and service to the state and nation. Faculty members work closely with students as teachers, project and team mentors, and as resources for placement and career planning after as well as before graduation.

**Placement**
Placement of students is a priority. We have recent graduates in nearly every conceivable marketing position around the world. Graduates have careers in brand management for consumer product firms, in banking, in industrial and pharmaceutical marketing and sales, in automobile manufacturing, in marketing research, in supply chain management, in sports and entertainment marketing, in entrepreneurship, in the public sector, in marketing of non-profit organizations, and in academics.
DOCTORAL PROGRAMS IN BUSINESS

The doctor of philosophy degree is awarded for scholarly attainment and represents the highest degree in business administration that the University may bestow upon a student. Doctoral programs in business are designed principally for those who wish to prepare for careers in university teaching or for research positions in business and government.

The faculty of the Manderson Graduate School of Business offer the Ph.D. degree in seven business fields: accounting, applied statistics, economics, finance, management, operations management, and marketing. The doctoral program in operations management offers an interdisciplinary concentration in management information systems.

Dual degree programs in Law and Economics. The University of Alabama School of Law and the Department of Economics, Finance, and Legal Studies offer the opportunity to obtain the dual juris doctor (J.D.)/doctor in philosophy (Ph.D.) degree in the field of economics. In order to be accepted in the J.D./Ph.D. program, a student must apply for admission to and be accepted into, the Ph.D. program in economics and the J.D. Please visit http://cba.ua.edu for additional information about these doctoral programs and access to specific program policies and guidelines.

Doctoral programs in business are built upon the premise that a student should possess an extensive, in-depth knowledge of one major field of study and one supporting or minor field of study, as well as knowledge of statistical and quantitative methods of analysis necessary to conduct research and contribute to the advancement of knowledge in business. Special emphasis is placed on the fact that the degree is not granted as a result of the student’s having taken a given number of courses or having earned a given number of credit hours. These factors, while obviously important, will vary for different students: consequently, there is no total number of courses or hours that satisfies degree requirements uniformly for all students. Instead, the requirements should be thought of primarily from the standpoint of the student’s ability to satisfy the graduate faculty that he or she has a thorough grasp of the fields selected. In all cases, however, students must meet the minimum requirements stipulated by the Graduate School and by the Manderson Graduate School of Business.

In addition to the course requirements, each student must show evidence of research competence by writing a dissertation and must satisfy the language/research tool requirement of his or her major field. The dissertation, as the culmination of each student’s scholarly efforts, should be a significant contribution to the field of knowledge in business.

Admission to doctoral programs in business is open to qualified individuals who hold undergraduate and/or graduate degrees from accredited colleges and universities. Individuals seeking admission to a doctoral program should follow the application procedure established by the Graduate School of The University of Alabama. Applications for admission are carefully evaluated by selected members of the graduate faculty of the specific field to which the student is seeking admission.

For registration for the first semester or summer session in residence, each student will be advised by the graduate coordinator or department head of the major field. A program committee is established for each student early in the first semester of study leading to the Ph.D. degree. The program committee guides the student in course selection and counsels the student regarding other aspects of the program. The committee may terminate a student from the program if the work attempted is not satisfactory. The program committee ceases to exist when the student passes the preliminary oral examination.

Scholastic requirements. Each student’s program will be reviewed by the program committee at the end of each semester. If a student’s cumulative grade average falls below "B," or if the student earns a "D" or "F" in a graduate course, the student may be dismissed from the program.

Residency requirements. For those students who are well prepared, the minimum period (following the bachelor’s degree) for earning the Ph.D. degree is three full academic years. The program is full-time and a student is expected to maintain continuous residence at The University of Alabama.

Major field requirements. The student must choose a major field from one of the following programs: accountancy, applied statistics, economics, finance, management, marketing, or operations management. The major field may include cognate courses offered by divisions of the University outside or within the Manderson Graduate School of Business. The student must take at least seven graduate-level courses in the major field to prepare for the...
Minor field requirements. One minor field of study must be selected from within the Manderson Graduate School of Business or in a discipline outside the School that is closely related to the student's major field of study. To satisfy the minor-field requirement, the student must meet the standards set by the program area granting the minor. In general, this means that the student must demonstrate a thorough grasp of the philosophy, methodology, and literature dealing with the minor field. The student must take a minimum of four graduate courses to satisfy the minor-field requirement. Some minor fields require a written comprehensive examination. For applied statistics, the minor-field requirement is replaced by the interdisciplinary field courses.

Quantitative methods requirements. Each student is required to complete two courses in statistical methods equivalent to the content of ST 550 and ST 551, and two additional courses involving more advanced quantitative and/or statistical methods. These two elective courses are in addition to courses selected to satisfy the major or minor field requirements. A student who selects statistics as the major or minor field may satisfy the quantitative-methods requirement by completing at least four courses involving quantitative methods in addition to those selected to satisfy the minor field requirements in statistics.

Language/research tool requirements. There is no University-wide or College-wide language/research tool requirement for the Ph.D. degree. Each program offering the degree may set its own requirements. In cases where the program has established a language/research tool requirement, candidates must complete the language/research tool requirement before taking the preliminary examination. Each student should contact the doctoral program coordinator in his or her major field for more information concerning language/research tool requirements.

Written and oral examinations. Each student is required to pass a written comprehensive examination in the major field, and, if required, a written comprehensive examination in the minor field(s). The examinations primarily aim to determine the student's ability to show relationships among the various segments of knowledge within the major and minor fields of study. The written examination in the major field is scheduled for each student by the department head or program director. Examinations in the minor field (if required) may be taken at any time scheduled by the respective programs.

A preliminary oral examination is given after the student has successfully completed the written examinations, and after the language/research tool requirement (if any) has been satisfied. The program committee or Ph.D. written examination committee administers the preliminary oral examination. In addition, faculty representatives from within and outside the Manderson Graduate School of Business may participate as members of the examining committee. The examination may be passed satisfactorily or provisionally.

In accordance with University policy, a student may attempt each examination no more than two times. However, each student should consult his or her program's policies for the written comprehensive examination because programs may vary in approach and requirements.

Student dissertation committee. The dissertation committee is appointed by the department head or the graduate coordinator in the student's major field, in consultation with the faculty and the student. The committee consists of a minimum of five members of the graduate faculty; no fewer than two members must be from outside the student's major field and at least one member must be from outside the student's academic department. Each member of the committee must possess a terminal degree. Exceptions must be approved by the dean of the Culverhouse College of Commerce and Business Administration and by the dean of the Graduate School. The director of the dissertation is the chairperson of the committee.

Program areas may impose additional procedures for approval of dissertation proposals. The dissertation committee is responsible for admission of the student to candidacy, supervision of the dissertation, and administration of the final oral examination.

Admission to candidacy. Students are certified by the dean of the Graduate School for admission to candidacy for the Ph.D. degree after they have met the following requirements:

1. Completed the program of coursework approved by the program committee
2. Demonstrated in comprehensive written examinations their competence in (a) the major field and (b) each minor field requiring the written examination
3. Satisfactorily fulfilled the language/research tool requirement, if any
4. Passed the preliminary oral examination
5. Received approval of the dissertation proposal from the dissertation committee

Dissertation requirements. A dissertation showing power of independent research and literary skill must be prepared on a topic in the major field. The subject of the dissertation must be approved by the student's dissertation
committee. A student who completes the coursework but fails to complete the dissertation within five years after being admitted to candidacy will be required to retake the written examinations and the preliminary oral examination. All candidates are expected to register for dissertation supervision each semester and summer session until the dissertation is completed.

**Final oral examination.** When the dissertation has been completed and accepted by the dissertation committee, the candidate will be given a final oral examination by the committee. This examination is primarily concerned with the research work of the candidate as embodied in the dissertation and the field in which the dissertation lies, but it may extend over the whole primary field of study. The final oral examination is governed by the rules of the Graduate School of The University of Alabama. All faculty members of the Manderson Graduate School of Business are invited to attend final oral examinations.

The candidate will present a copy of the final draft of the dissertation to each committee member at least two weeks in advance of the final oral examination. A copy of the final draft of the dissertation must be on file in the Bruno Business Library at least five days before the final oral examination.

**Time limit for completion of the Ph.D.** A student entering the Ph.D. program must complete all requirements for the Ph.D. degree within seven years of the date of initial matriculation in the graduate program.

If a student is dropped from the Ph.D. program for exceeding the time limits for completion of the program, the individual may petition the Culverhouse College of Commerce and Business Administration's Ph.D. Programs Committee for an extension of time. Extension of time and/or additional requirements for readmission to the program must be recommended to the Graduate School of The University of Alabama by the graduate faculty of the major program or school.
7.6.1 CULVERHOUSE SCHOOL OF ACCOUNTANCY (AC)
Director: Professor Mary S. Stone, Office: 314 Alston Hall

The courses below are offered by the Manderson Graduate School of Business. Courses offered by other divisions of
the University that business students are either required to take or permitted to elect are listed under the appropriate
department in this catalog or in the undergraduate catalog. Prerequisites for any course may be waived if the student
has equivalent knowledge or if the student passes an examination on the required prerequisites.

AC 432 Introduction to Governance, Risk Assessment, and Assurance. Three hours.
Prerequisites: AC 311 with a grade of "C-" or higher.
A risk-oriented study of standards, concepts, procedures, and professional ethics underlying corporate governance
and the practice of external and internal auditing and assurance services. The course will focus on mechanisms and
activities that enhance the reliability of information for decision making.

AC 456 Governmental and Nonprofit Accounting. Three hours.
Prerequisite: AC 310 with a grade of "C-" or better.
Special features of budgetary and fund accounting as applied to municipalities, other government units, and
institutions such as schools and hospitals.

AC 471 Taxation of Business Transactions and Organizations. Three hours.
Prerequisites: AC 371 with a grade of "C-" or higher.
Examination of the tax implications of business formations, transactions between the entity and the owners,
reorganizations, and liquidations. The course develops tax research skills.

AC 500 Professional Judgment and Decision Making. Three hours.
The course is designed to improve decision-making skills using a structured decision model incorporating critical,
creative, evaluative, logical, and reflective judgment processes. Cases represent professional problems in audit, tax,
and management, including ethical conflicts and technical decisions.

AC 501 Basic Accounting for Managerial and Financial Control. Three hours.
Prerequisite: Admission to the EMBA program.
Study of the fundamentals of financial accounting. Attention is given to the interpretation and uses of information
contained in financial statements.

AC 502 Accounting for Management Decisions. Three hours.
Prerequisites: AC 501 and admission to the EMBA program.
Study of the fundamentals of managerial accounting. Attention is given to the use of accounting by business
managers.

AC 506 Concepts of Financial and Managerial Accounting. Three hours.
Prerequisite: Admission to the M.B.A. program.
Basic accounting concepts and procedures with an emphasis on the use of accounting information by business
managers.

AC 510 Principles of Systems Development. Three hours.
Prerequisites: AC 389 and admission into the M.Acc. program.
Systems analysis and design methods across the development cycle: planning, analysis, design, creation,
implementation, operation and maintenance. Particular attention is given to roles of accountant/auditor.

AC 512 Advanced Financial Reporting and Analysis. Three hours.
Prerequisite: AC 311 or equivalent.
Advanced topics in financial accounting and reporting considered from a practical and theoretical perspective.

AC 516 Risk Analysis and Control. Three hours.
Prerequisite: AC 506 or equivalent.
Identification of the risk profile of a business, including operational, financial, technological, and behavioral risks.
Development and implementation of risk management policies and procedures used to detect and prevent business
risk problems.

AC 522 Contemporary Accounting Issues. Three hours. May be repeated for up to six hours credit.
Prerequisite: Permission of the instructor.
Examination of topics of current relevance to accounting theory and practice.
AC 523 Business Valuation and Performance Measurement. Three hours.
Prerequisite: AC 506 or equivalent.
The analysis of accounting information for purposes of valuing businesses for investment, credit, and related decisions.

AC 532 Advanced Governance, Risk Assessment, and Assurance. Three hours.
Prerequisite: AC 432 or AC 516 or equivalent.
Advanced study of standards, concepts, procedures, and professional ethics underlying governance and the provision of assurance services.

AC 533 Systems Analysis and Control. Three hours.
Examination of information systems development and control issues from the perspective of ensuring relevance, reliability, and security of business systems and information.

AC 534 Fraud and Ethics Risk Management. Three hours.
Prerequisite: AC 432 or AC 516 or equivalent.
Advanced study of the forensic accounting profession, fraud prevention, detection, and investigation, and the character needed to manage ethical challenges.

AC 541 International Accounting. Three hours.
Prerequisite: AC 311 or equivalent.
Accounting and financial reporting issues associated with global business operations.

AC 554 Professional Certification. Three hours.
Examination of accounting standards and procedures required for professional accounting certification.

AC 556 Governmental and Nonprofit Accounting. Three hours.
Prerequisite: AC 310 or equivalent.
Special features of budgetary and fund accounting as applied to municipalities, other governmental units, and institutions such as schools and hospitals.

AC 561 Accounting for Business Management. Three hours.
Concepts and procedures employed in developing and using accounting information for management decisions.

AC 571 Taxation of Business Organizations. Three hours.
Prerequisite: AC 471 or permission of the instructor.
A study of advanced tax topics with an emphasis on problem analysis, research, and preparation of proposed solutions.

AC 572/Law 647 Estate and Gift Taxation. One to three hours.
Prerequisite: Admission to M.T.A. program or permission of the instructor.
Introduction to principles and practices associated with the taxation of estates and gifts.

AC 573 Individual Tax Planning. Three hours.
Prerequisite: Admission to M.T.A. program or permission of the instructor.
A study of tax planning for individual taxpayers, including the interplay of income, estate, and gift taxes; and the taxation of partnerships, estates, and trusts.

AC 574 Special Topics in Taxation. Three hours.
Prerequisite: Admission to M.T.A. program or permission of the instructor.
A study of special tax topics, including taxation of natural resources and international taxation.

AC 575 Taxation of Corporations and Shareholders. Three hours.
Prerequisite: Admission to M.T.A. program or permission of the instructor.
A study of federal income tax problems of corporations and the relationships of these problems to the tax problems of the corporate shareholder.

AC 576 Advanced Corporate Taxation. Three hours.
Prerequisite: Admission to M.T.A. program or permission of the instructor.
A study of the tax accounting problems relating to corporate organizations, commonly controlled corporations, and consolidated tax returns.

AC 577 Law 641 Tax Practice and Procedure. One to three hours.
Prerequisite: Admission to M.T.A. program or permission of the instructor.
A study of organization, policies, and procedures of federal and state taxing authorities, including consideration of problems of organizations generally exempt from tax.

AC 578 Partnership Taxation. Three hours.
Prerequisite: Admission to M.T.A. program or permission of the instructor.
Designed to explore, in depth, the taxation of the formation, operation, and disposition of partnerships and LLCs. In addition, a brief review of the taxation of S corporations is presented.

**AC 579 Seminar in Taxation.** Three hours.  
Prerequisite: Admission to M.T.A. program or permission of the instructor  
A study of selected current issues in taxation, including policy of taxation, taxation of foreign income, and taxation of special industries.

**AC 581/Law 761 International Taxation.** One to three hours.  
Prerequisite: Admission to M.T.A. program or permission of the instructor  
Introduction to the principles and practices associated with the taxation of international businesses.

**AC 582/Law 650 State and Local Taxation.** One to three hours.  
Prerequisite: Admission to M.T.A. program or permission of the instructor  
Introduction to state and local taxation of businesses.

**AC 583//Law 732 Employee Benefits.** One to three hours.  
Prerequisite: Admission to M.T.A. program or permission of the instructor  
Introduction to employee benefits particularly retirement and health benefits.

**AC 584/Law 796 Tax-Exempt Organizations.** One to three hours.  
Prerequisite: Admission to M.T.A. program or permission of the instructor  
Course will explore the tax and regulatory rules pertaining to tax exempt organizations.

**AC 589 Accounting Information Systems.** Three hours.  
Prerequisite: AC 389 or its equivalent and admission to the M.Acc. program  
Examination of information systems development and control issues from the perspective of ensuring relevance, reliability, and security of business systems and information.

**AC 591 Independent Study in Accounting.** Three hours.

**AC 592 Accounting Internship.** Three hours.

**AC 593 Research and Communication in Taxation.** Three hours.  
Prerequisite: Admission to the M.T.A. program or permission of the instructor  
A study of tax research procedures, documentation of research, and presentation of research findings.

**AC 595 Accounting Research and Communication.** Three hours.  
Individual study of specific accounting topics and written and oral communication of the results of the study.

**AC 597 Special Topics in Accounting.** Variable credit.

**AC 598 Research in Accounting.** Variable credit.

**AC 599 Thesis Research in Accounting.** Variable credit.

**AC 610 Introduction to Accounting Research Methods.** Three hours.  
Prerequisite: Ph.D. student  
Study of the production of accounting research, with specific focus on the scientific method. Intensive focus on problem identification and communication, and theory and hypothesis development.

**AC 620 Advanced Accounting Research Methods.** Three hours.  
Prerequisite: Ph.D. student  
Study of advanced research methods with intensive focus on design and method development, data analysis, and interpretation of results.

**AC 630 Archival Accounting Research.** Three hours.  
Prerequisite: Ph.D. student  
Study of the archival accounting research literature.

**AC 640 Experimental Accounting Research.** Three hours.  
Prerequisite: Ph.D. student  
Study of the experimental accounting research literature.

**AC 650 Directed Research.** Three hours.  
Prerequisite: Ph.D. student  
Examination of the literature and methodology associated with a specific research topic. Directed focus on development of second-year paper.

**AC 691 Research Practicum I.** Three hours.
Prerequisite: Ph.D. student.
Development of a first year project under the supervision of a faculty member. Resulting papers are presented at a departmental research workshop.

**AC 692 Research Practicum II.** Three hours.
Prerequisite: Ph.D. student.
Development of a second-year research project under the supervision of a faculty member. Resulting papers are presented at a departmental research workshop.

**AC 698 Research Colloquium Series.** One hour.
Prerequisite: Ph.D. student.
Participation in a research colloquium series involving scholars from top academic institutions.

**AC 699 Dissertation Research in Accounting.** Variable credit (three to nine hours).
Intermediate macro- and microeconomic theory (EC 309 and EC 308 or their equivalents) are considered prerequisites for all graduate coursework in economics, except for M.B.A.-designated courses.

EC 412 Industrial Organization: Market Power and Economic Welfare. Three hours. A study of the various types of industry structure, conduct, and performance; business strategies; and policy alternatives. Emphasizes case studies of major types of industry.

EC 413 Economic Forecasting and Analysis. Three hours. A survey of the analytical techniques used by economists to forecast the macro- and micro-levels of economic activity and the effects of public policy on the economy.

EC 416 Monetary Theory and Policy (same as FI 416). Three hours. An analysis of the role of money in the economy and the conduct of monetary policy. Emphasis is given to the money supply process, the demand for money, and the choice of monetary policy strategies and procedures.

EC 421 Regional Economics. Three hours. A study from the viewpoint of economics of the interrelationships among areas of a universe of unevenly distributed and imperfectly mobile resources.

EC 422 Urban Economics. Three hours. An analysis of the economics of community growth and the application of economic principles to solving problems and exploiting opportunities generated by the process of urban development.

EC 423 Public Finance (same as FI 423). Three hours. A study of the principles of taxation, government expenditures, borrowing, and fiscal administration.

EC 429 Seminar in Planning. Three hours. Prerequisite: Permission of the Committee on Urban and Regional Planning and Development. The course surveys the practice and theory of comprehensive planning, with the primary objective of integrating the various aspects of social, political, economic, and physical relationships germane to the various planning processes.

EC 430 International Economics. Three hours. An analysis of the theoretical principles underlying international trade, with an application of these principles to recent historical developments and to current national policies.

EC 431 International Finance (same as FI 431). Three hours. An examination of international financial economics and the international financial system, with emphasis on the theories, techniques, and practices relevant to international financial management.


EC 441 International Financial Management (same as FI 441). Three hours. Prerequisites: FI 302 and EC/FI 431. Study of the application of principles of financial management in an international setting, primarily from the perspective of non-financial, multinational firms.

EC 442 Economic Development in Latin America. Three hours. A comparative analysis of economic strategies, problems, issues, and policy outcomes, with special attention given to Mexico, Costa Rica, Cuba, and Brazil.

EC 450 History of Economic Concepts. Three hours. A study of the development of economic theory from Adam Smith to the present day.

EC 452 Economics of Regulated Industries (same as FI 452). Three hours. An examination of the form of regulation and its impact on American industries, encompassing both traditional public-utility regulation and newer, social regulation (e.g., environmental and health-and-safety regulation).

EC 453 Comparative Economic Systems. Three hours. A comparative study of the various economic systems as they operate in the major nations of the modern world.
EC 461 Modern Finance Capitalism. Three hours.  
A study of the development and function of financial markets and institutions as they impact the economy, both domestically and internationally.

EC 470 Introduction to Mathematical Economics (same as FI 470). Three hours.  
Prerequisite: MATH 121 or MATH 125.  
Application of selected mathematical methods to the analysis of economic problems.

EC 471 Econometrics. Three hours.  
Prerequisites: ST 260 and MATH 121 or MATH 125.  
This course emphasizes statistical methods for analyzing data used by social scientists. Topics include simple and multiple regression analyses and the various methods of detecting and correcting data problems such as autocorrelation and heteroscedasticity.

EC 480 Economics of the Environment and Natural Resources. Three hours.  
Prerequisite: EC 311.  
A survey of the techniques used to estimate the benefits of environmental improvements and an analysis of public policy relating to the environment and the use of natural resources.

EC 481 Economics of the Public Sector. Three hours.  
Prerequisite: EC 308.  
A study of the provision of public goods and services introducing the theory of welfare economics, public choice, and cost-benefit analysis.

EC 482 Senior Seminar on Economic Issues. Three hours.  
Group discussions of current economic issues together with analysis and policy recommendations.

EC 483 Health Care Economics. Three hours.  
Prerequisites: EC 110, EC 111, and EC 308.  
An investigation of the microeconomics of the American health care delivery system. The course focuses on the demand for and supply of health care services and emphasizes the efficiency and equity characteristics of the system.

EC 491 Independent Study. Variable credit.
EC 492 Internship. Three hours.
EC 497 Special Topics in Economics. Three hours.

EC 500 Managerial Economics. Three hours.  
Prerequisite: Admission to the M.B.A. program.  
An introduction to the foundations of both micro- and macroeconomic analysis, including consumer demand, production and cost analysis, price determination, and macroeconomic theory and policy. Emphasis is on the theory of the firm.

EC 503 Economics of the Firm. Three hours.  
Prerequisite: Admission to the M.B.A. program.  
An introduction to the foundations of economic analysis as it applies to consumer and firm behavior. Emphasis is on market structures and pricing decisions.

EC 508 Microeconomic Theory. Three hours.  
Prerequisites: EC 308 or equivalent and MATH 125 or equivalent.  
An examination of the theory of resource allocation. Topics include demand theory, production and cost functions, theory of markets, general equilibrium analysis, and welfare theory.

EC 509 Macroeconomic Theory and Policy. Three hours.  
Prerequisite: EC 508, EC 308, or permission of the instructor.  
This overview of modern macroeconomic theory and its implications for the conduct of stabilization policies is intended to provide a solid background in macroeconomics for students not seeking a terminal degree in economics or for students preparing for EC 511. The course considers the microeconomic foundations of aggregate economic analysis, but with less mathematical rigor than in EC 511.

EC 510 Advanced Microeconomic Theory. Three hours.  
A thorough examination of advanced value theory and a brief survey of distribution theory.

EC 511 Advanced Macroeconomic Theory. Three hours.  
Modern theory of aggregate income and employment, with application to analysis of stabilization policies.

EC 512 Industrial Organization and Public Policy. Three hours.  
Prerequisite: EC 508 or equivalent.  
The theoretical and empirical study of large industrial firms in a market economy. The focus is on corporate and
governmental policies affecting markets.

**EC 513 Macroeconomic Policy.** Three hours.
Prerequisite: Admission to the M.B.A. program and ST 260, MATH 121 or MATH 125 or equivalent.
A survey of the analytical techniques used by economists to forecast the macro- and micro-levels of economic activity and the effects of public policy on the economy.

**EC 516 Monetary Theory and Policy (same as FI 516).** Three hours.
Prerequisites: EC 508 and EC 509 or equivalents.
Theoretical and empirical analysis of the money supply process, the demand for money, the impact of money on the economy, and the implementation of monetary policy.

**EC 523 Public Finance.** Three hours.
Prerequisites: EC 508 and EC 470.
Study of the principles of taxation, government expenditures, borrowing, and fiscal administration.

**EC 530 International Economics.** Three hours.
Prerequisite: EC 430 or equivalent.
Analysis and policy implications relating to the international movement of goods, resources, and financial assets.

**EC 531 International Finance (same as FI 531).** Three hours.
Prerequisite: EC 430 or equivalent.
An examination of the foreign exchange market, exchange rate determination, international financial institutions, and the management of the risks associated with international business.

**EC 540 The Theory of Economic Development.** Three hours.
A comprehensive study of classical and modern theories of economic progress. Particular emphasis is given to the less developed countries and to the role of institutions.

**EC 550 Survey of Development of Economic Thought.** Three hours.
A study in the development of economic ideas, from the classical writers down to the present.

**EC 570 Mathematical Economics (same as FI 570).** Three hours.
Prerequisite: EC 470 or equivalent.
An introduction to mathematical tools commonly used in advanced economic theory and econometrics.

**EC 571 Econometrics.** Three hours.
Prerequisite: EC 570 or equivalent.
Corequisite: ST 551 or equivalent.
A quantitative analysis of actual economic phenomena based on the current development of theory and observation, related by appropriate methods of inference.

**EC 591 Independent Study.** Variable credit.

**EC 597 Special Topics in Economics.** Variable credit.

**EC 598 Introduction to Economic Research.** Variable credit.

**EC 599 M.A. Thesis Supervision.** Variable credit.

**EC 610 Seminar in Microeconomic Theory.** Three hours.
Prerequisite: Graduate student status and permission of the instructor.
An advanced study of the modern theory of value and price. The seminar includes demand and supply analysis, marginal analysis, and the monopolistic and competitive structure of markets.

**EC 611 Seminar in Macroeconomic Theory.** Three hours.
Prerequisite: Graduate student status and permission of the instructor.
Selected topics in contemporary macroeconomic theory, with emphasis on dynamic analysis of cyclical fluctuations, stabilization policies, and growth.

**EC 612 Seminar in Industrial Organization.** Three hours.
Prerequisite: EC 512 or equivalent.
A survey of selected topics in industrial organization. Both theoretical and applied topics are examined, with special emphasis on recent developments.

**EC 615 Distribution Theory.** Three hours.
Prerequisite: Graduate standing.
Analysis of welfare economics as applied to income and wealth distributions. Methods of measuring and evaluating poverty, inequality, growth, income mobility, and redistributive policies.

**EC 616 Seminar in Monetary Economics (same as FI 616).** Three hours.
Prerequisite: EC 516 or equivalent.
Selected topics in contemporary monetary theory, with emphasis on determination of the value of money and the
effectiveness of monetary policies.

**EC 622 Seminar in Public Finance (same as FI 622).** Three hours.
Prerequisite: EC 581 or equivalent.
A seminar on recent developments in public economics, with emphasis on the theory of taxation including tax incentives and tax incidence.

**EC 623 Public Expenditure and Policy Analysis.** Three hours.
Prerequisite: EC 510 or equivalent.
A survey of the public-economics literature, with emphasis on the theory of public goods, public choice, and income distribution policies.

**EC 630 International Trade Theory.** Three hours.
Prerequisite: EC 610 or permission of the instructor.
A survey of selected topics in international trade with emphasis on the basis for trade and the welfare effects of trade policy.

**EC 631 Seminar in International Finance (same as FI 631).** Three hours.
Prerequisite: EC 531 or equivalent.
A survey of the most important professional literature dealing with international financial management.

**EC 640 Theory of Risk and Insurance (same as FI 640).** Three hours.
Prerequisite: Graduate standing.
Foundation of insurance in risk theory and its problems and practices.

**EC 641 Seminar in the International Economics of Development.** Three hours.
Prerequisite: EC 430, EC 440, or equivalent.
Consideration of advanced literature in international economics, with emphasis on those issues that relate to less developed countries: trade, multinational enterprise, and external debt problems.

**EC 650 Seminar in Economic Thought.** Three hours.
Prerequisite: EC 550 or equivalent.
An examination of the literature on economic analysis and policy. The course aims at establishing a synthesis of evolving doctrines that have become, and are formulating, the basis of accepted economic theory and policy.

**EC 653 Comparative Economic Systems.** Three hours.
A comparative analysis of market and non-market theoretical economic systems from the viewpoint of economic welfare.

**EC 660 Game Theory.** Three hours.
Prerequisites: EC 610 and EC 470.
An introduction to non-cooperative game theory. Emphasis on applications in microeconomics and macroeconomics.

**EC 670 Econometrics.** Three hours.
Prerequisites: EC 570, ST 551.
Introduction to methods of analyzing economic data. Topics include linear and non-linear least squares, maximum likelihood estimation, statistical inference, and methods for handling data problems.

**EC 671 Seminar in Econometrics.** Three hours.
Prerequisite: EC 571 or equivalent.
A study of selected topics and problems in econometrics emphasizing methodology for economic research measurements.

**EC 672 Financial Econometric Modeling.** Three hours.
Prerequisite: EC 571 or ST 570.
The application of econometric time-series methods to financial data. GARCH, nonlinear and cointegration models will be emphasized.

**EC 698 Research in Economics.** Three hours.
These courses consist of supervised study and investigation of specific problems in economics. They are open only to graduate students nearing completion of coursework for the degree.

**EC 699 Dissertation Research.** Variable credit. Three-hour minimum.
7.6.3 FINANCE (FI)
Head: Professor Billy P. Helms, Office: 206 Alston Hall

EC 110 and EC 111 or their equivalents are prerequisites for all graduate coursework in finance, except for M.B.A.-
designated courses.

FI 411 Corporate Financial Policy. Three hours.
Prerequisite: FI 302.
An integrative course designed to give the student experience in problem solving in finance. Cases will be used to
permit students to apply what they know to specific business problems.

FI 412 Money and Capital Markets. Three hours.
Prerequisites: FI 301 and FI 302.
An overview of the financing process and the role of financial markets. Areas covered are aggregate investment and
savings behavior; money, capital markets, and flow of funds; determinants and the relationships between different
asset prices (i.e., fixed income and equity yields); the role of financial intermediates and the impact of their portfolio
policy; and international aspects of financial markets.

FI 414 Investments. Three hours.
Prerequisites: FI 301 and FI 302.
A study of the various investment media together with analysis of factors involved in the development of a well-
balanced investment program.

FI 415 Advanced Investment Topics and Portfolio Management. Three hours.
Prerequisite: FI 414.
The aim of this course is to acquaint the student with standards for the selection of securities of investment quality.

FI 416 Monetary Theory and Policy (same as EC 416). Three hours.
Prerequisite: FI 301.
An analysis of the role of money in the economy and the conduct of monetary policy. Emphasis is given to the money
supply process, the demand for money, and the choice of monetary policy strategies and procedures.

FI 419 Financial Engineering. Three hours.
Prerequisite: FI 414.
Function, techniques, and impact of speculation conducted through forward markets, and the nature of speculative
transactions, pricing, and methods of trading.

FI 421 Bank Administration. Three hours.
Prerequisites: FI 301 and FI 302.
A survey of analytical methods in banking, including a study of the powers of the various government agencies.
Emphasis is placed on the managerial aspects of commercial banking.

FI 423 Public Finance (same as EC 423). Three hours.
A study of the principles of taxation, government expenditures, borrowing, and fiscal administration.

FI 431 International Finance (same as EC 431). Three hours.
An examination of international financial economics and the international financial system, with emphasis on theories,
techniques, and practices relevant to international financial management.

FI 432 Real Estate Appraisal. Three hours.
A study of the sources of real estate value, the techniques for estimating property value, and the effective use of
appraisal information.

FI 436 Real Estate Finance. Three hours.
Prerequisites: FI 301 and FI 302.
A study of the institutions of real estate finance. Factors affecting the flow of funds, investment analysis, and
procedures involved in real estate financing.

FI 441 International Financial Management (same as EC 441). Three hours.
Prerequisites: FI 302 and EC/FI 431.
Study of the application of principles of financial management in an international setting, primarily from the
perspective of non-financial, multinational firms.

FI 442 Business Risk Management. Three hours.
The role of insurance in serving business firms and governmental bodies exposed to economic loss.
FI 443 Property and Liability Insurance. Three hours.  
Current financial, legal, and social problems concerning the property-liability insurance industry. Role of government in providing insurance and topics in the management of property-liability insurance companies and agencies.

FI 444 Life and Health Insurance. Three hours.  
Detailed analysis of life insurance and health insurance with emphasis on their role in employee-benefit planning. Specific provisions of qualified retirement plans. Current problems facing the life insurance industry and analysis of the distribution system for life and health insurance. Topics in management of life and health insurance companies and agencies.

FI 452 Economics of Regulated Industries (same as EC 452). Three hours.  
An examination of the form of regulation and its impact on American industries, encompassing both traditional public-utility regulation and newer, social regulation (e.g., environmental and health-and-safety regulation).

FI 491 Independent Study. Variable credit.

FI 492 Internship. Three hours.

FI 497 Special Topics in Finance. Three hours.

FI 504 Financial Management. Variable hours.  
Prerequisite: Admission to the M.B.A. program.  
Corporate financial planning and decision making; working capital management, capital budgeting, financing, risk-return analysis, valuation, and dividend policy.

FI 505 Corporate Valuation. Three hours.  
Prerequisite: FI 504 or equivalent.  
A case study course that focuses on the valuation of publicly held firms.

FI 506 Mergers and Acquisitions. Three hours.  
Prerequisite: FI 504, FI 510, or equivalent.  
An examination of corporate acquisitions, including firm valuation, bidding contests, and defense managers, as well as the corporate tax and legal environment.

FI 510 Financial Management. Three hours.  
Prerequisite: FI 302 or permission of the instructor.  
A course concerned with the management of corporate capital. Emphasis is on analysis of problems.

FI 512 Money and Capital Markets. Three hours.  
A detailed analysis of the role of money and capital markets in the financial process and of the influence outside forces have on these markets.

FI 514 Investments. Three hours.  
Prerequisites: FI 301 and FI 302 or equivalents.  
An overview of the investment decision process. Areas covered are financial statement analysis, risk measures, stock-price valuation models, and portfolio management.

FI 515 Quantitative Investment Analysis. Three hours.  
Prerequisite: FI 514 or permission of the graduate advisor.  
Acquaints the student with the quantitative approaches used in modern portfolio theory and investment analysis.

FI 516 Monetary Theory and Policy (same as EC 516). Three hours.  
Prerequisites: EC 510 and EC 511 or equivalents.  
Theoretical and empirical analysis of the money supply process, the demand for money, the impact of money on the economy, and the implementation of monetary policy.

FI 519 Financial Engineering. Three hours.  
Prerequisite: FI 514 or equivalent.  
A study of options and futures markets, with emphasis on the nature of speculative transactions, pricing, and method of trading.

FI 520 Advanced Financial Engineering. Three hours.  
Prerequisite: FI 519.  
Advanced methodologies of valuing and managing structured notes and mortgage-backed securities are introduced, including lattice approaches, simulation and option-adjusted spreads. The C++ object-oriented framework is introduced.

FI 522 Bank Administration. Three hours.  
Prerequisites: FI 301 and FI 302.
A case course examining various aspects of managing a commercial bank in a dynamic environment.

**FI 524 Financial Markets and Institutions.** Three hours.
Prerequisite: Admission to the M.B.A. program.
An analysis of the role of financial markets (especially equity markets) and financial institutions in the economy.

**FI 531 International Finance (same as EC 531).** Three hours.
Prerequisite: EC 430 or equivalent.
An examination of the foreign exchange market, exchange rate determination, international financial institutions, and the management of the risks associated with international business.

**FI 534 Seminar in Real Estate.** Three hours.
Prerequisite: Graduate standing.
A survey of the major topics and issues in real estate, including real estate investment, alternative financing arrangements, law and agency theory, appraisal, market analysis, taxation, and brokerage.

**FI 535 Seminar in Real Estate Investment.** Three hours.
Prerequisite: FI 534 or equivalent.
A study of the concepts and principles of real property valuation and the analysis of real estate investments.

**FI 591 Independent Study.** Variable credit.

**FI 597 Special Topics in Finance.** Variable credit.

**FI 598 Research.** Variable credit.

**FI 599 Thesis Research.** Three hours.

**FI 600 Research Methods for Finance.** Three hours.
Prerequisite: FI 470 or EC 471.
Emphasis on the different approaches and techniques used by financial researchers. Hands-on experience with data analysis is required.

**FI 601 Finance Theory I.** Three hours.
Prerequisite: FI 510.
Advanced practices of financial management and their application to decision making in the business firm.

**FI 602 Advanced Finance Theory II.** Three hours.
Prerequisite: FI 511.
An extension of the content of previous courses to summarize modern developments in financial theory.

**FI 610 Seminar in Financial Management.** Three hours.
Advanced management theory and techniques in the finance area. Emphasis is on current publications in the academic finance literature.

**FI 614 Seminar in Investments.** Three hours.
Provides an understanding of theoretical and functional aspects of professional investment management theory.

**FI 616 Seminar in Monetary Economics (same as EC 616).** Three hours.
Prerequisite: FI 516 or equivalent.
Selected topics in contemporary monetary theory, with emphasis on determination of the value of money and the effectiveness of monetary policies.

**FI 620 Market Microstructure Theory.** Three hours.
Prerequisite: EC 610 or permission of the instructor.
This course provides exposure to the major theoretical models that examine how the structure of markets affects price formation, information transmission, and operational efficiency.

**FI 622 Seminar in Public Finance (same as EC 622).** Three hours.
Prerequisite: EC 581 or equivalent.
A seminar on recent developments in public economics, with emphasis on the theory of taxation including tax incentives and tax incidence.

**FI 624 Seminar in Financial Markets.** Three hours.
This seminar provides for a deep understanding of the monetary and financial system, required of finance specialists in corporate finance, banking, and investments.

**FI 631 Seminar in International Finance (same as EC 631).** Three hours.
Prerequisite: FI 531 or equivalent.
A survey of the most important professional literature dealing with international financial management.
**FI 633 Principles of Land Utilization.** Three hours.
A study of factors affecting land use, land use patterns, and the development and measurement of land values, and of problems related to the optimization of land values and the maintenance of the highest and best use of land.

**FI 634 Land Utilization Policy.** Three hours.
A study of the impact on the use of land and the control of the use of land of private investment activity and public activities, including monetary management, fiscal policy, federal aid to highways, FHA, VA, urban renewal, and public housing programs.

**FI 640 Theory of Risk and Insurance (same as EC 640).** Three hours.
Prerequisite: Graduate standing.
The foundation of insurance in risk theory and its problems and practices.

**FI 641 The Social and Economic Functions of Insurance Enterprises.** Three hours.
Prerequisite: Graduate standing.
The functions performed within insurance and insurance-related institutions and the response of management to the changing needs of society.

**FI 649 Seminar on Insurance and Its Environment.** Three hours.
The institution of insurance is viewed as one of many approaches to achieve environmental security.

**FI 698 Research in Finance.** Three hours.

**FI 699 Dissertation Research.** Variable credit. Three-hour minimum.
7.6.4 GENERAL BUSINESS ADMINISTRATION (GBA)
Head: Professor Robert M. Morgan, Office: 104 Alston Hall

GBA 501 Professional Development. One hour.
Mini-lectures on current topics related to the profession of business.

GBA 525 Strategy Formulation and Implementation. Three hours.
Prerequisite: Admission to the M.B.A. program.
An integrative study of the manager’s role as chief strategy maker and chief strategy implementer, using case
analysis and management simulation techniques.

GBA 526 Competitive Strategy. Three hours.
Prerequisite: GBA 525 or equivalent.
Examines conceptual tools for the in-depth analysis of industries and competitors; how to build and defend
competitive advantages and how to formulate a successful competitive strategy. Usually offered spring semester.

GBA 527 Managing Strategy Implementation. Three hours.
Prerequisite: GBA 525 or equivalent.
An examination of the tasks of strategic leadership and the action alternatives for matching internal organizational
conditions to the requirements of strategy execution. Usually offered spring semester.

GBA 570 Starting New Ventures. Three hours.
Focuses on strategy development, planning, identification of market opportunities, capital structure, organization,
and operations start-up as applied to new-venture management.

GBA 571 Management of Health Care Organizations. Three hours.
Prerequisites: MGT 517 (M.B.A.) or equivalent and EC 503 (M.B.A.) or equivalent.
An analysis of the problems, issues, and environmental forces affecting management in health care organizations.
Emphasis is given to the role of management and its particular functions in a health care environment.

GBA 591 Independent Study. Three hours.
Open to all graduate students on an elective basis. This course offers students an opportunity to pursue a course of
study that they design according to their own interests. Students may also work on a faculty-directed research
project and receive credit.

GBA 592 Managerial Internship. Three hours.
Open to all graduate students on an elective basis. Through the cooperation of participating organizations, students
are exposed to actual management situations and are given an opportunity to apply classroom knowledge to practical
decision problems.
7.6.5 HEALTH CARE MANAGEMENT (HCM)
Head: Professor Robert M. Morgan, Office: 104 Alston Hall

HCM 571 Management of Health Care Organizations. Three hours.
Prerequisites: MGT 517 (M.B.A.) or equivalent and EC 500 (M.B.A.) or equivalent.
An analysis of the problems, issues, and environmental forces affecting management in health care organizations. Emphasis is given to the role of management and its particular functions in a health care environment.

HCM 573 Advanced Issues in Health Care Management. Three hours.
Prerequisites: Graduate status with: an undergraduate degree or enrollment in HCM, or health care related field; or enrollment in the MBA program, or instructor’s permission.
This course examines current policy and social issues in health care management. Students develop the analytical skills needed by decision makers of health care organizations.

HCM 575 Advanced Managed Care. Three hours.
Prerequisites: Graduate status with: an undergraduate degree or enrollment in HCM, or health care related field; or enrollment in the MBA program, or instructor’s permission.
This course examines basic and advanced concepts of managed care for health care organizations – from physician practices to hospitals and health systems – with an emphasis on understanding and applying the business philosophy and practices of managed care organizations.

HCM 576 Advanced Long Term Care. Three hours.
Prerequisites: Graduate status with: an undergraduate degree or enrollment in HCM, or health care related field; or enrollment in the MBA program, or instructor’s permission.
This course examines basic and advanced concepts of long term care organizations and management, with an emphasis on understanding the current delivery system and the unique challenges faced by practitioners, as well as the needs of long term care stakeholders.

HCM 577 Advanced Ambulatory Care. Three hours.
Prerequisites: Graduate status with: an undergraduate degree or enrollment in HCM, or health care related field; or enrollment in the MBA program, or instructor’s permission.
This course examines basic and advanced concepts of ambulatory care organization and management, with an emphasis on the competencies needed to operate an ambulatory practice, as well as the skills needed to manage relationships with ambulatory care stakeholders.
7.6.6 INTERNATIONAL BUSINESS ADMINISTRATION (IBA)
Head: Professor Robert M. Morgan, Office: 104 Alston Hall

Students who are interested in international business may select a concentration in economics or marketing. International courses are offered in marketing, economics, finance, legal studies, and accounting. It is strongly recommended that interested business students develop a working knowledge of a language other than English. Opportunities for dissertation research in international business are available in economics, management, and marketing.

IBA 550 Global Business. Variable hours.
Prerequisite: Admission to the M.B.A. program.
A seminar emphasizing the environmental factors affecting international business operations, and studying different economic, social, cultural, legal, and other environmental conditions and their influence on both the formulation and execution of business policy of firms engaged in multinational business.

IBA 551 International Business Management. Three hours.
A seminar acquainting the student with the functions, problems, and decision-making processes of multinational business organizations. Representative cases are used as a basis for decisions. Offered spring semester.

IBA 555 Global Marketing Management. Three hours.
The object of this course is to investigate the effects of cultural similarities and differences on marketing practices worldwide. Also examined are the effects of market idiosyncrasies on globally oriented products, promotion, pricing, and distribution strategies.
7.6.7 OTHER INTERNATIONAL COURSE OFFERINGS

**EC 430 International Economics.** Three hours.
Analysis of the theoretical principles underlying international trade, with an application of these principles to recent historical developments and to current national policies.

**EC 530 International Economics.** Three hours.
Prerequisite: EC 430 or equivalent.
Analysis and policy implications relating to the international movement of goods, resources, and financial assets.

**FI 431 International Finance** (same as EC 431). Three hours.
An examination of international financial economics and the international financial system, with emphasis on theories, techniques, and practices relevant to international financial management.

**FI 441 International Financial Management** (same as EC 441). Three hours.
Prerequisites: FI 302 and EC/FI 431.
Study of the application of principles of financial management in an international setting, primarily from the perspective of non-financial, multinational firms.

**FI 531 International Finance** (same as EC 531). Three hours.
Prerequisite: EC 430 or equivalent.
An examination of the foreign exchange market, exchange rate determination, international financial institutions, and the management of the risks associated with international business.

**LGS 405 International Business Law.** Three hours.
Prerequisite: LGS 402 recommended.
This course is concerned with law pertaining to international marketing, regulations pertaining to import-export trade, etc.

**MKT 455 International Marketing.** Three hours.
An examination of the various political, economic, legal, and cultural systems and their effects on the global marketing of products and services, with particular focus on product, promotion, pricing, and distribution decisions.

**MKT 460 Export-Import Management** (same as IBA 460). Three hours.
Includes a thorough examination of export-import management processes and highlights the importance of management in international business strategy.
The School does not offer a graduate-level major program in legal studies. However, these courses will add breadth and a valuable background to any of the available graduate programs, by incorporating understanding of law within other disciplines.

**LGS 402 Government and Business.** Three hours.  
Prerequisite: EC 111.  
This course is designed to give students some information about the regulations government may or may not impose on business, leaving students free to form their own conclusions as to the wisdom, adequacy, and practicability of the regulations. A survey of basic constitutional principles and the legal aspects of recent federal legislation affecting business and antitrust laws.

**LGS 403 Estates and Trusts.** Three hours.  
This course treats principles and rules of law relating to wills and inheritances; how the estates of deceased persons are administered; why and how trusts are created and their operation; and the duties and settlement of executors, administrators, and trustees.

**LGS 404 Legal Issues in the Accounting Profession.** Three hours.  
Prerequisite: LGS 200.  
A study of various legal issues in the accounting profession. Among the topics covered are accountant liability, commercial transactions, and business organizations.

**LGS 405 International Business Law.** Three hours.  
Prerequisite: LGS 402 recommended.  
This course is concerned with law pertaining to international marketing, regulations pertaining to import-export trade, etc.

**LGS 407 Real and Personal Property Law.** Three hours.  
This course is concerned with the conveyance of property, deeds, covenants, condemnation of property, rights of landlord and tenant, and bailments.

**LGS 408 Law of Business Organizations.** Three hours.  
This course covers the law of business organizations, their formation, and bankruptcy.

**LGS 472 Legal Aspects of Health Care** (same as HCM 472). Three hours.  
Prerequisite: HCM 370.  
Examines aspects of the law that are of most concern to individuals in health care management, including administrative law, hospital law, welfare law, public health law, and licensing and legislation.

**LGS 491 Independent Study.** Variable credit.

**LGS 504 Legal Issues in Accounting.** Three hours.  
Prerequisite: LGS 200.  
Study of various legal issues in the accounting profession. Among topics covered are accountant liability, commercial transactions, and business organizations.

**LGS 522 Legal and Social Environment of Business.** Variable hours.  
Prerequisite: Admission to the M.B.A. program.  
A study of the legal system, with an emphasis on government regulation, including antitrust law.

**LGS 591 Independent Study.** Variable credit.

**LGS 597 Special Topics in Legal Studies.** Variable credit.

**LGS 600 Problems in International Business Law.** Three hours.
THE UNIVERSITY OF ALABAMA GRADUATE CATALOG

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7.6.9 MANAGEMENT (MGT)
Head: Professor Robert M. Morgan, Office: 104 Alston Hall

MGT 420 Organizational Change. Three hours.
Prerequisite: MGT 300 or permission of the instructor.
An investigation of task, structure, technological, and humanistic approaches to organizational change; the resistance to change; and the implementation of change in business, private, and public organizations.

MGT 421 Managerial Analysis. Three hours.
This course uses case analysis to examine the development and implementation of managerial actions in modern organizations.

MGT 510 Research Methods in Management. Three hours.
This course familiarizes the student with the basic methodology for addressing issues and solving problems in modern organizations.

MGT 511 Employee Recruitment, Selection, and Placement. Three hours.
A course designed to acquaint the student with a scientific approach to the selection, training, and placement of employees. Validation of selection practices and evaluation of training programs are emphasized.

MGT 517 Leadership and Ethics. Three hours.
Prerequisite: Admission to the M.B.A. program.
This course is an overview of leadership theory and models including discussions of ethical issues that corporate decision makers face.

MGT 520 Change Management. Three hours.
The major objective of the course is to introduce students to the most recent thinking about strategic change, its drivers, and the techniques that are currently used for its management.

MGT 527 Strategic Human Resources Management. Three hours.
An analysis of the methods and techniques used in the management of human resources.

MGT 530 Labor Economics. Three hours.
A course in the methods of economic analysis of the major problems of labor. Micro- and macroanalysis of wages, hours, employment, labor markets, and related public labor.

MGT 532 Employee Relations. Three hours.
A critical examination of the factors that condition employee relations in both the private and public sectors. Topics covered include philosophies of management and how organizations resolve friction, the concept of industrial relations, systems theory, minority employment, and work and discontent.

MGT 542 Management Communication. Three hours.
Prerequisite: Admission to the M.B.A. program.
Methodology for understanding both written and oral presentations. Students develop a language to use to manage written and oral verbal skills in specific business environments.

MGT 582 New Venture Development. Three hours.
This course provides an opportunity to develop a business plan for a new venture or for expansion of an existing company. Students are expected to acquire skills in evaluating business ventures; to learn alternative financing sources; to develop ideas for differentiating products; and to develop an understanding of what is required to harvest the profits of a growing business.

MGT 586 Small Business Consulting Field Project. Three hours.
Prerequisite: By invitation only.
This course is designed to offer education and training in the art of management consulting as it applies to smaller firms. The overall purpose of the course is the acquisition of knowledge and skills that will enable students to provide management advice to entrepreneurs and businesspersons to improve the performance of smaller organizations.

MGT 591 Independent Study in Human Resources Management. Three hours.
Open to graduate students with the approval of the chairperson of the human resources management program. This course offers graduate students in human resources management the opportunity to undertake a specialized course of study, under the guidance of an individual faculty member.

MGT 592 Internship in Human Resources Management. Three hours.
Open to graduate students with the approval of the chairperson of the human resources management program.
Graduate students receive on-the-job experience in human resources management in actual organizational settings, under the joint guidance of the cooperating organizational officials and faculty members.

MGT 597 Contemporary Issues in Performance Management. Three hours.
A graduate seminar devoted to the study of current topics of interest.

MGT 598 Research in Management. Three hours.
A supervised study of specific issues and problems in management. The course is open to students in their final semester of coursework leading to the completion of a master's degree in management.

MGT 599 Thesis Research. Variable credit.

MGT 610 Introduction to Management Thinking. Three hours.
A critical analysis of the theories as well as the study of selected problems and developments in management thinking. The course places particular emphasis on the application of a wide range of social science theory and research to the study managerial thought.

MGT 620 Organizational Behavior and Individual Performance. Three hours.
A course designed to develop thorough understanding of individual behavior within formal organizations. Consideration is given to a number of important behavioral processes, including learning, perception, attitudinal structuring, conflict, motivation, and social reinforcement. Attention is devoted to the individual's effect on the organization and the way behavior affects the achievement of organizational goals.

MGT 621 Organizational Behavior and Group Performance. Three hours.
A study of human interaction and interpersonal behavior within working relationships. Emphasis is given to findings of the behavioral sciences as related to management problems. Theoretical and empirical approaches to issues such as communication, socialization, and role theory are presented.

MGT 622 The Management of Organizational Change. Three hours.
A course that gives special attention to the human aspects of problems that arise in technical, social, and organizational arenas faced with the need to change. The course includes detailed analyses of organizations as systems and of organizational leadership, change, and development.

MGT 623 Contemporary Issues in Organizational Theory. Three hours.
This course deals with the definition and grouping of work units, the relationships between work units, and the assignment of decision-making authority to units within a contingency framework. Special emphasis is placed on the influence of the external environment on the structure and design of the organization.

MGT 679 Theory Development and Testing (same as MKT 679). Three hours.

MGT 698 Research in Organizational Management. Three hours.
A course that provides an overview of theory, research, and techniques associated with the investigation of specific research problems in the fields of personnel management, industrial relations, and organizational behavior.

7.6.10 MANAGEMENT INFORMATION SYSTEMS (MIS)

Head: Professor Michael D. Conerly, Office: 300 Alston Hall

MIS 430 Systems Analysis and Design I. Three hours.
Prerequisites: MIS 320, MIS 330, and CS 325.
Corequisite: MIS 450.
Detailed study of systems development and delivery from the perspective of a business information systems solution provider. Emphasis is placed on project-level systems development utilizing rigorous methodologies, project management, and business strategy alignment.

MIS 431 Systems Analysis and Design II. Three hours.
Prerequisites: MIS 430 and MIS 450.
Corequisite: MIS 451.
Advanced-level skills in systems development and delivery techniques are developed. Emphasis is placed on enterprise-level systems development, creation of tailored methodologies, creation of architectural standards, testing, and deployment.

MIS 440 Decision Support Systems. Three hours.
Prerequisite: MIS 430.
Principles for analytic problem solving utilizing rule- and model-based knowledge structures are presented within the organizational context.

MIS 450 Systems Construction and Implementation I. Three hours.
Prerequisites: MIS 320, MIS 330, and CS 325.
Corequisite: MIS 430.
Leveraging software development skills honed in junior-level MIS and CS courses, students develop skills to code and test functional application systems.

MIS 451 Systems Construction and Implementation II. Three hours.
Prerequisites: MIS 430 and MIS 450.
Corequisite: MIS 431.
Students code, test, and implement large-scale application systems. User and system documentation is developed and maintained. Conversion, migration, training, and operations plans and budgets are emphasized.

MIS 491 Independent Study in Management Information Systems. Three hours.
Students may earn degree credit for only one independent study course (491).

MIS 492 Internship. Three hours.
Prerequisites: Junior or senior standing and a GPA of 2.50 or higher.
Students are selected through a competitive process for assignments in approved organizations. During the internship a student must use knowledge and skills in a meaningful IS project. Participation in the MIS internship must be pre-approved by the MIS program director. Students may earn degree credit for only one internship (492).

MIS 497 Special Topics. Three hours.

MIS 510 Principles of Systems Development. Three hours.
Prerequisites: AC 489 and admission into the M.Acc. program.
The role of accountants and auditors in the design, development, and operations of management information systems is addressed.

MIS 511 Management Information Systems. Two hours.
Prerequisite: Admission to the M.B.A. program.
Motivation for, construction of, and application of MIS. Topics include IS strategic alignment, information intensive business processes, and decision making. Business analysis techniques are emphasized for systems such as TPS, e-business, management reporting systems, and data warehouses.

MIS 514 Information Technology Boot Camp. Three hours.
In-depth treatment of software engineering techniques for information systems business solutions.

MIS 516 Practicum. Three hours.
Prerequisite: MIS 514.
Experiential learning in a dual-coached, commercial IS environment reporting to faculty and organizational management. Projects started during the practicum continue through the remainder of the program.

MIS 520 Systems Analysis and Design. Three hours.
Prerequisite: MIS 511.
Techniques and methodologies of systems analysis and design are introduced, including conducting project scoping, requirements elicitation, requirements definition, and operations specifications.

**MIS 525 Information Systems Project Management.** Three hours.
Prerequisites: MIS 514 and admission to the MBA/MIS program.
Corequisite: MIS 520.
Techniques and methodologies of project level scoping, staffing, planning, scheduling, monitoring, and controlling the development of value-added information technology business solutions on time and within budget.

**MIS 527 Emerging Information Technologies Seminar.** Three hours.
Prerequisites: MIS 516 and admission to the MBA/MIS program.
Corequisite: MIS 520.
Exploration of the capabilities, potential uses, constraints, value and implications of emerging information technologies through analytical methods, measurement, and evaluation.

**MIS 530 Systems Development and Implementation.** Three hours.
Prerequisite: MIS 520.
Techniques and methodologies of project-level systems development and delivery are introduced including interface design, platform constraints, application architecture, testing, quality control, security, and performance evaluation.

**MIS 535 Information Systems Consulting.** Three hours.
Prerequisites: MIS 520 and MIS 525.
Corequisites: MIS 530.
Techniques and methodologies in client relationship management, proposal development, scope negotiation, component-based costing, knowledge management, software module and deliverable integration, systems deployment, and change management.

**MIS 540 Database Design, Construction, and Operations.** Three hours.
Prerequisite: MIS 514 or permission of the instructor.
Emphasizes commercial business application of relational DBMS. Topics include semantic data modeling, normalization, process triggers, enterprise integrated, ODBC, n-tier architecture, e-business application, and performance tuning.

**MIS 542 Data Communication Design and Construction.** Three hours.
Prerequisite: MIS 514 or permission of the instructor.
Advanced data communication design and construction concepts are explored, emphasizing the interaction between DC and software applications including international protocols, e-business, and mobile applications.

**MIS 544 Systems Engineering Concepts.** Three hours.
Prerequisite: MIS 520 or permission of the instructor.
Advanced systems engineering best practices, including the foundations of architecture-based systems and component-based development.

**MIS 560 Enterprise Integration Methods.** Three hours.
Introduction to techniques and methodologies of enterprise-level governance, architecture, analysis, design, procurement, integration and deployment

**MIS 562 Enterprise Integration Development.** Three hours
Prerequisite: MIS 560
Application of techniques and methodologies to develop and deliver enterprise-level business information systems solutions

**MIS 591 Independent Study in Management Information Systems.** Three hours.

**MIS 592 Internship in Management Information Systems.** Three hours.

**MIS 597 Special Topics in Management Information Systems.** Variable credit.

**MIS 598 Research in Management Information Systems.** Variable credit.
Open to students nearing completion of coursework for the master's degree. A supervised study and investigation of specific problems in management and management information systems.

**MIS 599 Thesis Research in Management Information Systems.** Variable credit.

**MIS 670 MIS Research Seminar I.** Three hours.
Prerequisite: Must be a C&BA Ph.D. student.
The exploration of IS development and delivery research issues. Emphasis is placed on exploring the scientific method, theory building research, and methods of inquiry. Provides a framework for undertaking and evaluating MIS research.
MIS 680 MIS Research Seminar II. Three hours.
Prerequisite: MIS 670.
A continuation of MIS 670 designed to explore empirical testing research and methods used in scholarly IS development and delivery research.

MIS 685 MIS Research Seminar III. Three hours.
Prerequisite: MIS 680.
Examination of recent information systems development and delivery research. After reviewing current research in the area, participants will evaluate the state of IS development research and then draft a research proposal to address a critical research question of interest and merit.

MIS 697 Special Topics. Variable credit.

MIS 698 Research in Management Information Systems. Three hours.
Open to students nearing completion of coursework for the Ph.D. degree. A supervised study and investigation of specific problems in management information systems.

7.6.11 OPERATIONS MANAGEMENT (OM)
Head: Professor Michael D. Conerly, Office: 300 Alston Hall

OM 420 Computer Simulation (same as OM 420). Three hours.
Prerequisite: OM 310.
Development and use of systems models for simulating administrative decision-making processes.

OM 425 Effective Quality Management. Three hours.
Prerequisites: Permission of student's advisor.
Provide participants with a broad understanding of philosophies and methods used to enhance organizational effectiveness in a wide range of organizational settings.

OM 491 Independent Study in Operations Management. Three hours.
Students may earn degree credit for only one independent study course (491).

OM 492 Internship. Three hours.
Prerequisites: Junior or senior standing and a GPA of 2.50 or higher.
Students may earn degree credit for only one internship (492). Students are selected through a competitive process for assignments in approved business or public-sector organizations. The internship is administered through the C&BA Office of Student Services.

OM 497 Special Topics. Three hours.

OM 500 Linear and Network Optimization. Three hours.
Prerequisite: MATH 121 or equivalent.
Mathematical programming techniques in the decision-making process. Attention is given to the assumptions, development, and administrative implications of linear programming models and network models.

Corequisite: Admission to the M.B.A. program and ST 509.
Operations research concepts and applications in decision making. Emphasis is on problem formulation and interpretation of results using computer-based solution procedures.

OM 516 Operations Management. Three hours.
Prerequisite: ST 509.
This course will address the important concepts and issues related to the design and management of business operations including manufacturing, distribution, logistics, transportation, and service operations. The course will demonstrate how certain quantitative methods can be applied to the analysis and solution of problems that arise in operations management.

OM 517 Supply Chain Modeling and Analysis. Three hours.
Prerequisite: OM 500 or OM 506.
This course provides a framework and quantitative methods for designing, managing, and analyzing the supply chain operations needed to support a firm's business strategy. Students will study the structure of supply chain operations in terms of the following categories: facilities, information, inventory and transportation. Students will analyze the relationship between supply chain structure and performance through case studies and examples that require students to develop analytical models to support their conclusions.

OM 522 Operations Scheduling Problems. Three hours.
Prerequisite: OM 500 or OM 506.
A broad investigation of a variety of scheduling activities in production, logistics or service environment are discussed. Typical topics include project scheduling, job-shop scheduling, routing related problems and manpower scheduling.

OM 523 Inventory Management. Three hours.
Prerequisite: ST 509 or ST 550 or ST 560.
Control techniques for the large multi-term inventories frequently associated with manufacturing supply and wholesale-retail operations are studied. The limitations and usefulness of models in actual practice are discussed. Coverage includes reorder-point procedures, single-period problems, and dynamic situations.

OM 524 Manufacturing Scheduling and Control Systems. Three hours.
Prerequisite: OM 500 or OM 506 AND ST 509 or ST 550 or ST 560.
An in-depth, analytical study of the systems used in manufacturing planning and control are covered. Alternative approaches used in practice (such as MRP and JIT) are studied.
OM 525 Effective Quality Management. Three hours.
Prerequisites: None.
Provide participants with a broad understanding of philosophies and methods used to enhance organizational effectiveness in a wide range of organizational settings.

OM 530 Linear Programming Models. Three hours.
Prerequisite: MATH 255 or permission of the instructor.
Theory and applications of linear programming models in decision making. Attention is given to primal and dual formulations, solution algorithms, sensitivity analysis, and special cases.

OM 531 Multiple Criteria Decision Making. Three hours.
Prerequisite: OM 500.
A survey of multiple-criteria decision-making concepts and methodologies used in business, including linear multi-objective programming, goal programming, compromise programming, and multidimensional risk and utility.

OM 532 Integer Programming. Three hours.
Prerequisite: OM 500 or equivalent.
The theoretical foundations of integer programming are outlined. Applications to management science problem areas are discussed. Solution procedures are developed.

OM 534 Nonlinear Programming. Three hours.
Prerequisites: MATH 227 and MATH 255, or permission of the instructor.
Convex sets and functions, optimality conditions, Lagrangian duality, constrained and unconstrained optimization techniques, penalty and barrier functions, and methods of feasible directions and applications.

OM 536 Network Analysis and Dynamic Programming. Three hours.
Prerequisite: OM 500.
Spanning tree, shortest-route, maximum flow, assignment, and transportation and transshipment problems in business administration and their generalizations. Multistage problem solving, decomposition, and recursive equations for final state and initial-final state optimization.

OM 540 Systems Simulation. Three hours.
Prerequisites: ST 509 or ST 550 or ST 560.
A study of the management applications of stochastic and deterministic mathematical and computer models in systems design and analysis.

OM 542 Systems Simulation II. Three hours.
Prerequisite: OM 540.
Methodology of systems simulation, including modeling, model inputs, simulation mechanics, output analysis, validation, and design of simulation experiments.

OM 550 Production Management Methods. Three hours.
Prerequisite: OM 520.
An analytical study of a specific production-management functional area's support systems and databases (such as forecasting, scheduling, or manufacturing decision making). The particular topic will vary from semester to semester; consult department for scheduled topic.

OM 591 Independent Study in Operations Management. Three hours.

OM 592 Internship in Operations Management. Three hours.

OM 597 Special Topics in Operations Management. Variable credit.

OM 598 Research in Operations Management. Variable credit.
Open to students nearing completion of coursework for the master's degree. A supervised study and investigation of specific problems in management and operations management.


OM 601 Stochastic Decisions Models. Three hours.
Prerequisite: MATH 557.
Probabilistic models in the decision-making process are discussed. Attention is given to the assumptions, development, and administrative implications of dynamic programming, queuing analysis, and decision analysis.

OM 602 Integer and Nonlinear Optimization. Three hours.
Prerequisite: OM 500.
Advanced optimization models are introduced and discussed. Topics include integer programming models and nonlinear programming models, and solution techniques for these problems.

OM 620 Production Management Models. Three hours.
Prerequisite: OM 500.
A quantitative study of models and procedures used in various decision problems addressed by production and operations managers is completed in this course. Mathematical modeling and optimization software packages are used in solving these models.

**OM 622 Theory of Production Scheduling.** Three hours.
Prerequisites: OM 522.
A rigorous mathematical treatment of various scheduling models and techniques are covered. Topics include performance measures, complexity theory, single machine sequencing, flowshop scheduling, the job-shop problem, and priority dispatching.

**OM 623 Inventory Theory.** Three hours.
Prerequisites: OM 523, MATH 557, and ST 550 or ST 560.
A rigorous, mathematical treatment of stochastic single- and multi-item inventory models is performed. A numerical analysis and software package is used to implement and analyze such models.

**OM 697 Special Topics.** Variable credit.

**OM 698 Research in Operations Management.** Three hours.
Open to students nearing completion of coursework for the Ph.D. degree. A supervised study and investigation of specific problems in management and operations management.

**OM 699 Dissertation Research.** Variable credit. Three-hour minimum.
7.6.12 MARKETING (MKT)
Head: Professor Robert M. Morgan, Office: 104 Alston Hall

MKT 300 or its equivalent is a prerequisite for all 400-level courses; MKT 518 or its equivalent is a prerequisite for all 500- and 600-level courses.

MKT 410 Product Development. Three hours.
This course has been designed to introduce students to the processes and tools of new product development. Skills learned in the course can be applied in a large or a small company or an entrepreneurial context. Topics include the role of new products in the organization, analysis of market opportunities, creative idea generation, concept screening, design, forecasting, manufacturing, and launch. A group project provides real-world product development experience.

MKT 411 Supply Chain Management. Three hours.
This course examines the role of intermediaries in channel strategies and the scope, methods, problems, and opportunities of implementing distribution strategies. Topics include pricing, costing, contracting, negotiating, and inter-organization management.

MKT 422 Distribution Management. Three hours.
Logistics, or supply chain management, is a system-based concept requiring the effective coordination of the flow of materials and goods from their points of origin to their end users. This course explores the key marketing tasks necessary to achieve an efficient logistics network: transportation, warehousing and materials handling, inventory management, forecasting, information and order processing, and simulation/modeling.

MKT 427 Business-to-Business Marketing. Three hours.
Business-to-business marketing involves effective selling of items like computers, office supplies, machinery, biochemicals, plastics, steel, packaging, pollution-control equipment, and transportation services to business and organizational markets. To familiarize students with the technologies, problems, opportunities, and strategies of business-to-business marketing, this course combines lectures, case and company discussions, guests, and projects. The course is for students interested in industrial sales, purchasing, and marketing management.

MKT 444 Promotional Management. Three hours.
Intensive investigation of underlying ideas, principles, and concepts that may be used to inform consumers of the availability and attributes of products and services. The course includes a comprehensive overview of promotional and sales management activities and tactics.

MKT 446 Measuring Marketing Effectiveness. Three hours.
Analytical tools and techniques used to manage marketing activities are examined, with emphasis on the factors underlying differences in marketing efficiency and effectiveness. The following activities and measurements are examined: natural versus functional accounts; contribution and segmental analysis; planning, budgeting, and controlling marketing operations; monitoring product/customer market performance; developing standard costs and modular databases; direct product profitability (DPP); and financial measurement techniques such as ROI, RONW, net present value, forward buys, and inventory carry costs.

MKT 455 International Marketing. Three hours.
An examination of the various political, economic, legal, and cultural systems and their effects on the global marketing of products and services, with particular focus on product, promotion, pricing, and distribution decisions.

MKT 460 Export/Import Management (same as IBA 460). Three hours.
The course includes a thorough examination of export/import management processes, and highlights the importance of management in international business strategy.

MKT 473 Marketing Research. Three hours.
Prerequisite: ST 260.
The application of research techniques and procedures for measuring market opportunities. Specific attention, in addition to descriptive analysis, is given to techniques of and criteria for the identification and selection of market segments.

MKT 487 Strategic Marketing. Three hours.
Prerequisites: Senior standing, MKT 313, and MKT 473 (general management majors may substitute MGT 319 for MKT 473).
Analysis of marketing problems as related to the managerial functions of planning, organizing, and controlling marketing operations.

MKT 488 Client-Based Projects in Marketing. Three hours
Prerequisite: 2.5 GPA
This course is devoted to the completion of real-world marketing projects for specific profit and not-for-profit clients. Project teams are comprised of a combination of graduate (MKT 581) and undergraduate (MKT 488) students. The scope of each project is determined by the needs of the client, but it typically is based in decision-making insights from marketing research and involves one or more of such marketing-oriented tasks as: (a) market segmentation and target marketing activities associated with a proposed new product, service, or strategic initiative; (b) evaluating the potential competitive advantage of a strategic or tactical move by the firm; (c) creation of an implementation plan for research, promotion, launch, pricing, and/or distribution for some aspect of the firm's business. Course emphasis is on marketing analysis, project management, client relationship building/maintenance skills, communications, decision making, and leadership.

MKT 491 Independent Study. Three hours.

MKT 492 Internship. Three hours.  
Prerequisites: Junior or senior standing and a 2.5 or higher grade point average. Students are selected competitively for assignments in approved business or public-sector organizations. The internship is administered through the College's Office of Student Services.

MKT 493 Special Topics in Marketing. Three hours.  
The courses offer the faculty a chance to present material of interest to themselves and to marketing students.

MKT 510 Product Design and Management. Three hours.  
An intensive investigation of the process of new product development, including its role in the organization, analysis of market opportunities, creative idea generation, concept screening, design, forecasting, manufacturing, and launch. Teaching emphasis is on processes, tools, and techniques. A group project provides real-world product development experience.

MKT 511 Supply Chain Management. Three hours.  
Prerequisite: MKT 518 or equivalent.  
MKT 511 is a graduate (master's) level counterpart to MKT 411 Supply Chain Management. Its focus is on providing a managerial perspective of best practice supply chain management. The course encompasses the collaborative strategies and planning processes needed to build and manage supply chains for systemic effectiveness and efficiency. It will be offered cotermously with MKT 411 during each spring semester. The target students for MKT 511 are M.B.A.'s with marketing concentrations and master of arts (M.A.) and master of science (M.S.C.) students in marketing. Graduate students in other degree programs may also enroll as an elective for graduate credit.

MKT 518 Survey of Marketing. Three hours.  
Prerequisite: Admission to the M.B.A. program.  
A combination of lectures and cases is used to examine and analyze the marketing process. Emphasis is on decision making: the refinement of skills needed to recognize and solve marketing problems, and to effectively communicate recommendations both within and without the organization. The following components of the marketing mix are examined: product management, pricing, promotion, personal selling, buyer behavior, marketing channels, distribution, and segmentation.

MKT 519 Survey of Marketing. Three hours.  
Same as MKT 518 for non-MBA students.

MKT 521 Seminar in Retailing Management. Three hours.  
A critical, decision-oriented seminar on the issues involved in retailing management. The focus is on current readings, case analyses, and guest speakers.

MKT 522 Strategic Logistics Management. Three hours.  
Prerequisite: Permission of the instructor.  
A study of the role of logistics in national and multinational business. Logistics-system elements and their interrelationships are reviewed, including trade-offs. A variety of analytical tools and techniques for solving logistical problems is presented, and the use of customer service to achieve differential advantage in the marketplace is explored. Students use case analyses, actual industry studies, and computer simulations to create practical solutions.

MKT 528 (M.B.A.) Measuring Marketing Effectiveness. Three hours.  
Prerequisite: Proficiency in LOTUS 1–2-3 or its equivalent.  
Tools and techniques of managing and measuring marketing activities are examined. Topics include contribution and segmental analysis; planning, budgeting, and controlling components in the marketing mix; monitoring product/customer market performance; developing analytical databases; and financial measurement techniques such as ROI, net present value, forward buying, and inventory carrying costs. Students use a computer-based decision support system (DSS) to analyze many concepts taught in this course.

MKT 530 Advanced Marketing Analysis. Three hours.  
This course for Master of Science in Marketing and second-year M.B.A. students concerns the generation of marketing research results to help make marketing decisions. The course is designed to complement and build on the skills
acquired in Marketing 518, the Survey of Marketing course. The core of Marketing 530 is decision-relevant data—planning its acquisition, getting it from a variety of internal, secondary, and primary sources, analyzing it, and using it as the basis of decisions. The course also provides students with marketing analytics-centered skills (ANOVA, regression, factor, and cluster analysis). Knowledge developed in the courses can be applied in the fields of market management, product management, and project management. This course also helps prepare students to successfully complete team-based projects (Marketing 581) in the spring semester.

**MKT 531 Services Marketing.** Three hours.  
An examination of how service firms achieve and maintain marketing excellence.

**MKT 538 Sales Management.** Three hours.  
The purpose of the course is to familiarize students with the problems and tasks faced by sales managers, to present principles and applications of effective sales management, and to develop students’ ability to critically analyze and provide solutions to problems of sales management.

**MKT 544 Promotional Strategy Management.** Three hours.  
An analysis of the promotion mix and how it can be utilized to achieve managerial objectives.

**MKT 555 Global Marketing Management (same as IBA 555).** Three hours.  
The objective of this course is to investigate the effects of cultural similarities and differences on marketing practices worldwide. Also examined are the effects of market idiosyncrasies on globally oriented product, promotion, pricing, and distribution strategies.

**MKT 581 Project Management in Marketing.** Three hours.  
Prerequisite: MKT 530.  
This course is devoted entirely to the completion of real-world marketing projects for specific organizational clients. Teams are created based on skills and interests as well as the needs of the clients. The scope of each project is determined by the needs of the client, but it typically is based in decision-making insights from marketing research and involves one or more of such marketing-oriented tasks as: market segmentation and target marketing activities associated with a proposed new product, service, or strategic initiative; the gathering and application of marketing research pertinent to an important GO/NO GO decision by the firm; gauging specific reaction from the potential customer market regarding a proposed new initiative by the client; evaluating the potential competitive advantage of a strategic or tactical move by the firm; creation of and implementation of a plan for research, promotion, launch, pricing, and/or distribution for some aspect of the firm’s business. This course is unique. It allows students to use the skills and knowledge that they have acquired in graduate marketing courses as well as build new skills in marketing analysis, project management, client relationship building/maintenance skills, communications, decision-making, and leadership.

**MKT 591 Independent Study in Marketing.** Three hours.

**MKT 592 Internship in Marketing.** Three hours.

**MKT 597 Special Topics in Marketing.** Variable credit.

**MKT 598 Research Methods I.** Three hours.  
A course that provides the student with an understanding of the principles, tools, and techniques of research in the fields of human resources management and marketing.

**MKT 599 Thesis Supervision.** Variable credit.

**MKT 613 Behavioral Theory and Qualitative Methodology.** Three hours.  
This course focuses on the use of qualitative methodology as a way to ground theory, in combination with a focus on the application of consumer psychological and behavioral topics in such contexts as services, retailing, shopping, and relationship marketing. Offered spring semester, every other year.

**MKT 627 Inter-Organizational Systems.** Three hours.  
An examination of inter-organizational distribution systems stressing the evolution of channel theory. Theoretical explanations of structural dynamics and the analysis of channel behavioral constructs (e.g., channel power, conflict, and leadership) are stressed. Offered every other year.

**MKT 661 History of Marketing Thought.** Three hours.  
The study of the development of marketing ideas, concepts, and theories from 1900 to the present. The influence and contribution of individuals to marketing concepts will be stressed. Offered according to demand.

**MKT 674 Measurement and Structural Equation Modeling.** Three hours.  
Prerequisite: ST 550.  
A course that covers measurement theory and how it is applied in scientific research. Students learn to construct effective questionnaires, to develop psychometrically-sound measures of constructs, and to assess measure reliability.
and validity. Quantitative methods, including exploratory factor analysis, confirmatory factor analysis, and structural equation modeling, are emphasized. Offered fall semester.

**MKT 679 Theory Development and Testing (same as MGT 679).** Three hours.
Prerequisites: MKT 674, ST 550, and ST 551.
The course presents the causal models approach to theory construction. Emphasis is given to integrating verbal approaches to theory building with the construction of simultaneous equation mathematical models with causal interpretations. Offered fall semester.

**MKT 685 Theory of Market Development.** Three hours.
Prerequisite: MKT 518 or equivalent.
A study of the spatial and temporal dimensions of marketing activity, including a study of the location and development of markets, extent and shape of market areas, models of the location process, consumer spatial behavior, and probabilistic choice modeling.

**MKT 688 Survey of Marketing Topics.** Three hours.
Prerequisites: MKT 518.
This course surveys several marketing topics. These include some data analysis tools, such as discriminant analysis, cluster analysis, perceptual mapping, and conjoint analysis; an introduction to some substantive topics, such as segmentation, new product diffusion, supply chain management, and attitude-to-the-ad; plus a brief overview of some selected marketing modeling topics. Offered fall semester, every other year.

**MKT 690 Behavioral Theory and Methodology.** Three hours.
This course begins with an examination of theory and theory development. It then follows with a consideration of various methodological approaches, with a heavy focus on experimental design. Finally, throughout, substantive behavioral and marketing topics are considered in detail, including attitudes and persuasion, advertising and branding effects, judgment and decision making, and the role of affect and emotions. Offered fall semester, every other year.

**MKT 691 Graduate Seminars in Marketing: Marketing Strategy.** Three hours.
Prerequisite: MKT 518 or equivalent.
Through the reading of this course, we will explore in depth several specific areas that are informed by strategic marketing thought. We will not only trace the development of theory in marketing strategy, but chart several courses for future research.

**MKT 698 Research in Marketing.** Three hours.

**MKT 699 Dissertation Supervision.** Variable credit. Three-hour minimum.
7.6.13 STATISTICS (ST)
Head: Professor Michael D. Conerly, Office: 300 Alston Hall

**ST 450 Statistical Methods for Applied Research I.** Three hours.
Development of fundamental concepts of organizing, exploring, and summarizing data; probability; common probability distributions; sampling and sampling distributions; estimation and hypothesis testing for means, proportions, and variances using parametric and nonparametric procedures; power analysis; goodness of fit; contingency tables. Statistical software packages are used extensively to facilitate valid analysis and interpretation of results. Emphasis is on methods and on selecting proper statistical techniques for analyzing real situations.

**ST 451 Statistical Methods for Applied Research II.** Three hours.
Prerequisite: One of the following—GES 400, GES 500, BER 540, CHS 425, CHS 525, ST 450, ST 550.
Analysis of variance and design of experiments, including randomization, replication, and blocking; multiple comparisons; correlation; simple and multiple regression techniques including variable selection, detection of outliers, and model diagnostics. Statistical software packages are used extensively to facilitate valid analysis and interpretation of results. Emphasis is on appropriate analysis of data in real situations.

**ST 454 Mathematical Statistics I.** Three hours.
Prerequisite: MATH 227
Fundamental concepts and theory of probability. Sample spaces, random variables, probability distributions, moments and moment-generating functions, and sampling distributions.

**ST 455 Mathematical Statistics II.** Three hours.
Prerequisite: ST 454.
Theory of point and interval estimation, hypothesis testing, chi square tests, correlation, regression, and analysis of variance. Includes some applications.

**ST 465 Sampling Techniques.** Three hours.
Prerequisite: ST 260 or equivalent.
Planning, execution, and evaluation of sample surveys. Simple, random, stratified, and cluster sampling; multistage and systematic sampling; questionnaire design; cost functions; and optimal designs. Teams will plan, perform, and analyze actual sample surveys.

**ST 475 Statistical Quality Control.** Three hours.
Prerequisite: ST 260 or equivalent.
Statistical methods useful in control and improvement of manufactured products, including statistical process control with variables and attribute control charts, and process improvement with designed experiments. Emphasis is placed on design, implementation, and interpretation of the techniques.

**ST 509 Statistics for Business Applications.** Three hours.
Prerequisite: Admission to the M.B.A. program.
A broad elementary introduction to statistical and probabilistic methods useful for managerial decision making. The course requires three hours of lecture and one hour of laboratory work per week. The laboratory is used to expose the student to computer software applications.

**ST 521 Statistical Data Management.** Three hours.
Introduction to the management of data using SAS. The collection and management of data from business or scientific research projects are emphasized.

**ST 522 Advanced Statistical Data Management.** Three hours.
Prerequisite: ST 521 or equivalent.
This course provides students with insight and understanding into the advanced aspects of data management. Emphasis will be placed on computer techniques for the preparing and cleaning of data from scientific research projects as well as for business-oriented projects in order to conduct advanced level analyses. Techniques for detecting, quantifying, and correcting data quality will be covered.

**ST 531 Knowledge Discovery and Data Mining I.** Three hours.
Prerequisite: ST 550 or ST 560 or equivalent.
Data mining is the process of selecting, exploring, and modeling large amounts of data to uncover previously unknown patterns of data. Techniques for accomplishing these tasks in a business setting will be discussed.

**ST 532 Advanced Data Mining.** Three hours.
Prerequisite: ST 531 or equivalent.
A detailed study of data mining techniques including logistic regression, neural networks, decision trees, general classifier theory, and unsupervised learning methods. Mathematical details and computer techniques are examined.
The SAS programming language and SAS's Enterprise Miner will be used to accomplish these tasks. Other packages may also be used.

**ST 635 Nonparametric Statistics.** Three hours.
Prerequisite: ST 554 or equivalent.
Theory and applications of various nonparametric statistical methods are covered for one-sample, two-sample, and multi-sample problems. Goodness of fit techniques such as Chi-square and the Kolmogorov-Smirnov test are covered along with graphical analysis based on P-P and Q-Q plots. Computer software such as MINITAB, SAS, and STATXACT are used.

**ST 550 Statistical Methods for Applied Research I.** Three hours.
Development of fundamental concepts of organizing, exploring, and summarizing data; probability; common probability distributions; sampling and sampling distributions; estimation and hypothesis testing for means, proportions, and variances using parametric and nonparametric procedures; power analysis; goodness of fit; contingency tables. Statistical software packages are used extensively to facilitate valid analysis and interpretation of results. Emphasis is on methods and on selecting proper statistical techniques for analyzing real situations.

**ST 551 Statistical Methods for Applied Research II.** Three hours.
Prerequisite: One of the following—GES 400, GES 500, BER 540, CHS 425, CHS 525, ST 450, ST 550, ST 560.
Analysis of variance and design of experiments, including randomization, replication, and blocking; multiple comparisons; correlation; simple and multiple regression techniques including variable selection, detection of outliers, and model diagnostics. Statistical software packages are used extensively to facilitate valid analysis and interpretation of results. Emphasis is on appropriate analysis of data in real situations.

**ST 552 Applied Regression Analysis.** Three hours.
Prerequisite: ST 451, ST 551, or ST 561.
Modeling issues for multiple linear regression are discussed in the context of data analysis. These include the use of residual plots, transformations, hypothesis tests, outlier diagnostics, analysis of covariance, variable selection techniques, weighted least squares and colinearity. The uses of multiple logistic regression are similarly discussed for dealing with binary-valued dependent variables.

**ST 553 Applied Multivariate Analysis.** Three hours.
Prerequisite: ST 451, ST 551, or ST 561.
Methods and business applications of multivariate analysis, discriminant analysis, canonical correlation, factor analysis, cluster analysis, and principal components.

**ST 554 Mathematical Statistics I (same as MATH 554).** Three hours.
Prerequisite: MATH 227.
Distributions of random variables, moments of random variables, probability distributions, joint distributions, and change of variable techniques.

**ST 555 Mathematical Statistics II (same as MATH 555).** Three hours.
Prerequisite: ST 554.
Theory of order statistics, point estimation, interval estimation, and hypothesis testing.

**ST 560 Statistical Methods in Research I.** Three hours.
Prerequisite: MATH 121 or 125.
Statistical methods for summarizing data; probability; common probability distributions; sampling and sampling distributions; estimation and hypothesis testing for means, proportions, and variances using parametric and nonparametric procedures; power analysis; goodness of fit; contingency tables; and simple regression and one-way analysis of variance.

**ST 561 Applied Design of Experiments.** Three hours.
Prerequisite: One of the following—GES 400, GES 500, BER 540, CHS 425, CHS 525, ST 450, ST 550, ST 560.
An introduction to the design and analysis of experiments. Topics include factorial, fractional factorial, block, incomplete block, and nested designs. Other methods discussed include Taguchi Methods, response surface methods, and analysis of covariance.

**ST 565 Sampling Techniques.** Three hours.
Prerequisite: ST 260 or equivalent.
Planning, execution, and evaluation of sample surveys. Simple, random, stratified, and cluster sampling; multistage and systematic sampling; questionnaire design; cost functions; and optimal designs. Teams will plan, perform, and analyze actual sample surveys.

**ST 570 Time Series Analysis.** Three hours.
Prerequisite: ST 551, EC 671, or permission of the instructor.
Modeling of both stationary and non-stationary time series. Autoregressive (AR) processes and moving average (MATH) processes, as well as mixed (ARMA) processes, are discussed, along with model identification and estimation and forecasting procedures. Computer software is used.
**ST 575 Statistical Quality Control.** Three hours.  
Prerequisite: ST 550 or ST 560 or equivalent.  
Statistical methods useful in control and improvement of manufactured products, including statistical process control with variables and attribute control charts, and process improvement with designed experiments. Emphasis is placed on design, implementation, and interpretation of the techniques.

**ST 580 Analysis of Categorical-Level Data.** Three hours.  
Prerequisite: ST 451 or ST 560.  
Logit and probit models, including dichotomous and multichotomous response functions; discrete choice models; log-linear models for multi-way contingency tables; procedures for analyzing ordinal-level data.

**ST 591 Independent Study in Statistics.** Three hours.

**ST 592 Internship in Statistics.** Three hours.

**ST 597 Special Topics in Statistics.** Variable credit.

**ST 598 Research in Statistics.** Variable credit.

**ST 599 Thesis Research in Statistics.** Variable credit.

**ST 603 Advanced Inference.** Three hours.  
Prerequisite: ST 555 or equivalent.  
A continuation of ST 555, with emphasis on the general theory of estimation and hypothesis testing and large sample distribution theory.

**ST 610 Linear Models.** Three hours.  
Prerequisite: ST 555 or equivalent.  
Gauss-Markov Theorem, solution of linear systems of less than full rank, generalized inverse of matrices, distributions of quadratic forms, and theory for estimation and inference for the general linear model.

**ST 615 Theory of Regression.** Three hours.  
Prerequisite: ST 610.  
Theory of the general linear regression models and inference procedures, variable selection procedures, and alternate estimation methods including principal components regression, robust regression methods, ridge regression, and nonlinear regression.

**ST 635 Nonparametric Statistics.** Three hours.  
Prerequisite: ST 610 equivalent.  
Theory and applications of various nonparametric statistical methods are covered for one-sample, two-sample, and multi-sample problems. Goodness of fit techniques such as Chi-square and the kolmogorov-Smirnov test are covered along with graphical analysis based on P-P and Q-Q plots. Computer software such as MINITAB, SAS, and STATXACT are used.

**ST 640 Statistical Computing.** Three hours.  
Prerequisites: ST 552 or its equivalent; MATH 237 or its equivalent; and experience with a computer programming language such as FORTRAN, C, Pascal, or Basic; or permission of the instructor.  
Topics include a survey of current statistical software, numerical methods for statistical computations, nonlinear optimization, statistical simulation, and recent advances in computer-intensive statistical methods.

**ST 675 Advanced Statistical Quality Control.** Three hours.  
Prerequisite: ST 555, ST 575, or equivalent.  
Theoretical approaches to statistical process control procedures and the design of experiments for quality improvement.

**ST 697 Special Topics.** Variable credit.

**ST 698 Research in Statistics.** Three hours.  
Open only to graduate students nearing completion of coursework. Independent study and investigation of specific problems for advanced students of statistics.

**ST 699 Dissertation Research.** Variable credit. Three-hour minimum.
8.1 PROGRAM ADMINISTRATION

The graduate programs in the College of Communication and Information Sciences are administered by the associate dean for graduate studies, by various administrative divisions within the College, and by the Graduate School. The Ph.D. degree program is an interdisciplinary program that draws on all subdivisions of the College and is administered by the associate dean for graduate studies and by the graduate studies committee. The master of arts degree programs are administered by the associate dean, by divisional or department heads, and by department program directors.

All curricula offered by the College of Communication and Information Sciences have been accredited by regional associations. The undergraduate programs in the College are accredited by the Accrediting Council on Education in Journalism and Mass Communication.

FINANCIAL AID

All divisions of the College of Communication and Information Sciences offer a limited number of graduate assistantships to qualified students. The assistantships are awarded on a competitive basis to individuals who can best aid the institution in achieving its research and instructional missions. Students interested in graduate assistantships should apply to the appropriate departments by November 1 for spring semester applications and by April 1 for fall semester applications. Some deadlines vary by departments so check under specific department for deadlines. February 15 is the deadline for Ph.D program applications. Other financial aid available from the University is described earlier in this catalog.
8.2 MASTER OF ARTS IN COMMUNICATION

The master of arts degree programs in the College of Communication and Information Sciences are designed to

- enable students to study communication from an individual, group, institutional, societal, or cultural perspective or combination thereof, using a variety of humanistic and social-scientific approaches
- enable students to begin or continue preparation for professional careers in media and media-related fields, teaching, research, governmental agencies, and industry
- enable students to specialize within one of the following academic departments: Advertising/Public Relations, Communication Studies, Journalism, or Telecommunication and Film
- prepare students to continue their studies at the doctoral level

Admission Requirements

Graduate students in the College of Communication and Information Sciences must meet the admission requirements of the Graduate School of The University of Alabama. Word processing proficiency is required in all writing and editing courses offered by the communication areas of the College (advertising/public relations, journalism, and telecommunication and film). Word processing proficiency is not a requirement for communication studies courses.

Each applicant must submit test scores from either the Graduate Record Examination general test or the Miller Analogies Test in support of the application. The Department of Advertising and Public Relations does not accept the Miller Analogies Test.

Applications for the fall semester should be submitted to the Graduate School by April 1. Applications for the spring semester should be submitted by November 1.

Admission into the Doctoral program with a B.A. Degree

Those who wish to apply for admission directly into the college-wide doctoral program after completing a B.A. must have majored in Communication and Information Sciences, must have shown superior aptitude at the undergraduate level, and must meet the Graduate School's normal requirements for admission at the doctoral level. Qualified students begin this graduate coursework within a specific master of arts degree program of the College and complete their graduate degree as College-wide doctoral candidates.

To be admitted directly into the doctoral program, one must satisfy the following requirements:

- Hold regular admission status for a specific college M.A. program and for admission into the Ph.D. program
- Submit a statement of purpose indicating interest and commitment in graduate work through the doctoral level
- Successfully pass a comprehensive qualifying exam, upon completing 24 hours of graduate coursework for continuing with the doctoral degree
- Earn a certificate of completion, or equivalent, for the M.A. program, whereupon admission into the doctoral program becomes official.

General Requirements for the M.A. Degree

In consultation with an advisor, the student selects a graduate major in one of the academic departments of the College. There are two options that students may choose for pursuing the master of arts degree.

Plan I, master's thesis. The student's curricular and research interests culminate in the completion of a traditional master's thesis. Students must take a minimum of 30 hours of approved graduate courses, of which 6 are specifically for the thesis. See departmental sections below for required and recommended courses.
Plan II, nonthesis option. Students must take a minimum of 30 hours of approved graduate courses. See departmental sections below for the specific nature of this option and its requirements.

Regardless of the option selected, each student must satisfy the following requirements:

- MC 550 Communication Research Methods (3 hours) or department-approved equivalent
- MC 551 Seminar in Communication Theory (3 hours) or department-approved equivalent

Written comprehensive examination or equivalent, as specified by the student's departmental committee
Final oral examination or equivalent, as specified by the student's departmental committee
8.3 MASTER'S PROGRAMS IN THE SCHOOL OF LIBRARY AND INFORMATION STUDIES

Master of Library and Information Studies (M.L.I.S.)

The program leading to the master of library and information studies (M.L.I.S.) degree is a 36-credit-hour program, one of approximately fifty-five programs in the United States and Canada accredited by the American Library Association and the only ALA-accredited program in the state of Alabama. The degree prepares graduates to work in any type of library or information center—public, K–12, academic, or special—and in entrepreneurial and research environments, especially those using advanced information technologies.

Master of Fine Arts in the Book Arts (M.F.A.)

The program leading to the master of fine arts (M.F.A.) degree in the book arts is a 60-credit-hour course of study comprised of four areas: printing/publishing, bookbinding, papermaking, and the history of the book, with a program emphasis on the book as an integrated unit. Emphasis is placed on developing craft skills based on historical principles and techniques, as well as artistic expression.

Educational Objectives

The educational objectives of these graduate programs are as follows:

- **Teaching.** Provide students with the knowledge, skills, understanding, and diverse technologies to meet the changing informational and cultural needs of diverse populations and organizations. Foster leadership skills and abilities in all students, provide opportunities within the program for students with leadership potential to exercise their abilities, and encourage students as graduates to seek out and assume leadership roles.
- **Research and creative activity.** Augment and advance knowledge through basic research and improve professional practice through systematic inquiry into its nature, standards, and principles.
- **Service.** Apply the insights and knowledge gained through research and instruction in service to public- and private-sector organizations.
8.4 DEPARTMENT OF ADVERTISING AND PUBLIC RELATIONS (APR)

Bruce Berger, Chairperson
Office: 412 Reese Phifer Hall

The master of arts programs in advertising and public relations are intended for those who wish to acquire advanced understanding of and skills in the development of highly effective persuasive communication. The programs focus on prevailing communication theories, current research findings, and advanced practical techniques. The faculty seeks to educate highly competent, focused students who will be recognized for their leadership qualities: the ability to discern issues both in the practice of their profession and in their role in society; the ability to develop and execute successful communication programs; and the ability to lead others effectively.

Two programs are offered: (1) a two-year thesis program with specialization in advertising or public relations (Plan I), and (2) a one-year professional program combining advertising and public relations (Plan II).

Admission Requirements

Admission to graduate work in advertising and public relations requires a 3.0 or higher undergraduate grade point average (on a 4.0 scale) and a combined score of at least 1000 on the verbal and quantitative portions of the Graduate Record Examination general test. The department also accepts the Graduate Management Admissions Test with prior approval. International students are required to obtain scores of 600 or better on the centrally administered version of the Test of English as a Foreign Language (TOEFL). Required supporting materials include a statement of career objectives and three letters of reference (at least two from academic sources).

Conditional admission sometimes may be granted for a student who falls below the minimum grade point average or test score requirements. Students admitted conditionally must earn at least a 3.0 grade point average for their first 12 credit hours.

Each student’s progress will be guided by an academic advisor or by the departmental director of graduate studies. Students in each program must maintain minimum grade point averages of 3.0 and may receive no more than two "C" grades to be eligible to continue.

Degree Requirements

Plan I, the Two-Year Research Program

The two-year master's degree program is intended for students seeking a strong research emphasis in their study of advertising and public relations. The Plan I program focuses on important problems and questions, gathering evidence, and setting standards for inference. The program specifically prepares students in the areas of (a) mastering the body of scholarly knowledge of advertising and public relations, and (b) contributing to the advancement of knowledge in these fields through basic and applied research. Students may decide to continue their studies, pursuing doctorates in advertising or public relations. Students in the Plan I program specialize in either advertising or public relations, learn the concepts and methods involved in productive scholarship, and collaborate with faculty members in conducting research.

Plan I requirements. Plan I is normally a two-year program and requires (a) a minimum of 30 hours of approved graduate courses, (b) demonstration of proficiency in research skills, (c) passing of a comprehensive written examination, and (d) completion and successful defense of a master's thesis. Students admitted to the program with little or no previous coursework in advertising or public relations may be required to take one or more undergraduate courses in the department to supplement their graduate studies.

All required graduate courses in the Plan I program are listed below; cognates and electives are chosen subject to the approval of the student's academic advisor.
Nine hours of this program are devoted to a cognate area, usually outside the College of Communication and Information Sciences. The cognate is intended to provide concentrated study in an area related to the student's career interests. The cognate typically consists of courses in one discipline, but it can consist of courses in several disciplines if the overall topic is unified and contributes to the student's objectives. Cognate examples include marketing, organizational communication, psychology, sociology, and political science.

Research proficiency can be demonstrated by successful completion of one or more statistics or computer science courses approved by the student's academic advisor, or by proficiency in the research methods appropriate to the student's master's thesis.

Following completion of all coursework, students must pass a comprehensive examination.

The student must select a faculty member to chair the thesis committee. In concert with the thesis chairperson, the student chooses a three-member thesis committee. One member must be from outside the Department of Advertising and Public Relations. Working with this committee, the student identifies an appropriate thesis topic and research approach. A thesis proposal must be approved by the thesis committee before a student is permitted to begin work on thesis research. The completed thesis must be defended in an oral examination before the thesis committee.

Plan II, the One-Year Professional Program

The professional program is an intensive, professionally oriented, one-year program that combines advertising and public relations. Recognizing the increasingly close links between the advertising and public relations professions, the Plan II program provides advanced preparation in both disciplines. The program provides intensive training to meet specific objectives. Graduates will be prepared to

- develop a thorough understanding of the institutions and processes involved in advertising and public relations, through a combined program of study
- use research both to generate communication strategies and to evaluate the success of communication programs
- write idea-driven persuasive communication
- plan, implement, and evaluate media plans for advertising and public relations programs and campaigns

The Plan II program is for recent college graduates who see the advantages of having advanced skills in advertising and public relations. The students will recognize that preparation in the liberal arts, business administration, or communication has provided them with important knowledge but has not sufficiently prepared them in the communication concepts and skills needed to be a leader.

Speaking and writing skills are emphasized in all courses, with frequent papers and presentations. One course each semester emphasizes writing skills involved in the advertising and public relations professions.

Plan II requirements. The one-year Plan II program requires (a) completion of a specific 33-hour program of graduate courses, (b) demonstration of proficiency in research skills, (c) passing of a comprehensive written examination, and (d) completion of a master's project in the course APR 598 Communication Workshop. Students admitted to the program will receive a list of critical readings and will be expected to become familiar with these materials before beginning the program. The program starts with a series of orientation sessions aimed at evaluating each student's grasp of the critical readings and ability to proceed with the program without further background study.
Plan II required courses are as follows (semester assignments are provided only as illustration):

**Fall semester**
- APR 570 Contemporary Advertising and Public Relations
- APR 572 Persuasive Communication
- APR 550 Advertising/Public Relations Communication Research Methods
- APR 551 Advertising/Public Relations Communication Theory

**Spring semester**
- APR 522 Media Planning*
- APR 582 Advertising and Public Relations Management
- APR 583 Research Applications in Advertising and Public Relations
- APR 592 Integrated Communication Project*

*Depending on the student's background, an elective course may be substituted for APR 522 or APR 592.

**Interim session**
- APR 590 Visual Communication

**First summer session**
- APR 597 Communication Campaign Workshop I

**Second summer session**
- APR 598 Communication Campaign Workshop II

Research proficiency can be demonstrated by completion of APR 550 and APR 583 with grades of "B" or better, or by successful application of research methods appropriate to the student's project.

The comprehensive examination will be conducted during the first week of the first summer term and may be attempted only twice.

Each year the department faculty will identify faculty members who will serve on the project committee for the Plan II master's degree program. Two members of this committee read each of the project reports submitted by students at the conclusion of APR 598, and a panel of faculty members attends the project presentations given by students at the end of this course.
8.5 DEPARTMENT OF COMMUNICATION STUDIES (COM)
Beth S. Bennett, Chairperson
Office: 203 Reese Phifer Hall

The Department of Communication Studies offers programs leading to the master of arts degree.

Admission Requirements
The department reviews admission applications for both fall and spring admission. Applications submitted to the Graduate School by May 1 will be reviewed by the department for fall admission. Applicants must submit one of the following examination scores in support of the application: the Graduate Record Examination general test or the Miller Analogies Test. Subject to the approval of the department chairperson and the dean of the Graduate School, a maximum of 12 semester hours of graduate courses may be transferred from another institution. These hours must be in communication studies or in a closely allied subject and must contribute to the educational objectives of the student.

Graduate students in communication studies may choose their electives in such areas as rhetorical theory and criticism, political communication, human communication theory, interpersonal and organizational communication, or cultural, critical studies. To apply for departmental graduate assistantships, which are usually awarded only in the spring for the following year, applicants must have been accepted for admission into the program, by the department, no later than March 1. A minimum of 24 graduate hours must be completed in communication studies.

Requirements for the M.A. Degree
The Department of Communication Studies uses a form of contract advising. Graduate students are required to plan contractual programs of study with their assigned advisors during the first semester of coursework. These contractual programs must be approved by the academic advisor and filed with the graduate program director by the end of the first semester of coursework. Each program must meet the minimum requirements of the Graduate School, the College of Communication and Information Sciences, and the Department of Communication Studies.

Degree Requirements
A master of arts degree program in communication studies requires a minimum of 30 hours, based on the following two component areas of study:

Core requirements (18 semester hours)

Theory requirements (12 semester hours)
COM 545 Classical Rhetorical Theory
COM 541 Contemporary Rhetorical Theory or CIS 605
COM 561 Human Communication Theory, or approved equivalent
COM 513, COM 569, or approved multicultural/diversity and communication course

Methods requirements (3 semester hours)
Plan I Thesis or Plan II: Academic/Comprehensive Examination
COM 548 Seminar in Rhetorical Criticism or approved research methods course, such as BER 631, MC 550, LS 502, MC 581.

Methods requirements (6 semester hours)
Plan II: Professional/Practicum
COM 548 Seminar in Rhetorical Criticism or approved methods course, and an approved professionally applied course: COM 590 or COM 598

2. Approved electives (a minimum of 12 semester hours)
To be determined with one’s academic advisor.

Plan I: Thesis option, which includes 6 hours of thesis research (COM 599): In addition to completing the courses specified above and electives stipulated by their plans of study, students who choose Plan I must successfully complete a master's thesis, orally defend that thesis, and have the thesis accepted by the Graduate School.
Plan II: Nonthesis Options, which include 6 hours of electives in the department: All students who choose Plan II must complete a minimum of 30 hours of graduate coursework, including the courses specified above and others stipulated by their approved plans of study, and give a departmental colloquium based on some aspect of their work. Students following the Plan II option have a choice of two plans:

- **Academic track/comprehensive examination plan:** Students who choose this plan must pass a comprehensive examination, to be taken no later than the semester in which the course requirements for the master's degree are to be completed. The examination is designed to reveal the knowledge gained by the candidate through both the core courses and the electives taken in the program, as well as the candidate's ability to express that knowledge in acceptable form. The questions will be formulated and evaluated by the comprehensive examination committee. The written part of the exam will be administered during a two-day period and shall not exceed five hours in total writing time. During this testing period, students will be relieved of all departmental and area duties and responsibilities, including class attendance. The time and place of the exam will be set and publicized by the department graduate program director. The oral part of the exam will be scheduled by the student's advisor upon successful completion of the written exam.

- **Professional track/practicum plan:** Students who are primarily pursuing professional interests or teaching requirements may choose this alternative plan. It provides students with an opportunity to include in their plans of study some type of practical application of their academic work. Students who choose to pursue this plan must secure permission to do so by submitting a formal practicum proposal to their academic advisors, no later than upon completion of 12 hours of graduate coursework. To complete the practicum, students will need to submit a final report, for the approval of their advisors, and give a department colloquium presentation based on the practicum final report, which fulfills the comprehensive examination requirement.

The residence requirement for the master's degree is a minimum of two semesters. Application for admission to degree candidacy may be made after completing a minimum of 12 semester hours. Each graduate student must first apply to the graduate program director for the Department of Communication Studies for admission to candidacy. The graduate program director will certify that the candidate has fulfilled the grade requirements and that undergraduate deficiencies have been or are in the process of being removed. The graduate program director will refer the names of students fulfilling these requirements to the faculty for approval of admission to candidacy.
The Department of Journalism offers the master of arts degree with a major in journalism. It is a flexible program designed to meet a broad range of educational objectives. Students work closely with a faculty that is highly trained, educated, and dedicated to the principles and practices of sound journalism and scholarly inquiry. The program is designed especially for:

- Students seeking to hone professional skills in writing, reporting, editing, and visual journalism to a high degree of competence and sophistication, while developing the conceptual knowledge, problem-solving skills, and personal qualities—the so-called “soft skills”—that make the difference in a career and in a life. These students usually, but not always, follow Plan II (see below).
- Students seeking in-depth knowledge and mastery of one or more of the subfields and methodologies of journalism and mass communication—for example, communication history, communication law, or communication theory and methods. These students usually, but not always, pursue Plan I (see below).

The program is intended for the serious student with a recent bachelor's degree, whether in journalism/mass communication or some other field. It is also open to serious professionals who want to deepen their knowledge.

Admission Requirements

Admission to graduate work in the Department of Journalism requires a 3.0 or higher undergraduate grade point average (on a 4.0 scale) and a score of at least 1000 on the Graduate Record Examination general test or a score of at least the 50th percentile on the Miller Analogies Test. A score of 4.5 on the written portion of the GRE is required. Other evidence of the student's capability for acceptable performance of graduate work must also be presented. Such supporting materials may include letters of recommendation, professional credentials, and a convincing statement of purpose. Conditional admission may sometimes be made if the student can persuade the faculty that other qualifications indicate that the student will perform well in the program despite failure to meet one of the criteria for admission.

Candidates with deficiencies in either their academic curricula or professional experience may be required to take up to 9 hours of undergraduate courses, as specified by the graduate faculty.

Degree Requirements

Each student entering the graduate program in journalism must complete 30 semester hours of credit, under Plan I or Plan II. Requirements for each plan are as follows:

**Plan I, master's thesis**

<table>
<thead>
<tr>
<th>Required courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC 551 Seminar in Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>MC 550 Communication Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>Two master's seminars from JN 525 to JN 563</td>
<td>6</td>
</tr>
<tr>
<td>JN 500 Orientation to Graduate Studies</td>
<td>0</td>
</tr>
<tr>
<td>JN 599 Thesis Research</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
</tr>
<tr>
<td>Total semester hours</td>
<td>30</td>
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**Plan II, master's project**

<table>
<thead>
<tr>
<th>Required courses</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC 551 Seminar in Communication Theory</td>
<td>3</td>
</tr>
<tr>
<td>MC 550 Communication Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>JN 562 Contemporary Issues</td>
<td>3</td>
</tr>
<tr>
<td>JN 563 History of Journalism and the First Amendment</td>
<td>3</td>
</tr>
<tr>
<td>JN 500 Orientation to Graduate Studies</td>
<td>0</td>
</tr>
<tr>
<td>Journalism Cognate</td>
<td>12</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
<tr>
<td>JN 597 Master's Project</td>
<td>3</td>
</tr>
<tr>
<td>Total semester hours</td>
<td>30</td>
</tr>
</tbody>
</table>
All students must enroll in JN 500 Orientation to Graduate Studies each semester. The faculty encourages students to pursue their individual professional objectives through elective hours, the seminar choices, and the master's thesis or master's project.

All students are required to pass both a comprehensive examination, usually given during the last full semester in which the student is enrolled at the University, and an oral defense of the thesis or master's project.

Each student must also demonstrate competency in a research skill before embarking on the thesis or master's project.

The student's work will be guided by an academic advisor who will represent the student before the department's standing Graduate Committee. The Graduate Committee has final authority for the student's work, reviews student progress each semester, and must approve all work taken at The University of Alabama. The committee may require that elective hours be taken in specific areas deemed important for the student's career objectives.

A student who pursues a degree under Plan I will write a master's thesis, while a student pursuing a degree under Plan II will complete a master's project. In either case, the student will select a chairperson and a committee to supervise the work no later than the end of the first semester of enrollment at the University.

The chair of journalism shall appoint a graduate faculty member to represent the department in the master's oral exam. That member will be expected to quiz the student on his or her course of study, especially in the core areas. The faculty member should be satisfied that the student has gained sufficient knowledge to qualify for the master's degree.

The following applies to students pursuing a master's degree under Plan II.

The purpose of the master's project is to demonstrate that the student can apply what he or she has learned and can produce work worthy of publication. The energy and time devoted to the project should be the equivalent of three hours of graduate work. The project may be either academic or professional in nature. For example, a student may choose to write a paper on some historical topic, or the student may produce a lengthy article or series of articles for a newspaper or magazine.

No later than the beginning of the student's final semester, he or she shall propose such a project in writing. The student shall describe how he or she intends to pursue the topic and what research methods will be appropriate. This proposal then shall be filed with the graduate coordinator, and he or she will circulate it among the graduate faculty.

Prior to the master's exam, each student shall present his or her project to the faculty and its guests in a public event. The student shall also present an accompanying paper that provides a detailed description of methodology he or she used to complete the project. In turn, the student's presentation and response to the faculty's questions and comments will help guide the student's project committee in deciding whether the student has performed in a satisfactory manner.

At the time of the master's oral exam, each student under Plan II shall present a portfolio of his or her exemplary work while enrolled in the program. The portfolio should have sufficient entries to demonstrate that the student meets the committee's expectations for performance. The master's project shall be the first item in the portfolio, along with a description of the methodology used to complete the project. Afterward, a copy of the portfolio shall be placed in either the department's files or the Reading Room for future reference.

Knight Community Journalism Fellows/MA in Journalism

Admission Requirements

Students must fulfill all UA Graduate School requirements for the Master of Arts degree (nonthesis track). Visit http://graduate.ua.edu for information on requirements, application forms and other information. Go to http://www.ccom.ua.edu/journalism/ for more information.

Applicants should have

- A 3.0 grade point average overall or 3.0 for the last 60 semester hours in an undergraduate degree program
out of a 4.0-possible grade point average.

- A minimum current (2003 or later) score on the Graduate Record Exam of 1000 (verbal and quantitative). Note: this requirement may be waived with two years of professional experience.

**Professional Experience**

Most Com-J students will have some prior professional experience. We advise others to complete an internship (or part-time job) with a news organization before arriving in Anniston or to arrive early for a two-week intensive introduction to journalistic writing and editing. Equipment, workspace, and multimedia classrooms with Internet connections will be provided in Anniston. Computer skills are recommended.

The application deadline is April 15 for the fall semester. There are no spring or summer admissions.

Each applicant must have a letter of recommendation from a media professional and from a professor familiar with the applicant’s work and talents.

**Program Requirements**

The Knight Community Journalism Fellows master’s degree requires a minimum of 30 semester-hours of credit. A professional quality and conceptually rigorous project is required.

Students must complete the following required courses:

- JN 501 Creating and Producing Community Journalism Content
- MC (Mass Communication) 550 Research Methods
- MC 551 Communication Theory
- JN 562 Issues in Community Journalism
- JN 563 History of Journalism and the First Amendment
- JN 590 Directed Studies. Intensive work during a three-week (40-hour week) Interim Term.
- JN (Journalism) 591 Orientation to Graduate Studies (Subtitle: Grand Rounds in Community Journalism, 1 credit hr, 3 semesters)
- JN 597 Master’s Project

Additional coursework is required to bring the total of credits to 30 hours. Elective course offerings are subject to change but include topics such as Editorial Leadership, Reporting in Depth, Media Management, and Applied Studies.

**Costs and benefits**

The partners have covered the cost of tuition and fees for the 12-month program. For out-of-state students (including international), this is approximately a $15,000 value.
Mission and Goals

The School of Library and Information Studies includes closely two related degree programs: master of library and information studies (M.L.I.S.) and master of fine arts in book arts (M.F.A.). Information on the LIS specialization within the college-wide doctor of philosophy degree program may be found in this Catalog under Communication & Information Sciences Doctoral Program. The mission and goals of the School pertain to each of these degree programs. However, the objectives of each program are specific for that program and more narrowly focused.

Mission statement. The mission of the School of Library and Information Studies is to advance the theory, art, and practice of professions specializing in the use of information and the creation of information in recorded form.

Goals:

- **Teaching.** Provide students with the knowledge, skills, understanding, and diverse technologies to meet the changing informational and cultural needs of diverse populations and organizations. Foster leadership skills and abilities in all students, provide opportunities within the program for students with leadership potential to exercise their abilities, and encourage students as graduates to seek out and assume leadership roles.
- **Research and creative activity.** Augment and advance knowledge through basic research and improve professional practice through systematic inquiry into its nature, standards, and principles.
- **Service.** Apply the insights and knowledge gained through research and instruction in service to public- and private-sector organizations.

Facilities. The School is located on the fifth floor of the Amelia Gayle Gorgas Library. Two classrooms are designed for optimal use of multimedia and information technologies. Large monitors, capable of handling both digital and analog signals, are connected to a workstation and the campuswide network. One classroom also serves as a node on a compressed digital audio/video/data network. Both proprietary and standards-based connectivity to other sites worldwide can be achieved utilizing bandwidths from 128 Kbs to 1.54 Mbs. The Media Preparation Laboratory contains Macintosh workstations and multimedia workstations linked to the School’s LAN, scanners, and laser printers. Software for creating multimedia presentations and for Web development is available on the workstations.

The Information Processing Laboratory includes a number of workstations connected to the School’s LAN. A modem server is available for dial-out capabilities. Students have access to a wide variety of electronic bibliographic databases in CD-ROM and online formats that are available to all stations via the network and Internet. Through the lab, regular instruction is provided to students in the use of the Internet, word processing, database applications, desktop publishing, and many other topics. The Media Preparation Laboratory contains state-of-the-art Macintosh and IBM workstations specifically for research in the areas of cataloging, graphics, and for the development of multimedia presentations, including the School’s website: www.slis.ua.edu. Peripheral equipment includes a CD-ROM writer, color scanner, and video capture boards. Students can gain experience working in MS-DOS, Unix, and Macintosh platforms.

A library reading room permits browsing in current periodicals and information files. This area contains a variety of workstations that provide access to contemporary-model electronic information systems. Conveniently located for relaxation and refreshment is the student/faculty lounge. Offices, other laboratories, and the administrative suite complete the 13,000-square-foot complex.

Academic Common Market (ACM). The School of Library and Information Studies participates in the ACM, an agreement among selected Southern states to share academic programs at in-state tuition rates. Residents of the states of Arkansas, Delaware, Virginia, and West Virginia may make an ACM application to attend the M.L.I.S. program. If accepted, The University of Alabama will pay the out-of-state portion of the student’s tuition. Residents of Georgia, Kentucky, Louisiana, Mississippi, South Carolina, and Tennessee may apply to the ACM to attend the M.F.A. in book arts program, also with UA’s paying the out-of-state portion of tuition. Background information on the ACM, a list with the contact information for each state’s ACM Coordinator, and an online application to the UA Academic Common Market are available at http://acm.ua.edu.
A number of departmental assistantships (which not only pay a stipend but also cover some out-of-state fees), as well as a number of scholarships, are available each academic year. Contact the Director of the SLIS for information.

Cooperative Education Program. The School of Library and Information Studies and several other institutions cooperatively provide students with professional experiences that enrich and supplement their graduate studies. Students interested in cooperative education should contact the director of the School of Library and Information Studies.

MASTER OF LIBRARY AND INFORMATION STUDIES (M.L.I.S.) PROGRAM

Regular Admission Requirements

An applicant whose credentials meet the following minimum requirements may be considered for regular admission:

- a grade point average of at least 3.0 overall or 3.0 for the last 60 semester hours in a degree program, based on a 4.0 system
- an acceptable score on the entrance examination (minimum test scores: general test of the GRE verbal and quantitative—1000 or MAT—50th percentile)

Not every student whose credentials meet the stated quantitative standards is admitted.

Information about the GRE is available from the Educational Testing Service, Princeton, NJ 08540. The MAT is given by the testing service of most colleges and universities and may be taken by appointment. Applicants should plan well in advance so that examination results are available when needed to support an application for admission. Braille editions of the GRE and the MAT can be obtained from The University of Alabama, Test Service, Box 870108, Tuscaloosa, AL 35487-0108.

Application materials, which must be submitted electronically, may be obtained from the Graduate School website at http://graduate.ua.edu. Applications for admission must be completed at least six weeks prior to the registration date for the term for which admission is sought.

Conditional Admission Requirements

An applicant whose credentials do not meet the stated requirements may be considered for conditional admission if the following minimum requirement is satisfied:

- a grade point average of at least 2.5 overall and a GRE or MAT score acceptable to the School and the Graduate School

A graduate student admitted conditionally removes the condition by earning an average of "B" or better for the first 12 semester hours of graduate-level work completed and by satisfying any other conditions specified by the School at the time of admission. If the 12 hours are completed in a term in which the total credits exceed 12, the evaluation is made on the basis of all graduate-level work completed at the end of that term of enrollment. Failure to remove the condition within the first 12 hours of graduate work will result in the student's being dropped from the program. A student who satisfies the condition automatically assumes the status of a regularly admitted graduate student.

Nondegree Admission Requirements

A student may be admitted as a nondegree student if that person has either a 3.0 undergraduate GPA or an acceptable test score: 50th percentile on the MAT or 1000 on the GRE general test. No more than 12 hours may be taken as a nondegree student and applied to a degree.

Degree Requirements

Candidates for the M.L.I.S. degree must earn a minimum of 36 semester hours of credit, completing all work with a grade average of "B" or better. A thesis is not required. All M.L.I.S. students must complete, as part of the minimum 36 hours, the following 18 hours of required courses:
LS 500 Organization of Information  
LS 501 Introduction to Library and Information Studies  
LS 502 Research Methods  
LS 507 Information Sources and Services  
LS 560 Information Technologies

And one of the following:  
LS 508 Administration and Management  
LS 530 Public Libraries  
LS 531 Academic Libraries  
LS 532 School Media Centers  
LS 533 Special Libraries and Information Centers

Graduate credit may be transferred from another university (with the approval of the M.L.I.S. program director and only after a formal application for transfer credit has been approved by the Graduate School) or may be elected from the offerings of other departments. No more than 9 hours of credit can be applied toward the M.L.I.S. for graduate courses taken outside SLIS, directed research courses, and internships. These hours may be combined as follows:

1. Six hours of approved credit for graduate work taken outside SLIS and 3 hours of credit for a directed research course or internship; or

2. Six hours of credit for any combination of directed research courses and internships and 3 hours of approved credit for graduate work taken outside SLIS.

NOTE: No more than 20 percent of courses required for a degree may be taken on a pass/fail basis, and at least 75% of the courses must be completed with a letter grade of A or B.

Student Learning Outcomes for the M.L.I.S.

Teaching. Upon completing the SLIS M.L.I.S. program, all students should

- have acquired a basic core of knowledge in the field: the creation and production, organization and access, selection and evaluation, preservation, dissemination and use of information  
- understand the nature of professional ethics, display a committed professional attitude, value the role of professional associations, and be committed to individual professional development  
- understand the opportunities and challenges of a variety of information settings, their functions, and the users they serve and be able to approach the design and management of services and systems  
- value teaching and service as ways to advance the field  
- have knowledge of current research, an understanding of research processes and methods, and an ability to analyze and critically evaluate research and apply it to professional duties  
- understand the significance of concepts and contributions of other disciplines to library and information studies and the importance of library and information studies theories, principles, and concepts to other disciplines  
- be aware of and sensitive to the impact of information practices, services, and programs on diverse, underserved and multicultural communities  
- understand the appropriate technologies and their applications within particular contexts for the organization, retrieval, management, and dissemination of information  
- be able to communicate cogently, clearly, and persuasively  
- support the development and improvement of library and information services in general with special focus on the people of Alabama and the southeastern United States

Research and creative activities. The SLIS faculty

- publish papers and reports in journals, monographs, and other publications devoted to librarianship, information science, and related disciplines  
- present the results of research, inquiry, and creative endeavors to peers at professional meetings and exhibitions  
- undertake applied research projects including consulting assignments that augment and advance knowledge

Service. The SLIS faculty and staff provide advice and assistance to libraries and information centers (with particular emphasis on institutions in the state of Alabama) that help them to enhance the services they provide.
The SLIS faculty and staff undertake consulting assignments. SLIS provides opportunities for faculty and students to participate in professional associations, to promote the profession, and to assume leadership and policy-making roles. SLIS faculty, staff, and students participate in the work of the University and the School through service on committees and working groups.

**Class A Library-Media Certification.** A candidate for the M.L.I.S. degree who seeks an Alabama Class A Library-Media Certificate must first have fulfilled the requirements for a teaching certificate at the baccalaureate level. Two years of successful teaching must also have been completed prior to receiving Class A certification as a library-media specialist. Certification may also be granted by the Alabama State Department of Education to a person who holds an M.L.I.S. degree, completes two years of successful teaching as a school library media specialist, and is recommended by the principal or superintendent who supervised the two years of work.

In addition to completing an approved program of studies, the candidate is required to earn a satisfactory score on a comprehensive examination administered by the School of Library and Information Studies. The approved program of studies for certification is as follows:

### Instructional support area

- **LS 500** Organization of Information 3
- **LS 501** Introduction to Library and Information Studies 3
- **LS 504** Media Production and Utilization 3
- **LS 507** Information Sources and Services 3
- **LS 532** School Media Centers 3
- **LS 542** Instructional Design and Development 3
- **LS 560** Information Technologies 3
- **LS 572** Internship in School Media Centers (requires a minimum of 300 clock hours) 3

### Foundation of professional studies

Three semester hours are to be earned in courses that meet the foundation of professional studies requirement, as defined by the granting institution. Students who have not already completed a survey course in special education must also take **SPE 500** Introduction to Exceptional Children and Youth (or its equivalent). Such students must complete a minimum of 39 semester hours for the degree. 3–6

### Research

- **LS 502** Research Methods 3

### Electives

- **LS 521** Materials and Services for Children 3
- **LS 522** Materials and Services for Young Adults 3

**Total semester hours 36–39**

If courses equivalent to any of these required courses have been taken previously, substitutions may be made, with the approval of a faculty advisor.

**MASTER OF FINE ARTS (M.F.A.) PROGRAM IN THE BOOK ARTS**

The program leading to the M.F.A. in the book arts degree is a 60-credit-hour program of study comprised of four areas: printing and publishing, bookbinding, papermaking, and the history of the book, with a program emphasis on the book as an integrated unit. Students may pursue one of three concentrations: printing and publishing; bookbinding; or a fusion of the two, focusing on the whole book. Emphasis is placed on developing craft skills based on historical principles and techniques, as well as artistic expression. The M.F.A. in the book arts program develops professional-level book artists who have well-honed technical knowledge of the various facets of contemporary bookmaking, an intimate personal involvement with their specific areas of interest, and an understanding of the role of the book in society.
Admission Requirements

Applicants may submit a score for either the general portion of the Graduate Record Examination or the Miller Analogies Test in support of the application for admission. Admission requirements for the M.F.A. program in the book arts are consistent with those for the M.L.I.S. degree program. A portfolio is not required; however, students are encouraged to submit one.

Degree Requirements

Candidates for the M.F.A. degree in the book arts must earn a minimum of 60 semester hours of credit, including at least 6 hours in the history of the book and 3 hours in a historical/theoretical course appropriate to the goals of the individual student; at least 33 hours in the book arts studio; and 12–18 hours of electives within or outside the book arts program. All coursework must be completed with a grade average of "B" or better. All students enter the program in the fall and spend four semesters in residence.

All M.F.A. students must complete, as part of the 60 hours, the following required courses:

- BA 520 Printing I—Elements of Printing 3
- BA 521 Printing II—Printing and Typography 3
- BA 530 Binding I—Elements of Binding 3
- BA 531Binding II—An Exploration of the Paper- and Cloth-Bound Book 3
- CIS 655 History of the Book: Book as Artifact 3
- CIS 654 History of the Book: Print Culture and Society 3
- BA 592 Graduate Symposium 3
- BA 599 Creative Project Production, Thesis, and Exhibition 9–12

**NOTE:** No more than 20 percent of courses required for a degree may be taken on a pass/fail basis, and as with all graduate programs at the University, at least 75% of courses must be completed with a letter grade of either A or B.

Those students concentrating in printing and publishing also must complete the following:

- BA 522 Printing III—Printing and Parallel Editions 6
- BA 523 Printing IV—Printing and Publishing 6

Those students concentrating in bookbinding must also complete the following:

- BA 532 Binding III—Leather Binding 6
- BA 533 Binding IV—Binding Exploration 6

Those students concentrating on the whole book must also complete advanced coursework in both printing and binding. The configurations of advanced courses will be determined through discussion with the book arts faculty.

Students who are not enrolled in the MFA program and who wish to take book arts classes must obtain permission from the instructor before enrolling.
DEPARTMENT OF TELECOMMUNICATION AND FILM (TCF)
Professor Gary Copeland, Chairperson
Office: 484 Reese Phifer Hall

The master of arts degree program in telecommunication and film focuses on the electronic media and the cinema as informative, influential, and meaning-producing forms. The program emphasizes the study of these media in terms of law and policy, technological systems, economic and industrial infrastructures, news and public affairs, management leadership, individual and societal effects, history, and cultural criticism.

Implementation. The principal goals of the program are to develop students' analytical and interpretive skills through thoughtful and informed consideration of the possibilities, limitations, and responsibilities of the telecommunication and film media. Our students study radio, television, film, the Internet, satellite communication, telephony, and other electronic media systems in an attempt to understand how they work and what influences they have upon individuals, societies, and the global community.

Specialized application of studies may culminate in a thesis or master's project specific to one of the following: management leadership; law and policy; news and public affairs analysis; telecommunication and society; cinema and television critical studies; or another emphasis in which the student's particular interests match appropriately qualified faculty members', subject to the availability of resources necessary for the proposed study.

Courses are selected in consultation with the student's graduate advisor and must be approved by the student's program committee.

Admission Requirements

In addition to meeting all requirements of The University of Alabama Graduate School, the department requires applicants to provide at least two letters of reference or statements from academic sources who can attest to the applicant's potential for graduate work. We encourage applicants to visit the department and become better acquainted with the program, the faculty, and the current students.

Degree Requirements

Plan I, master's thesis. Students who write a master's thesis must complete a minimum of 30 graduate credits, including the courses specified below and others stipulated by the student's program committee. In addition, the student must do all of the following:

- pass a comprehensive written exam (typically eight hours long) and orally defend the answers
- successfully complete a master's thesis (enrolling in TCF 599 Thesis Research for at least 6 credit hours) and orally defend that thesis
- deposit a bound copy of the master's thesis in the department

Plan II, nonthesis options. Students who choose Plan II must complete a minimum of 30 hours of graduate coursework, including the courses specified below and others stipulated by the student's program committee. Students following the nonthesis option have two plans from which to choose:

Plan II, Project: The student must do all of the following:

- pass a comprehensive written exam (typically eight hours long) and orally defend the answers
- successfully complete a master's project (enrolling in TCF 598 Master's Research Project for 3 credit hours) and orally defend that project
- deposit a bound copy of any written portion of the master's project in the department

A student choosing this option will create a project appropriate to his or her interests and approved by his or her program committee. Such projects always will include written justification for the undertaking, an explanation of the procedures involved, and a clear rationale for each decision. Substantive documentation to support observations and conclusions is expected.
Plan II, Independent Research: The student must do all of the following:

- pass a comprehensive written exam that is substantially longer than those taken in the other options (typically 12–16 hours long) and orally defend the answers
- successfully complete individual study with a faculty member (enrolling in TCF 597 Independent Research for 3 credit hours).
- deposit a bound copy of any written portion of the master’s project in the department

Course requirements. All College of Communication and Information Sciences master's degree candidates must complete MC 550 Communication Research Methods and MC 551 Seminar in Communication Theory. Master's degree candidates in telecommunication and film must also complete TCF 553 Seminar in Telecommunication or TCF 577 Cinema Seminar.

Remaining coursework will consist of thesis research (at least 6 hours) and electives (15 hours) or master's project research/study (3 hours) and electives (18 hours), or independent research (3 hours) and electives (18 hours). The student may take no more than 9 hours of electives numbered TCF 500-549; with approval, up to 6 hours of electives outside the department may be taken (MC courses are not included in these 6 hours). The student must develop a curriculum plan, which must be approved by the student's program committee. Sample curriculum plans might include the following courses:

<table>
<thead>
<tr>
<th>Management leadership</th>
<th>Semester hours</th>
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<tbody>
<tr>
<td>TCF 545 Telecommunication Media Management</td>
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<td>TCF 547 Telecommunication History and Systems</td>
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<td>TCF 553 Seminar in Telecommunication</td>
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<th>Law and policy</th>
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<tr>
<td>MC 501 Mass Media Law and Regulation</td>
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<td>TCF 533 Seminar in Telecommunication</td>
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<td>TCF 547 Telecommunication History and Systems</td>
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<td>TCF 548 Telecommunication Policy and Law</td>
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<th>News and public affairs analysis</th>
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<tr>
<td>TCF 533 Broadcast News Analysis</td>
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<td>TCF 541 The Documentary Form</td>
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<td>TCF 553 Seminar in Telecommunication</td>
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<tr>
<th>Telecommunication and society</th>
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<tr>
<td>TCF 520 Telecommunication Effects</td>
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<td>TCF 553 Seminar in Telecommunication</td>
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<td>MC 501 Mass Media Law &amp; Regulation</td>
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<th>Cinema and television critical studies</th>
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<td>TCF 511 Seminar in Critical Studies in Television</td>
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<td>TCF 540 Seminar in American Cinema</td>
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<td>TCF 541 The Documentary Form</td>
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<td>TCF 577 Cinema Seminar</td>
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The college-wide doctor of philosophy degree in the College of Communication and Information Sciences is designed to

- prepare communication scholars for positions of leadership in education, public service, the media, libraries, information-management positions, and other communication-related fields
- add to a student’s usable body of knowledge in a chosen area of specialization within the field of communication and information sciences
- develop each student’s research, teaching, and professional capabilities
- promote scholarly achievement and advancement of knowledge in the communication and information science disciplines, through basic and applied research

Specializations

- Mass Communication
- Information Studies
- Cultural, Critical, and Rhetorical Studies

Admission Requirements for the Ph.D. Program

Applicants to the doctoral program must meet the admission requirements of the Graduate School of The University of Alabama and those stated below. Consideration for acceptance is based on having met these requirements, and on evidence of the capacity for success in communication studies at the doctoral level, in the form of clarity of expression and goals in the statement of purpose; letters from professors who can attest to an applicant's potential for doctoral-level work; record of prior academic study (including the nature and academic standing of courses of study already completed and grades earned); satisfactory scores on the Graduate Record Examination; and other information that may illustrate ability, maturity, commitment, and sense of purpose or that may otherwise indicate an applicant’s potential to complete doctoral studies.

Normally, an applicant will have completed requirements for a master's degree in the communication field or in library and information studies. Consideration will be given to individuals with advanced degrees in other fields if they can make clear cases showing how their previous graduate work would apply to doctoral study in communication and information sciences. Admission for study in master's degree programs offered in the College of Communication and Information Sciences does not imply eligibility to work toward the doctoral degree. Admission to doctoral study in the College of Communication and Information Sciences requires completion of a separate application through the Graduate School. An applicant whose credentials meet the following minimum requirements may be considered for admission to the Ph.D. program in communication:

- an undergraduate grade point average of 3.0 or higher overall (based on a 4.0 system) or a 3.0 or higher average for the last 60 semester hours of undergraduate study, and a graduate-level grade point average of at least 3.0
- a combined score of 1100 on the verbal and quantitative portions of the Graduate Record Examination general test, with no less than 400 on either the verbal or quantitative portion of the examination, and 4.5 on the written portion of the GRE

Foreign applicants must score at least 600 on the Test of English as a Foreign Language (TOEFL) to be considered for admission.

An applicant who does not meet these requirements may be considered for conditional admission to the program if the following conditions are satisfied: an undergraduate grade point average of at least 3.0 overall (based on a 4.0 system) and a combined score of 1000 or higher on the verbal and quantitative portions of the Graduate Record Examination general test, with no less than 400 on either the verbal or quantitative portion of the examination. A student admitted conditionally to the program removes the condition by earning a grade point average of 3.0 or better during the first 12 semester hours of graduate work attempted after admission to the doctoral program, and by satisfying any other conditions specified by the College of Communication and Information Sciences Graduate
Studies Committee. If the 12 hours are completed in a term in which the total credits exceed 12, the evaluation is made on the basis of all graduate work completed at the end of that term of enrollment.

A student who removes the condition immediately assumes the status of a regularly admitted graduate student. Failure to remove the condition within the first 12 hours of graduate work will result in the student's dismissal from the program. No student will be admitted to the program on any basis other than the two described above (regular and conditional admission to the Ph.D. program in communication and information sciences).

Admission of a foreign student to the program may be contingent upon the successful completion of specified coursework in the English language offered by the English Language Institute of The University of Alabama. In such cases, the criteria for successful completion include earning at least a "B" grade in each course. Stipulated courses in the English Language Institute must be completed before the student is permitted to begin a course of study in the doctoral program.

Students who are admitted contingent upon the completion of preliminary courses specified by the Admissions Committee must complete these prerequisites during the first semester of study in the program if at all possible. Students will not be permitted to continue beyond the second semester of enrollment without having successfully completed the prescribed prerequisites. The prerequisite courses do not carry graduate credit.

The student's advisor and/or Program Advisory Committee may also recommend specific, preliminary, noncredit coursework to be completed during the first or second semester of study if deficiencies in a specific area are determined. These requirements must be approved by the associate dean for graduate studies of the College of Communication and Information Sciences.

General Requirements for the Ph.D. Degree

Coursework

1. **Number of semester hours required in the program**: 48–60 hours as determined by a student's program committee. An additional 24 hours of dissertation research will be taken, usually following admission to candidacy.

2. **Specialization**: 18–30 hours are required in the student's area of specialization, from one of the following three specializations: mass communication, information studies, or cultural, critical, and rhetorical studies. The student’s Program Advisory Committee determines which specific courses he or she must take to satisfy program and research requirements.

3. **Cognate**: 9–15 hours are required in the student's cognate area, which has to be approved by the student's Program Advisory Committee. We recommend that students take their cognate in courses outside the College of Communication and Information Sciences. If the cognate is taken within the College, it must be in an area outside the specialization.

4. **Core requirements (courses required of every student)**
   a. **12 hours required in six courses**:
      - 3 hours of the following:
        - CIS 600 Proseminar in Communication and Information Sciences (1 hour)
        - CIS 601 Proseminar in Pedagogy (1 hour)
        - CIS 602 Colloquium in Communication and Information Sciences. (1 hour)
   b. **6 hours in theory. The student, in conjunction with the Program Advisory Committee, chooses two theory courses from the following, one of which must be in the student’s area of specialization**:  
      - CIS 604 Mass Communication Theory
      - CIS 605 Cultural, Critical, and Rhetorical Theory
      - CIS 606 Knowledge and Information Theory
      - CIS 607 Theory Construction and Epistemology
   c. **3 hours in research methods**:
      - CIS 603 Communication Research Methods
      - Additionally, the student must demonstrate proficiency in the research methodology to be used in the dissertation through coursework beyond CIS 603 before taking the comprehensive examinations.
      - Students taking coursework that requires quantitative research and/ or doing a dissertation using quantitative research must complete at least one statistics course.

5. **Electives (additional courses): 0–21 hours.** These courses may be in the specialization, cognate, or other areas that the student's Program Advisory Committee may stipulate or approve.
6. Other requirements

- A minimum of 36 hours of coursework must be completed after enrollment in the CIS doctoral program.
- A minimum of 24 hours of coursework must be at the 600 level. The remainder of hours of approved graduate course credit must be at the 500 or 600 level. No slash-listed 400/500-level course may be taken in the doctoral degree program. A maximum of 6 hours of 400- or 400/500-level credit may be transferred if completed as part of a master's degree program.
- Each student must complete a minimum of four 600-level seminars from the College of Communication & Information Sciences curriculum.
- Up to 12 of these 36 hours may be transferred from a student's master's program if approved by the student's Program Advisory Committee and the associate dean for graduate studies. Credits so approved must have been earned within a period of no more than six years prior to admission.

Required Plan of Study. By the time each doctoral student has completed 30 graduate semester hours of UA and/or transfer work toward the degree, the student must have a doctoral Plan of Study approved by the director of the Communication and Information Sciences doctoral program and by the dean of the Graduate School. Failure to obtain approval of the Plan of Study by the graduate dean by the completion of 30 hours may result in the student's having a hold placed on future registrations. The Plan of Study is available at the Office for Graduate Studies in CIS.

Students admitted to the doctoral program may be required to complete additional coursework to be prepared for doctoral-level (600-level) study and research in communication and information sciences, at the discretion of the Program Advisory Committee and the CIS associate dean for graduate studies.

All degree requirements must be completed within seven years after first enrollment in the program. Entering doctoral students with incomplete master's theses must complete these during the first year of doctoral study. Students must provide official transcripts of their master's degree work as evidence that their degrees have been granted. If a student fails to provide the transcript, the College may refuse to administer the Ph.D. preliminary examination and/or may withdraw financial support; the Graduate School also would nullify the doctoral program admission.

Scholastic requirements. A student must maintain cumulative grade point average of at least 3.00 on a 4.00 scale for graduate courses undertaken following admission to the doctoral program. A doctoral student whose grade point average falls below 3.00 at any time after 6 semester hours have been completed will be placed on academic warning by the Graduate School and the College of Communication and Information Sciences.

- A student on academic warning will not be permitted to apply for admission to candidacy and may not hold an assistantship.
- Warning status must be removed (by raising the overall average to 3.00 or higher) within the next 9 hours of graduate work following the period of warning. Failure to remove the warning status will result in the student's suspension from the Graduate School and the program.
- Earning a "C" grade at any time will automatically place a student on academic warning within the College.
- A grade of "I" (Incomplete) is evaluated as an "F" in computing GPAs, and such grades must be removed within four weeks of the next term of enrollment.
- A student who earns a grade below "B" in more than two courses will be dropped from the program.

Students who are dropped from the program may petition the College of Communication and Information Sciences Graduate Studies Committee for readmission. The committee may in turn make a special request to the dean of the Graduate School for approval of the student's readmission.

Residency requirement. The minimum period in which the doctoral degree can be earned is three full academic years of graduate study. The student must spend an academic year in continuous residence on the campus of The University of Alabama as a full-time student (9–12 hours of coursework per semester) or, if specifically approved by the faculty concerned, one full summer consisting of two terms, preceded or followed by one regular, full-time semester. Only non-dissertation coursework can satisfy this requirement; dissertation research cannot be used.
Students must complete their residence requirement before admission to candidacy.

Preliminary examination. A preliminary examination is required of all doctoral candidates. The examination is given after all required course work and other work prescribed by the student’s Program Advisory Committee has been completed. The examination must be completed at least three months before the degree is awarded.

The student demonstrates, through written and oral examinations, a capacity to understand, synthesize, and apply communication theory and research techniques, as well as demonstrate knowledge of the pertinent literature, issues, and recent advances in the student's area of specialization and cognate area of study. In other words, the examination must cover (1) the communication theory core, (2) the research methodology core, (3) the student's area of specialization, and (4) cognate area. The written examination is administered by the student's Program Advisory Committee, which may call on other faculty members associated with the student's coursework for assistance in preparing the examination. Sixteen hours are set aside for the examination—four hours for each division (theory, methods, specialization, and cognate). The examination is to be completed within a two-week period.

The oral portion of the examination is required of all students and will be scheduled as soon as possible following the completion of the written examination. Immediately following the oral examination, the examination committee will determine whether the student has passed, must perform additional work to demonstrate competency in one or more areas of the examination, or has failed the examination. When additional work is required, the examining committee may choose to administer another oral examination. In the case of a clear failure, re-examination must take place after six months and before twelve months have elapsed. Each of the four portions of the preliminary examination may be taken only twice. The examining committees will rule either pass or fail on the second examination in toto.

Admission to candidacy. A student is certified by the dean of the Graduate School for admission to candidacy for the Ph.D. in Communication & Information Sciences after meeting the following requirements:

- completion of the program of coursework and other requirements prescribed by the student’s Program Advisory Committee, approved by the College of Communication and Information Sciences Office for Graduate Studies, and approved by the dean of the Graduate School on the Plan of Study and Admission to Candidacy forms
- demonstration, by passing the preliminary examination, of competence in the Ph.D. core, research methods, the specialization, and the cognate
- a successful defense of a dissertation proposal
- approval by the Graduate School of the Admission to Candidacy for the Doctoral Degree form, available at the Graduate School’s website

Dissertation committee. Following a successful completion of preliminary examinations, the candidate for the Ph.D. in Communication and Information Sciences must form a Dissertation Committee.

The dissertation committee is composed of at least five members. The Graduate Faculty of the College of Communication and Information Sciences must be represented by at least three members. A fourth member may be from CIS or from a college or school outside the College of Communication and Information Sciences, but he or she must have graduate faculty status. A fifth member, to be appointed by the Graduate School of the University, must be a member of the Graduate Faculty in a division other than the College of Communication and Information Sciences; this so-called “Outside Member” represents the UA Graduate Faculty at large. Only full members of the Graduate Faculty may chair doctoral dissertations.

At least one committee member other than the chair must have full membership in the Graduate Faculty of the College of Communication and Information Sciences. All other members may be associate members. However, no more than one temporary member of the Graduate Faculty may serve on any given committee.

Dissertation. After successful completion of the preliminary examination, degree candidates must submit a written proposal to their dissertation committee.

The proposal describes the importance of the proposed topic, outlines the hypotheses to be evaluated, provides and overview of relevant literature, specifies the methodology to be used, and lays includes a timetable for completion of the project. The dissertation must make a significant original contribution to the field of communication and information sciences and must demonstrate the candidate's ability to report that research in writing in a clear, comprehensive, and scholarly manner.

The student must submit the proposal, and later the dissertation, to the committee at least 14 days prior to the defense. After the proposal has been circulated among the members, the student's dissertation committee meets for the student's oral defense of the proposal. The candidate must complete the dissertation and all other degree requirements within seven years of the date of admission to the doctoral program.
Final examination. The candidate must present a copy of the final draft of the dissertation to each committee member at least two weeks before the scheduled date of the final examination. After the dissertation has been completed and accepted by the candidate's dissertation committee for purposes of the examination, the candidate will be given a final oral examination by the dissertation committee.

The final examination is concerned primarily with the research embodied in the dissertation and with the field in which the dissertation lies, but it may extend over the student's entire primary field of study. The final oral examination is governed by the rules of the Graduate School of The University of Alabama. All graduate faculty of the College of Communication and Information Sciences are invited to attend. After the Graduate School has approved the dissertation, the student is to provide a bound copy of the final version of the dissertation to the Office for Graduate Studies in the College.
8.10.1 ADVERTISING AND PUBLIC RELATIONS (APR)

APR 522 Media Planning. Three hours.
Development of media objectives, strategies, and budgets and implementation of media plans for advertising and public relations. Each student prepares and presents a media plan.

APR 550 Advertising/Public Relations Communication Research Methods. Three hours.
A survey of qualitative and quantitative methods in communication research.

APR 551 Advertising/Public Relations Communication Theory. Three hours.
A study of the development of selected mass communication theories as related to advertising and public relations.

APR 560 International Public Relations. Three hours.
Prerequisites: Graduate standing and permission of the academic advisor and instructor.
Integration of public relations theory and techniques into complete campaigns. Research and analysis of topics related to international corporate communication, with particular emphasis on the public relations industry in Europe, especially Britain. Offered spring semester, with a field trip to Europe during summer session.

APR 570 Contemporary Advertising and Public Relations. Three hours.
An advanced survey of the academic and professional literature underlying the contemporary practice of advertising and public relations.

APR 572 Persuasive Communication. Three hours.
The practice of creating, writing, editing, and producing persuasive communication for advertising and public relations. Writing skills are exercised extensively in this course.

APR 582 Advertising and Public Relations Management. Three hours.
Problems and decision-making processes involved in the management of advertising and public relations programs and organizations.

APR 583 Research Applications in Advertising and Public Relations. Three hours. Prerequisite: APR 550.
Application of research methods and procedures for problem solving and impact assessment in advertising and public relations programs.

APR 590 Visual Communication. Three hours.
The practice of developing ideas and creative strategies for professional evaluations about design and its application. Each student prepares a portfolio.

APR 592 Integrated Communication Project. Three hours.
A message-oriented course. Students conceptualize and execute integrated communication programs. Topics vary.

APR 596 Independent Study or Research. One to three hours.
Prerequisite: permission of the academic advisor and instructor.

APR 597 Communication Campaign Workshop I. Three hours.
Research to develop an advertising and public relations campaign for a specific organization. This is the preparation stage for the major case study prepared by the student in APR 598.

APR 598 Communication Campaign Workshop II (Master's Project). Three hours.
Development and presentation of a complete advertising and public relations plan and proposal for the specific organization studied in APR 597. Integration of theory, concepts, and techniques in a complete communication program.

APR 599 Thesis Research. Three hours.
Prerequisite: permission of the academic advisor.
8.10.2 BOOK ARTS (BA)
To enroll in BA courses, the student must be admitted to the Book Arts Program or have permission of the instructor.

Printing/Publishing

**BA 520 Printing I: Elements of Printing.** Three hours.
Craft skills used in fine letterpress printing are introduced in a studio environment. Through a number of printing/publishing experiments and projects, students gain an understanding of the nature and interaction of printing types with inks and papers; learn fundamental terminology; and gain familiarity with the equipment. The emphasis is on setting type, letterpress printing, and basic typographic design. Miller.

**BA 521 Printing II: Typography and Printing.** Three hours. 
Prerequisite: BA 520. 
Explores contemporary attitudes and innovations in fine printing and fine press publishing through individual printing/publishing projects, as well as a collaborative project. The focus is on typographic design, editorial decision making, color and image integration, and press work. Miller.

**BA 522 Printing III: Parallel Editions and Printing.** Three or six* hours. 
Prerequisite: BA 521.
Students initiate and produce an edition of a relatively extensive book. Emphasis is on production, with manuscript selection and editing being critical aspects. Photopolymer platemaking processes are introduced in a desktop publishing environment adapted to historic tools and media. Such subjects as marketing and distribution of limited-edition books are covered. For those students taking the 6-hour option, a Parallel Editions book may be produced. Miller.
*Required for students with concentrations in either printing/publishing or bookbinding.

**BA 523 Printing IV: Printing and Publishing.** Three or six* hours. 
Prerequisite: BA 522. 
*Required for students with concentrations in either printing/publishing or bookbinding.

Binding

**BA 530 Binding I: Elements of Binding.** Three hours. 
Drawing upon both the historic and contemporary Western bookbinding traditions, this course is an initiation into fundamental binding forms, techniques, materials, and design. A series of cloth and paper bindings will be designed and made. While design and innovation will be stressed, the primary focus of the course will be upon learning technical skills. Embree.

**BA 531 Binding II: An Exploration of the Paper- and Cloth-Bound Book.** Three hours. 
Prerequisite: BA 530. 
Students will continue to hone their fundamental binding skills and acquire new ones while also experimenting with the possibilities that the paper and cloth case binding forms offer, both one-of-a-kind and multiples. The examination and use of nontraditional materials and of innovative binding design are encouraged. Embree.

**BA 532 Binding III: Leather Binding.** Three or six* hours. 
Prerequisite: BA 531. 
A concentrated study of the use of leather as a binding cover material. Various binding styles and structures appropriate to leather treatment are studied. Familiarity with the preparation and application of leather in bookbinding is achieved through a series of assigned projects culminating in a final project. Though not the primary focus of the course, binding design and innovation will be studied and explored. Embree.
*Required for students with concentrations in either printing/publishing or bookbinding.

**BA 533 Binding IV: Advanced Binding Exploration.** Three or six* hours. 
Prerequisite: BA 532. 
An exploration of bound books as expressive forms. Students will further refine their leather-working and binding skills while developing their own binding styles. Emphasis will be placed upon personal binding interpretation of printed texts using traditional and nontraditional techniques and materials.
*Required for students with concentrations in either printing/publishing or bookbinding.

**BA 534 Boxmaking.** Three hours. 
Prerequisite: BA 530.
Traditional and experimental forms of boxes and other protective enclosures for books. The use of paper, cloth, and leather, as well as other nontraditional materials, will be explored. Embree.

**BA 535 Edition Binding/Parallel Editions.** Three hours.
Prerequisite: BA 531.
Exploration, design, and creation of appropriate enclosures for books that amplify and enhance the typographic content of the fine limited edition.

Papermaking

**BA 541 Hand Papermaking.** Three hours.
Provides hands-on experience in the fundamentals of making traditional Western-style handmade papers using a variety of fibers. The objective is to produce reference samples of various kinds of sheets, as well as edition sheets of papers for book or art-making purposes. Miller.

**BA 542 Decorated Papers.** Three hours.
Introduction to decorative techniques, including experiences in the decoration of papers for binding and printing in a variety of techniques: Turkish watercolor marbling (ebru-su), Swedish oil-base marbling, Japanese suminagashi, paste papers, printed papers, and stenciling.

**BA 543 Eastern and Alternative Fiber Papermaking.** Three hours.
Introduction to the mysteries of Eastern-style papers handmade from natural fibers. We will also produce papers from plant fibers native or naturalized to the American landscape. The objective will be to make papers suitable for printing or bookbinding purposes, as well as substrate for artistic media. Miller.

Additional Courses

**BA 590 Book Design and Production.** Three hours.
Studies the theoretical and practical aspects of book design and production. Emphasis is on the aesthetic principles of bookmaking; the preparation of layouts; and the selection of type faces, papers, and binding materials. Miller.

**BA 592 Graduate Symposium.** Three hours.
Prerequisite: Fourth-semester standing.
Discusses professional standards, professional presentation and portfolio building, creative project research, exhibition design, management of a small business, marketing, and other topics. Six meetings during the course of the semester.

**BA 593 Workshops in the Book Arts.** One to twelve hours.
Workshops covering all subjects in the book arts, held both on and off campus.

**BA 594 Practicum in Teaching the Book Arts.** Three or six hours.
Prerequisite: Second-year standing.
Practical experience teaching introductory courses in printing, binding, and other appropriate book arts.

**BA 595 Independent Project.** One to six hours.
Provides an opportunity for the student to pursue independently a project in the book arts.

**BA 596 Directed Research in the Book Arts.** One to six hours.
Provides an opportunity for an intensive investigation of both historical and technical studies of a book-arts craft.

**BA 597 Internship.** One to six hours.
Prerequisites: Second-year standing and permission of the faculty.
A direct learning experience in a studio of a professional book artist.

**BA 599 Creative Project Production, Thesis, and Exhibition.** Nine to twelve hours.

The capping experience of the M.F.A. in the book arts program is the creative project, thesis, and exhibition. Working with a faculty advisor, the candidate develops a project that demonstrates a deep understanding of the craft and the aesthetic, historic, and critical contexts of the book; to establish technical expertise; and to work independently. The thesis paper provides the student a formal means in which to articulate the aesthetic, historic, and critical contexts of his or her work as well as the scope and merits of the creative project. The exhibit, which is publicly presented in the Book Arts Gallery, provides the student with an opportunity to showcase both artistic and technical skills and to contextualize the body of work produced during the course of the program. A public defense with a slide presentation is also required.
8.10.3 COMMUNICATION AND INFORMATION SCIENCES (CIS)

CIS 600 Proseminar in Communication and Information Sciences. One hour *Required.
The course is part of orientation for all students in the Ph.D. program. It must be taken during the first semester of study. As an introduction to relevant research and teaching practices, this course allows students to hear presentations by faculty and advanced doctoral students. *These are core courses in the Ph.D. program.

CIS 601 Proseminar in Pedagogy. One hour *Required.
The course is part of orientation for all students in the Ph.D. program. It must be taken during the second semester of study. It introduces the students to teaching techniques in communication and information studies. *These are core courses in the Ph.D. program.

CIS 602 Colloquium in Communication and Information Sciences. One hour *Required.
The course is part of orientation for all students in the Ph.D. program. It must be taken during the third semester of study. The course is designed to allow doctoral students to learn about research being conducted within the College and to make formal presentations of their own research. *These are core courses in the Ph.D. program.

CIS 603 Communication Research Methods.* Three hours.
The course is a Ph.D. core requirement. Topics are a survey of quantitative and qualitative methods in communication and information sciences. The course provides detailed study of research methods appropriate to the Ph.D. specializations. *These are core courses in the Ph.D. program.

CIS 604 Mass Communication Theory.* Three hours.
This course is a Ph.D. core requirement for students specializing in mass communication. The course is a survey of the development of theories of mass communication and provides a detailed study of the theoretical foundation of each student's specialization. *These are core courses in the Ph.D. program.

CIS 605 Cultural, Critical, and Rhetorical Theory. Three hours.
This is a Ph.D. core requirement for students specializing in Cultural, Critical and Rhetorical studies. The course is a survey of the development of theory development in these areas.

CIS 606 Knowledge and Information Theory. Three hours.
This is a Ph.D. core requirement for students specializing in Information Studies. The course is a survey of theoretical developments in the study of knowledge and information.

CIS 607 Theory Construction and Epistemology. Three hours.
This course is designed to provide detailed study of the philosophical foundations of theory construction and current issues in theories of the nature of knowledge.

CIS 618 Advanced Topics in Library Management. Three hours.
Prerequisite: LS 508 or permission of the instructor.
Thorough study of all aspects of the organization and administration of libraries and information centers.

Study of the major issues in library education. Among the topics considered are theories of education, the university environment, special characteristics of education for the professions, library school faculty, students, and curricula. Dalton.

CIS 620 Advanced Materials and Programming for Youth. Three hours.
Prerequisite: LS 521 or LS 522.
Special topics in materials, programs, and services for children and young adults. May be taken more than once.

CIS 632 School Media Centers. Three hours.
Develops a philosophical and functional background of the school media program as an integral part of the teaching-learning process. Coleman.

CIS 642 Advanced Instructional Design. Three hours.
Prerequisite: LS 542.
Thorough study of the human and environmental factors that impinged upon the instructional design consultation process. Selected steps in the instructional design process are emphasized.

CIS 650 Seminar in Communication. Three hours.
Topics vary but may be research in broadcast news, libel and privacy, communication management, organizational communication, international communication, or another area appropriate for advanced study and original research. Emphasis is on specific topics outside the main topic areas, but the course supports the Ph.D. specializations and coincides with the research needs of students and the expertise of the directing faculty member. Depending on the interests of participants and on the topic of the seminar, students may conduct research individually or may work together on research projects. May be repeated.

CIS 651 History of Libraries. Three hours.
Covers the history of the institutions that preserve and disseminate the records of intellectual progress. Dalton.

CIS 652 Seminar in Cultural Critical and Rhetorical Studies. Three hours.
The examination of a wide range of mediated texts through the intersecting perspectives of cultural, critical and rhetorical analysis.

CIS 653 Descriptive Bibliography. Three hours.
Examines the intellectual objectives served by descriptive bibliographies and introduces the methods and problems of bibliographical description of printed books of the hand- and machine-press periods. Emphasis is on the examination and historical analysis of books as physical objects. Primarily for students interested in the history of books, special collections, rare book cataloging, and humanities reference work.

CIS 654 History of the Book: Print Culture and Society. Three hours.
Examines the book as a cultural artifact and explores the impact of print culture on communication and knowledge/information production in Europe and the United States. Topics include orality and literacy, reading, authorship, copyright, markets and distribution, and the future of books in a digital age.

CIS 655 History of the Book: Book as Artifact. Three hours.
Examines the book as a cultural artifact, as the material embodiment of text. Topics include the transitions between hand production and mechanical production, methods of bookmaking, printers and publishers, the alphabetic code, paratext, letterforms and typography, paper, page formats and layouts, illustrations, bindings, and other semiotic systems and bibliographic signifiers, as well as the purpose of the book with special emphasis on the relationships between meaning and physical form and the complex conventions of the book.

CIS 656 Electronic and Contemporary Publishing. Three hours.
Focuses on both scholarly and commercial networked digital publishing within the context of the information cycle and information chain from the vantages of contemporary publishing and communication. The course is concerned with the numerous and varied problems/opportunities of electronic publishing and the accompanying paradigm shifts.

CIS 657 Processes and Effects of Communication. Three hours.
Study and analysis of how communication works and its effects on audiences.

CIS 659 Special Topics in the History of the Book. Three hours.
Studies in specialized topics.

CIS 660 Database Analysis and Design. Three hours.
In-depth coverage of database design techniques. Topics include requirement specifications, data models, schemas, and implementation considerations.

CIS 661 Digital Libraries. Three hours.
Prerequisites: LS 560 or currently taking.
Prepares students to develop digital libraries, exploring the issues associated with creating, operating, and maintaining digital libraries; analyzing electronic library programs in the U.S. and assessing their impact on education, scholarship and research.

CIS 662 Knowledge Management. Three hours.
Prerequisites: LS 560 or currently taking.
Covers theories and practices of knowledge management, analyzing how knowledge is created, shared and synthesized; conditions that inhibit or enhance information sharing, including competitive intelligence; and technological tools and systems, including case studies.

CIS 663 Communication Technologies. Three hours.
Study and analysis of the advent of communication technologies and their impact on communication and society.

CIS 664 Communication Institutions. Three hours.
Study and analysis of the development and management of communication institutions and their place in society.

CIS 665 Communication Message Analysis. Three hours.
Study and analysis of communication messages, their antecedents, and their potential effects.

CIS 666 Information Policy. Three hours.
Explores key federal information policies and related legislative/regulatory activities. Focuses on relationships
between public policy evolution and the spread of information technologies; emphasizes social, economic, and equity impacts and mitigating circumstances.

**CIS 667 Persuasion.** Three hours.
Study and analysis of the persuasive function of communication through theoretical and/or strategic approaches.

**CIS 668 Communication as Entertainment.** Three hours.
Study and analysis of the entertainment function of communication and its uses for audience information, recreation, and education.

**CIS 669 Visual Communication.** Three hours.
Study and analysis of visual communication in its various forms, intended uses, and potential effects.

**CIS 671 Public Opinion.** Three hours.
Study and analysis of the formation and expression of public opinion and its relation to communication.

**CIS 672 Media History.** Three hours.
Historical investigations of communication through descriptive, evaluative, critical, and/or archival approaches.

**CIS 673 Political Communication.** Three hours.
Study and analysis of political communication theory, research, practice, and/or criticism.

**CIS 674 Communication Law and Policy.** Three hours.
Study and analysis of public policy concerning the expression of communication, as articulated by the various branches of government and/or society.

**CIS 690 Practicum in Teaching Library and Information Studies.** Three hours.
Designed to give doctoral students interested in a teaching career extensive teaching experience under the direct supervision of one or more faculty members. The goal is to assume responsibilities for a course. Cannot be applied to the minimum 48-hour course requirement. Coleman.

**CIS 697 Directed Research.** Variable Credit.
Original research not related to the dissertation, conducted under the direction of a graduate faculty member.

**CIS 698 Independent Study.** Three hours. Pass/fail.
Prerequisite: Doctoral standing.
Study of a topic in librarianship under faculty direction. Not part of dissertation research.

**CIS 699 Doctoral Dissertation.** Variable credit. Three-hour minimum.
8.10.4 COMMUNICATION STUDIES (COM)

COM 500 Introduction to Graduate Studies. One hour. The primary goal is to orient new graduate students to the expectations and procedures of graduate study in the department. Topics covered include developing the plan of study, thesis prospectus, comprehensive examination, and choosing advisors and committees.

COM 501 Introduction to Teaching Public Speaking. No hours. This course is open to graduate students with at least 18 hours of coursework in the department. The primary goal is to facilitate the instruction of COM 123 Public Speaking. Students enrolled in this course will provide lesson plans for public speaking classes and discuss options for improving classroom learning.

COM 513 Communication and Diversity. Three hours. Study and analysis of issues of diversity as they relate to groups in society and in communication fields. Emphasis is on the media's treatment of various groups in society. Approved as a communication and cultural diversity elective.

COM 515 African American Rhetoric. Three hours. A historical-critical investigation of African American public discourse from the Revolutionary era to the present, exploring rhetorical strategies for social change and building community.

COM 521 Political Communication. Three hours. An exploration of rhetorical, media, and cross-disciplinary theories related to political communication.

COM 525 Gender and Political Communication. Three hours. Study of the impact of gender on political communication activities. Topics include gender differences in political messages and voter orientation, masculine ideals of leadership, women’s roles and advancement in the political sphere, and media representations.

COM 532 Political Campaign Management. Three hours. The study of communication management in the context of political campaigns. Topics include audience analysis, candidate and electoral context analysis, strategic planning and assessment, leadership and campaign management styles, and database management.

COM 536 Independent Study. Three hours. Prerequisite: Written permission. A formal request must be approved by the faculty advisor and submitted to the Graduate Program Director.

COM 541 Contemporary Rhetorical Theory. Three hours. A survey of major contributions to rhetorical theory from the 20th century up to the present.

COM 545 Classical Rhetorical Theory. Three hours. A systematic inquiry into the development of Greek and Roman rhetorical theory during the classical period (ca. 480 B.C.E.–400 C.E.).

COM 548 Seminar in Rhetorical Criticism. Three hours. An examination of various methodological perspectives of rhetorical criticism. Specifically, the course aims to familiarize students with both traditional and alternative critical methods and to encourage students to perceive the rhetorical dimensions of all manner of public discourse, ranging from speeches, advertising, film, popular music to discursive forms in new media and the Internet.

COM 549 Seminar: Persuasion and Social Influence. Three hours. The course emphasizes social-scientific approaches to the study of social influence and persuasion (primarily as exemplified by speech communication research, mass media research, and psychology).

COM 560 Group Leadership. Three hours. An advanced study of small-group behavior, examining in detail theories of leadership as they relate to problem solving in group situations.

COM 561 Human Communication Theory. Three hours. A detailed review of selected theories of speech communication with a focus on the critical examination of the foundation of social scientific theories.

COM 562 Theories of Persuasion. Three hours. A critical review of social-influence theories in the area of persuasion and human action.

COM 563 Seminar in Interpersonal Communication. Three hours.
Prerequisite: COM 220 or permission of the instructor.
Focused investigation of selected approaches to interpersonal communication with an emphasis on recent conceptual and theoretical developments.

**COM 567 Seminar: Public Address.** Three hours.
A topical consideration of individual case studies from public discourse, designed to probe problems of the nature of the audience, the ethics of persuasion, and the power of public advocacy in mass society.

**COM 569 Communication and Gender.** Three hours.
Explores the role of communication in the construction of gender. Covers feminist theoretical approaches in communication and other disciplines, the intersections of gender with other marginalities, and the role of gender in various communication contexts. Approved as a communication and cultural diversity elective.

**COM 571 Seminar in Organizational Communication I.** Three hours.
An introductory examination of historical and contemporary issues in organizational communication scholarship from a variety of theoretical and methodological perspectives.

**COM 572 Seminar in Organizational Communication II: Advanced.** Three hours.
Prerequisite: COM 571 or permission of the instructor.
Advanced study in organizational communication, focusing on such areas as communication climate, technology and communication, communication research in organizations, and communication consulting.

**COM 590 Internship in Communication Studies.** One to three hours.
Prerequisite: Written permission from the graduate program director. Proposal for supervised field experience in communication studies must be submitted and approved.

**COM 595 Special Topics.** Three hours.

**COM 598 Research Not Related to Thesis.** Three hours.

**COM 599 Thesis Research.** One to three hours.
8.10.5 JOURNALISM (JN)

**JN 500 Orientation to Graduate Studies.** No credit.
Required each semester. Introduces students to the program and program requirements and provides a forum for presentation and discussion of faculty and student research.

**JN 501 Producing Community Journalism.** Three hours.
Primary first-term skills course. Focus is on gathering, writing, editing and presenting of news and information across media platforms.

**JN 503 Media Management and Operations.** Three hours.
The class is to orient and give a student’s “hands-on” graduate program on various aspects of the operation of a newspaper and other media.

**JN 511 Depth and Investigative Reporting.** Three hours.
Researching and writing major, multiple-source articles, series, and projects for newspapers and magazines.

**JN 512 Editorial Leadership.** May be repeated
Study of the role, function, and construction of editorials and other persuasive writing, historical and contemporary issues in organizational communication scholarship from a variety of theoretical and methodological perspectives.

**JN 515 Magazine Writing and Editing.** Three hours.
Writing and marketing of magazine articles. Study of technical, industrial, employee, and general-circulation magazines.

**JN 520 Advanced Editing and Design of Publications.** Three hours.
Lecture and laboratory. Study, research, applications, and production of traditional and online newspapers, magazines, and related media, including managing and organizing newsrooms, graphics departments, and production departments. Demographics and research of audiences for different news and information products; formulation of policy.

**JN 525 Literary Journalism I.** Three hours.
Studies in nonfiction. Includes extensive writing in this genre.

**JN 526 Literary Journalism II.** Three hours.
Studies in nonfiction. Includes extensive writing in this genre.

**JN 536 Teaching of Journalism.** Three hours.
Prerequisite: CSE 579 or permission of the instructor.
Introduction to the techniques and practices of teaching scholastic journalism and management of school newspapers, yearbooks, and literary magazines.

**JN 561 Special Topics.** Three hours.
Studies in specialized topics ranging from the theoretical to the practical. May be repeated for credit when the topic varies.

**JN 562 Contemporary Issues.** Three hours.
Examines current issues facing the news media, ranging from professional problems to the human, social, and other consequences of news, news practices, and news technology.

**JN 563 History of Journalism and the First Amendment.** Three hours.
Study of the history of the principles and practices of American journalism, with particular attention to the First Amendment and freedom of the press.

**JN 590:591 Special Problems in Journalism.** One to three hours (each).
Independent study as arranged.

**JN 591 Special Topics & Grand Rounds in Community Journalism.** 1 hour.

**JN 597 Master's Project.** Three hours.

**JN 599 Thesis Research.** Six hours.
8.10.6 LIBRARY AND INFORMATION STUDIES (LS)

Introductory—Conceptualization

**LS 500 Organization of Information.** Three hours. Required course introducing the principles of organizing bibliographies, library catalogs, and collections. Examines the content of bibliographic records in printed and machine-readable form, choice and form of access points, authority control, verbal and classified systems of subject access, and the impact of new technologies. An introduction to OCLC searching is included. The course objective is to enable the student to understand and use catalogs and bibliographies. Students interested in becoming catalogers should follow LS 500 with LS 506 Cataloging and Classification. MacCall.

**LS 501 Introduction to Library and Information Studies.** Three hours. Required course designed to provide the student with a broad background in library and information studies. Must be taken during the first 12 hours of a student’s program. Through a variety of instructional methods, this course examines three interrelated themes: the nature of the library and information profession; issues of intellectual freedom and access to information; and the impact of technology upon society and the profession. Coleman.

Introductory—Methodological

**LS 502 Research Methods.** Three hours. Required course introducing research design and statistical techniques used in library, media, and information science. At the conclusion of the course, the student should be able to comprehend and utilize research reports in these fields and to design and carry out basic research projects.

**LS 503 Systems Analysis.** Three hours. Investigation of the concepts of systems analysis; investigation and use of the techniques of systems analysis; and study of applications of systems analysis in library and information systems. Aversa.

Introductory—Operational

**LS 504 Media Production and Utilization.** Three hours. Instructional modules that introduce the student to basic skills in the preparation and utilization of educational media.

**LS 505 Collection Development.** Three hours. Explores principles and issues involved in developing library collections. Aspects such as community analysis, policy development, selection and acquisitions, resource sharing, evaluation, weeding, and preservation are examined. Osburn, Weddle.

**LS 506 Cataloging and Classification.** Three hours. Prerequisite: LS 500. Explores problems of descriptive cataloging of print and non-print materials; subject access using Library of Congress subject headings, LC classification, and Dewey decimal classification; OCLC searching, record modification, and inputting; and contemporary issues in bibliographic control.

**LS 507 Information Sources and Services.** Three hours. Required course introducing printed and digital reference sources and reference services. Dalton, Weddle.

**LS 508 Administration and Management.** Three hours. Designed to introduce students to the theory and practice of modern management by studying the management aspects of authority, communications, decision making, delegation, leadership, personnel, planning, budgeting, and motivation. Use is made of case studies and simulations. Tidline.

**LS 509 Distance Learning: Library and Information Studies.** One hour. An intensive course that provides an orientation to distance learning in the School of Library and Information Studies. Technical issues related to distance learning, resource issues such as access to library and electronic collections, and socialization to librarianship are addressed. Particular emphasis is on the online MLIS program in which the student has enrolled.
Information Resources

**LS 510 Information Resources: Humanities.** Three hours.
Prerequisite or corequisite: LS 507.
Surveys and evaluates the major informational and bibliographical resources in literature, mythology, religion, philosophy, history, and the visual and performing arts. Stephens, Aversa.

**LS 511 Information Resources: Social Sciences.** Three hours.
Prerequisite or corequisite: LS 507.
Surveys scholarly communication and the use of information in the social sciences. The use of reference sources in psychology, sociology, economics, anthropology, and political science is taught. Dalton.

**LS 512 Information Resources: Sciences.** Three hours.
Prerequisite or corequisite: LS 507.
Surveys scientific and technical communication, the bibliographic structure of science and technology, and information services for scientists and technologists. In-depth study of the major information sources in biology, chemistry, physics, mathematics, engineering, and geology is included.

**LS 513 Information Resources: Government Publications.** Three hours.
Prerequisite or corequisite: LS 507.
Explores the nature, use, and organization of local, state, federal, and international documents.

**LS 514 Sources of Business Information.** Three hours.
Prerequisite or corequisite: LS 507.
Surveys and evaluates the major informational and bibliographical resources in business librarianship.

**LS 515 Advanced Information Sources and Services.** Three hours.
Prerequisite: LS 507.

Special Clientele

**LS 521 Materials and Services for Children.** Three hours.
Explores materials (print and non-print) and programs appropriate for children ages 3 to 12.

**LS 522 Materials and Services for Young Adults.** Three hours.
Explores materials (print and non-print) and programs appropriate for teenagers.

**LS 523 Materials and Services for Adults.** Three hours.
Examines services, programming, and popular materials provided to adult users of public libraries.

Environments

**LS 530 Public Libraries.** Three hours.
Examination of public library development, purpose, governance, and services and exploration of issues and concepts involved in managing public libraries. Stephens, Weddle.

**LS 531 Academic Libraries.** Three hours.
Study of the role of library service in higher education. Osburn, Dalton.

**LS 532 School Media Centers.** Three hours.
Develops a philosophical and functional background of the school-media program as an integral part of the teaching-learning process. Coleman.

**LS 533 Special Libraries and Information Centers.** Three hours.
Philosophy, environment, and unique aspects of the services, operation, and management of special libraries and information centers are covered. Provides considerable opportunity for study of topics of interest to individual students.

**LS 534 Medical Librarianship.** Three hours.
Prerequisite or corequisite: LS 507 or permission of the instructor.
Introduction to medical librarianship and the environment in which it operates. Orientation to the health care field, operation and administration of health sciences libraries, and basic information sources and services for the health sciences is included. MacCall.

http://graduate.ua.edu/catalog/21300.html
**LS 535 Records Management.** Three hours.
Introduces the fundamentals of information and records management. Content includes (a) inventory, scheduling, and auditing records; (b) active and inactive information maintenance; (c) organizing and administering a records center; and (d) applications for information systems—computer, microform, paper.

**LS 536 Archives.** Three hours.
Survey of archival resources and special collections, with attention to their organization, administration, and service problems.

**LS 537 Music Librarianship.** Three hours.
Introduces the concepts of music librarianship: collection development and management, and sources for music research.

**LS 538 Law Libraries and Legal Resources.** Three hours.
Introduces the concepts of law library management and the techniques and materials of legal research.

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Educational Media

**LS 542 Instructional Design and Development.** Three hours.
Comprises a series of modules that cover the basic skills required to undertake instructional development. Materials needed to plan and prepare instruction, as well as exercises designed to upgrade interpersonal skills, are included. Designed for library-media specialists, supervisors, administrators, and others who assist teachers in the development of instruction.

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Historical and Conservation Studies

**LS 554 Conservation and Collection Management.** Three hours.
Provides an introduction to the forensic examination of manuscripts and books as artifacts, and acquaints students with their materials and structures, manufacturing technology, and historical development as media. Emphasis is on papers, leathers, synthetics, binding structure, and methods of conservation treatment, with particular attention to conservation concerns in developing collection-management and disaster-prevention policies.

**CIS 651 History of Libraries.** Three hours. (Formerly LS 651.)
Covers the history of the institutions that preserve and disseminate the records of intellectual progress. Dalton.

**CIS 653 Descriptive Bibliography.** Three hours. (Formerly LS 653.)
Examines the intellectual objectives served by descriptive bibliographies and introduces the methods and problems of bibliographical description of printed books of the hand- and machine-press periods. Emphasis is on the examination and historical analysis of books as physical objects. Primarily for students interested in the history of books, special collections, rare book cataloging, and humanities reference work.

**CIS 654 History of the Book: Print Culture and Society.** Three hours. (Formerly LS 654.)
Examines the book as a cultural artifact and explores the impact of print culture on communication and knowledge/information production in Europe and the United States. Topics include orality and literacy, reading, authorship, copyright, markets and distribution, and the future of books in a digital age. Tidline.

**CIS 655 History of the Book: Book as Artifact.** Three hours. (Formerly LS 655.)
Examines the book as a physical artifact, as the material embodiment of text. Topics include the transitions between hand production and mechanical production, methods of bookmaking, printers and publishers, the alphabetic code, paratext, letterforms and typography, paper, page formats and layouts, illustrations, bindings, and other semiotic systems and bibliographic signifiers, as well as the purpose of the book with special emphasis on the relationships between meaning and physical form and the complex conventions of the book. Tidline.

**CIS 659 Special Topics in the History of the Book.** Three hours. (Formerly LS 659.)
Studies in specialized topics.

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Information Studies

**LS 560 Information Technologies.** Three hours.
A required course. Topics in information technology, applications of automation to library procedures, planning for and implementing an automated library system, and the library of the future.

**LS 561 Fundamentals of the Information Sciences.** Three hours.
Includes selected topics centered on the study of information needs, uses, and access. Covers methods for identifying the information needs of diverse populations, how people seek and use information, and methods for evaluating the effectiveness of traditional and computerized systems in helping people deal with their information-related problems. Explores the changing roles of traditional information sciences methods and tools (e.g. indexing, user studies, cognitive studies) in these matters. MacCall.

**LS 563 Indexing and Abstracting.** Three hours.
Traditional and computerized approaches to indexing, abstracting, and thesaurus construction and maintenance are examined. Deals with classification systems, indexing and abstracting typologies, measures of relevance and system effectiveness, vocabulary control vs. free-text searching, and applications of cognitive-science research. Evaluation of abstracting and indexing services and organizations, as well as current and emerging standards, is conducted.

**LS 565 Economics of Information.** Three hours.
Explores applications of economic principles to information and knowledge systems. Examines information as an economic good; methods for valuing information; characteristics and trends of the information economy; pricing of information products and services; and techniques for performing and evaluating cost-benefit analyses of information systems. Relationships between information economics, federal and state information policies, and social equity are explored.

**LS 568 Information Architecture.** Three hours.
Introduces the technical and conceptual skills needed to comprehend the phenomenon of the World Wide Web; to understand its potential; to be able to create and maintain websites and intranets of modest scope and complexity; and to undertake further training in the technologies used to create and maintain websites and intranets.

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**Internships**

*Internships require a minimum of 150 clock hours, except for LS 572, which requires 300 clock hours. Internships are to be taken during the last 12 hours of the student's program.*

**LS 570 Internship.** Three hours.
Prerequisite: Permission of the advisor.

**LS 572 Internship in School Media Centers.** Three hours.
Prerequisites or corequisites: LS 532 and permission of the advisor.

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**Advanced Electives**

*Prerequisite: Sixth-year status or permission of the instructor.*

**LS 590 Issues in Librarianship.** Three hours.
Explores societal problems and professional developments that have, or are likely to have, an impact on the practice of librarianship. May be taken more than once.

**LS 593 Problems in Library and Information Studies.** Three hours. Pass/fail.
Students pursue specialized study in a variety of subjects in library and information studies.

**LS 594 Introduction to Philanthropy and Institutional Advancement.** Three hours.
Designed to provide a broad overview to the field of philanthropy and institutional advancement. Especially suited for those who may assume administrative positions in a wide variety of nonprofit or not-for-profit services or cultural agencies. Coleman.

**LS 598 Directed Research in Library and Information Studies.** One to six hours. Pass/fail.
Prerequisites: LS 502 and permission of the instructor.
Provides the opportunity for an intensive investigation of a special aspect of library and information studies, under the supervision of an appropriate faculty member.

**CIS 618 Advanced Topics in Library Management.** Three hours. (Formerly LS 608.)
Prerequisite: LS 508 or permission of the instructor.
Thorough study of all aspects of the organization and administration of libraries and information centers.

**CIS 619 Seminar in Education for Librarianship.** Three hours. Pass/fail. (Formerly LS 609.)
Study of the major issues in library education. Among the topics considered are theories of education, the university environment, special characteristics of education for the professions, library school faculty, students, and curricula. Dalton.

**CIS 620 Advanced Materials and Programming for Youth.** Three hours. (Formerly LS 620.)
Prerequisite: LS 521 or LS 522.
Special topics in materials, programs, and services for children and young adults. Atkinson. May be taken more than once.

**CIS 632 School Media Centers.** Three hours. (Formerly LS 632.)
Develops a philosophical and functional background of the school media program as an integral part of the teaching-learning process. Coleman.

**CIS 642 Advanced Instructional Design.** Three hours. (Formerly LS 642.)
Prerequisite: LS 542.
Thorough study of the human and environmental factors that impinge upon the instructional design consultation process. Selected steps in the instructional design process are emphasized.

**CIS 656 Electronic and Contemporary Publishing.** Three hours. (Formerly LS 656.)
Focuses on both scholarly and commercial networked digital publishing within the context of the information cycle and information chain from the vantages of contemporary publishing and communication. The course is concerned with the numerous and varied problems/opportunities of electronic publishing and the accompanying paradigm shifts.

**CIS 660 Database Analysis and Design.** Three hours. (Formerly LS 660.)
In-depth coverage of database design techniques. Topics include requirement specifications, data models, schemas, and implementation considerations.

**CIS 661 Digital Libraries.** Three Hours. (Formerly LS 661.)
Develop digital libraries, exploring the issues associated with creating, operating, and maintaining digital libraries; analyzing electronic library programs in the U.S. and assessing their impact on education, scholarship, and research.

**CIS 662 Knowledge Management.** Three Hours. (Formerly LS 662.)
Develop theories and practices of knowledge management, analyzing how knowledge is created, shared, and synthesized; conditions that inhibit or enhance information sharing, including competitive intelligences; and technological tools and systems, including case studies.

**CIS 666 Information Policy.** Three hours. (Formerly LS 666.)
Explores key federal information policies and related legislative/regulatory activities. Focuses on relationships between public policy evolution and the spread of information technologies, emphasizing social, economic, and equity impacts and mitigating circumstances. Tidline.

**CIS 690 Practicum in Teaching Library and Information Studies.** Three hours. (Formerly LS 690.)
Designed to give doctoral students interested in a teaching career extensive teaching experience under the direct supervision of one or more faculty members. The goal is to have the responsibilities for a course. Cannot be applied to the minimum 48-hour course requirement. Coleman.

**CIS 698 Independent Study.** Three hours. Pass/fail. (Formerly LS 698.)
Prerequisite: Doctoral standing.
Study of a topic in librarianship, under faculty direction. Not part of dissertation research.
8.10.7 MASS COMMUNICATION (MC)

MC 501 Mass Media Law and Regulation. Three hours.
A study of the laws affecting the media, decisions, and case histories that act as guides for the media. Independent readings and papers are required.

MC 505 Social Responsibility of the Mass Media. Three hours.
Interrelationships of government, the public, and the media. Independent readings and papers are required.

MC 509 History of Mass Communication. Three hours.
An intensive study of the historical development of the media. Independent readings and papers are required.

MC 511 International Mass Communication. Three hours.
A survey of communication systems and theories operative in the world. Independent readings and papers are required.

MC 513 Communication and Diversity. Three hours.
Study and analysis of issues of diversity as they relate to groups in society and in communication fields. Emphasis is on the media's treatment of various groups in society.

Nature, development, formation, and distribution of politically relevant attitudes and opinions; role of leadership, persuasion, and communication in opinion-policy process. Emphasis on the role of the media in the formation of public opinion and on how the media are influenced in turn by public opinion.

MC 521 Political Communication. Three hours.
The purpose of this course is to explore the general character and dimensions of the cross-disciplinary field of political communication. The principal aim is to familiarize each participant with the literature and propositions surrounding key approaches, methods, and substantive areas of inquiry in political communication.

MC 550 Communication Research Methods. Three hours.
A survey of qualitative and quantitative methods in communication research.

MC 551 Seminar in Communication Theory. Three hours.
A study of the development of selected theories of communication as they pertain to interpersonal, public, and mass communication.

MC 581 Media Analysis Seminar. Three hours.
A study of media content and its effects on society.

MC 582 History of Communication Seminar. Three hours.
Research and study in the historical development of the media, particularly in the United States.

MC 583 Media and Society Seminar. Three hours.
Research and study in society's expectations of the media and the response of the media.

MC 584 International Communication Seminar. Three hours.
Research and study in specific media, press systems, and theories outside the United States.

MC 585 Communication Law Seminar. Three hours.
Research in and study of specific laws and regulations related to the media.
8.10.8 TELECOMMUNICATION AND FILM (TCF)


TCF 520 Telecommunication Effects. Three hours. Study of individual and social effects of audio and visual mass media, with emphasis on research results.

TCF 533 Broadcast News Analysis. Three hours. Historical and critical analysis of broadcast news and public-affairs programs in the United States; research methodology used in the assessment of news programming.

TCF 540 Seminar in American Cinema. Three hours. Study of selected topics in American film genre, authorship, and the star system.

TCF 541 The Documentary Form. Three hours. The documentary presentation in cinema and telecommunication as an informative and persuasive means of communication. Analysis and discussion of selected documentaries.

TCF 544 Seminar in Telecommunication/Film Topics. Three hours. Analysis of contemporary issues in broadcasting, cable, and/or motion-picture industries. Topics vary with instructor.

TCF 545 Telecommunication Media Management. Three hours. Study of station, cable TV, and network organization; decision making; and research techniques.

TCF 547 Telecommunication History and Systems. Three hours. The development of the global information infrastructure since the middle of the 19th century, a comparative review of national legal and regulatory systems, international decision-making mechanisms and effects, the evolution of new forms of governance for the World Wide Web environment, and current issues.

TCF 548 Telecommunication Policy and Law. Three hours. Organizational structures and processes that formulate and apply laws and regulations shaping broadcast, cable, satellite, and "new technology" operations; analysis of national policies and standards and their relationship to regional and international controls and practices.

TCF 553 Seminar in Telecommunication. Three hours. Topics and instructors change with each offering. Individual research is emphasized. May be repeated, with permission of the instructor (6-hour limit).

TCF 575 Cable Television and New Technologies. Three hours. Study of the history of the cable TV industry and operation of contemporary cable systems and selected other electronic media systems, such as communication satellites, wireless cable, cellular telephones, and high-definition video.

TCF 577 Cinema Seminar. Three hours. Study of special topics in the history and theory of the cinema. May be repeated with permission of the instructor (6-hour limit).

TCF 597 Independent Research. Variable credit. Prerequisites: Permission of the instructor and approval of the student’s program committee. May be repeated with permission of the instructor and approval of the program committee (6-hour limit).

TCF 598 Master’s Research Project. One to three hours.

TCF 599 Thesis Research. One to six hours.
9. COLLEGE OF COMMUNITY HEALTH SCIENCES

The College of Community Health Sciences (CCHS) is committed to the education of students in the health sciences. CCHS provides the last two years of clinical training for a portion of the medical students enrolled at the University of Alabama School of Medicine, and it operates a three-year family practice residency program.

CCHS welcomes students from disciplines other than medicine. A variety of graduate-level courses are offered, as are internship and research opportunities for students in nursing, health care management, nutrition, psychology, education, social work, and other disciplines.

9.1 Admission Requirements

The College of Community Health Sciences does not offer a degree, and students taking courses offered by CCHS are enrolled in other Graduate School programs or the University of Alabama School of Medicine (medical students). Admission requirements for these programs are given elsewhere. For the most current information, contact the registrar in the Dean’s Office, College of Community Health Sciences, Box 870326, Tuscaloosa, AL 35487-0326; phone (205) 348-7707; e-mail pmurphy@cchs.ua.edu; or visit http://graduate.ua.edu/catalog/.

Graduate minor in community health sciences. The aim of the graduate minor in community health sciences is to provide the student with an understanding of health and disease as processes influenced by a wide range of factors, from the molecular to the sociocultural. The minor emphasizes the concepts and tools of epidemiology, community and family medicine, and behavioral sciences. To obtain a graduate minor, the student must successfully complete 12 hours in community health sciences (CHS) courses. The following three courses are required:

<table>
<thead>
<tr>
<th>Required courses</th>
<th>Semester hours</th>
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</thead>
<tbody>
<tr>
<td>CHS 520 Basic Epidemiology</td>
<td>3</td>
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<tr>
<td>CHS 527 Health Policy and Planning</td>
<td>3</td>
</tr>
<tr>
<td>CHS 610 Special Problems in Medical Behavioral Science</td>
<td>3</td>
</tr>
</tbody>
</table>

In addition, students must take 3 credit hours of their choice from other graduate CHS offerings.

It is anticipated that the entering student will have a sufficient background in quantitative methods. If not, the student will be required to take CHS 525 Biostatistics prior to the other required coursework; CHS 525 will complete the student’s required 12 credit hours.
9.2 COURSE DESCRIPTIONS (CHS)

The courses listed below are open to qualified graduate students. Medical school and family practice residency curricula are published separately from this catalog.

CHS 500 Rural Environment/Occupational Health. Three hours.
Prerequisite: Standing as a Rural Medical Scholar or permission of the instructor.
The goal of the course is to help the student recognize environmental and occupational health hazards in the rural setting, the effects of exposure to these hazards, and preventive measures that should be taken to avoid them.

CHS 520 Basic Epidemiology. Three hours.
Prerequisite: CHS 425 or equivalent.
A course for students in health-related fields. The basic epidemiologic approach is developed; principles and methods are learned through readings (text and published studies), lectures, discussions, and the preparation of a research design by each student.

CHS 522 Community Clinical Process. Three hours.
Prerequisite: Standing as a Rural Medical Scholar or permission of the instructor.
A combination of scheduled sessions and fieldwork activities. The fieldwork will consist of visiting with an assigned rural advisor, completing a rural community assessment, and assisting with community health screenings and education programs.

CHS 525 Biostatistics. Three hours.
A course in statistical methods and concepts particularly appropriate for biomedical research and health-related subjects. Topics include descriptive statistics, probability, parametric and nonparametric procedures for one-group and two-group problems, contingency tables, and computer applications.

CHS 526 Advanced Biostatistics. Three hours.
An advanced course in statistical methods and concepts particularly appropriate for biomedical research and health-related subjects. Topics include simple and multiple regression, analysis of variance, and analysis of covariance.

CHS 527 Health Policy and Planning. Three hours.
Designed to assist the student in understanding the planning process and factors that influence and determine policy decisions.

CHS 532 Community Clinical Process II. Three hours.
Prerequisite: CHS 522 or equivalent.
A continuation of studies from CHS 522 that will include an introduction to basic physical assessment techniques and continuation of a community project.

CHS 560 Introduction to Medical Science. Three hours.
Prerequisite: Second-year standing in social work or graduate standing in a health- or mental-health-related discipline.
Introduces social workers and other allied health professionals to the basic processes and components of the health care system; the major structures and characteristics of human body systems; the common or characteristic pathophysiological processes associated with these body systems; and the implications of illness and wellness for the individual, the family, and the community.

CHS 610 Special Problems in Medical Behavioral Science. One to three hours.
Open to graduate students in the social and behavioral sciences by permission of the instructor. Research or directed reading in behavioral science.

CHS 620 Independent Study in Preventive/Community Medicine. One to three hours.
Research or directed reading in community medicine topics, including health care delivery, preventive medicine, and health policy aspects of other related topics.

CHS 622 Directed Research in Community Health. One to three hours.
An advanced applied-research course designed to develop skills in the analysis and evaluation of health problems of community interest.

CHS 627 Multivariate Methods of Health Statistics. Three hours.
Prerequisite: CHS 526 or equivalent.
Emphasis is on application and interpretation of statistical software that performs techniques such as multivariate analysis of variance, discriminant analysis, logistic regression, log-linear modeling, and factor analysis.
10. COLLEGE OF EDUCATION

The College of Education offers graduate programs leading to the master of arts, the educational specialist, the doctor of education, and the doctor of philosophy degrees.

10.1 GENERAL ADMISSION REQUIREMENTS

To be considered for regular admission to a graduate program in the College of Education, a student must satisfy both of the following admission requirements:

- An entrance examination score no lower than the 50th percentile. Either of the following examinations may be used if acceptable to the department to which admission is sought: the Miller Analogies Test and the Graduate Record Examination general test.
- An undergraduate grade point average of 3.0 on a 4.0 scale, a 3.0 average for the last 60 semester hours in a degree program, or a 3.0 or higher in a completed graduate degree program.

An applicant whose credentials do not meet the above requirements may be considered in some programs for conditional admission, if one of the following minimum requirements is satisfied:

- an overall grade point average of 2.75 (2.5 kinesiology)
- an entrance examination score no lower than the 40th percentile on the entrance examination required by the department

Admission to graduate programs is competitive. Meeting minimum requirements does not guarantee admission, only that students will be reviewed for admission. Applications are reviewed by departmental screening committees with consideration given to such factors as academic and professional backgrounds, test scores, personal traits, professional goals and aspirations, and other factors that pertain to the ability to complete the program successfully and continue a productive career.

An applicant to a College of Education program that leads to professional certification must submit references from current and former professors and supervisory personnel knowledgeable of the applicant’s academic and professional capabilities.

Additional admission requirements may be outlined in the individual department descriptions in this catalog.
10.2 MASTER'S DEGREE PROGRAMS

The College of Education offers graduate work for the master of arts degree in counselor education (school counseling, community counseling, and rehabilitation counseling); educational leadership; higher education administration; educational psychology; general educational psychology; educational psychology: school psychometry; elementary education; human performance; secondary education (music education is available as a specialization within secondary education); and special education.

The rules of the University of Alabama Graduate School pertaining to transfer of credit, academic progress, graduation requirements, admission to candidacy, and time limits apply to all students in College of Education master's degree programs (see “Academic Policies” earlier in this catalog).

Master's programs prerequisites. The prerequisites for programs leading to the master of arts degree in education include (a) the completion of an appropriate baccalaureate curriculum, and in most programs, (b) professional teacher certification. For a student in college and community counseling or higher education, the completion of a bachelor's degree in an approved program is required. For a student in music education, audition, ensemble performance or teaching sample, and music history and music theory testing are required prior to or during the first 12 hours of graduate study.

For a student in educational leadership, the completion of a professional teacher certification program and two years of satisfactory teaching experience, including at least one year of P–12 teaching experience, is required. This should be completed by the end of the first year of graduate study. In addition, students preparing for positions in educational leadership are required to complete screening procedures, including special tests.

Master's degree requirements. There are two study plans available to students pursuing the master of arts degree. Candidates for the master's degree under Plan I must earn a minimum of 24 semester hours of credit in coursework and must write a thesis. Candidates for the master's degree under Plan II must earn a minimum of 30 semester hours of credit; a thesis is not required.

Master's degree programs leading to professional certification normally require a minimum of 30 semester hours. Nontraditional, alternative certification programs requirements vary; however, they normally require 39–45 graduate hours in addition to any of the applicant's undergraduate deficiencies. Courses that are taken for undergraduate credit may not be repeated for graduate credit.

Under each plan (including the nontraditional, alternative program) the student must pass a comprehensive examination in the field(s) of study at an appropriate time toward the close of the student's work.

Additional degree requirements may be outlined in the individual program descriptions in this catalog.

Nontraditional, alternative initial teacher certification program. The College of Education has been approved by the state board of education to offer special programs of study leading to the master's degree for degree holders who have not previously completed a teacher-education program. Admission to these programs requires a passing score on either the Graduate Record Examination general test or Miller Analogies Test appropriate for admission to the Graduate School; and a minimum 3.0 grade point average for all previous college-level work attempted. Individuals applying for alternative initial teacher certification programs must meet the minimum qualifications that are expected of candidates entering and completing undergraduate (Class B) certification in the same discipline. Other requirements, such as completion of writing tests, a passing score on the Alabama Prospective Teacher Testing Program (APTTP), and other screening associated with undergraduate certification, must be completed before formal admission to the alternative certification program. Some additional undergraduate work may also be required for admission. In addition to admission to the Graduate School, each prospective student must secure an appropriate evaluation letter from personnel in the Office of Student Services and Certification, 104 Carmichael Hall.

Nontraditional, alternative certification programs are available in elementary music education, physical education, secondary education (most fields), and special education (collaborative, early childhood special education, gifted, and multiple abilities).

To graduate, students in these programs must complete the required semester hours in specific graduate courses. Upon completion of the program, the student is eligible to be recommended for an Alabama Class A Professional Certificate. For most programs, no more than 12 semester hours of graduate courses may be completed in a nontraditional, alternative program before the removal of all admission deficiencies, unless special permission is granted by department heads in conjunction with personnel in the Office of Student Services and Certification, 104 Carmichael Hall. A student with a master's or higher degree in a secondary teaching field (or K–12 in music) generally may apply 12 semester hours from that degree to the fulfillment of teaching field requirements. This allows
the completion of up to 12 additional graduate hours in the program while meeting admission deficiencies and requirements.

**Clinical placements.** All clinical placements in the College of Education relating to teacher certification are coordinated through the Office of Clinical Experiences. These placements are in the greater Tuscaloosa area (with the exception of music education) in order to facilitate supervision of students. For students in the educational leadership program, internships are coordinated through the Department of Educational Leadership, Policy, and Technology Studies.

**Professional liability.** Students enrolled in College of Education courses that require a clinical placement are required to provide proof of professional liability insurance before being allowed to participate in a clinical placement. Professional liability insurance may be purchased through an independent insurer or is available to students who are members of the Student Alabama Education Association (SAEA), the Council for Exceptional Children (CEC), or Collegiate Music Educators National Conference (CMENC). Further information and membership applications may be obtained from the Office of Clinical Experiences.

**Teaching Internship requirements.** The teaching internship (formerly called student teaching) is one of the most important experiences College of Education students have. It is generally regarded as the culminating activity of one's preparation to become a teacher.

At The University of Alabama, the internship is a full-semester, full-time assignment and must be taken in residence.

Both alternative (nontraditional, fifth-year) and graduate students must file internship applications with the Office of Clinical Experiences in 105 Graves Hall during the semester preceding the semester of the planned internship. The application process begins by attending a mandatory application session, which is held the first Wednesday in October for spring-semester interns and the first Wednesday in March for fall-semester interns. The time, date, and place of the application session are announced at the beginning of each semester. The deadline for filing applications for a spring-semester internship is October 31; for a fall-semester internship the deadline is March 31.

Students may apply to enroll for an internship if they meet the following criteria:

- The student must have completed all courses in the major or majors, or must secure written permission to enroll for an internship from the appropriate department head.
- The alternative masters student must show proof of a passing score on the Praxis II Content Test.
- The traditional masters student must show proof of a passing score on the Praxis II Content Test if seeking certification in an area which differs from current certificate.
- The student must have achieved a minimum grade point average of 3.0, both for all University of Alabama courses attempted and for all University of Alabama courses and transfer courses combined.
- The student must have achieved a minimum grade point average of 2.75 in each major, both for University of Alabama courses in each major and for combined University of Alabama courses and transfer courses in each major.
- The student must have achieved a minimum grade point average of 2.75 for professional education coursework.
- The student must have completed all methods courses and appropriate professional coursework with grades of "C" or better.
- The student must have removed from the transcript any grade of incomplete ("I") recorded in required courses; grades of incomplete are treated as grades of "F."

**Registration for internship credit hours.** Graduate students are required to register for the number of internship credit hours specified by their program. In some programs, graduate students may be allowed to choose a 6-hour registration or a 9-hour registration; course requirements are the same whether 6 hours or 9 hours are taken. Graduate students whose program requires two internship placements should register for two sections of internship (3 hours per section or 4.5 hours per section). Students enrolled for internship must not expect to be enrolled in other courses while interning.

**Policy on internship placements.** All internship placements are coordinated by the College of Education Office of Clinical Experiences. Placement sites are selected so as to ensure the quality of the internship experience and of the supervision provided by the cooperating teacher. All internship placements are in the greater Tuscaloosa area (with the exception of music education) in order to facilitate supervision of students by University of Alabama faculty or other designees of the department heads. Placements outside the greater Tuscaloosa area are made only if the director of clinical experiences and/or the department head determines that an appropriate local placement is unavailable.

Students may apply for overseas internships if they meet certain criteria and if appropriate placements can be coordinated by the Consortium for Overseas Student Teaching (COST) and/or The University of Alabama. Applications for overseas internships are taken during January for placements for the next fall semester, and in May for placements the succeeding spring semester. Contact the Office of Clinical Experiences in 105 Graves Hall for
additional information.

Internship Assignments

- **Elementary education (K–6)** interns will receive two internship assignments: half in grade K, 1, 2, or 3; and half in grade 4, 5, or 6.
- **Secondary education (6–12 or 7–12)** interns with a comprehensive major may receive one or two internship assignments; students with two secondary majors will receive a split internship assignment; half in each major.
- **Special education-CTP (K–6 or 6–12)** interns will receive a split internship assignment: half in a severe and profound setting and half in a mild to moderate setting. The placements will be divided according to their certification grade levels.
- **Special education-early childhood (birth–age 8)** interns will receive a split internship assignment: half in a special education preschool setting and half in a kindergarten through 2nd grade setting. These placements will be in a public school setting where a child has been identified with a disability.
- **MAP (K–6)** interns will receive two internship assignments: one 12 week semester placement will be in a general education classroom (K–6) and the other 12 week semester placement will be in a special education setting (K–6).
- **P–12 programs in physical education, foreign language, or music education** interns should expect to have a split internship assignment between an elementary and a secondary school.
- **English as a second language (ESL)** interns should expect to have a split internship assignment between an elementary and a secondary school or if ESL interns are employed full-time as an ESL teacher in a public school setting, they may complete one semester of internship in their own classroom under the supervision of their building principal and a first-term summer semester of internship in an ESL summer program coordinated by the Office of Clinical Experiences under the supervision of a University of Alabama ESL faculty member.

Summer Internship. Summer internships are rarely available and then only to persons who hold an undergraduate degree and certification and have one or two years of successful teaching experience at the level and in the subject for which they are seeking certification (with approval from the department head). In addition, summer internship assignments are allowed only if an appropriate placement can be secured in the Tuscaloosa area and appropriate supervision can be provided. These conditions also apply to those seeking to update or renew their certification or add an additional endorsement to a current certificate. To apply for a summer internship, file an appropriate application with the Office of Clinical Experiences in 105 Graves Hall by March 31 of that year.
10.3 PROFESSIONAL CERTIFICATION

Alabama Class A Professional Certificate. Class A teacher education programs are designed to help teachers more effectively serve the purposes defined for the same teaching field at the Class B level, provided such programs exist. The intent of the fifth-year program is to help the teacher develop higher levels of competence than is possible in the Class B program. Following a review by the Alabama State Board of Education, the Class A Professional Certificate is granted to the student who (a) has applied for and has been recommended for certification by the College of Education, and (b) has completed a preplanned graduate program, approved by the state board of education, that includes a master’s degree. It is important to remember that the awarding of a master’s or higher degree does not necessarily imply that the student is eligible for Class A certification. Applicants for the certificate must also present to the Alabama Department of Education evidence of successful and appropriate teaching experience, as follows: for certification as a library/media specialist, two years; as a counselor or psychometrist, two years; as an educational administrator, three years.

The Class A certificate is valid for five years and may be renewed according to regulations of the Alabama State Board of Education.

Alabama Class AA Professional Certificate. The essential objective of the sixth-year program is to extend upward the level of competence of the teacher. Following a review by the Alabama State Board of Education, the Class AA Professional Certificate is granted to students who (a) have applied for and are recommended for certification by the College of Education, and (b) have completed a preplanned graduate program, approved by the state board of education. Students seeking Class AA professional certification must enroll in and complete the Ed.S. (or doctoral) degree program in the desired certification area in order to obtain the University’s recommendation for Class AA professional certification. Courses used to qualify for a lower-level supporting certificate may not be used again as part of a higher-level certification program.

A cumulative grade point average of not less than 3.25 is required for all graduate work attempted after the master's degree, and a final comprehensive examination is required. A maximum of 15 semester hours of appropriate post-master’s-degree credit earned through an institution approved to offer graduate programs beyond the master’s level in the field of study in which the credits were earned may, with approval by the department head or his or her designee, be applied toward the Class AA Professional Certificate. It is important to remember that the awarding of a graduate degree does not necessarily imply that the student is eligible for Alabama certification.

A student completing requirements for a master’s degree during a semester or summer session who does not need a full class load to meet those requirements may, with approval of the advisor and department head, register for additional courses toward a Class AA Professional Certificate, not to exceed the maximum prescribed class load.

Strengthened Subject Matter Option (SSMO). In family and consumer sciences, graduate students may opt to complete the Class A certification program with the Strengthened Subject Matter Option, or SSMO. Generally, SSMO programs require a master’s or higher degree in the teaching field, with appropriate courses completed for lower-level certification or as an additional part of the graduate program (e.g., general survey in exceptional childhood education). Since SSMO is not available in all fields, consult the appropriate department head or personnel in the Office of Student Services and Certification, 104 Carmichael Hall.

Alternative approaches to certification. In addition to "regular" certification programs, the Alabama State Board of Education offers five alternative approaches to certification. These are as follows: (a) alternative baccalaureate-level approach (contact the Alabama Department of Education at www.alsde.edu); (b) alternative fifth-year-level approach (see information in this catalog); (c) speech- and language-impaired approach; (d) nationally certified school psychologist approach; and (e) National Board for Professional Teaching Standards approach. Further information regarding these alternative approaches is available via the Office of Student Services and Certification, 104 Carmichael Hall.

Policies for out-of-state students at fifth-year (Class A) and sixth-year (Class AA) levels for any area except educational administration. Admission requirements for fifth-year (Class A) programs for teachers include “eligibility for Class B certification in the teaching field(s) in which Class A certification is sought,” except in a few specified fields.

Admission requirements for sixth-year (Class AA) programs for teachers include "eligibility for Class A certification in the teaching field(s) in which Class A certification is sought," except in a few specified fields.

Out-of-state students who do not meet the above admission requirements to enroll in courses at the respective levels may be recommended to other state departments of education based only on completion of coursework, not completion of approved programs. Thus, these students will not be eligible for Alabama certification and, if and when the students wish to receive Alabama certification and teach in Alabama, they must present verification of eligibility for an appropriate prerequisite Alabama certificate before being recommended for Alabama certification.
**Policy for fifth-year level educational administration.** All students (not just Alabama students) must meet all admission requirements for the Class A Educational Administration Program before enrolling in the program.

**Changes in certification requirements.** The programs listed in this catalog that lead to Alabama Class A and Class AA professional certificates for service in the public schools may be altered to meet certification standards adopted by the state board of education. Check with the appropriate department head for information.

Coursework and/or a degree accepted from institutions outside the United States shall be substantiated by an evaluation of the foreign credentials from a state, federal, or private foreign credential evaluation service recognized by the Teacher Education and Certification Office. Contact the College's Office of Student Services and Certification for more information.
10.4 EDUCATIONAL SPECIALIST DEGREE

The College of Education offers graduate work for the educational specialist (Ed.S.) degree in counselor education; educational leadership; educational psychology: general educational psychology, educational psychology, educational research, and school psychology; elementary education, secondary education (music education is available as a specialization within secondary education); and special education.

The College of Education conducts its Ed.S. programs in accordance with the rules of the University of Alabama Graduate School; see the section "Academic Policies" earlier in this catalog for regulations.

Graduate students seeking AA certification at The University of Alabama must enroll in and complete the Ed.S. (or doctoral) program in that certification area in order to obtain University of Alabama recommendation for AA certification. A student who takes a course for credit in a master's level program may not take the same course for credit in a sixth-year program.
10.5 DOCTORAL PROGRAMS

Programs leading to the doctor of philosophy (Ph.D.) degree are offered in counselor education, educational administration, higher education administration, educational psychology, educational research, elementary education, human performance, instructional leadership, school psychology, secondary education (music education is available as a specialization within secondary education), and special education. Programs leading to the doctor of education (Ed.D.) degree are offered in counselor education, educational administration, higher education administration, educational psychology, elementary education, instructional leadership, school psychology, secondary education (music education is available as a specialization within secondary education), and special education. The doctoral programs are designed for school personnel and others engaged in educational service and leadership.

A master's degree from an accredited institution is required for admission into any Ed.D. or Ph.D. program in the College of Education. Other objective and subjective criteria are employed to select students whose success can be reasonably predicted. Some doctoral programs have further prerequisites for admission such as a professional teaching certificate and/or certain experience in teaching or a related activity. Those who wish to pursue doctoral study in the College of Education should communicate directly with the head of the department in which they seek to work.

In planning a program, doctoral students should follow these steps:

**Declaration of intent.** Before establishing a doctoral committee, students must successfully complete a screening process in the department in which they wish to study. The applicant initiates the screening process by filing a declaration of intent form with the appropriate department head. The forms are available in the departmental offices.

**Preliminary conference.** As part of the screening process, appropriate faculty members review information the applicant has supplied and interview the applicant. In this preliminary conference, consideration is given to factors such as the applicant's academic and professional background, test scores, personal traits, professional goals and aspirations, and other factors that pertain to the ability to complete the program successfully and continue a productive career. The applicant is notified of the decision of the screening committee by the department head within a few days following the preliminary conference. The department head notifies the College of Education Office of Student Services of the decision by returning the appropriately marked declaration of intent form.

**Appointment of advisor and doctoral program advisory committee.** Students accepted for doctoral study will be asked to confer with the appropriate department head regarding the appointment of advisors and program advisory committees. Nominations for appointment to these committees are made by the program chairperson through the department head to the dean of the College.

Ed.D. program advisory committees usually consist of a minimum of three members of the graduate faculty: a chairperson who represents the student's major area of study and who will be the major advisor for the student in program planning and research, and two members (one from outside the department of the College in which the student is majoring) who can also be of assistance in their areas of expertise.

Ph.D. program advisory committees must have at least five members: a chairperson, who is drawn from the graduate faculty and who represents the student's major area of study (the chairperson serves as the major advisor in program planning and research) and four members, one of whom must be from outside the department of the student's major.

**Program planning.** As soon as possible after the appointment of the doctoral program advisory committee, but no later than the end of the first semester of doctoral study, the student and the major advisor should convene a meeting of the program advisory committee. At this program-planning meeting, the student provides each member with a formal written summary of graduate study to date. The student and the committee then plan a program of study to meet the academic and professional needs of the student and fulfill all requirements of the program, the College, and the Graduate School. Program planning forms for both doctoral degrees may be obtained in the departmental offices.

Official copies of the plan agreed upon by the student and the committee shall be dated, signed by the committee members and the department head, and distributed to the Office of the Graduate School, to the student's program office for inclusion in the student's program file, to the dean, and to the committee members. Any deviation from the plan must be approved by the committee and noted by the chairperson on the student's official record and communicated to the Graduate School.
The program advisory committee continues to assist the student in program planning and advisement until the student satisfactorily completes all major and minor comprehensive examinations.

**Degree requirements.** Requirements for the Ph.D. degree are a minimum of 24 semester hours in a major field of study; a minimum of 12 semester hours in courses in foundational coursework; and a minimum of 24 hours of dissertation research. Although there is no longer a College-wide requirement, individual departments may stipulate additional hours for a minor requirement. The total minimum course credit hours for the Ph.D. is 48.

The Ed.D. degree requires a minimum of 60 semester hours beyond the master's degree, or a minimum of 90 semester hours including the master's degree. Programs must include a broad field of study in a major area of specialization; a minimum of 12 semester hours in courses in foundational coursework; and a minimum of 12 semester hours of dissertation research. With the approval of the student's program advisory committee, some departments permit up to 6 semester hours of dissertation research credit to be included in the 60 (or 90) required hours. In such cases the minimum number of hours is 66 (or 96).

Students pursuing Ph.D. and Ed.D. degrees in the College of Education must satisfy the following foundations requirement: 12 hours of graduate coursework comprising (i) any BEF or BEP classes or (ii) any non-research methods courses outside the student's department. Foundations courses cannot come from the student's major program. Approved by the program study committee, these classes should introduce the student to theoretical discourses and bodies of knowledge that provide a depth and breadth of understanding necessary for fluency with the research, theory, and scholarship foundational to the student's field of inquiry and dissertation research. A 12–15 semester hour research/statistics competency is also required in all Ph.D. and Ed. D. programs.

**Major and minor examinations.** Each Ph.D. candidate must demonstrate competence in his or her major fields (and minor fields, if required by the department). Each Ed.D. student must demonstrate competence in the broad area of knowledge and any areas of specialization specified in his or her program of study. Written comprehensive examinations are required to determine competence in the student's major (Ph.D.) or broad area of knowledge (Ed.D.). A student who fails a major or minor examination may repeat it only once.

A student may apply to take the comprehensive examination in the major after filing a program of study, completing at least one semester in residence, and obtaining approval of the department head (or the department head's designee) to take the examination. An examination application should be filed with the appropriate department head at least four weeks in advance of the scheduled testing date.

Comprehensive examinations in minor fields or areas of specialization can be taken after the student has completed all coursework in the minor field. The chairperson of the program or department offering the minor or area of specialization may establish evaluating procedures other than a written comprehensive examination.

**Dissertation committee.** The dissertation committee is responsible for assisting the doctoral student in developing and conducting dissertation research. Once the dissertation committee is formed, the student’s program planning committee is disbanded. To form the dissertation committee, the student meets with the chairperson of the program advisory committee to discuss a potential dissertation topic and identify faculty with relevant expertise who by virtue of full membership in the graduate education faculty may chair the dissertation committee. The student then requests such a faculty member to chair the dissertation committee, and together they recommend at least four additional members of the committee, at least one of whom is from outside the department that includes the student’s major field of study.

Selection of the committee chairperson and members should be based on the relationship between the expertise and scholarly interests of the faculty members and the student's proposed dissertation topic. The student and committee chairperson recommend the committee to the program chairperson who recommends the committee to the department head, who in turn recommends the committee to the dean of the College of Education.

The dissertation committee chairperson provides intense counsel in selecting the dissertation problem, developing the proposal, coordinating input from committee members, chairing committee meetings, guiding the student's dissertation research, guiding the writing of the dissertation, and chairing the oral defense of the dissertation. The dissertation committee assists the student in developing the proposal, conducting dissertation research and writing the dissertation, and judges the adequacy of the student's dissertation defense. Close cooperation and involvement of all committee members are expected at all stages of the dissertation process, from the development of the proposal to successful oral defense of the dissertation. The student, in consultation with the chairperson of the committee, is responsible for scheduling committee meetings.

**Dissertation proposal.** The dissertation is a contribution to research and literature in a field. It represents the student's ability to identify a problem; develop an understanding of the relevant literature and previous research in an area of inquiry; formulate cogent research questions or hypotheses; report and discuss results of investigation; and derive conclusions, implications, and recommendations from results. The dissertation proposal is the first major
step in this process.

The topic of the dissertation should evolve from the student's academic and professional interests. The topic will not be accepted until the dissertation committee formally meets and approves a comprehensive dissertation proposal. While a student may present a brief prospectus to the committee informally, the acceptance of the complete dissertation proposal is necessary before the student has approval from the committee to pursue the dissertation, and before the student is admitted to candidacy for the doctoral degree.

The dissertation proposal will include an introduction to the problem, a statement of the problem, research questions or hypotheses, a comprehensive review of literature and related research, a description of the methods of inquiry or research methods to be employed in the investigation, and the results of pilot studies (where appropriate). It is expected that the information presented in the proposal will be comprehensive and will include discussion of the areas just mentioned in a form that is essentially the same as the final dissertation. Some departments require a formal prospectus prior to the dissertation proposal.

Prior to the formal proposal meeting of the dissertation committee, the student should confer with all committee members. The written dissertation proposal must be provided to members of the committee at least 10 working days prior to the proposal meeting. The Graduate School policy on article-style dissertations may be found in the "Academic Policies" section of this catalog under "Dissertation."

Upon acceptance of the dissertation proposal, including completion of any changes recommended by the committee, each committee member will sign the acceptance page of the dissertation proposal. One copy of the signed proposal will be filed with the chairperson of the dissertation committee and one copy will be forwarded to the program chairperson and department head for the student's permanent file. The student is then eligible for admission to candidacy for the degree; the application for admission to candidacy for degree must be completed. The dissertation proposal will be maintained in the program and departmental office until the student completes and successfully defends the dissertation.

Typically, the student's major advisor (chairperson of the dissertation committee) will serve as the chief advisor for the dissertation research and preparation of the dissertation. However, another advisor may be selected if the choice of topic warrants such action. Such a change must be approved by the program chairperson and department head, in consultation with the student. In addition, more than five faculty members may serve on the dissertation committee. Students are encouraged to seek advice and assistance with their research from any member of the dissertation committee and from staff members in the College of Education Research Assistance Laboratory.

The length of work on dissertation research will vary. In no case shall the student be allowed to take an oral examination on the dissertation before having been admitted to candidacy.

**Admission to candidacy.** After approval of the dissertation proposal, and completion of all major and minor examinations, the student is eligible for admission to candidacy for the degree. The Graduate School provides the form application for admission to candidacy for the Ph.D. or Ed.D. degree. The student completes the form; obtains the signatures of the dissertation committee, department head, and other appropriate officials; and has the form forwarded to the dean of the College of Education for signature. Copies of the form are then distributed per instructions on the form.

The department head reports the results of all comprehensive examinations to the College's Office of Student Services and Certification.

No student may be admitted to candidacy in a program requiring teaching experience before completing the minimum number of years of appropriate teaching or other experience acceptable to the dissertation committee. A statement of experience from previous employers may be required.

**Oral examination.** Since the dissertation research results from the acceptance of the proposal, a minimum of two semesters normally is anticipated prior to oral defense of the dissertation. This time frame ensures adequate attention to discussion of results, their implications for the field, and recommendations for future scholarship.

When all requirements have been met and the dissertation is completed, the student shall arrange a meeting of the dissertation advisory committee; the student shall distribute copies of the dissertation to the members at least 10 working days prior to this meeting.

At least 10 working days prior to defending the dissertation, the student must send an abstract of the dissertation to all faculty in the College of Education along with an invitation to attend the defense that indicates time and place of the defense. The student must defend the dissertation satisfactorily in that meeting and must pass any other examinations considered appropriate. The record of the student's performance on the final defense of the dissertation
will be noted on the proper forms, in accordance with requirements of the Graduate School. These forms will be signed by committee members.

It is the responsibility of the student to submit to the Office of the Graduate School, six weeks prior to graduation, two copies of the dissertation and the abstract in the final, approved form. Further changes or corrections may be suggested by the Graduate School at this time, and these must be completed or reconciled before graduation.

**Time limits for doctoral study.** Doctoral programs of study may include appropriate coursework that has been earned six years prior to the date of the student’s admission to the doctoral program. All degree requirements must be completed within seven years of the date of the student’s admission to and enrollment in the doctoral program. For example, a student being admitted to and enrolled in the 2008 fall semester may utilize appropriate coursework earned during the 2002 fall semester and may also utilize appropriate coursework earned through the 2015 summer semester.

**Time limits extension request.** Under unusual circumstances, a student may petition for a one-semester extension to the seven-year time limit that, if recommended by the department head and approved by the graduate dean, will not require the student to validate any out-of-date courses. Validation of out-of-date courses is not an option in the College of Education. If a student fails to complete all degree requirements within seven years of his or her admission to the doctoral program, the student will be dropped from the doctoral program and must reapply for admission.

**Repeating courses when given an extension.** When requests are made for extension of Graduate School deadlines, and it is deemed that an out-of-date course is integral to the degree program, the dean of the College of Education may request permission of the Graduate School for the course to be repeated. In such instances, both grades shall be used in calculation of the GPA.

**Residence requirements for doctoral study.** A minimum of two academic years of graduate study beyond the master’s degree is required for completion of Ed.D. and Ph.D. programs in the College of Education. At least one academic year of doctoral study (or its equivalent, as noted below) must be spent in continuous residence as a full-time student on the campus of The University of Alabama.

Doctoral program advisory committees may approve either of the following alternatives for meeting residence requirements:

- one full summer term and the following fall semester engaged in coursework on a full-time basis on the campus
- a spring semester and the following full summer term engaged in coursework on a full-time basis on the campus

Students in the secondary education and educational leadership Ed.D. (not Ph.D.) programs have the option to meet the doctoral residency requirement by following an alternative policy that is on file with the Graduate School. Contact the Graduate School for details.

Students at the Gadsden Center may fulfill Ed.D. residency by completing 24 graduate hours while continuously enrolled for a period of 24 months.

**Transfer credit.** Appropriate graduate credit beyond the master’s degree that was earned in other accredited institutions may be transferred and applied to doctoral requirements, but in no case can the amount of transferred credit exceed one-half of the hours required for the degree. In calculating the number of transferable hours, dissertation-research credit hours are subtracted from the total degree requirements.

Additional degree requirements may be outlined in the individual program descriptions in this catalog.
10.6 DEPARTMENT OF EDUCATIONAL LEADERSHIP, POLICY, AND TECHNOLOGY STUDIES (AEL, AHE, AIL, BEF, CAT)

Department Head: Professor Stephen Tomlinson, Office: 301C Graves Hall

The mission of the Department of Educational Leadership, Policy, and Technology Studies is to prepare ethical and reflective practitioners, researchers, and scholars for work in K–12, higher education, and other educational settings. Through teaching and outreach, the department strives to promote the values, knowledge, and skills needed to improve education in the state and across the region; and, through the scholarly activities of its faculty and students, contribute to national research. Leadership in all areas requires an understanding of curricular, instructional, supervisory, and administrative processes—as well as awareness of the ever-changing social, political, legal, moral, and economic contexts of education. In line with the College’s Conceptual Framework, programs offered through the department meet these challenges by addressing the themes of Student and Community, Disciplinary and Pedagogic Expertise, Technology and Assessment, Collaboration and Life-long Learning, and Democracy and Diversity. We respect diversity, honor difference, and promote social justice. The department also maintains an on-going, open dialogue about educational improvement through its association with various federal, state, and local educational agencies and professional organizations.

The department offers Class A and Class AA certification programs in educational leadership, masters’ degrees in educational leadership and higher education administration, Ed.S. degrees in educational leadership, and Ed. D. and Ph.D. degrees in educational administration, higher education administration, and instructional leadership. In addition, the department also offers a variety of undergraduate and graduate courses in instructional technology and the social foundations of education.

Admission and degree requirements for the Graduate School and for the College of Education are detailed in an earlier section of this catalog. However, admission to the Graduate School and the College of Education does not ensure admission to the doctoral programs. Admission forms and requirements, specific program parameters, departmental policies, and contact information for each doctoral degree can be found at http://education.ua.edu/leader/degrees.html.

The department comprises the following academic programs.

- Computer & Applied Technology
- Educational Leadership
- Educational Administration
- Instructional Leadership
- Higher Education Administration
- Social Foundations of Education
area, an additional Class A certificate in educational administration may be obtained by completing the 18-hour Innovative Leadership Program (ILP). Those holding Class B certification must complete the additional hours required for the M.A. (see additional requirements below). Effective Fall 2005, the requirements for admission to the ILP program leading to administrative certification include: (i) a bachelor's degree or master's degree with professional educator certification in a teaching field or instructional support area, (ii) a minimum of three years of successful teaching experience, (iii) the submission of a portfolio before the interview, and (iv) passing an interview conducted by the program admission committee.

The portfolio must include (a) three letters of recommendation and include the applicant's principal or supervisor, (b) a completed copy (all forms) of the most recent performance appraisal to include the professional development component if available, (c) evidence of leadership and management potential, including evidence of most recent accomplishments in the area of educational leadership and/or student achievement, (d) a summary of the candidate's reasons for pursuing educational administration certification, and (e) a summary of what the candidate expects from the program.

In order to be awarded Class A Certification (i) students must maintain a GPA of at least 3.25 on all courses with no grade below a "C", (ii) successful completion of the internship; (iii) a passing score on a comprehensive written educational administration test, (iv) completion of State Department of Education certification application forms, and (v) completion of the survey of special education course (SPE 300 or SPE 500). The certification programs of the department have been designed to fulfill current requirements of the Alabama State Board of Education. These state requirements change from time to time and, accordingly, the department's requirements and programs are subject to change.

**Master of Arts in Educational Leadership/Class A Certification (P–12)** (30 semester hours). Students holding current Class B certification may earn a master's degree in educational leadership by adding 12 more credit hours to the ILP program described above. The additional credit hours consist of one research course, one foundations course, and two electives. Admission and degree requirements for the Graduate School and for the College of Education are detailed in an earlier section of this catalog.

The program of study leading to Class A administrative certification is based on a cohort approach to instruction with cohorts being established annually. Admission forms and requirements, specific program parameters, departmental policies, contact information can be found at [http://education.ua.edu/leader/degrees.html](http://education.ua.edu/leader/degrees.html).

**Educational Specialist in Educational Leadership/Class AA Certification** (30 semester hours). Students who earned initial credit toward Class AA professional certification during the Fall 1992 semester or later must enroll in and complete the Ed.S. degree program. Courses used to qualify for a lower-level supporting certificate may not be used again in a higher-level certification program. Also, effective Fall 2005, students who are admitted to the program must (a) hold master's-level certification as a superintendent/principal, superintendent, (b) principal, supervisor, vocational administrator, or educational administrator, (c) have at least one year successful experience as a school administrator, and (d) present an acceptable GRE or MAT score (see application policy). Admission and degree requirements for the Graduate School and for the College of Education are detailed in an earlier section of this catalog. Admission and degree requirements are subject to change and may be found on the department website at [http://education.ua.edu/leader/degrees.html](http://education.ua.edu/leader/degrees.html), and on the Graduate School website at [http://graduate.ua.edu](http://graduate.ua.edu).

To be awarded class AA certification, students must (a) earn a passing score on a comprehensive exam covering the content of the program, (b) maintain a GPA of at least 3.25 on all courses with no grade below a "C", (c) complete the State Department of Education certification application forms, and (d) complete the survey of special education course SPE 300 or SPE 500. Please note: classes taken for Class A certification and credits over six years old cannot be applied to this degree. The certification programs of the department have been designed to fulfill current requirements of the Alabama State Board of Education.

The program of study leading to Class AA administrative certification is based on a cohort approach to instruction with cohorts being established annually. In order to maintain compliance with the Alabama Board of Education, admission and program requirements are subject to change. Admission forms and requirements, specific program parameters, departmental policies, and contact information can be found at [http://education.ua.edu/leader/degrees.html](http://education.ua.edu/leader/degrees.html).

**Educational Specialist in Educational Leadership/ non-certification option** (30 semester hours). The Educational Specialist Program in Educational Leadership (non-certification) provides an option for aspiring educational leaders who are not seeking state administrative certification. It serves individuals who are preparing for organizational leadership positions in a variety of settings with a focus on becoming competent and creative leaders of learning. The program comprises four semesters of intensive coursework including a common introductory course about what it means to be an instructional leader and a culminating course experience that involves students in school-community partnerships. The cohort design allows students to take their beginning and culminating courses together, but provides options in selecting other coursework.
EDUCATIONAL ADMINISTRATION
Professor David Dagley, Office: 302A Graves Hall

**Doctoral Degrees.** The doctoral degrees offered by the program in educational administration emphasize the application of theory and research to the practice of administration in P–12 schools as well as the preparation of individuals for positions in other educational policy arenas. The programs provide individuals with knowledge, skills, and dispositions needed to function as scholarly, ethical, and reflective decision makers in the areas of executive management, educational leadership, and policy. The programs prepare individuals to lead complex educational organizations in ways that improve schools, foster democratic communities, and promote those principles of education established by legally and nationally established mandates.

The primary purpose of the doctor of education (Ed.D.) degree program is to prepare individuals for leadership positions as assistant principals, principals, supervisors, assistant superintendents, superintendents, state level personnel, and other policy arenas. Individuals seeking this degree have often earned both A-level administrative certification obtained at the master's level and AA-level administrative certification obtained at the Ed.S. level.

The primary purpose of the doctor of philosophy (Ph.D.) degree program is to prepare students for careers in the professoriate. As compared to the Ed.D., such preparation includes more extensive contact with the university culture in the form of residency requirements and more rigorous expectations for research (i.e., additional courses and dissertation hours).

INSTRUCTIONAL LEADERSHIP
Professor John Petrovic, Office: 323C Graves Hall

The Instructional Leadership Program is dedicated to the advancement of knowledge, the improvement of professional practice, and service to learning communities, including distributive and shared leadership teams. We develop future generations of scholars, researchers, policy makers, and institutional leaders. Our work is guided by the principles of reflective practice, professional growth and development, individual responsibility, the pursuit of social justice, an ethic of caring, and a commitment to the communities we serve. The program differs from the one in educational administration in that it focuses primarily on the development of leaders with expertise in fields such as curriculum, instruction, supervision, technology, and the social and cultural factors influencing learning.

**Doctoral Degrees.** The Ed.D. in instructional leadership provides learning opportunities in the areas of policy, curriculum, supervision, and human resource and professional development for educators who hold or aspire to leadership responsibilities for policy making, planning, instruction, and supervising and evaluating programs in schools and other agencies. Students who hold degrees in instructional leadership are prepared to teach in community, four-year colleges, and universities in the areas of their expertise. Courses in the program are designed to provide the technical, human, and conceptual skills essential to theory and practice. Additionally, a Nurse Educator Specialization in the Ed.D. program is available to practicing nurses whose career goals include teaching in a nursing program in community colleges or universities.

The Ph.D. in instructional leadership prepares educational leaders, scholar practitioners, policy makers, professors, and researchers who can draw upon knowledge of learning processes, pedagogy, and the social foundations of schooling to make ethical and politically informed judgments that advance K–12 education while respecting diversity, honoring difference, and promoting social justice. Courses focus on curriculum, professional development, supervision, learning, pedagogy, and questions of diversity and social justice. Throughout, the overarching aim is to develop the skills of reflective decision making so that graduates are able to construct theoretically informed practical solutions to the complex and multi-dimensional problems that face schools. The Ph.D. offers two optional concentrations. The concentration in instructional technology trains future researchers, teachers, and corporate trainers in the field of computer assisted instruction. The concentration in the social and cultural foundations of education prepares students for jobs in the professoriate that focus on the social foundations of education or multicultural education.

HIGHER EDUCATION ADMINISTRATION
Professor Claire Major, Office: 328C Graves Hall

The exclusively graduate-level program in higher education administration, through its varied course offerings and structured learning experiences, meaningfully serves a broad clientele, especially current and future administrators in viable roles in the administration of two- and four-year colleges and universities. Course offerings are designed primarily to train, sensitize, and broaden the information base of administrators and personnel already affiliated with institutions of higher learning, and to prepare others for employment with institutions of higher learning in Alabama and the Southeast. The program offerings also complement other courses of study undertaken by graduate students pursuing other majors within the area, the College, and the University. The program in higher education
administration offers the following degrees: the M.A., Ed.D., and Ph.D.

Admission and degree requirements for the Graduate School and for the College of Education are detailed in an earlier section of this catalog.

SOCIAL FOUNDATIONS OF EDUCATION
Professor John Petrovic, Office: 323C Graves Hall

Foundations of education course offerings include basic support courses for undergraduate and graduate teacher education programs throughout the College of Education, and for programs in other units of the College and University. Students pursuing a Ph.D. in instructional leadership may choose a concentration in Social and Cultural Foundations of Education. Students in foundations of education complete coursework in the areas of educational policy, social theory, philosophy, and history. Special emphasis is placed on critical examination of the relationships between education and social justice in both U.S. and global contexts.
10.6.1 DEPARTMENT OF EDUCATIONAL LEADERSHIP, POLICY, AND TECHNOLOGY STUDIES COURSES

Course Descriptions (CAT)

CAT 520 Computer Graphics Education. Three hours.
Prerequisite: CAT 531 or CAT 532.
Application course dealing with the use of graphics in learning, including implications for designing materials for education and training applications. Core of course is student’s individual product development and research.

CAT 531 Computer-Based Instructional Technologies. Three hours.
An introductory course for teacher educators in the fundamentals of computer applications for educational use. It covers historical and social contexts of computer development, fundamentals in computer systems, Macintosh and DOS, configuring hardware, and the use of word-processing, database, and spreadsheet software applications for personal productivity and educational uses.

CAT 532 Current and Emerging Instructional Technologies. Three hours.
Prerequisite: CAT 531.
The course focuses on the educational applications of emerging chronologies, including Internet, fax, bulletin boards, voice mail, and networks. Students will use electronic mail and transfer files through Internet. Production skills are required in desktop publishing and use of graphics, including draw and paint programs and animation. A significant part of the course concerns production in hypermedia software. Also, students will engage in the uses of telecommunications other than computer, such as one-way interactive satellite class, two-way video phone course sequence transmission, and two-way IITS instructional event.

CAT 533 Curriculum Integration of Technology. Three hours.
Prerequisite: CAT 532.
This course is a culminating course that will involve the production of technological pieces and uses of existing technologies for the development of learning activities appropriate for the student's grade level and subject matter.

CAT 534 Issues and Trends in Educational Technology. Three hours.
Study of current issues and trends affecting educational computing. Examines emerging technologies; legal, social, and ethical issues affecting technology; technology funding and grants; technology planning; professional development; and multicultural issues.

CAT 589 Practicum Research Educational Computer Technology. Three hours.
Prerequisites: CAT 531, and either CAT 532 or CAT 533.
Students pursue individual research in educational computer technology; they are required to implement, analyze, and report findings in APA format.

CAT 689 Practicum in Educational Computer Technology. Three to six hours.
Prerequisites: CAT 531, and either CAT 532 or CAT 533.
Students pursue individual research in the program in educational computer technology; they are required to implement, analyze, and report findings in APA format.

Course Descriptions (AEL)

AEL 500 Introduction to Educational Organization and Administration. Three hours.
An analysis of the general concepts and issues of organization, administration, and leadership in education.

AEL 505 The Educational Leader. Three hours.
An exploration of the relationship between leadership theory and the roles, functions, and tasks of school leaders. Emphasis on developing competencies required for leadership in the N–12 educational setting.

AEL 510 Principles of Curriculum and Instruction. Three hours.
An examination of foundations, principles, and concepts inherent in the field of curriculum. Focuses on knowledge of and understanding about learning, and methods and strategies for program planning, design, implementation, and evaluation. The fit between the needs of the learner, a planned program of instruction, and an implemented program of instruction is examined critically.

AEL 552 Foundations of Instructional Supervision. Three hours.
Prerequisites: Either AEL 500, AEL 505, and AEL 600, or permission of the instructor.
A comprehensive study of basic concepts of effective supervision, including supervisory roles and functions.
communicative interaction, and formative and summative strategies for improving instruction. Focuses on practical application of approaches to, organization of, and techniques of supervision for use with individuals and groups to facilitate continued professional development and contributions to the educational enterprise.

AEL 581 Educational Policy and Reform. Three hours.
A focus on the relation of the public school to the state, on the principles of education, and on the possibilities for reform.

AEL 599 Thesis Research. Variable credit.
Directed thesis research in the field of educational leadership. Enrollment is subject to program regulations and consent of the student's program committee.

AEL 600 Introduction to Educational Law. Three hours.
An introduction to how legal methods and kinds of laws, such as torts, contracts, agency, equity, and constitutional law, apply to educational situations. Students will be exposed to research and will be tested on state and federal statutes, state and federal administrative law, and case law.

AEL 602 Educational Leadership and School Restructuring. Three hours.
Prerequisite: AEL 500, AEL 505, or permission of the instructor.
An inquiry into identification, analysis, and application of leadership theories and interpersonal dynamics and the relationship of leadership theories to other disciplines. Implications of these for school restructuring and change for the improvement of instruction are emphasized.

AEL 605 Internship in Educational Leadership. Three hours.
The application of theory, knowledge, and skills in authentic educational settings. Students are required to complete two consecutive semesters of internship for a total of 6 hours of credit.

AEL 608 Educational Finance: Theory and Practice. Three hours.
A study of litigation, legislation, and implementation of public-school finance programs in the 50 states. Concentrates on four aspects of equity: resource equity, input equity, output equity, and tax equity.

AEL 610 Personnel Administration: Theory and Practice. Three hours.
A comprehensive analysis of personnel functions in educational administration, including dimensions of personnel needs, fulfillment of those needs, and the maintenance and improvement of personnel services.

AEL 611 Superintendency and the Leadership Team. Three hours.
An inquiry—utilizing the perspectives of effective delegation and participation—into the nature of the superintendency and the development of a leadership team.

AEL 612 Instructional Supervision and Mentoring: Theory and Practice. Three hours. Prerequisite: AEL 552 or permission of the instructor.
A comprehensive critical examination of advanced philosophy, theory, and research of instructional supervision, including an interdisciplinary focus on forces impinging upon instruction. Implications of these findings for individual and group development and the improvement of instruction and the instructional environment are emphasized.

AEL 616 Operational and Strategic Planning: Theory and Practice. Three hours.
A focus on the major strategies and tactics of long-term and short-term planning for education and other organizations. Integration of various planning functions is stressed. The course includes 6 hours of field experience.

AEL 618 Advanced Educational Law. Three hours.
Prerequisite: AEL 600 or permission of the instructor.
Emphasizes original legal research by the student. After reviewing general principles of educational law, each student selects a topic for intense research. With the instructor's assistance, each student will prepare a publishable article on some area of educational law. Proper use of legal notations, forms, and research methods is stressed.

AEL 619 Politics of Education. Three hours.
Prerequisite: Advanced graduate standing.
Study of politics as it relates to educational decision making, with emphasis on political theory, history of politics in education, and the legislative process. Offered once during the academic year.

AEL 620 Curriculum: Theory and Practice. Three hours.
Prerequisite: AEL 510 or permission of the instructor.
Presents a synoptic overview of historical and contemporary discourses necessary to understand curriculum as a synergistic field of study and an area of professional practice. Emphasis is placed on the contributions of individual scholars and the 1970s shift in the field from traditionalist to reconceptualist perspectives. Applications to practice are explored.

AEL 624 Practicum in Educational Leadership. Six hours (three hours of credit for each of two consecutive semesters).
Prerequisite: Completion of all AEL required courses.
Directed opportunities to use educational leadership knowledge and skills to design projects and solve problems. Students develop a field-based project that includes the identification and analysis of a local school or district problem and the implementation and evaluation of a solution to the identified problem.

**AEL 639 Educational Theory and Policy.** Three hours.
A critique of educational theory-learning, curricular, instructional, administrative-and its implications for policy making.

**AEL 649 Advanced Research.** Variable credit.
Directed research activities related to educational leadership topics. Enrollment is subject to program regulations and permission of the student's program committee. Credit is based on the nature and degree of student involvement.

**AEL 650 Organizational Theory.** Three hours (core course for Ph.D./Ed.D. in educational administration).
An exploration of the relationship among concepts, generalizations, and theoretical models found in the behavioral and social sciences. The application of these to administrative practice in educational settings is addressed.

**AEL 655 Human Resource Development: Theory and Practice.** Three hours.
Prerequisite: AEL 610 or permission of the instructor.
An analysis of the major functions involved in administering a staff personnel program. Stresses the interrelationship of functions and focuses on the administrative level and the organizational development/human resource development relationship.

**AEL 661 Major Issues and Trends.** Three hours.
An advanced analysis of current issues and trends impacting educational organizations and the leaders of those organizations.

**AEL 664 The Dynamics of Change.** Three hours.
Components of change will be identified and theories of social and personal dynamics will be adapted and applied to planned programs of change in education.

**AEL 666 Educational Facilities Planning and Utilization.** Three hours.
Emphasis on the practical applications of planning building programs for school districts. Includes bond issues, educational specifications, architectural specifics, and construction.

**AEL 667 Multicultural and Social Education for Leadership Personnel.** Three hours.
An advanced inquiry into contemporary social and cultural dimensions of education and their relationships to leadership. Includes issues of diversity, gender, ethnicity, pluralism, and equality.

**AEL 669 Curriculum and the Study of Schooling.** Three hours.
Prerequisite: AEL 620 or permission of the instructor.
An inquiry into the curriculum of schooling. Critical analysis of the relationship of curricular decision making to social and political systems and other school context variables is emphasized. Application is made to contemporary issues and problems in school leadership and restructuring.

**AEL 671 Survey of Instructional Supervision.** Three hours.
Prerequisite: AEL 612 or permission of the instructor.
A critical examination, interpretation, and evaluation of significant current and classical writings in the field of instructional supervision with particular emphasis on research findings, the emergence of instructional trends and issues across the literature, and applications for effective leadership of instructional supervision.

**AEL 681 Ethics and Education.** Three hours.
Doctoral core course. An exploration and examination of traditional and contemporary ethical issues confronting educational leaders, managers, and teachers at all levels of the educational process. Emphasis on an interdisciplinary approach to foundations in ethical theory and establishing a conceptual framework for the resolution of moral and ethical questions prevalent across the education spectrum.

**AEL 682 Leadership and Organizations: Theory and Applications.** Three hours (core course for Ph.D./Ed.D. in educational administration).
Prerequisite: AEL 602 or permission of the instructor.
An examination of historical and contemporary theories, models, concepts, and practices for effective and efficient approaches to leadership within organizations and how these apply to educational settings.

**AEL 683 Contemporary Political and Economic Issues in Education.** Three hours (core course for Ph.D./Ed.D. in educational administration).
An exploration of contemporary economic and political dimensions of education and their relationships to leadership. Includes issues related to issues of democracy, governance, power, equity, and choice.

**AEL 694 Clinical Research Project Dissertation.** Variable credit.
Twelve semester hours (Ed.D.) or 24 semester hours (Ph.D.) required. Research for and preparation of Ed.D. clinical research project dissertation designed to address a policy or problem of practice. Student must maintain continuous
enrollment for a minimum of 3 semester hours per semester until dissertation is completed. Enrollment is subject to program regulations and permission of the student’s dissertation committee.

**AEL 695 Seminar in Curriculum Leadership.** Three hours.
An advanced seminar for students to explore, discuss, and interpret contemporary curriculum practice and research. Provides students with opportunities for critical inquiry into an area of specialized need and interest.

**AEL 696 Seminar in Administration and Planning.** Three hours.
An advanced seminar for students to explore, discuss, and interpret contemporary curriculum practice and research in leadership for administration and planning. Provides students with opportunities for critical inquiry into an area of specialized need and interest.

**AEL 697 Seminar in Instructional Leadership.** Three hours.
An advanced seminar for students to explore, discuss, and interpret contemporary curriculum practice and research in instructional leadership. Provides students with opportunities for critical inquiry into an area of specialized need and interest.

**AEL 698 Dissertation Seminar in Educational Leadership.** One hour.
Prerequisite: Admission to doctoral study.
Analysis and discussion of current research topics, effective research approaches, and exemplary research practices and programs related to educational leadership. Outlines expectations for graduate work, explores possible areas of investigation for doctoral dissertations, examines research designs and proposals, and provides opportunities for refinement of student manuscripts prior to formal presentation. A minimum total of 3 semester hours of credit is required.

**AEL 699 Dissertation Research.** Variable credit.
Twelve semester hours (Ed.D.) or 24 semester hours (Ph.D.) required. Directed dissertation research in the area of educational leadership. Student must maintain continuous enrollment for a minimum of 3 semester hours per semester until the dissertation is completed. Enrollment is subject to program regulations and permission of the student’s dissertation committee.

**Course Descriptions (AHE)**

**AHE 500 Perspectives on Higher Education Administration.** Three hours.
How higher education has been shaped by the major trends in American society, how it has contributed to the development of this country, and what may be expected of higher education in the future. Higher education is also viewed in institutional and conceptual forms from the perspective of students, faculty, and administrators.

**AHE 510 The Community and Junior College.** Three hours.
An overview of the development, format, issues, and purposes of the contemporary community and junior college.

**AHE 511 Orientation in Higher Education.** Three hours.
Introduction to structure, processes, and study of higher education organizations, including community colleges, technical schools, and universities.

**AHE 520 The Student in Higher Education.** Three hours.
A survey of the needs, characteristics, and cultures of the American college student within various types of higher education institutions.

**AHE 530 Law in Higher Education.** Three hours.
Investigates and explicates the structure and background of law and equity in higher education, with emphasis on how statutory law, administrative law, and case law respond to and affect faculty, students, administrators, and trustees. Constitutional law, contracts, torts, the law of private associations, civil rights statutes, executive orders, injunctions, specific performance, corporate and partnership law, law of agency, and laws on liability are studied as they apply to higher education.

**AHE 540 Organization and Administration of Higher Education.** Three hours.
Overview of the organization, administrative roles and positions, administrative process, and administrator relationships within various institutions of higher learning.

**AHE 550 Finance and Business Affairs in Higher Education.** Three hours.
An overview of the budgeting processes, sources of revenue, types of expenditures, and issues and innovations in financing various types of contemporary institutions of higher education. Also a survey of the various business and planning operations vital to the operation of colleges and universities.

**AHE 560 Comparative Higher Education.** Three hours.
This course is designed to provide a cross-cultural perspective on issues related to higher education throughout the world. The course will focus on topics such as reform, students and student activism, internal and external
governance of universities, unions, and the academic profession in key world regions.

**AHE 590 Independent Study in Higher Education.** Three hours.
Prerequisite: Permission of the instructor.
Directed independent study in the literature of higher education, designed for the student seeking a minor or pursuing master's work in the program in higher education (AHE).

**AHE 591 Seminar in Higher Education.** Three hours.
A topical seminar on a current issue or problem in higher or postsecondary education. On occasion, the seminar involves travel or on-site visitations to institutions or oversight bodies.

**AHE 599 Thesis Research.** Three to six hours.
Directed thesis research.

**AHE 600 Student Development Theory I.** Three hours.
Introduction to the theoretical basis for the delivery of services through organizational student development, and a study of the research basis for student development.

**AHE 601 Professional Seminar in Higher Education.** Three hours.
This course is designed for students newly admitted to the doctoral program in higher education administration. As such, the seminar concentrates on issues and concerns that arise as part of the doctoral experience. Course activities and experiences may vary according to the professional experience and academic background of course participants.

**AHE 602 Problems in Higher Education.** Three hours.
Seminar studying the current issues and trends related to higher education.

**AHE 603 College and University Teaching.** Three hours.
An intensive graduate seminar that provides an overview of the issues, principles, and practices associated with effective college teaching. Topics include learning and diversity; teaching models and strategies; teacher and student behaviors and learning outcomes; and instructional improvement strategies.

**AHE 607 Student Development Theory II.** Three hours.
Provides a comprehensive study of student growth and development during the college years. The course is designed to address professionals in student affairs and higher education administration.

**AHE 610 Academic Cultures and Learning in Academe.** Three hours.
An intensive examination of the student, faculty, and administrative cultures in higher education environments. The impact of various internal and external factors on institutional culture and behavior will also be studied, particularly as they relate to teaching, learning, research, and service.

**AHE 620 Power, Politics, and Change in Higher Education Systems.** Three hours.
A study of higher education institutions as complex organizations within a framework of local, state, and federal domains. Attention is focused on the institution as a dynamic political entity that continually undergoes change. State-level coordination and systems behavior are also examined.

**AHE 632 Affirmative Action Law.** Three hours.
An examination of anti-discrimination legislation and litigation and their impact on the university, especially in light of the judicial revolution in interpretation of the 11th Amendment.

**AHE 635 Seminar in Continuing Education.** Three hours.

**AHE 636 Continuing Education Operations.** Three hours.
The course addresses the programmatic operations of continuing education as it relates to mission, clientele, marketing, program planning, facilities, and delivery.

**AHE 641 Personnel and Human Resource Management in Higher Education.** Three hours.
Need for and types of personnel; recruitment, advancement, and security of personnel; salaries, wages, and benefits; and problems peculiar to college personnel.

**AHE 642 Institutional Research and Assessment in Higher Education.** Three hours.
An overview of the institutional research and analysis techniques utilized in contemporary higher education. The course is configured for those with an interest in conducting institutional research and/or working in offices of institutional research on the campus, system, and/or state level.

**AHE 643 Grant Writing and Contract Management.** Three hours.
Prerequisite: AHE 630 or permission of the instructor.
An introduction to the legal principles of contracts and grants in higher education, including how to identify funding sources, make the proposal, and manage the project. Statutory, administrative, and case law will be studied as they relate to making the proposal and managing the project.
AHE 644 Academic Program Development and Evaluation in Higher Education. Three hours.
Design and management of academic programs; study of institutional structures for academic affairs; practice in program review for instructional improvement; and overview of graduate programs (general and liberal education, as well as occupational and professional education).

AHE 690 Directed Doctoral Study in Higher Education. Two to six hours.
Prerequisites: Permission of the instructor and prior approval of study topic.
Directed individual study and analysis of a problem confronting higher education. Note: Frequently, special one-time-only seminars focusing on a particular aspect of higher education are offered by program faculty under this course number.

AHE 699 Dissertation Research. Three to twelve hours.
Directed dissertation research in the field of higher education. Enrollment is subject to program regulations and permission of the student's dissertation committee chairperson. Also offered in summer school.

Course Descriptions (AIL)

AIL 600 Integration of Technology in Education and Training. Three hours.
An examination of advanced applications of current and emerging instructional technological applications in a variety of settings and in the context of various fields of study and job environments. Technologies and applications addressed in current course include computers, the Internet, presentation media, and multimedia. Cognitive, product, and skill competencies are included. Cognitive competencies are integrated into product and skills evaluations. Products are required to reflect some competencies, while skills competencies are either observed directly or inferred from the products.

AIL 601 Theories of Learning Applied to Technological Instruction. Three hours.
Advanced theory and applications of educational technology. Including the effects of technology on thinking and learning, and the effects of technology in problem solving and other higher-level thinking skills, the course examines current research on computerized learning (CAI, simulation, and tutorials) and other relevant topics such as virtual reality, games and gaming theory, hypertext (design and comprehension), presentation software, groupware for cooperative learning, and telecommunications (distant and/or distributed learning).

AIL 602 Electronic Instructional Design. Three hours.
Designed to develop basic knowledge and skills for electronic instructional design—analysis, design, production, evaluation, and revision—for specific electronic projects.

AIL 603 Telecommunications and Networking. Three hours.
Designed to explore design, layout, and installation of local and wide area networks. Addresses topologies, ethernet standards, physical layer, network operating software, data-link layer, file server, network cards, hubs, peripherals, routers, and other network operations.

AIL 604 Distance Technologies. Three hours.
Prepares students with knowledge and skills in methods of distance education, which incorporates telecommunications and computer technology to instruct students at remote locations or to serve as an adjunct to classroom instruction. The technology used includes telephony, cable television, satellite communications, videocassettes, videoconferencing, computer-mediated instruction, and/or online computer communication via the Internet.

AIL 605 Interactive Multimedia Process. Three hours.
Prepares students with knowledge and skills in modeling, simulation, testing, or analysis or training in real-world contexts using interactive multimedia processes.

AIL 606 Software Technology. Three hours.
Intended for students who have had some prior programming experience; otherwise, students will need to develop competencies prior to taking this course. Issues include matching the capabilities of the medium to the intellectual structure of the subject, who directs the interaction between human and computer; the size of the intellectual field; and pedagogical concerns in choosing the operations of a software environment. Students are expected to design and complete a project at the end of the course.

Course Descriptions (BEF)

BEF 503 History of American Education. Three hours.
An interpretive history of the educational and social movements and conflicts leading to understanding contemporary issues of educational aims, curriculum, teaching methodology, administrative policy, and the professionalization of teaching. Offered in alternate semesters and in summer school.

BEF 504 Philosophy of Education. Three hours.
An examination into the meaning and purpose of education in light of major philosophical problems of knowledge, value, and reality. Offered in alternate semesters and in summer school.

**BEF 507 Sociology of Education.** Three hours.  
A sociological emphasis on cultural factors (such as ethnic background; socioeconomic status; family, peers, and community; and sex-role stereotyping) that influence education in a pluralistic society.

**BEF 510 Social and Philosophical Foundations of Education.** Three hours.  
Prerequisite: Admission to an alternative certification program or permission of the instructor.  
Education is necessarily concerned with issues of value, knowledge, and reality—philosophy. Yet these concerns are always understood from the vantage point of cultures in transition within the framework of a social tradition—sociology and history. This course examines the development of the public school in relation to the social, cultural, and intellectual makeup of the nation as a whole.

**BEF 512 Church, State, and the School.** Three hours.  
A critical interpretation of the First Amendment and the separation of church and state in American education.

**BEF 534 Multicultural Education.** Three hours.  
Selected aspects of the anthropological and sociological foundations of education, with a critical evaluation of their relevance for increasing and/or enhancing multicultural understanding.

**BEF 575 Foundations of Education through Film.** Three hours.  
One of the most powerful media for awakening and reflecting on ideas is film. This course uses various films with educational themes to examine social and philosophical issues in education.

**BEF 581 Educational Policy and Reform.** Three hours.  
A focus on the relation of the public school to the state, on the principles of education, and on the possibilities for reform.

**BEF 585 Language Politics and Education.** Three hours.  
Course covers the history and politics behind the English-only movement and its effect on education policy for language minority students. Informed by international comparisons, second language acquisition theory, and effectiveness studies, the pros/cons of bilingual and English-only policies are analyzed.

**BEF 598 Nonthesis Research.** Variable credit.  
Individual research in history, philosophy, or sociology of education.

**BEF 599 Thesis Research.** Three to six hours.

**BEF 607 Readings in Sociology of Education.** Three hours.  
Individualized readings in the sociology of education, with a focus on the educator as reflective practitioner and facilitator of learning.

**BEF 639 Educational Theory and Policy.** Three hours.  
A critique of educational theory—learning, curricular, instructional, administrative—and its implications for policy making.

**BEF 640 Studies in the History of Education.** Three hours.  
A critical examination of significant events, movements, or individuals in the history of education.

**BEF 641 Studies in the Social Foundations of Education.** Three hours.  
A special topics course providing an in-depth analysis of important individuals, theories, and contemporary issues in the social foundations of education.

**BEF 642 Studies in the Philosophy of Education.** Three hours.  
This course provides in-depth analyses of important individuals, ideas, or concepts that have helped to develop, expand, or shed light on our philosophical understandings of the myriad and contested purposes, policies, and practices of schooling.

**BEF 644 Philosophy of Science and Its Relation to Educational Research.** Three hours.  
An inquiry into the basic assumptions and principles underlying scientific research in education. Offered spring semester.

**BEF 653 History of American Higher Education.** Three hours.  
A critical interpretation of the institutional development of American higher education and its cultural and intellectual roots.

**BEF 654 Philosophy and American Higher Education.** Three hours.  
An analysis of the language, concepts, and value judgments embedded in higher-education policy issues.
BEF 667 Multicultural and Social Educations for Leadership Personnel. Three hours. An advanced inquiry into contemporary social and cultural dimensions of education and their relationships to leadership. Includes issues of diversity, gender, ethnicity, pluralism, and equality.

BEF 681 Ethics and Education. Three hours. An exploration and examination of traditional and contemporary ethical issues confronting educational leaders, managers, and teachers at all levels of the educational process. Emphasis on an interdisciplinary approach to foundations in ethical theory and establishing a conceptual framework for the resolution of moral and ethical questions prevalent across the educational spectrum.
COUNSELOR EDUCATION
(School Counseling, Rehabilitation Counseling, and Community Counseling)

Professor S. Allen Wilcoxon III, Community Counseling and Counselor Education, Office: 315 Graves Hall

Three study options in counselor education lead to the M.A. and Ed.S. degree and provide the professional preparation necessary for work in schools, colleges, rehabilitation, and other agency and community settings. The Ed.D. and Ph.D. are also offered in counselor education. Certification programs for school counselors are available at the Class A and Class AA levels. Students who earned initial credit toward Class AA professional certification during the fall semester of 1992 or later must enroll in and complete the Ed.S. degree program. Courses used to qualify for a lower-level supporting certificate may not be used again in a higher-level certification program.

Because of the necessarily heavy emphasis at the entry level upon practicum and internship experiences, the M.A. programs in school counseling and rehabilitation counseling require a minimum of 48 semester hours of study. The community counseling master's degree requires a minimum of 60 semester hours. No thesis is required in any of the M.A. programs.

The Council for Accreditation of Counseling and Related Programs (CACREP), a specialized accrediting body recognized by the Commission on Higher Education Accreditation (CHEA), has conferred accreditation on the following: community counseling (M.A.), school counseling (M.A.), and counselor education (Ed.D. and Ph.D.). The Council on Rehabilitation Education, also recognized by CHEA, has conferred accreditation for rehabilitation counseling (M.A.).

Admission and degree requirements for the Graduate School and for the College of Education are detailed in an earlier section of this catalog. Cohort admission decisions are made twice annually (November and April). Admission and degree requirements specific to the program and in addition to those of the Graduate School, College, and department include the following:

Admission for master's degrees. Admission to pursue a master's degree in any track within the program in counselor education is based upon success in admission for graduate study with the Graduate School. No additional program requirements are expected beyond these minimum standards.

Admission for educational specialist degree. Admission to pursue an educational specialist degree in counselor education is based upon success in admission for graduate study with the Graduate School as well as the following requirements: (a) completion of a master's degree in counseling, and (b) two years of experience.

Admission for doctoral degrees. Admission to pursue a doctoral degree in counselor education is a two-step procedure. Unconditional admission by the Graduate School is only the initial step for those seeking the doctoral degree. Within this step, students are engaged in post-master's study and are subject to scrutiny and review by program faculty for their suitability for doctoral study. An applicant for doctoral study must (a) possess a completed master's degree in counselor education; (b) when necessary, complete supplemental master's-equivalency courses to comply with the CACREP-accredited course of study for the master's degree; and (c) successfully complete the doctoral screening interview for formal pursuit of the doctoral degree in counselor education. Course credit in post-master's study prior to the screening interview may be used to fulfill doctoral degree requirements only after supplemental master's-equivalency study is completed and a successful screening interview is conducted.

Degree requirements. Degree requirements are noted on the official program planning record for the various degrees/tracks. These documents are available from the chairperson or administrative staff for the department.
educational psychology not as a static body of pre-existing knowledge to be internalized by the students, but as an evolving system of problems and solutions, a scientific system of problem solving, a living system of communication, and an ethical system for personal and professional conduct. The program invites applications from all potential students, especially those in underrepresented populations.

Four educational psychology degrees are offered: M.A., Ed.S., Ed.D., and Ph.D. in educational psychology. The M.A. has thesis and nonthesis options and a focus on general educational psychology. There is also an option for an M.A. focus on program evaluation (no thesis), in collaboration with the program in educational research. Ph.D. students may choose specializations in (a) learning, motivation, and instruction, (b) interdisciplinary educational science or (c) human development, through a collaborative arrangement with the Department of Human Development and Family Studies in the College of Human Environmental Sciences.

Admission requirements. Statement of purpose and letters of recommendation consistent with goals of the program, scores above the 50th percentile on the GRE or MAT, and a GPA of 3.0 on a 4.0 scale are needed for unconditional admission. Conditional admission will be granted in some circumstances. Prospective students are encouraged to complete their applications by January 15 for admission the following fall.

Degree requirements. Master's degrees require 30–33 graduate credit hours. Ed.S. degrees require 30–33 hours beyond the master’s. Doctoral degrees require 60 or more hours beyond the master’s.

RESEARCH METHODOLOGY
Professor Judith A. Stock, Office: 315 Carmichael Hall

The program in educational research offers the Ph.D. in educational research and Ed.S. in educational psychology: educational research. The degrees require coursework in educational statistics, assessment/measurement, program evaluation, and qualitative research. A student may choose to specialize in educational statistics, program evaluation, assessment/measurement, research methodology, or qualitative research at the Ph.D level. Field experiences are required as part of the program. A doctoral minor is also offered in educational research. Admission and degree requirements for the Graduate School and for the College of Education are detailed in an earlier section of this catalog.

SCHOOL PSYCHOLOGY
Professor Patti Harrison, Office: 306 Carmichael Hall

The school psychology program is designed to provide exemplary graduate training in research, application, and practice related to learning, development, and mental health of people of all ages. The program also serves graduate students and faculty throughout the College of Education and other colleges by providing coursework, consultation, and doctoral minors.

The degrees from the school psychology program may lead to state and national credentials. The M.A. degree in educational psychology: school psychometry is approved for Alabama A Certification in School Psychometry if the following prerequisite is met: (a) baccalaureate-level certification in a teaching field and (b) two years of satisfactory educational experience. The Ed.S. in educational psychology: school psychology and the Ph.D. and Ed.D. degrees in school psychology are approved for the Alabama AA Certification in School Psychology if the following prerequisites are met: (a) baccalaureate-level certification in a teaching field, (b) certification as a school psychometrist, and (c) two years of satisfactory educational experience. Individuals who hold National Certificate in School Psychology (NCSP) may be eligible for the Alabama AA certificate in School Psychology. The Ed.S. and doctoral degrees are approved by the National Association of School Psychologists. Students who obtain these degrees are eligible for the NCSP, following successful completion of the national school psychology examination. Requirements for certification and licensure in school psychology vary from state to state. Students are expected to determine the requirements in the state or states in which they are interested in practicing before beginning the program.

For a student handbook and specific degree requirements, email or call: Chairperson, School Psychology, The University of Alabama, College of Education, Box 870231, Tuscaloosa, AL 35487-0231; phone (205) 348-7575; fax (205) 348-0683; program office, 306 Carmichael Hall, email: pharriso@bamaed.ua.edu.
10.7.1 DEPARTMENT OF EDUCATIONAL STUDIES IN PSYCHOLOGY, RESEARCH METHODOLOGY, AND COUNSELING COURSES

Course Descriptions (BCE)

BCE 411 Guidance for Teachers. Three hours.
Prerequisite: Junior standing or higher.
No credit to majors in the program. The sociological, psychological, and philosophical bases for guidance in schools. Appropriate for both elementary and secondary teachers. Offered only through the Office of Independent Study.

BCE 511 Principles of Guidance. Three hours.
Explores the rationale for guidance by examining human development and sociological, psychological, and philosophical bases for guidance. Provides awareness of services by surveying components of guidance programs. Offered fall semester.

Introduction to counseling, counseling theories, and the counseling relationship; and an overview of the counseling process. Offered fall and spring semesters.

BCE 513 Career Development. Three hours.
An introduction for counselors and teachers to career development concepts, labor force information, and other resources needed to help persons with career planning and decision making. Offered spring semester.

BCE 514 Prepracticum in Counseling. Three hours.
An experiential course involving applied elements of theoretical models and customary helping skills to orient and prepare students for their initial supervised work with counseling clients. Offered fall and spring semesters.

BCE 515 Practicum in Counseling I. Three hours.
Prerequisite: BCE 514 and permission of the faculty.
Laboratory training in attending, listening, and influencing skills. Supervised experience in counseling. Offered fall and spring semesters.

BCE 516 Practicum in Counseling II. Three hours.
Prerequisites: BCE 515 and permission of the faculty.
Supervised practice in counseling. Offered fall and spring semesters.

BCE 518 Introduction to Community Counseling. Three hours.
Seminar and fieldwork designed to acquaint the student with the functions and roles of the counselor in various community and agency settings. Offered fall semester.

BCE 521 Group Procedures in Counseling and Guidance. Three hours.
Prerequisite: Permission of the faculty.
Background in group methods, including group guidance, group counseling, and group dynamics. One-half of class time is spent in a laboratory experience during which each student is provided an opportunity to function in a group. Offered fall and spring semesters and in summer school.

BCE 522 Individual and Group Appraisal. Three hours.
Prerequisite: BER 540.
An overview of measurement methods, practice in administration and interpretation of standardized tests, and evaluation of tests and testing programs for counseling and guidance. Offered spring semester and in summer school.

BCE 523 Program Development and Management. Three hours.
An examination of the organization and implementation of the guidance functions of schools and the guidance responsibilities of counselors, teachers, and administrators. Offered in spring semester and in summer school.

BCE 525 Internship in School Counseling and Community Counseling. Three to twelve hours.
Prerequisite: Permission of the faculty.
Supervised field experience in an appropriate job setting. Offered fall, spring and summer semesters/terms.

BCE 528 Advanced Seminar in Community Counseling. Three hours.
Prerequisite: BCE 518.
Advanced study and discussion of a variety of agency-specific issues and topics. Offered spring semester.

BCE 540 Introduction to Rehabilitation Counseling. Three hours.
Philosophical, social, psychological, and legislative bases of rehabilitation; the nature and scope of the rehabilitation process and the functions of the rehabilitation counselor; and study of the individual. Offered fall semester.

**BCE 541 Principles and Practices of Rehabilitation Counseling.** Three hours.  
Prerequisite for non majors: Permission of the instructor.  
Supervised experiences in selected rehabilitation and agency settings to provide an opportunity to integrate theory and practice early and to do selected independent field studies. Offered fall semester.

**BCE 542 Medical, Functional, and Environmental Aspects of Disability I.** Three hours.  
Orientation to the medical profession and related rehabilitation professions. Survey of body systems, their functions and malfunctions, and the most common diagnostic and treatment procedures. Implications for educational, social, and vocational development. Offered fall semester.

**BCE 543 Psychological and Sociological Aspects of Disability.** Three hours.  
Psychological and sociological attitudes, adjustment problems, sexuality, rehabilitation techniques, placement, family and social systems implications, programs, and facilities; emphasis on severely disabled individuals. Offered spring semester.

**BCE 544 Job Development/Placement in Rehabilitation Counseling.** Three hours.  
Provides an overview of job development and placement, as well as theories of work adjustment. Emphasizes the development of job placement techniques and strategies to enhance employment outcomes for people with disabilities.

**BCE 545 Seminar in Rehabilitation Counseling.** Three hours.  
Helps integrate prior course and field experiences and serves as a forum to cover evolving legislation, practices, and consumer populations. Offered fall semester.

**BCE 546 Practicum in Rehabilitation Counseling.** Three to six hours.  
Prerequisite: Permission of the faculty.  
Supervised practice in rehabilitation counseling. Offered fall, spring, and summer semesters/terms.

**BCE 547 Internship in Rehabilitation Counseling.** Three to twelve hours.  
Prerequisite: Permission of the faculty.  
Supervised field experience in a rehabilitation setting. Offered fall, spring, and summer semesters/terms.

**BCE 548 Medical, Functional, and Environmental Aspects of Disability II.** Three hours.  
A study of medical, psychosocial, and rehabilitation considerations surrounding cognitive disabilities arising from brain trauma, mental illness, and addictions. Offered spring semester.

**BCE 615 Field Experiences in Counselor Education.** Three hours.  
Prerequisite: BCE 512, admission to specialist/doctoral study, and/or permission of the faculty; for majors only.  
Supervised field experiences in counseling to supplement accredited, advanced-level internships. Offered annually.

**BCE 616 Internship in Counseling.** Three to nine hours.  
Prerequisites: Six hours from BCE 515, BCE 516, or BCE 546, and permission of the faculty.  
Supervised practice in counseling for advanced majors. Offered alternate spring semester.

**BCE 617 Internship in Group Counseling and Guidance.** Three hours.  
Prerequisites: BCE 521 and permission of the faculty.  
Supervised practice in group guidance techniques with clients in a variety of settings. Offered alternate fall semesters.

**BCE 618 Advanced Theories of Counseling.** Three hours.  
Historical and current approaches to individual counseling, and the theories of personality structure and individual behavior from which these approaches are derived. Offered alternate spring semesters.

**BCE 619 Internship in Supervision of Counseling.** Three to six hours.  
Prerequisite: Permission of the faculty.  
Supervision of practicum students within a structured pedagogical course.

**BCE 625 Advanced Internship in Counselor Education.** Six to twelve hours.  
Prerequisite: Permission of the faculty.  
Supervised field experiences in counseling and counselor education for advanced students. Offered fall, spring, and summer semesters/terms.

**BCE 626 Readings in Counseling.** Three hours.  
Prerequisite: Permission of the faculty.  
Independent study under faculty direction. Offered fall, spring, and summer semesters/terms.

**BCE 631 Consultation in Educational and Agency Settings.** Three hours.
Prerequisite: BCE 512.
Study of consultation with teachers, administrators, parents, and various community agencies, emphasizing behavioral, ecological, mental health, and organized models and appropriate interventions to be planned with consultees. Offered alternate spring semesters.

**BCE 633 Advanced Seminar in Counselor Education.** Three hours.
Prerequisite: Permission of the faculty.
Seminars focusing on contemporary counseling issues and topics. Varied offerings.

**BCE 650 Counseling Strategies for Family Relationships.** Three hours.
Prerequisite: BCE 512 or permission of the instructor.
Examination of theoretical and applied elements of systemic intervention with troubled families. Offered spring semester.

**BCE 651 Counseling Strategies for Couple Relationships.** Three hours.
Prerequisite: BCE 512 or permission of the instructor.
Examination of theoretical and applied elements of intervention with distressed couples. Offered fall semester.

**BCE 652 Counseling Strategies for Adult-Child Relationships.** Three hours.
Prerequisite: BCE 512 or permission of the instructor.
Examination of theoretical and applied elements of intervention with discordant relationships between adults and children. Offered summer terms only.

**BCE 653 Introduction to Play Therapy.** Three hours.
Prerequisite: BCE 512 or permission of the instructor.
Lecture/laboratory experience focusing on an overview of play therapy, including history, theories, beginning skills, and practicum experience.

**BCE 654 Advanced Play Therapy.** Three hours.
Prerequisite: BCE 512, BCE 653, or permission of the instructor.
Individual readings, conferences, group discussions, lecture and reports focusing on techniques/methods, applications to special settings or populations, ethics, and professional responsibilities with an extended practicum experience.

**BCE 698 Nondissertation Research.** Three to six hours.
Directed research not related to dissertation research. Variable offerings.

**BCE 699 Dissertation Research.** Variable credit. Three-hour minimum.

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**Course Descriptions (BEP)**

**BEP 500 Advanced Educational Psychology.** Three hours.
Prerequisite: Graduate standing.
Principles of educational psychology for teaching and for educational services in schools and colleges.

**BEP 505 Development of Self-Regulation.** Three hours.
Investigates the development of self-regulatory processes and the match between those processes and educational practice. Transitions from home to school, elementary to secondary, and high school to college/work are considered in depth.

**BEP 541 Authentic School Learning and Teaching.** Three hours.
Prerequisite: Admission to the Graduate School.
Cognitive approaches to learning/teaching with focus on what constitutes authentic learning and on role of the intuitive knowledge base. Topics/themes include nature of preschool learning, sources contributing to learning, constructivism, and holistic perspectives.

**BEP 550 Life-Span Development.** Three hours.
Prerequisite: Admission to the Graduate School.
A study of principles and concepts of physical, cognitive, personality, and social development from conception through death.

**BEP 554 Developmental Neuroscience of School-Age Learners.** Three hours.
Thorough examination of physical, cognitive, and emotional development of children from biological and psychological perspectives. Relevant cutting-edge research in neuroscience and implications for formative postnatal development of school-age learners are examined.

**BEP 561 Social and Cultural Basis of Behavior.** Three hours.
Prerequisite: Admission to the Graduate School.
Provides fundamental knowledge regarding the methods in which social and cultural interactions and histories
influence human behavior. Focuses on application of social psychology principles and multicultural issues to increase awareness and improve skills across a variety of social settings, including schools and human-service agencies.

**BEP 565 Personality and Social Development.** Three hours.
Prerequisite: Admission to the Graduate School.
Examines the major theories of personality and social-emotional factors as they impact on the learning process and educational practice.

**BEP 598 Nonthesis Research.** Variable credit.
Prerequisite: Permission of the instructor.

**BEP 599 Thesis Research.** Variable credit.

**BEP 600 Contemporary Educational Problems and Educational Psychology.** Three hours.
Thorough exploration of current problem areas in education and the impact and perspectives of educational psychology.

**BEP 640 Behavioral Learning Theories.** Three hours.
Examines behavioral theories and research with a focus on their impact on educational practice.

**BEP 641 Authentic School Learning and Teaching.** Three hours.
Cognitive approaches to learning/teaching with focus on what constitutes authentic learning. Topics/themes include nature of preschool learning, sources contributing to learning, constructivism, and holistic perspectives.

**BEP 642 Cognitive Psychology in Education.** Three hours.
Examines theory and research in cognitive psychology from the perspective of educational practice. Topics include remembering, knowledge, representations, problem solving, language comprehension, development of expertise, and nature of intelligence.

**BEP 650 Psychology of Morality.** Three hours.
Prerequisite: Graduate status and a background in Educational Psychology, Psychology, or Human Development.
An overview of the psychology of morality with a particular focus on the processes leading to moral action. Specialty topics include measurement, gender, cross-cultural, and educational issues. Character education will be discussed with special attention to the empirical and theoretical background of current character education programs.

**BEP 661 Psychological Study of Learners.** Three hours.
Thorough study of intervention, remediation, and training strategies in cases of educational and learning problems. Focus on individual differences in cognitive processing, biological factors, cognitive style, intelligence, self-regulation, motivation, and psychological processes of reading, writing, math, and science.

**BEP 665 Motivation and Emotion in Education.** Three hours.
Exploration into processes of human motivation and emotion with a focus on educational settings.

**BEP 672 Teaching Educational Psychology in College.** Three to twelve hours.
Prerequisite: Permission of the instructor.
Seminar for graduate student instructors. Students must be GTAs in educational/school psychology. Designed to help GTAs use reflective decision making and knowledge of educational psychology to teach undergraduates.

**BEP 673 Doctoral Research and Ethics Seminar.** One to six hours.
Prerequisite: Permission of the instructor.
Critical study of current issues in educational psychology.

**BEP 686 Observation of Development, Teaching, and Learning.** Three hours.
Discussion of contemporary methods of observing children, teachers, parents, and learners of all ages for purposes of research and the evaluation/assessment of teaching and learning. Provides hands-on field experience in observational techniques.

**BEP 688 Internship in Educational Psychology.** Three to twelve hours.
Prerequisite: Permission of the instructor.
Supervised internship experiences, with educational psychology course content related to the experience.

**BEP 689 Practicum in Educational Psychology.** Three to twelve hours.
Prerequisite: Permission of the instructor.
Seminar for graduate students to support their cooperative faculty-student research projects and their development as members of the community of educational psychologists.

**BEP 690 Readings in Educational Psychology.** Three hours.
Prerequisite: Permission of the instructor.
An opportunity for the student to study intensively a topic in educational psychology, covering a sizable body of literature (the topic chosen should nevertheless be narrower than that subsumed under the name of a course).
**BEP 698 Nondissertation Research.** Variable credit.
Prerequisite: Permission of the instructor.
Participation in a research project relating to educational psychology.

**BEP 699 Dissertation Research.** Variable credit. Three-hour minimum.

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**Course Descriptions (BER)**

**BER 500 Introduction to Educational Research.** Three hours.
An overview of research methodology, primarily for master's students. Offered fall, spring, and summer semesters.

**BER 540 Statistical Methods in Education.** Three hours.
This three-hour course covers basic descriptive and inferential statistics, including measures of central tendency and dispersion. Hypothesis testing related to one-sample z-and t-test; independent and dependent samples t-test; correlation; and chi-square and simple regression are included. An introduction SPSS is required. Offered fall and spring semesters.

**BER 545 Analysis of Variance in Education.** Three hours.
Prerequisite: BER 540 or equivalent.
This is a three-hour course in which the student will learn various forms of the General Linear Model (GLM) using Analysis of Variance (ANOVA) methods. One and Two-Way ANOVAs; including contrast and interaction analyses, analysis of covariance ANCOVA; Repeated Measures; and Mixed-Model design; non-parametric. SPSS is required. Offered fall and spring semesters.

**BER 546 Regression Methods in Education.** Three hours.
Prerequisite: BER 540 or equivalent.
Topics include correlation, simple, and multiple regression analyses from two to multiple variables. SPSS is required. Offered fall and spring semesters.

**BER 550 Evaluation of Classroom Learning.** Three hours.
A comprehensive contemporary approach to the development, application, and interpretation of teacher-made classroom assessments; use of textbook assessments to be aligned with national and state achievement standards. Attention is given to interpreting standardized norm and criterion referenced tests. Grading practices are presented especially to be aligned with No Child Left Behind Federal legislation 2001. Offered fall and spring semesters.

**BER 558 Introduction to Psychometrics.** Three hours.
Prerequisite: BER 540 or equivalent.
An introduction to classical and current theories and practices in psychometrics. Theory is presented together with exposure to many of the popular assessment procedures. Offered fall semester.

**BER 600 Quantitative Research Methods in Education.** Three hours.
An overview of research methods and procedures in education, primarily for doctoral students. Emphasis is given to the quantitative and qualitative methods used in writing a doctoral dissertation.

**BER 603 Survey Research in Education.** Three hours.
Prerequisite: BER 540.
Comprehensive introduction to using survey instruments for research purposes. Survey development, construction, validation scaling, sampling, and research methods as they apply to matching the survey to research questions are covered.

**BER 630 Case Study Research Methods.** Three hours.
Prerequisite: BER 631.
Examines the production of case studies of individual practices, discrete institutions and organizations, and state-level policies. Explores the research methods that can inform the production of case study representations of human experience, as well as the different styles of case study writing. Offered summer term.

**BER 631 Inquiry as Interpretation: Qualitative I.** Three hours.
Examines the history and philosophy of naturalistic studies of human experience. Concentrates on post-positivistic, phenomenological, structuralist, and post-structuralist theory and modes of analysis. Course assignments provide practice with rudimentary qualitative research skills. Offered fall, spring, and summer semesters.

**BER 632 Reflexiveness and Resistance in Research Representation: Qualitative II.** Three hours.
Prerequisite: BER 631.
Examines the irony and ideology of naturalistic studies of human experience. Examines the epistemic limits of any method of research representation, and the political and ethical implications of those limits for researchers. Course assignments provide practice with intermediate qualitative research skills, including participant observation, field note development, and interviewing skills. Offered spring and summer semesters.
BER 633 Ethics and Aesthetics of Meaning Making: Qualitative III. Three hours.
Prerequisites: BER 631 and BER 632.
Examines the ethics, aesthetics, and opportunities for advocacy in naturalistic studies of human experience. Explores feminist, Afrocentric, critical theoretic, artistic, and journalistic conceptions of data collection and a variety of styles and formulas for research writing. Course assignments support the development of students’ research interests and are geared toward scholarly publication. Offered all semesters.

BER 637 Qualitative Research Software Applications. Three hours.
Prerequisite: BER 631
Examines use of data analysis software in qualitative social scientific research. Explores the ways that technology can both assist and distort social science analysis. Course assignments include extensive practice with various qualitative data analysis software packages.

BER 640 Multivariate Dependence Methods. Three hours.
Prerequisites: BER 540, BER 545, and BER 546.
Covers the following statistical procedures: discriminant analysis, Hotelling’s T2, multivariate analysis of variance (MANCOVA), Multivariate covariance (MANCOA), multivariate regression, and other dependence methods.

BER 641 Multivariate for Interdependence Methods. Three hours.
Prerequisites: BER 540, BER 545, and BER 546.
Covers the following statistical procedures: principal component analysis, factor analysis, cluster analysis, multidimensional scaling, discriminate analysis, canonical correlation, and hierarchical linear modeling (HLM) and other interdependent multivariate methods.

BER 646 Structural Equation Modeling. Three hours.
Prerequisites: BER 540, BER 545, and BER 546.
Includes an introduction to the basic concepts of structional equational modeling, including approaches to regression, path analysis, confirmatory factor analysis, and model building with dependent and independent variables.

BER 650 Advanced Topics in Instrument Development. Three hours.
Prerequisite: BER 540, BER 558 or permission of the instructor.
Emphasis on theory and instrument development related to IRT analyses, layer scale data with computer applications required. Offered spring of even years.

BER 658 Psychometric Theory and Practice. Three hours.
Prerequisite: BER 540, BER 558.
Major topics include true score reliability, validity, classical theory, generalizability theory, contemporary theory: item response theory. Computer applications required. Offered spring of odd years.

Prerequisite: Graduate standing.
Concepts and techniques for evaluating education programs, projects, materials, curriculum, and personnel. Field work and computer analyses required. Offered fall semester.

BER 661 Evaluation II: Advanced Theories and Application. Three hours.
Prerequisites: BER 660.
Advanced study of evaluation theories, their utilization, and political implications for the practice of program evaluation in education programs. Offered every other even year.

BER 672 Teaching Educational Research in College. Three hours.
Prerequisite: Permission of the instructor.
Seminar for graduate teaching assistants. Offered each semester.

BER 673 Seminar in Educational Research. Three hours.
Prerequisite: Permission of the instructor.
A course designed to help majors in educational research prepare for the profession.

BER 687 Fieldwork in Educational Research. Three to six hours.
Prerequisite: Approval of advisor.
Faculty-supervised participation in research and other educational projects. Work is related to advisor’s research interests. Field work required. Offered fall, spring and summer semesters.

BER 689 Practicum in Educational Research. Three to six hours.
Prerequisite: Approval of advisor.
Practicum is a student-initiated research project done with faculty supervision. Field work is required. Offered fall, spring and summer semesters.

BER 690 Readings in Educational Research. Three hours.
Offered fall and spring semesters and in summer school.
BER 698 Nondissertation Research. Variable credit.


Course Descriptions (BSP)

BSP 500 Introduction to School Psychology. Three hours.
Prerequisite: Graduate standing.
The history, role, and ethical and legal issues of school psychology are studied. The school psychologist’s role in team decision making is emphasized.

BSP 515 Individual Intelligence Testing and Case Report Writing. Three hours.
Prerequisite: Graduate standing and permission of the instructor.
Introduction to individual intelligence testing and psychological case report writing, focusing on the Wechsler, Stanford-Binet, and Kaufman scales, and other intelligence tests, and treating the topics from practical and theoretical perspectives.

BSP 516 Advanced Psychoeducational and Social-Emotional Assessment. Three hours.
Prerequisite: BSP 515.
Advanced study of intelligence, achievement, behavioral, and social-emotional assessment, emphasizing psychoeducational diagnosis and decision making for children with learning and behavioral problems; formulation of hypotheses based on test data, and development of meaningful educational recommendations are also stressed.

BSP 586 Assessment Practicum in School Psychology. Three hours.
Prerequisite: Permission of the instructor.
Requires 150 hours of supervised experience in assessment and is conducted in public schools or other agencies. Intellectual, achievement, behavioral, and social-emotional assessment of children with learning and behavioral problems and use of assessment in team decision making are emphasized.

BSP 588 Internship in School Psychometry. Three to six hours.
Prerequisite: Permission of the instructor.
The student performs the duties of a school psychometrist in a school system, under supervision.

BSP 601 Applied Pediatric Neuropsychology. Three hours.
Study of applied brain-behavior relationship in the areas of academics, behavior, and social/emotional skills. Various disorders, assessment techniques, interventions, and prevention will be examined and discussed.

BSP 625 Cognitive and Behavioral Interventions. Three hours.
Study of applied behavioral analysis, cognitive behavior modification, motivation techniques, aptitude-treatment interaction, social problem-solving training, study-skills training, peer-influenced academic interventions, prevention, and other interventions.

BSP 635 Consultation in Educational and Agency Settings. Three hours.
Study of consultation with teachers, administrators, parents, and various community agencies, emphasizing behavioral, ecological, mental health, and organized models and appropriate interventions to be planned with consultees.

BSP 660 Psychopathology. Three hours.
Thorough examination of the history, scope, and understanding of abnormal behavior through the life span, with emphasis on educational and clinical implications. The most recent classification system is used to structure topics and issues in the course.

BSP 661 Social and Cultural Foundations of Behavior. Three hours.
Provides fundamental knowledge regarding the methods in which social and cultural interactions and histories influence human behavior. Focuses on application of social psychology principles and multicultural issues to increase awareness and improve skills across a variety of social settings, including schools and human-service agencies.

BSP 673 Doctoral Research and Ethics Seminar. Three hours.
Prerequisite: Permission of the instructor.
Covers topics of current interest to school psychologists.

BSP 686 Consultation and Intervention Practicum in School Psychology. Three hours.
Prerequisite: Permission of the instructor.
Requires 150 hours of supervised experience in conducting consultation and intervention (within a team-decision-making framework) with children, parents, teachers, and administrators in public schools and other agencies.

BSP 687 Specialist Internship in School Psychology. Three to six hours.
Prerequisite: Permission of the instructor.
The student performs the activities of a school psychologist in an educational or other agency, under supervision.

**BSP 688 Doctoral Internship in School Psychology.** Three to six hours.
Prerequisite: Permission of the instructor.
The student performs the duties of a school psychologist in an educational agency, under supervision.

**BSP 689 Research Practicum in School Psychology.** Three to six hours.
Prerequisite: Permission of the instructor.
Participation in cooperative faculty/student research on some aspect of school psychology.

**BSP 690 Readings in School Psychology.** Three hours.
Prerequisite: Permission of the instructor.
An opportunity for the student to study intensively a topic in school psychology, covering a sizable body of literature (the topic chosen should nevertheless be narrower than that subsumed under the name of a course).

**BSP 698 Nondissertation Research.** Three hours.
Prerequisite: Permission of the instructor.
Participation in a research project relating to school psychology.

**BSP 699 Dissertation Research.** Variable credit. Three-hour minimum.
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10.8 DEPARTMENT OF CURRICULUM and INSTRUCTION
Interim Department Head: Professor Miguel Mantero, Office: 201C Graves Hall

The Department of Curriculum and Instruction consists of the the following:

10.8.1 Elementary Education Program
10.8.2 Programs in Secondary Curriculum, Teaching, and Learning

10.8.1 ELEMENTARY EDUCATION PROGRAM (CEE)

Admission Requirements: Admission requirements are outlined in an earlier section of this catalog.

M.A. degree requirements. A minimum of 30 hrs of course credit must be earned, as follows: curriculum and teaching, 6 hrs; foundations of professional studies, 3 hrs; evaluation of teaching and learning, 3 hrs; teaching field, 12 hrs; electives (which may be specified), 6 hrs. If the special education requirement has not been fulfilled, the student may be required to complete an additional 3-hour survey course in special education. A list of courses that fulfill these requirements may be obtained from the program secretary in 204 Graves Hall or on our website http://elementary.ua.edu. Students may not count more than 6 hrs in certain seminar/workshop/problems courses toward the completion of the degree. A maximum of 6 hrs of approved transfer credit (maximum of 9 from UAH/UAH) may be applied to the degree. Students should see their advisors regarding which courses are appropriate for transfer credit.

Nontraditional, alternative initial teacher certification program. A minimum of 36 semester hours of specific graduate credit plus some undergraduate prerequisites is required for the certificate. The program of study must be planned with an advisor. Also, see the page http://education.ua.edu/elem/altma.

Ed.S. degree requirements. A minimum of 30 hrs of appropriate work beyond the M.A. degree and the completion of a research paper are required for the educational specialist degree. Admission requires appropriate educational experiences. The total hours of graduate work beyond the M.A. degree must be at least 30 hrs, as follows: educational research project, 3 hrs; curriculum and teaching, 3 hours; other teaching field courses, 12 hrs; foundations of professional studies, 3 hrs; research, 6 hrs; electives (which may be specified), 3 hrs. A list of courses that fulfill these requirements may be obtained from the departmental secretary in 204 Graves Hall. A maximum of 6 hrs of approved transfer credit (maximum of 9 hrs from UAB/UAH) may be applied toward the degree. See http://education.ua.edu/elem/eds

Class AA certificate required courses. A minimum of 30 hrs of appropriate work beyond the M.A. degree is required for the Class AA certificate (see Ed.S. above). Students who are pursuing certification options must be certain that their planned programs meet all certification requirements according to programs approved by the state department of education. Approved program check sheets are available from the program office. Students who earned initial credit toward Class AA professional certification during fall 1992 or later must enroll in and complete the Ed.S. degree program. Courses used to qualify for a lower-level supporting certificate may not be used again in a higher-level certification program.

Early Childhood Education. Contact the department head for information on this program.

Course Descriptions (Note: see also CIE and CRD courses)

CEE 515 Teaching Elementary School Science (N–6). Three hours. Designed to expand knowledge and competencies of elementary teachers of science with specific focus on current standards, research, and inquiry models of instruction.

CEE 516 Social Sciences in the Elementary School. Three hours.
The focus is on current trends in elementary social studies, with particular attention to innovative instructional modes and to relating learning to the learners' social environment.

**CEE 517 The Language Arts Program in Elementary Schools.** Three hours. Designed to extend and strengthen the knowledge and competencies of experienced teachers of communication arts and skills in the elementary school.

**CEE 525 Issues Trends in Elementary School Science.** Three hours. Focus on current research and trends in elementary science with respect to historical, political, and socio-cultural contexts.

**CEE 526 Implementing Social Studies.** Three hours. The focus is on considering and applying the research base of investigating social studies curricula and instruction to one's own classroom.

**CEE 532 The Elementary School Curriculum.** Three hours. The evolving elementary school curriculum, from historical, current trends, and projective perspectives.

**CEE 544 Current Trends and Research in Early Childhood Education.** Three hours. Current research findings, program development, and the resulting trends in the field of early childhood education.

**CEE 550 Introduction to Teaching Elementary School Science.** Three hours. Prerequisite: Admission to Elementary Education Alternative Certification program. Introduction to the teaching of science. Current research is emphasized supporting best instructional practices in science.

**CEE 555 Introduction to Teaching Social Studies.** Three hours. Prerequisite: Admission to Elementary Education Alternative Certification program. Teaching elementary social studies using research-based instructional strategies and curriculum.

**CEE 565 Classics and Modern Literature for Children.** Three hours. Deals with major developments in literature for children; the areas of children's literature; and effective methods of helping children enjoy and use literature.

**CEE 570 Introduction to Teaching Beginning Reading/Language Arts in the Elementary School.** Three hours. Prerequisite: Admission to Elementary Education Alternative Certification program. A foundation for the teaching of beginning reading/language arts with an emphasis on development, assessment, and instruction for individual students. Intensive field experience is required.

**CEE 574 Guiding Pupil Learning.** Three hours. Focuses on understanding how children learn, what factors influence learning, and how teachers can facilitate learning using brain based learning. Application of these principles of learning to classroom situations.

**CEE 578 Introduction to Teaching Expanded Reading/Language Arts in the Elementary School.** Three hours. Prerequisite: Admission to Elementary Education Alternative Certification program. Deepening understanding of teaching reading/language arts with emphasis on planning a balanced literacy program. Intensive field experience is required.

**CEE 580 Concepts of Elementary School Mathematics.** Three hours. Focuses on the current research in mathematics education concerning how children learn mathematics.

**CEE 581 Mathematics Curriculum Design.** Three hours. Designing mathematics curricula using current research from mathematics education.

**CEE 582 Teaching Mathematics for Elementary Alternative Students.** Three hours. Prerequisites: Admission to Elementary Education Alternative Certification program. This course prepares students to effectively teach mathematics in grades K–6. Emphasis is on the current research in mathematics education.

**CEE 583 Computer Learning in the Elementary Classroom.** Three hours. For students who have had little experience with microcomputer courses. Emphasis is on computers and software and their integration into the elementary curriculum.

**CEE 590 Seminar in Elementary Education.** One to three hours. Prerequisite: Permission of the instructor. In-class opportunities to analyze and discuss current topics, problems, and/or projects of collective concern. Topics vary.

http://graduate.ua.edu/catalog/22800.html
CEE 592 Fieldwork in Elementary Education. One to three hours. 
Prerequisite: Permission of the instructor.
Field-based opportunities to study or work on topics or projects of individual or collective concern. Topics vary.

CEE 593 Workshop in Elementary Education. One to three hours. 
Prerequisite: Permission of the instructor.
In-class opportunities to study or work on topics or projects of collective concern. Topics vary. May be repeated.

CEE 594 Problems in Elementary Education. One to three hours. 
Prerequisite: Permission of the instructor.
Opportunities to study or work independently on topics or projects of individual concern. Credit is based on the nature and degree of student involvement.

CEE 595 Practicum in Elementary Education. Variable credit. 
Prerequisite: Permission of the program chairperson.
Supervised opportunities to apply knowledge and skills in a professional setting. Credit is based on the nature and degree of student involvement.

CEE 596 Advanced Practicum. Three hours. 
Corequisites: CEE 550, CEE 560, CEE 578.
A field-based course providing graduate students with opportunities to practice authentic classroom application of various content areas in elementary education.

CEE 597 Internship in Elementary Education. Nine to twelve hours. 
Prerequisites: Permission of the department head, admission to the teacher education program, a minimum GPA of 2.75 for all work attempted, and a minimum of 2.75 in the major.
Observation, participation, and teaching experiences supervised by selected cooperating teachers in public elementary schools. Additional supervision is provided by College of Education personnel.

CEE 598 Nonthesis Research. Variable credit.

CEE 615 Elementary School Science. Three hours. 
Current trends, research, and research techniques in elementary school science with emphasis in children's learning, innovative instruction and curricula, and expertise in teaching.

CEE 616 Advanced Social Studies in the Elementary Classroom. Three hours. 
The focus in on current trends and research in elementary social studies with particular attention to innovative instructional modes and relating learning to the learner's social environment.

CEE 644 Advanced Study of Current Trends and Research in Early Childhood Education. Three hours. 
Prerequisite: Permission of the instructor.
Analysis of current research findings, program development, and the resulting trends in early childhood education.

CEE 681 Evaluation of Mathematics Programs. Three hours. 
Prerequisites: Graduate methods course in mathematics and permission of the instructor.
Evaluation of various commercial mathematics programs currently being used in classrooms.

CEE 687 Topical Research Review. Three hours. 
Supervised opportunities to apply knowledge and skills in a professional setting. Credit is based on the nature and degree of student involvement.

CEE 690 Advanced Seminar in Elementary Education. One to three hours. 
Prerequisite: Permission of the instructor.
In-class opportunities to analyze and discuss current topics, problems, and/or projects of collective concern. Topics vary.

CEE 692 Advanced Fieldwork in Elementary Education. One to three hours. 
Prerequisite: Permission of the instructor.
Field-based opportunities to study or work on topics or projects of individual or collective concern. Topics vary.

CEE 693 Advanced Workshop in Elementary Education. One to three hours. 
Prerequisite: Permission of the instructor.
In-class opportunities to study or work on topics or projects of collective concern. Topics vary. May be repeated.

CEE 694 Advanced Problems in Elementary Education. One to six hours. 
Prerequisite: Permission of the instructor.
Opportunities to study or work independently on topics or projects of individual concern. Credit is based on the nature and degree of student involvement.

CEE 695 Practicum in Elementary Education. Variable credit.
Supervised opportunities to apply knowledge and skills in a professional setting. Credit is based on the nature and degree of student involvement.

**CEE 697 Educational Specialist Degree Research.** Variable credit.

**CEE 698 Nonthesis Research.** Variable credit.

**CEE 699 Dissertation Research.** Variable credit. Three-hour minimum.
10.8 DEPARTMENT OF CURRICULUM and INSTRUCTION
Interim Department Head: Professor Miguel Mantero, Office: 201C Graves Hall

The Department of Curriculum and Instruction consists of the following:

10.8.1 Elementary Education Program
10.8.2 Programs in Secondary Curriculum, Teaching, and Learning

10.8.2 Programs in Secondary Curriculum, Teaching, and Learning (CSE, CIE, CRD)
Interim Department Head: Professor Miguel Mantero, Office: 201C Graves Hall

The Department of Curriculum and Instruction consists of programs in Secondary Curriculum, Teaching, and Learning, and the Elementary Education Program.

Admission requirements. Admission requirements are outlined in an earlier section of this catalog.

M.A. degree requirements. A minimum of 30 hours of course credit must be earned; see specific program checklists. The program of study must be planned with an advisor.

Nontraditional, alternative initial teacher certification program. A minimum of 42 semester hours of specific graduate credit plus some undergraduate prerequisites is required for the certificate. The program of study must be planned with an advisor. See also p. xxx.

Ed.S. degree requirements. A minimum of 30 hours of appropriate work beyond the M.A. degree and the completion of a research project are required for the educational specialist degree. Graduate coursework must include the following: curriculum and teaching, 9 hours; foundations of professional studies, 3 hours; evaluation of teaching and learning, 3 hours; teaching field, 12 hours; electives (which may be specified), 6 hours. If the special education requirement has not been fulfilled, the student may be required to complete an additional 3-hour survey course in special education.

Postsecondary instruction. Graduate students in both the M.A. and Ed.S. programs who have an interest in teaching in postsecondary institutions may take advantage of the program's flexibility to acquire a maximum of 18 hours in cognate field courses. Students who have this option in mind should coordinate the program of study carefully with their advisors.

Class AA certificate required courses. A minimum of 30 hours of appropriate work beyond the M.A. degree is required for the Class AA certificate. The total hours of graduate work (including the M.A. degree) must be at least 66 hours. Students who are pursuing certification options must be certain that their planned programs meet all certification requirements according to programs approved by the state department of education. Approved program check sheets are available from the program office.

Students who earned initial credit toward Class AA professional certification during the fall of 1992 or later must enroll in and complete the Ed.S. degree program. Courses used to qualify for a lower-level supporting certificate may not be used again in a higher-level certification program.

PROGRAMS IN SECONDARY CURRICULUM, TEACHING, AND LEARNING COURSES

Course Descriptions (CSE) (See also CIE and CRD courses)

CSE 530 The Modern Secondary School Program. Three hours.
The evolving secondary school and its program, with emphasis on analysis of current trends that directly affect modern school practices in a societal context.
CSE 531 Teaching of Family and Consumer Sciences. Three hours.
Prerequisite: Enrollment in nontraditional, alternative certification program.
Implementation of competency-based professional education in home economics at the preprofessional level.
Competencies are developed in the following categories: philosophy, professional role, program planning and execution, educative process, and research.

CSE 532 The Secondary School Curriculum. Three hours.
The evolving secondary school curriculum, from historical, current trends, and projective perspectives.

CSE 555 Adolescent Literature. Three hours.
An introduction to literature appropriate for the adolescent reader; reading patterns and major concerns of adolescents.

CSE 562 Improving Family and Consumer Sciences Instruction. Three hours.
Identification and development of teaching-learning strategies and resources within the context of professional development education in home economics.

CSE 563 Improving English Instruction. Three hours.
Prerequisite: CSE 479 or equivalent.
Principles of learning applied to concepts, skills, attitudes, and problem solving in English and speech; diagnosis, enrichment, remedial teaching, and evaluation.

CSE 564 Improving Social Science Instruction. Three hours.
Prerequisite: CSE 487 or equivalent.
Exploration and examination of methods and materials for improving social studies instruction. Focuses on teaching for diverse learners, constructivist methods, critical thinking, interdisciplinary teaching, and various technologies as they apply to secondary social studies classrooms.

CSE 565 Improving Science Instruction. Three hours.
Prerequisite: CSE 486 or equivalent.
Principles of learning applied to concepts, skills, attitudes, and problem solving in science; diagnosis, enrichment, remedial teaching, and classroom evaluation, and application and evaluation of technologies.

CSE 566 Improving Mathematics Instruction. Three hours.
Prerequisite: CSE 483 or equivalent.
Principles of learning applied to concepts, skills, attitudes, and problem solving of teaching aids; construction and utilization of teaching instruments; and examination and exploration of alternative assessment strategies and technologies for use in secondary mathematics classrooms.

CSE 567 Improving Foreign Language Instruction. Three hours.
Prerequisite: CSE 480 or equivalent.
Principles of learning applied to concepts, skills, attitudes, and problem solving in foreign language; diagnosis, enrichment, remedial teaching, and evaluation.

CSE 569 Pedagogical Grammar. Three hours.
Exploration of structural, transformational, and traditional approaches to teaching grammar.

CSE 574 Guiding Pupil Learning. Three hours.
Understanding ways children and youth learn, factors influencing learning, and ways in which teachers can facilitate learning through brain based research. Application of principles of learning to classroom situations. Usually offered during summer school.

CSE 576 Improving Science Teaching through New Technologies. Three hours.
Examination and evaluation of appropriate technologies for the secondary science curriculum.

CSE 579 Teaching Secondary School English. Three hours.
Prerequisite: Admission to Teacher Education Program.
Corequisite: CRD 512 and CSE 592.
Methods and media essential to effective instruction in English in the secondary school.

CSE 580 Teaching Secondary School Foreign Languages. Three hours.
Prerequisite: Admission to Teacher Education Program.
Corequisite: CRD 512 and CSE 592.
Theories, methods, techniques, and essential media for teaching foreign languages effectively in the secondary school.

CSE 583 Teaching Secondary School Mathematics. Three hours.
Prerequisite: Admission to Teacher Education Program.
Corequisite: CRD 512 and CSE 592.
Methods, media, and techniques of teaching mathematics in the secondary school, including selected topics in mathematics and exploration and examination of various technologies for use in secondary mathematics classrooms, including, but not limited to, calculators and various computer software.

**CSE 586 Teaching Secondary School Science.** Three hours.
Prerequisite: Admission to Teacher Education Program.
Corequisite: CRD 512 and CSE 592.
Methods and technologies essential to effective instruction in science in the secondary school.

**CSE 587 Teaching Secondary School Social Science.** Three hours.
Prerequisite: Admission to Teacher Education Program.
Corequisite: CRD 512 and CSE 592.
Theories and methods of teaching social studies in secondary schools, including examination and exploration of instructional materials, various technologies, constructivist methods, and assessments.

**CSE 592 Fieldwork in Secondary Education.** Three hours.
Prerequisite: Admission to the teacher education program.
Corequisite: Appropriate content methods course.
A clinical experience taken concurrently with the methods course and designed to facilitate students’ development of pedagogical skills, effective thinking, and professional problem solving.

**CSE 593 Workshop in Secondary Education.** One to three hours.
Prerequisite: Permission of the instructor.
In-class opportunities to study or work on topics or projects of collective concern. Topics vary. May be repeated.

**CSE 594 Problems in Secondary Education.** One to six hours.
Prerequisites: Permission of the instructor and approval of the program chair in secondary education.
Opportunities to study or work independently on topics or projects of individual concern. Credit is based on the nature and degree of student involvement.

**CSE 595 Practicum.** Three hours.
Focuses on analysis and performance of teaching strategies and the evaluation of teaching-learning problems.

**CSE 597 Internship in Secondary Education.** Six to nine hours.
Prerequisites: A minimum GPA of 2.75 in graduate teaching field and a minimum GPA of 2.75 in professional courses; a minimum GPA of 2.75 on all work attempted (undergraduate and graduate); an overall graduate GPA of 3.0; and satisfactory completion of 12 hours in the graduate teaching field courses.
Full-time internship as a teacher in the major teaching field.

**CSE 598 Nonthesis Research.** Variable credit.

**CSE 658 School Accreditation Standards: Self-Study and Continuous Improvement.** Three hours.
A study of regional and SACS school accreditation including standards for accreditation, school self-study procedures and validation, roles of school personnel, and creating continuous school improvement activities through SACS accreditation requirements.

**CSE 662 Secondary School Family and Consumer Sciences.** Three hours.
Prerequisite: CSE 562 or equivalent.
Focuses on trends and issues in home economics, literature, content, and research in the field; content and methods of experimental programs; sequencing of subject matter; programs and procedures of curriculum development; and program evaluation.

**CSE 663 Secondary School English.** Three hours.
Prerequisite: CSE 563 or equivalent.
Literature, research, and content in English and speech; current trends; experimental programs; gradation or sequence of subject matter; criteria for program evaluation; and basic issues.

**CSE 664 Secondary School Social Science.** Three hours.
Prerequisite: CSE 564 or equivalent.
Focuses on curriculum and research in social studies education, including materials development and current issues in the field.

**CSE 665 Secondary School Science.** Three hours.
Prerequisite: CSE 565 or equivalent.
Literature, research, and content in science; current trends; experimental programs; gradation of subject matter; criteria for program evaluation; and basic issues.

**CSE 666 Improving Mathematics Instruction.** Three hours.
Prerequisite: CSE 566 or equivalent.
Principles of learning applied to concepts, skills, attitudes, and problem solving; proper use and evaluation of
teaching aids; construction and utilization of teaching instruments; and examination and exploration of alternative assessment strategies and technologies for use in secondary mathematics classrooms.

**CSE 667 Secondary School Foreign Language.** Three hours.  
Prerequisite: CSE 567 or equivalent.  
Literature, research, and content in foreign languages; current trends; experimental programs; criteria for program evaluation; special problems; and graduation of subject matter.

**CSE 670 Research and Theory in Secondary Education.** Three hours.  
An examination of the relationship between theory and research. Students learn to search and evaluate the research literature and develop a proposal for research.

**CSE 690 Advanced Seminar in Secondary Education.** One to three hours.  
Prerequisites: Permission of the instructor and approval of the program chair in secondary education.  
In-class opportunities to analyze and discuss current topics, problems, and projects of collective concern. Topics vary.

**CSE 692 Advanced Fieldwork in Secondary Education.** One to three hours.  
Prerequisites: Permission of the instructor and approval of the program chair in secondary education.  
Field-based opportunities to study and work on projects or topics of individual or collective concern. Topics vary.

**CSE 693 Advanced Workshop in Secondary Education.** One to three hours.  
Prerequisites: Permission of the instructor and approval of the program chair in secondary education.  
In-class opportunities to study or work on topics or projects of collective concern. Topics vary. May be repeated.

**CSE 694 Advanced Problems in Secondary Education.** One to six hours.  
Prerequisites: Permission of the instructor and approval of the Department Head.  
Opportunities to study or work independently on topics or projects of individual concern. Credit is based on the nature and degree of student involvement.

**CSE 695 Practicum in Secondary Education.** Variable credit.  
Prerequisite: Permission of the instructor.  
Supervised opportunities to apply knowledge and skills in a professional setting. Credit is based on the nature and degree of student involvement.

**CSE 697 Educational Specialist Degree Research.** Three hours.  
Systematic classroom inquiry is used to engage students in a teacher action research project. Advisor recommendation required.

**CSE 698 Nonthesis Research.** Variable credit.

**CSE 699 Dissertation Research.** Variable credit. Minimum of three hours' enrollment per semester.

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**CURRICULUM AND INSTRUCTION (CIE) COURSES**

The courses are designed to meet the continuing professional-growth needs of teaching personnel. In all programs, heavy emphasis is placed on the proper blend of theoretical and conceptual considerations with the realities of the classrooms in which graduates work. Doctoral degrees utilizing these courses are available in the traditional fields of elementary and secondary education, and these courses may be applicable in other departments. Doctoral minors and supporting concentrations have recently been developed from a generic perspective. The latter option was developed especially for doctoral students in educational research and evaluation who have not had previous school-based experience, although others may qualify.

**Course Descriptions (CIE)**

The following courses are designed to serve students in all programs.

**CIE 527 Teaching Literacy to Second Language Learners.** Three hours.  
This course applies methods for teaching reading and writing to limited English proficient students K–12, assessment of literacy strategies and skills, and development of materials.

**CIE 544 Supervising Interns.** Three hours.  
Organization and administration of student-teaching programs and methods of supervising student-teaching in schools.

**CIE 562 TESL: Basic Methods.** Three hours.  
Prerequisite: Permission of the instructor.  
Theories, methods, and strategies for English as a second language that focus on communicative competence and cross-cultural understanding.
CIE 567 Improving Foreign Language Instruction. Three hours.  
Prerequisite: Permission of the instructor.  
Critical examination of theoretical perspectives, methods, major issues, and controversies pertinent to teaching foreign language; use of technology in language instruction is a critical component.

CIE 576 Linguistics for Classroom Teachers. Three hours.  
This linguistic course enables teachers to understand the basics of how the English language functions. Provides information essential for dealing with students whose native language is not English. Offers useful information about various English dialects as well.

CIE 577 Second Language Acquisition: Issues, Theories, and Instructional Implications. Three hours.  
Introduction to and analysis of the main issues and theories in second language acquisition (SLA); students deduce and demonstrate instructional implications.

CIE 578 Second Language Testing, Assessment, and Evaluation. Three hours.  
Prerequisite: Permission of the instructor.  
Preparation in the background and skills necessary to construct classroom-based tests, appropriately use published tests, and understand second or foreign language program evaluation.

CIE 579 Teaching English as a Second Language: Programs and Policies. Three hours.  
Prerequisite: Permission of the instructor.  
Theories of language learning, acquiring a second language, and current linguistic theories; emphasis is on programs, policies, and instructional methods of ESL education.

CIE 580 Teaching Foreign Languages. Three hours.  
Prerequisite: Permission of the instructor.  
Theories, methods, and strategies for foreign language teaching that focus on communicative competence and cross-cultural understanding; use of technology in language education is a critical component.

CIE 592 Fieldwork in Curriculum and Instruction. Three hours.  
Prerequisite: Admission to the teacher education program.  
Corequisite: Appropriate content methods course.  
A clinical experience taken concurrently with the methods course and designed to facilitate students' development of pedagogical skills, effective thinking, and professional problem solving.

CIE 593 Workshop in Curriculum and Instruction. One to three hours.  
Prerequisite: Permission of the instructor.  
In-class opportunities to study or work on topics or projects of collective concern. Topics vary. May be repeated. Offered according to demand.

CIE 594 Problems in Curriculum and Instruction. One to six hours.  
Prerequisite: Permission of the instructor.  
Opportunities to study or work independently on topics or projects of individual concern. Credit is based on the nature and degree of student involvement. Offered according to demand.

CIE 595 Practicum in Curriculum and Instruction Education. Variable credit.  
A laboratory course that provides opportunities to observe, implement, and analyze instruction in school settings.

CIE 610 Effective Teaching Concepts and Processes. Three hours.  
Prerequisite: Graduate course in educational or cognitive psychology, graduate course in learning theory, or permission of the instructor.  
Examination of the knowledge base in effective teaching practice through in-depth study of the research literature on classroom instructional practices and conditions, and on the classroom teacher. Designed specifically for doctoral-level students.

CIE 620 Designing and Conducting Research on Classroom Teaching. Three hours.  
Prerequisite: Graduate course in research methods or permission of the instructor.  
The practice and use of reflection and action research with emphasis on developing professional skills in performing and applying research on classroom teaching and learning leading to teacher empowerment and school reform. Designed specifically for doctoral-level students.

CIE 623 Models and Strategies of Instruction. Three hours.  
Prerequisite: Admission to Ed.S. or doctoral program.  
Exploration of a variety of instructional models. Emphasis is on the current research of effective instructional practices in the elementary school.

CIE 625 Research Seminar in Science Curriculum. Three hours.
Designed to enable students to understand and synthesize current research and to develop a theoretical framework in the science curriculum for K–12.

**CIE 626 Seminar in Research in Social Studies Curriculum.** Three hours.
Designed to enable students to understand and synthesize current research and to develop a theoretical framework in social studies education for K–12.

**CIE 627 Second Language Literacy.** Three hours.
This course is designed to provide the student with an introduction to the major issues in research and instruction in second language (L2) literacy (reading and writing). An emphasis in this course is on literacy as a cognitive skill. The psycholinguistic processes of reading and writing in a second language will be addressed.

**CIE 630 Curriculum for the Classroom Teacher.** Three hours.
This course discusses the major issues in curriculum design and implementation for the classroom teacher. Designed specifically for doctoral-level students.

**CIE 638 Seminar in ESL Education.** Three hours.
Prerequisite: Permission of the instructor.
Examination and critical analysis of a wide range of perspectives from the professional literature on teaching and learning ESL.

**CIE 640 Seminar in Teacher Education Processes.** Three hours.
The course focuses on issues, problems, trends, and research associated with undergraduate and graduate teacher education and certification programs in Alabama, the U.S., and the world. Designed specifically for doctoral-level students.

**CIE 644 Teacher-Intern Supervision.** Three hours.
Organization and administration of student-teaching programs and methods of supervising student-teaching in schools. Designed specifically for doctoral-level students.

**CIE 645 Professional Continuum: Teaching and Learning Communities.** Three hours.
Research-based focus using theoretical frameworks to examine and analyze the professional development continuum.

**CIE 650 Individual/Context Variables.** Three hours.
This course deals with learning styles, personality factors, and social-environmental issues that affect curriculum and instruction. Theoretical and practical aspects are covered. Designed specifically for doctoral-level students.

**CIE 656 Seminar in Foreign Language Education.** Three hours.
Prerequisite: Permission of the instructor.
Examination and critical analysis of a wide range of perspectives from the professional literature on teaching and learning a foreign language.

**CIE 660 Cognitive Perspectives on Teaching and Learning in K–12 Classrooms.** Three hours.
The course focuses on systematic descriptions and analysis of major learning theories for classroom application. The intent is to contribute education insight toward more effective teaching through cognitive processes.

**CIE 662 Advanced ESL Education.** Three hours.
Prerequisite: Permission of the instructor.
Designed for experienced ESL teachers, this course critically examines the professional literature and various methods of teaching ESL.

**CIE 667 Foreign Language Education.** Three hours.
Prerequisite: Permission of the instructor.
Designed for experienced language teachers, this course critically examines the professional literature and various methods of teaching foreign languages.

**CIE 670 Critical Inquiry into Curriculum and Pedagogy.** Three hours.
Prerequisite: Advanced standing or permission of the instructor.
Examinations of different conceptualizations of curriculum and pedagogy in K–12; emphasis on critical theory and postmodern theory and critique.

**CIE 676 Advanced Linguistics.** Three hours.
This course involves advanced investigation within general areas of applied linguistic studies such as phonology, morphology, syntax, semantics, discourse, pragmatics, writing systems, etc., and their impact on second language acquisition.

**CIE 680 Seminar in Mathematics Education Research.** Three hours.
Designed to enable students to understand and synthesize current research and to develop a theoretical framework in mathematics education.
CIE 682 Advanced Issues in ESL Education. Three hours. Critical examination of theoretical perspectives, methods, policies, major issues, and controversies pertinent to teaching second languages in the United States and around the world.

CIE 692 Advanced Fieldwork in Curriculum and Instruction. One to three hours. Prerequisite: Permission of the instructor. Field-based opportunities to study or work on topics or projects of collective concern.

CIE 693 Advanced Workshop in Curriculum and Instruction. One to three hours. Prerequisite: Permission of the instructor. In-class opportunities to study or work on topics or projects of collective concern. Topics vary. May be repeated. Offered according to demand.

CIE 695 Practicum in Curriculum and Instruction. Variable credit. Provides graduate students with supervised opportunities to apply knowledge and skills in a professional setting, focusing on preparation of teachers and professional personnel.

READING EDUCATION

Course Descriptions (CRD)

CRD 510 Expanding Reading in the Elementary Grades. Three hours. A comprehensive study of the major factors involved in teaching reading at the intermediate grade levels. Techniques for teaching word recognition and comprehension skills are studied extensively.

CRD 511 Beginning Reading in PK–Primary Grades. Three hours. Attends to the theory and practice of beginning reading; key areas of study include diagnostic and evaluative procedures and the organization and implementation of appropriate instruction. A field component is required.

CRD 512 Improvement of Reading in Secondary Schools. Three hours. Prerequisite: Admission to Teacher Education Program. Corequisite: Content methods course and CSE 592. A comprehensive study of the major components involved in literacy instruction at the secondary level. A field component is required. This course should be taken concurrently with the content methods course and CSE 592.

CRD 553 Foundation of Reading PK–12. Four hours. Course provides a comprehensive study of the development and teaching of reading in PK–12 settings. Techniques for direct instruction in phonemic awareness and phonics, comprehension, fluency, and vocabulary are studied extensively. Open only to students in the Reading Specialist certification program.

CRD 590 Seminar in Reading Education. Three hours. Prerequisite: Permission of the instructor. In-class opportunities to analyze and discuss current topics, problems, and projects of collective concern. Topics vary.

CRD 593 Workshop in Reading Education. One to three hours. Prerequisite: Permission of the instructor. In-class opportunities to study or work on topics or projects of collective concern. Topics vary. May be repeated.

CRD 595 Practicum in Reading Education. Variable credit. Prerequisite: Permission of the instructor. Provides graduate students supervised opportunities to apply knowledge and skills in a professional setting. Credit is based on the nature and degree of student involvement.

CRD 654 Assessment and Instruction of At-Risk Readers. Three hours. Prerequisite: Permission of the instructor. Provides advanced study of diagnostic methods and materials for students at risk of reading failure. A large-scope analysis of the subject is provided. Offered according to demand.

CRD 690 Advanced Seminar in Literacy. Three hours. Prerequisite: Permission of the instructor. Provides students with a knowledge base of the relationship between theory, research, and practice in regard to K–12 literacy education.

CRD 693 Advanced Workshop in Reading Education. One to three hours. Prerequisite: Permission of the instructor. In-class opportunities to study or work on topics or projects of collective concern. Topics vary. May be repeated.

CRD 695 Advanced Practicum in Reading Education. Variable credit.
Prerequisites: CRD 595 or approved equivalent, and permission of the instructor. Provides advanced experiences that enable students to refine knowledge acquired at lower levels of study.

**CRD 696 Advanced Reading Specialist Practicum.** Variable credit. Prerequisite: Permission of the instructor. Provides graduate students preparing to assume new or expanded professional responsibilities with related field-based work experiences under close supervision. Credit is based on the nature and degree of student involvement.
10.9 DEPARTMENT OF SPECIAL EDUCATION AND MULTIPLE ABILITIES (SPE)

Department Head: Professor Jim Siders, Office: 201 Graves Hall

Special education offerings in the College are designed to help establish, maintain, and improve educational services to exceptional children by providing exemplary personnel resources. Courses of study leading to certification in the education of exceptional children (Class A and Class AA) and to the master of arts (M.A.) and educational specialist (Ed.S.) degrees are offered. Emphases are available in gifted and talented, collaborative education, and early childhood special education.

The doctor of education (Ed.D.) degree program is offered to provide competencies in teacher education, administration, and research. In preparing for any of these three professional activities, Ed.D. students usually specialize in one of the fields within special education; they are also expected, however, to acquire broad-based information across the spectrum of exceptional children and youth. The doctor of philosophy (Ph.D.) program is designed to prepare major researchers for roles as university professors or administrators.

The sequence of advanced study followed by the graduate student in special education is contingent on the skills and background brought to the program and on the student's career plans. While there are core course requirements at each degree level, each program is individually designed based on the student's needs and goals; flexibility may be provided through elective courses.

Special education faculty are involved in a number of demonstration and research projects designed to develop and evaluate innovative procedures for training professionals, paraprofessionals, and parents to work with various types of exceptional children. These projects are also concerned with the development and evaluation of instructional programs and techniques for exceptional individuals. Students have access to an array of practicum and research opportunities from a variety of resources.

Certification. The Alabama State Board of Education grants a Class A Professional Certificate with an endorsement in gifted and talented, early childhood special education, collaborative teacher (K–6), or collaborative teacher (6–12). To be eligible, students must hold appropriate Class B certification and must complete all requirements for the M.A. degree in the chosen program, as described in this catalog.

The Ed.S. in special education program leads to Class AA certification with an endorsement in gifted and talented, early childhood special education, collaborative teacher (K–6), or collaborative teacher (6–12). To be eligible, students must hold appropriate Class A certification and must complete the appropriate number of semester hours of work in an approved program beyond the master's degree.

The separate supervisor of special education certificate is no longer available. Students interested in supervising special education who earned initial credit toward Class A professional certification during the spring of 1992 or later must enroll in and complete a certification program in educational leadership. By obtaining the educational leadership certificate along with appropriate educational experience, the student may be certified to be a principal, supervisor, and/or superintendent.

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<tr>
<th>Exceptionality:</th>
<th>To enter Class A work, Class B certification must be in</th>
<th>To enter Class AA work, Class A certification must be in</th>
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<tr>
<td>collaborative education*</td>
<td>any area of certification</td>
<td>see advisor</td>
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<tr>
<td>Multiple Abilities Program*</td>
<td>see advisor</td>
<td>N/A</td>
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<tr>
<td>early childhood special education*</td>
<td>any area of certification</td>
<td>early childhood special education for the handicapped or early childhood education</td>
</tr>
<tr>
<td>gifted *</td>
<td>any area of certification</td>
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</tbody>
</table>

*Initial certification also is available at the master's level in these exceptionalities via the nontraditional, alternative initial teacher certification program.
Degree requirements. Degree requirements are outlined in an earlier section of this catalog.

Financial aid. Graduate assistantships, student stipends, and fellowships in special education are available in limited numbers. Interested students must complete the financial assistance form, and/or the application for graduate teaching or research assistant form, available from the program office. These forms must be returned to the program chairperson, who will forward them to the area head.

M.A. program admission. In addition to meeting the Graduate School 's admission requirements, students interested in the special education programs should be aware of the state certification program admission requirements listed in the chart above.

Nontraditional, alternative initial teacher certification program. The program in special education offers teacher-education programs that lead to Alabama Class A certification in collaborative teacher (K–6) (special education), or collaborative teacher (6–12) (special education), gifted, and the Multiple Abilities Program (MAP) but do not require Class B certification in any teaching field. These programs are designed to allow individuals with undergraduate degrees in nonteaching fields to enter the field of education. Admission requirements for nontraditional, alternative teacher certification programs are as follows:

1. Admission to the Graduate School, requiring a score of 1000 on the GRE general test or a score at the 50th percentile on the MAT, and a grade point average of 3.0 on a 4.0 scale for the last 60 hours completed; or, conditional admission to the Graduate School, requiring a score of 900 on the GRE (general test) or a score at the 40th percentile on the MAT, a grade point average of 3.00 overall, and an average of "B" or better for the first 12 graduate hours attempted
2. A baccalaureate degree, including 60 semester or 90 quarter hours of general studies courses in humanities, social science, laboratory science, and mathematics (at or above the level of college algebra)

Admission to a nontraditional, alternative certification program in special education requires full admission to the Graduate School and the completion of specified undergraduate prerequisite courses. The M.A. degree is awarded when program requirements are completed.

Ed.S. program admission. In addition to meeting the Graduate School 's admission requirements, a student interested in the Ed.S. program must have earned an M.A. or equivalent degree in special education (with the exception of students applying for study in gifted).

Ed.D. and Ph.D. program admission. Prerequisites for admission to doctoral work in special education are an earned M.A. degree in special education (or a related area) and three years of appropriate experience, defined as three years of work in agencies serving children and youth, one year of which must have been spent in direct interaction with exceptional children on a full-time basis. Graduate faculty members individually evaluate and collectively discuss admission applications. When feasible, applicants are encouraged to visit the campus for an interview as part of the evaluation process.

Course Descriptions

SPE 500 Introduction to Exceptional Children and Youth. Three hours.
Introduction to programs and problems of children and youth who deviate from the norm in physical, mental, emotional, and social characteristics.

SPE 501 Diagnosis and Assessment of Exceptional Children and Youth. Three hours.
Comprehensive study of diagnosis and assessment, emphasizing concepts of tests and measurements, formal and informal assessment, test administration, and use of diagnostic results in educational intervention.

SPE 502 Advanced Behavior Management for Special Educators. Three hours.
Prerequisite: SPE 435 or equivalent.
Concepts and principles of behavior change and management; practical experience in developing plans to prevent and remedy behavior problems. Research project required.

SPE 503 Master's Seminar in Special Education. Three hours. Critique of research and research problems in current special education issues.

SPE 506 Family Intervention with Exceptional Children and Youth. Three hours. Examination of the effects of an exceptional child on the family, and the various approaches to intervention with the family.

SPE 511 Reading and Research in Special Education. Variable credit (registration for fewer than 3 hours requires permission of the program chairperson). To assist master's students with intensive review of new research in a particular area of exceptionality.

SPE 514 Teacher Consultant Models in Special Education. Three hours. Introduction to various direct and indirect service delivery models for students with mild disabilities; consultant techniques demonstrated.

SPE 571 Education of Young Children with Disabilities. Three hours. An introductory course to the field of early childhood special education, including rationale, legal issues, and characteristics of children from birth through kindergarten.

SPE 576 Assessment of Young Children. Three hours. Prerequisite: SPE 571 or permission of the instructor. Selection, administration, and interpretation of assessments of young children (birth through kindergarten).

SPE 578 Methods of Teaching Young Children with Disabilities. Three hours. Prerequisite: SPE 571 or permission of the instructor. Use of curricula, materials, and management techniques for young children (birth through kindergarten) with disabilities.

SPE 579 Internship in Education of Young Children with Diverse Abilities. Three to nine hours. Prerequisites: SPE 573, SPE 577, and SPE 578. Intensive supervised teaching experience with young children with and without disabilities.

SPE 581 Psychology of Gifted and Talented Children and Youth. Three hours. Examination of the nature of youth with high potential in multiple areas. Contemporary theory, research, and the relationship between definition/identification and educational planning are considered.

SPE 582 Teaching the Gifted and Talented. Three hours. Use and evaluation of teaching-learning methods for education of the gifted and talented, including consideration of roles, expectations for learning, and organizational procedures.

SPE 583 Creative Problem Solving Seminar. Three hours. A guided sequence of exercises and experiences leading to increased personal creative behavior, with emphasis on methods for nurturing creative talent in students of all ages.

SPE 584 Special Populations in Gifted Education. Three hours. Examination of a variety of administrative designs, curriculum options, instructional models, and strategies to meet the unique cognitive and affective needs/abilities of special populations of gifted students.

SPE 585 Teaching Thinking Skills: Integrating Programs. Three hours. Prerequisite: SPE 582 or permission of the instructor.
Corequisite: SPE 589.
Survey of existing thinking-skills programs and techniques for creating new programs for thinking. Emphasis is on integrating thinking skills into gifted education and regular education.

SPE 589 Internship in Gifted/Talented. Three to nine hours.
Prerequisites: SPE 581 and SPE 582.
Corequisite: SPE 585.
Intensive, supervised teaching experience in programs for gifted and talented.

SPE 590 Introduction to Mild Disabilities. Three hours.
An intensive study of the background and current perspective on mild disabilities. Emphasis on developing professional knowledge base.

SPE 591 Academic Methods: Elementary. Three hours.
Designed to develop skills in the use of curriculum, materials, and strategies for students with disabilities at the elementary school level.

SPE 592 Academic Methods: Secondary. Three hours.
Designed to develop skills in the use of curriculum, materials, and strategies for students with disabilities at the secondary level.

SPE 593 Introduction to Severe Disabilities. Three hours.
An intensive study of the background and current perspective on severe disabilities. Emphasis is on developing professional knowledge.

SPE 594 Methods for Severe Disabilities. Three hours.
Emphasizes educational programming, subject matter, professional responsibilities of teachers and related service personnel, curriculum development, communication, and physical management and handling procedures of individuals with severe disabilities.

SPE 597 Transition Methods for Adolescents with Disabilities. Three hours.
Focuses on the strategies, methods, curriculum, and measurement for facilitating an effective transition from school to adulthood of adolescents with disabilities.

SPE 598 Internship in Special Education. Three hours.
Prerequisites: SPE 561 and SPE 562.
Intensive, supervised teaching experience in a special education program.

SPE 599 Thesis Research. Variable credit.
Allows master's students to initiate and develop a thesis topic into a formulated paper that describes or investigates in great depth problems and/or issues in special education.

SPE 600 Doctoral Seminar in Special Education. Three hours.
Required for all first-year doctoral students; diagnostic in function. Activities include examination of career goals and assessment of skills in written and oral presentations. Offered fall semester.

SPE 601 Seminar: College Teaching in Special Education. Three hours.
Prerequisite: SPE 600.
Course structure, lecturing and other delivery techniques, student evaluation, and practicum supervision are included among topics that are reviewed to develop skills in college training. Offered fall semester.

SPE 602 Seminar: Research in Special Education. Three hours.
Prerequisite: SPE 600.
Focuses on the unique aspects of the exceptional population in relationship to typical statistical and research design procedures. Offered spring semester.

SPE 606 Topical Seminar in Special Education. Three hours.
Prerequisite: Permission of the instructor.
May be repeated for credit. Selected topics, review and critique of current literature, research problems, and methodology.

SPE 609 Practicum in Special Education. Three to six hours.
Designed for advanced graduate students. Students practice effective supervision skills or college teaching skills under the direction of the course instructor.

SPE 611 Independent Study in Special Education. Three to nine hours.
Intensive investigation of a specific aspect of special education, by one student under the supervision of a faculty member in the student's area of concentration.

SPE 612 Readings and Research in Special Education. Three to twelve hours.
For doctoral students, an opportunity to initiate, develop, and successfully defend a dissertation topic dealing with a problem of magnitude in the field of special education.

SPE 613 Consultation Processing in Special Education Programs. Three hours.
Training in human-relations techniques and administrative strategies designed to facilitate communication and interaction with individuals and groups in special education programming.

SPE 614 Assessment of Teaching and Learning in Special Education. Three hours.
Strategies for curricular designs, teaching methods, and program models using informal and observational techniques to assess teaching effectiveness and learner outcomes (academic and behavioral) in special education programs.

SPE 631 Educational Programming for Children in Emotional Conflict. Three hours.
Systems analysis and literature reviews for teaching the nature and needs of children and youth experiencing emotional conflict. Data from the general areas of mental health and learning are used to raise questions about the education of children experiencing emotional conflict.

SPE 632 Teachers' Cognitive Styles. Three hours.
Prerequisite: SPE 532.
Teaching consultation seminar that demonstrates teaching models and self-evaluation skills during direct involvement with children experiencing emotional conflict.

SPE 633 Psychology of Emotional Conflict. Three hours.
The interaction of dynamic and developmental characteristics of children and youth experiencing emotional problems is considered in an interdisciplinary context, but emphasizing educational implications and curricular adaptations.

SPE 644 Issues and Trends in Mental Retardation. Three hours.
Prerequisite: SPE 542.
Advanced curriculum planning, methods, and materials for people who are mentally retarded. Emphasis is on the conceptual level.

SPE 661 Issues in Learning Disabilities. Three hours.
Prerequisite: SPE 561 or permission of the instructor.
Thorough analysis of current trends and issues in the field of learning disabilities. Focus is on problem identification, viable solutions, and needed research.

SPE 670 Issues in Education of Young Children with Diverse Abilities. Three hours.
Explores current issues in early childhood education and accommodates students doing extensive reading and research in a specific area within the field.

SPE 672 Ethical and Legal Aspects of Special Education. Three hours.  
Study of the ethical principles supporting statutory and judicial activities in special education.

SPE 681 Issues in Gifted Education. Three hours.  
Discussion of current research, and investigation of major issues in the education of gifted and talented youth, focusing on definition, identification, programming, evaluation, community involvement, and guidance.

SPE 682 Advanced Curriculum Workshop in Gifted Education. Six hours.  
Prerequisites: SPE 581 and SPE 582, or permission of the instructor.  
Assists leaders in gifted education in applying studies in basic disciplines to the development and implementation of appropriate curriculum for the gifted. Emphasis is on application of diverse teaching models and the use of a variety of program alternatives and skills in designing, managing, and evaluating programs.

10.10 DEPARTMENT OF KINESIOLOGY (HPE)
Department Head: Professor Matthew Curtner-Smith, Office: 106 Moore Hall

The master of arts degree in Human Performance studies is offered with these specializations: sport management, exercise science, human performance, and sport pedagogy. The latter three programs are available under Plan I (thesis) and Plan II (nonthesis). The sport management program involves completing a "capstone experience" project. There is also an alternative master's program in sport pedagogy which leads to Class A certification for those with an undergraduate degree in a non-teaching field. The degree with an emphasis in sport pedagogy leads to Class A certification, unless the student prefers a nonteaching degree. Programs leading to the doctor of philosophy (Ph.D.) degree in human performance with emphases in sport pedagogy and exercise science are also offered.

Admission and degree requirements for the Graduate School and for the College of Education are detailed in an earlier section of this catalog. There are no degree requirements specific to the department in addition to those of the Graduate School and College.

Course Descriptions

HPE 500 Sociology of Sport. Three hours.
Examines the institution of sport from a sociological perspective. Provides an opportunity to critically analyze the assumptions surrounding the social significance of sport through a process of reflective thought.

HPE 502 Current Research in Physical Education. Three hours.
A broad review of current published research in physical education, with emphasis on practical application of research findings.

HPE 506 Techniques of Research. Three hours.
Designed to acquaint the student with the types of research and the methods and materials necessary for scientific inquiry. Includes the development of a research proposal, with emphasis on form and style.

HPE 507 Laboratory Techniques. Three hours.
Theoretical and practical understanding of physiological instrumentation and measurement in physical education, including practical laboratory experiences, as preparation for graduate research or other research opportunities.

HPE 508 Perceptual-Motor Development. Three hours.
Perceptual-motor development of infants and young children. Current philosophies, theories, and methods; laboratory work in movement exploration. A clinical experience is required.

HPE 510 Teaching and Supervising Elementary School Physical Education. Three hours.
Open to elementary education and physical education majors. Reviews the essential concepts for successfully teaching grades 1–6; learning, function, and duties of consultant.

HPE 512 Physical Education Curriculum. Three hours.
Program content and curriculum planning in grades 1–12 and higher education; includes developing curriculum plan applicable to one's need.

HPE 538 Advanced Adapted Physical Education. Three hours.
Pertinent information concerning legislation, mainstreaming, the physical education IEP, and movement problems of individuals who deviate from the norm. A clinical experience is required.
**HPE 550 Coaching: A Psychological Application.** Three hours.  
Application of psychological concepts, theories, and principles in coaching to maximize the athlete's performance.

**HPE 555 Sport Finance.** Three hours.  
An overview of the budgeting process, sources of revenue, types of expenditures, issued and innovations in financing for sport management.

**HPE 562 Administration of Athletics.** Three hours.  
Problems and issues in organizing and administering secondary and college athletic programs.

**HPE 566 Evaluation in Physical Education.** Three hours.  
Covers practical aspects of measurements and evaluation in schools and colleges to measure clients, patients, and students. A practical measurement/evaluation on project is completed.

**HPE 585 Laboratory and Field Experience.** One to six hours each.  
Provides for teaching laboratory, internship, and/or practicum experiences, according to individual needs and goals.

**HPE 588 Sport Marketing and the Media.** Three hours.  
This course examines the various components of sport marketing and consumer culture. Particular emphasis is given to the influence of the media in promoting sporting goods and products.

**HPE 590 Sports/Dance Workshop.** One to six hours.  
In-depth study of physical education subject matters (gymnastics, dance, fitness, aquatics, track and field, and sports/games) focusing on content, theoretical frameworks, and educational perspectives. Students enroll in 1-credit-hour workshops according to individual needs and certification requirements.

**HPE 592 Physiology of Exercise.** Three hours.  
Designed to be an overview of the human physiological response to exercise.

**HPE 593 Organization and Implementation of Adult Fitness Programs.** Three hours.  
Designed to provide practical experience in organizing and implementing adult fitness programs.

**HPE 595 Workshop in Physical Education.** One to three hours.  
This course is designed to help students improve their ability to teach elementary, secondary, and/or college physical education and understand theory and research as it is applied in each setting.

**HPE 596 Independent Study in Physical Education.** One to three hours.  
Designed to provide the opportunity for independent study in a specific area of physical education.

**HPE 598 Nonthesis Research.** Three hours.  
Experimental or analytical investigation of problems in physical education.

**HPE 599 Thesis Research.** Three hours.  
Research in a selected area of physical education.

**HPE 600 Motor Activity and Learning.** Three hours.  
Investigation of factors that have implications for motor learning throughout the life span; practical implications for teaching, coaching, and analyzing motor skills.

**HPE 602 Readings in Physical Education.** Three hours.  
An independent readings course for doctoral students.

**HPE 603 Special Projects in Physical Education.** Three hours.
Experimental or analytical investigations of problems in physical education, arranged on an independent basis for doctoral students.

**HPE 604 Seminar in Physical Education.** Three hours.
Critical issues in athletics, curriculum, instruction, evaluation, research, fitness, individual differences, and financial support.

**HPE 612 Research in Physical Education/Teacher Education.** Three hours.
An examination of the development, design, and application of research in physical education/teacher education.

**HPE 622 Analysis of Research on Teaching in Physical Education.** Three hours.
A thorough analysis of published research on teaching in physical education.

**HPE 632 Systematic Observation in Physical Education.** Three hours.
An examination of analytical techniques used to collect and evaluate data related to teacher and student behaviors. Instruction in the development and use of systematic observation instruments is provided.

**HPE 642 Instructional Design in Physical Education in Higher Education.** Three hours.
An examination of methods, applications, and current research related to instructional design.

**HPE 646 Administration of Physical Education.** Three hours.
Focuses on academic and practical experience in the organizational and administrative skills necessary to successfully direct a secondary, junior college, college, or university program.

**HPE 685 Fieldwork and Laboratory Experience.** One to six hours each.
Arranged on an independent basis for doctoral students. Participation and research in schools and agencies.

**HPE 690 Exercise in Health and Disease.** Three hours.
Prerequisite: HPE 592.
Designed to acquaint the student with the health benefits of regular physical activity and exercise. The most recent research literature is critically analyzed.

**HPE 691 Research Studies in Sociology of Human Performance.** Three hours.
A presentation of theoretical sociological principles that relate to human performance, physical education, and exercise.

**HPE 692 Seminar in Exercise Physiology.** Three hours.
Prerequisite: HPE 592.
Provides an opportunity to study in depth the scientific literature related to various exercise physiology topics. May be taken more than once.

**HPE 698 Nondissertation Research.** Three hours.
Prerequisite: Doctoral student standing.
Experimental or analytical investigation of problems in kinesiology.

**HPE 699 Dissertation Research.** Three to twelve hours.
Design, research, and/or analytical investigation of a problem in the field of kinesiology to satisfy the dissertation requirement for the doctoral degree.
Graduate work in Music Education is an option through curriculum and instruction (see Curriculum and Instruction, College of Education). Under Curriculum and Instruction, Music Education concentrations are available at the M.A., nontraditional initial certification, Ed.S., Ed.D., and Ph.D. degree levels. All programs, except the doctoral programs, can lead to Alabama teacher certification.

**Admission Requirements:**

**M.A. in Curriculum & Instruction (Music Education option):** Master's candidates must hold valid Alabama Class B or approved equivalent certification to be considered for admission. Music education is offered as an option under curriculum and instruction in the College of Education. Students are required to demonstrate professional competence in music theory and music history; to submit a tape of an ensemble performance or teaching sample; and, if requested, to perform a placement audition on the major instrument prior to the completion of 12 hours of graduate study. Contingent upon faculty and Graduate School approval, conditional admission is granted in some instances.

**Ed.S., Ed.D., and Ph.D. in Curriculum & Instruction (Music Education option).** Music education is offered as an option under curriculum and instruction of the College of Education. An applicant must successfully complete a formal screening interview with the music education faculty prior to an admission decision, and doctoral applicants must submit a writing sample. Students are required to demonstrate professional competence in music theory and music history; to submit a tape of an ensemble performance or teaching sample; and, if requested, to perform a placement audition on the major instrument prior to the completion of 12 hours of graduate study. It is highly recommended that applicants have a minimum of three years’ full-time contractual teaching experience prior to beginning a post-master’s degree program. Contingent upon faculty and Graduate School approval, conditional admission is granted in some instances.

**Degree Requirements:**

**M.A. in Curriculum and Instruction (Music Education option).** Two M.A. plans are offered. Both plans presume an undergraduate degree in music education from an accredited school, valid Alabama Class B teaching certification (or an approved equivalent teaching certificate), and lead to Alabama Class A, master's level, teaching certification. Both require compliance with the State--approved certification program and a minimum of 30 graduate semester hours as follows: (a) required music education courses, 6 hours; (b) foundations of professional studies, 3 hours; (c) educational research, 3 hours; (d) technology, 3 hours; (e) faculty-approved teaching field, 15 hours; and, additional requirements/electives, 0-3 hours. Candidates under Plan I for the master's degree must write a thesis (6 semester hours of thesis research may be used toward the degree). Plan II candidates must earn a minimum of 30 graduate semester hours. No music education master’s degree programs are available without satisfying Alabama certification requirements; students earning a master's degree must be eligible for recommendation for Alabama Class A music education (P-12) teaching certification.

**Nontraditional, Alternative Initial Teacher Certification Program.** The alternative certification master’s degree program is designed for students who have not completed an undergraduate degree in music education, but who possess an undergraduate degree in an area of music from a school accredited by the National Association of Schools of Music. It requires a minimum of 39 course credits as follows: (a) curriculum and teaching, 3 hours; (b) professional studies, 6 hours; (c) survey of special education, 3 hours; (d) technology, 3 hours; (e) evaluation of teaching and learning, 3 hours; (f) teaching reading or reading in content area, 3 hours; (g) music and music education, 12 hours; (h) internship, 6 hours. Some undergraduate prerequisites are also required. The fulfillment of all requirements leads to recommendation for the Alabama Class A teaching certificate in music education (P-12) and the master’s degree. Prior to an admission decision, students must request a formal written evaluation of all college-level coursework by the Office of Student Services and Certification; College of Education; Box 870231; Tuscaloosa, AL 35401; (205) 348-6073. Information about the request for evaluation can be found at www.education.ua.edu, from the Office of Student Services and Certification link, or by contacting that office.

**Ed.S. in Curriculum & Instruction (Music Education option).** A minimum of 30 hours of appropriate work beyond the M.A. degree, including completion of a research project, is required for the educational specialist (Ed.S.) degree. The fulfillment of these requirements leads to the Alabama Class AA certificate in music education (P-12). The total hours of graduate work, including the M.A. degree, must be 60 hours. Students who are pursuing certification options must be certain their programs of study meet all certification requirements according to programs approved by the Alabama Department of Education. Courses used to qualify for a lower level supporting certificate cannot be used again in a higher level certification program.
**Ed.D. in Curriculum & Instruction** (Music Education option). The doctor of education degree in curriculum and instruction (music education option) is designed to include a broad field of study in a major area of specialization. Selection and sequence of courses are contingent on the skills, background, and professional goals of the student. Each student's program will include courses in music, music education, professional education, and research. Interested students should contact Music Education; Box 870366; Tuscaloosa, AL 35487-0366; (205) 348-6054; [www.musiceducation.ua.edu](http://www.musiceducation.ua.edu), or speak with a music education advisor.

**Ph.D. in Curriculum & Instruction** (Music Education option). The doctor of philosophy degree in curriculum and instruction (music education option) is designed to include a broad field of study in a major area of specialization. Selection and sequence of courses are contingent on the skills, background, and professional goals of the student. Each student's program will include courses in music, music education, professional education, and research. Interested students should contact Music Education; Box 870366; Tuscaloosa, AL 35487-0366; (205) 348-6054, [www.musiceducation.ua.edu](http://www.musiceducation.ua.edu), or speak with a music education advisor.

**General Requirements**

Before 12 hours of graduate study are completed in any graduate degree program, all music education graduate students are required to demonstrate professional competence in music theory and music history; to submit a tape of an ensemble performance or teaching sample; and, if requested, to perform a placement audition on the major instrument. Information about specific examinations can be obtained through the Music Education Office; Box 870366; Tuscaloosa, AL 35487-0366; (205) 348-6054; [www.musiceducation.ua.edu](http://www.musiceducation.ua.edu).

Graduate-level music education courses which meet requirements for specific State-approved certification programs (Class A, Class AA) are typically offered during summer sessions. Applicants for music education graduate degrees should anticipate that summer enrollment may be necessary to complete degree requirements. Questions concerning the rotation of course offerings should be directed to the Music Education Department; Box 870366; Tuscaloosa, AL 35487-0366; (205) 348-6054; [www.musiceducation.ua.edu](http://www.musiceducation.ua.edu).

The content of all graduate programs in music education is determined, in part, by the background and goals of the individual student. Each program will include graduate courses in music education (choral, instrumental, or general) and professional education, and may include studio courses and other graduate study as indicated by the student’s background and interests in consultation with his or her advisor. It is recommended that each student contact his or her advisor during the first term of graduate study in order to plan the program.

**Course Descriptions**

**MUE 500 Foundations of Music Education.** Three hours. Investigation of the purposes and functions of music education from antiquity to the present. Philosophical foundations and a chronological survey of historical issues related to the inclusion of music in general education will also be discussed.

**MUE 502 Sociology of Music and Music Education.** Three hours. This course explores the literature on sociological aspects of music and music education, including psychological, cultural and teacher role development.

**MUE 522 Curricular Trends in Elementary Music.** Three hours. Instructional materials, lesson planning, teaching practices and procedures, research, and the evaluation of pupil achievement.

**MUE 524 Advanced Studies in Teaching Music: Orff-Schulwerk, Kodaly and Dalcroze Approaches.** Three hours. This course explores instructional processes, philosophical foundations and related research of the Orff-Schulwerk, Kodaly and Dalcroze approaches to teaching music.

**MUE 525 Choral Techniques and Materials.** Three hours. Organization, rehearsal, programming and performance of choral groups.

**MUE 526 Instrumental Techniques and Materials.** Three hours. Organization, rehearsal, programming and performance of instrumental groups.

**MUE 528 Curricular Trends in General Music Education.** Three hours. Prerequisites: MUE 500 or permission of instructor. Analysis of current trends in general music and their influence on techniques and materials for P-12 and 2-year community colleges.

**MUE 530 Music Education Curriculum Theory and Development.** Three hours.
Analysis of music curricula and study of the development process.

**MUE 535 Curriculum Projects in Music Education.** One to three hours.  
The design, proposal, implementation, evaluation, and reporting of a curriculum project or an improved instructional procedure in music. Independent study.

**MUE 540 Research in Music Education.** Three hours.  
Introduction to research study in music education.

This course explores applied research methods in classroom management and psychology through examination of selected research studies and behavioral projects.

**MUE 560 Functional Instruments.** One-half to one hour.

**MUE 586 Marching Band Techniques.** Three hours.  
Prerequisites: graduate standing  
Fundamentals of marching, maneuvering, and preparation and presentation of formations. Offered spring and summer terms as needed.

**MUE 590 Seminar in Music Education.** One to three hours.  
Study of special topics in music education.

**MUE 591 Workshop in Music Education.** One to three hours.  
Special topics in music education focusing on in-class activities and materials directly applicable to general, band, and orchestra music instruction. Typically focused for practicing teachers, with the bulk of the expected work to be accomplished in class.  
MUE 597 Practicum in Music Education. Three to twelve hours.

**MUE 598 Non-thesis Research.** Variable credit.

**MUE 599 Thesis Research.** Variable credit

**MUE 600 Foundations of Music Education.** Three hours.  
Advanced investigation of the purposes and functions of music education from antiquity to the present. Philosophical foundations and a chronological survey of historical issues related to the inclusion of music in general education will also be discussed.

**MUE 602 Sociology of Music and Music Education.** Three hours.  
This course explores the literature on sociological aspects of music and music education, including psychological, cultural and teacher role development.

**MUE 625 Choral Techniques and Materials.** Three hours.  
Advanced organization, rehearsal, programming and performance of choral groups.

**MUE 626 Instrumental Techniques and Materials.** Three hours.  
Advanced organization, rehearsal, programming and performance of instrumental groups.

**MUE 628 Curricular Trends in General Music Education.** Three hours.  
Prerequisites: MUE 530, MUE 630, or permission of the instructor.  
Advanced analysis of current trends in general music and their influence on techniques and materials for P-12 and two-year community colleges. Offered according to demand.

**MUE 630 Music Education Curriculum Theory and Development.** Three hours.  
Prerequisite: Master's degree.  
Advanced analysis of music curricula and study of the development process.

**MUE 631 Music Education Curriculum Evaluation and Supervision.** Three hours.  
Prerequisites: Master's degree, and MUE 530, MUE 630, or permission of the instructor.  
Study and application of observation and measurement tools, and the use of evaluation in leading curriculum change. Offered according to demand.

**MUE 635 Curriculum Projects in Music Education.** One to three hours.  
Prerequisites: Master’s degree.  
The design, proposal, implementation, evaluation, and reporting of a curriculum project or an improved instructional procedure in music. Independent study.

**MUE 641 Advanced Research in Music Education.** Three hours.  
Prerequisites: MUE 540; graduate standing
The design, implementation and reporting of research studies that illustrate a variety of methodological and statistical plans for research in music education.

**MUE 650 Advanced Studies in Teaching Music: Classroom Management Using Behavioral Modification.**
Three hours.
This course explores applied research methods in classroom management and psychology through examination of selected research studies and behavioral projects.

**MUE 698 Non-thesis Research.** Three hours.

**MUE 699 Dissertation Research.** Variable credit. Three hour minimum.
11.1 GRADUATE STUDY IN COLLEGE OF ENGINEERING

Graduate work in the College of Engineering is administered jointly by the Graduate School, the College of Engineering, and various administrative subdivisions of the College of Engineering. The Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (the national accrediting agency for engineering curricula) has examined and accredited all of the professional engineering undergraduate curricula. The undergraduate program in computer science is accredited by the Computer Science Accreditation Commission of the Computing Sciences Accreditation Board, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the U.S. Department of Education.

Graduate degrees.
The College of Engineering offers the following graduate degrees:

Master of Science in aerospace engineering, chemical engineering, civil engineering, computer science, electrical engineering, engineering (environmental engineering), engineering science and mechanics, mechanical engineering, and metallurgical engineering

Doctor of Philosophy in the fields of chemical engineering, civil engineering, computer science, electrical engineering, engineering science and mechanics, mechanical engineering, and materials/metallurgical engineering (the Ph.D. in materials/metallurgical engineering is offered jointly with The University of Alabama at Birmingham)

Joint interdisciplinary Ph.D. program in materials science.
A Ph.D. degree in the field of materials science is also offered, in collaboration with The University of Alabama at Birmingham and The University of Alabama in Huntsville. Full details of the program and its admission requirements may be found in this catalog in the section "Interdisciplinary Programs."
11.2 ADMISSION REQUIREMENTS

Applicants for graduate work in engineering must apply for admission to the Graduate School of the University. All applicants are required to submit a statement of purpose; there are no exceptions. Regular admission to graduate study may be granted to applicants who

- have earned baccalaureate degrees from institutions with programs accredited by the Accreditation Board for Engineering and Technology (ABET) or, for applicants for computer science programs, programs accredited by ABET or the Computing Sciences Accreditation Board (CSAB)
- have overall grade point averages of at least 3.0 on a 4.0 scale, or at least 3.0 for the last 60 hours completed

Each applicant is required to submit a statement of purpose as part of the application packet; there are no exceptions.

Other appropriate requirements may be established by the individual engineering departments.

Regular admission may also be granted to applicants who are not graduates of ABET- or CSAB-accredited programs and who have Graduate Record Examination general test scores of 1000 or higher, as specified by the department of interest. Each applicant should have the equivalent of a 3.0 or higher grade point average (as in requirements listed above). Other appropriate requirements may be established by the individual engineering departments.

International Admission. International applicants for engineering graduate programs must satisfy the above requirements and must also have TOEFL scores of at least 550 or IELTS score of at least 6.5. The student’s proposed plan of study shall include a schedule for removing any undergraduate course deficiencies.

Conditional Admission. Conditional admission may be granted to applicants who

- have earned baccalaureate degrees from institutions with programs accredited by the Accreditation Board for Engineering and Technology (ABET) or, for applicants for computer science programs, institutions accredited by ABET or the Computing Sciences Accreditation Board (CSAB)
- have overall grade point averages of at least 2.5 on a 4.0 scale

Other appropriate requirements may be established by the individual engineering departments.

Conditional admission may be granted to applicants who are not graduates of ABET- or CSAB-accredited programs and who have Graduate Record Examination general test scores of 1000 or higher, as specified by the department of interest. Each applicant should have the equivalent of a 2.5 or higher grade point average (as in requirements listed above). Other appropriate requirements may be established by the individual engineering departments.

A student admitted conditionally is required to maintain a "B" average for the first 12 semester hours of graduate coursework and to remove any conditions imposed for admission in order to continue graduate study.

Applicants with GPAs of less than 2.5 (out of a possible 4.0) may be considered for admission to the Graduate School only after demonstrating the ability to pursue advanced work successfully.

Advisement and Committees. After admission to graduate study by the dean of the Graduate School, the student will be referred to the head of the appropriate department for assignment to a temporary advisor. The chairman and other members of the graduate student's supervisory committee are usually appointed during the first term of enrollment. The examining committee (the membership of which is normally the same as that of the supervisory committee) is appointed approximately one semester before the student expects to graduate.
11.3 MASTER OF SCIENCE DEGREES

Master of science degrees with appropriate designations are conferred on those students who satisfy the requirements of (a) the programs or departments in which they are enrolled, (b) the College of Engineering, and (c) the Graduate School (as described in the "Master's Degree" section of the Graduate Catalog). Any requirements established by the individual departments are outlined in the departmental information that follows.

**Master of science degree requirements.** Minimum requirements for the master's degree in all programs are 24 semester hours of acceptable coursework under Plan I or 30 hours under Plan II. Specific course requirements (in addition to those established by the Graduate School) are as follows:

1. The greater of 12 hours or 25% of the required coursework for a master's degree may be transferred, subject to the approval of the appropriate faculty. Average grade must be at least "B."
2. Engineering courses numbered 400 to 499 (offered primarily for senior undergraduates) may be taken for graduate credit with prior approval of the student's supervisory committee. A maximum of 6 semester hours of 400-level course credit may be accepted for a master's degree (see p. 110). To receive graduate credit for such courses, a minimum grade of "B" must be made in courses in the student's major field of study, and a minimum grade of "C" in courses outside the major field. Courses numbered 500 to 599 are offered primarily for master's students. Courses numbered 600 to 699 are offered primarily for students beyond the master's level.
3. Students will be expected to have received credit for MATH 238 Applied Differential Equations prior to admission, or to complete the course with a passing grade after admission (no graduate credit will be awarded), unless they are enrolled in the computer science program.
4. All courses are selected by the student with the approval of the student's supervisory committee. If there are deficiencies in undergraduate subjects, the student's supervisory committee may require additional coursework to correct them.
5. Under no circumstances will graduate credit be given for courses numbered below 400.
6. Under both Plan I and Plan II, students must pass a final comprehensive examination on the content of the degree program. (See "Comprehensive Examinations" in the "Academic Policies" section of this catalog.)
7. The application for admission to candidacy for the master's degree may be filed with the Graduate School after 12 semesters hours of graduate credit have been completed.

**M.S.E. (environmental engineering) degree requirements.** The interdisciplinary master of science in engineering program in environmental engineering is administered by the Department of Civil and Environmental Engineering; inquiries should be directed to the director of the Environmental Engineering Program, Box 870205, Tuscaloosa, AL 35487-0205. The program is open to persons with baccalaureate degrees who have completed at least one year's work in chemistry, mathematics through differential equations, and an engineering mechanics sequence through fluid mechanics. These prerequisites and others may be satisfied by completing appropriate coursework for nongraduate credit.

The versatile M.S.E. (environmental engineering) program uses environmental engineering courses offered by the College of Engineering and appropriate courses in biology, chemistry, geology, and microbiology. A list of courses approved for inclusion in the environmental engineering major is available upon request. The flexibility of the degree requirements permits a student to follow a course of study designed to suit individual interests and needs. Degree requirements are as follows:

1. For Plan I students, 24 semester hours of approved environmental coursework and a minimum of 6 additional semester hours of credit in CE 599 Thesis Research is required, along with an approved
completed thesis. For Plan II students, 30 semester hours of approved environmental coursework is required. It is expected that master’s students will pursue the Plan I (thesis) option. The Plan II (nonthesis) option may be pursued only with approval of the faculty of the department. Students wishing to pursue the Plan II option must formally petition the department faculty to be considered for approval and must present substantial reasons for seeking the variance.

2. No more than 6 hours at the 400 level can be applied to this program.

3. One course in air pollution and one course in water pollution are required.

Master of science in AE, CHBE, CE, ECE, ESM, IE, ME, or MTE degree requirements. Each student pursuing one of these master’s degrees must satisfactorily complete the following minimum requirements:

1. Under both Plan I and Plan II, each student must complete 18 hours of graduate courses (500 or above) in the major field; under Plan I, 6 of these hours may be thesis research credit.

2. Six hours of approved electives must be completed.

3. Under Plan I, an approved thesis must be completed; a minimum of 6 semester hours of credit in 599 Thesis Research is required for Plan I students.
11.4 DOCTOR OF PHILOSOPHY DEGREE

Doctor of Philosophy students in each College of Engineering department with a Ph.D. program must meet minimum course requirements and all other requirements described in the “Doctoral Degrees” section of the Graduate Catalog. The requirements include, but are not limited to, submission of a plan of study to the Graduate School by the time the student completes 30 graduate hours of UA and/or transfer course work for the doctoral degree.

Under no circumstances will graduate credit be given for courses numbered below 400. No 400-level credit (except the 6 hours maximum accepted for a master's program) may be accepted for a doctoral degree program (see p. 110). Candidates for the Ph.D. should contact their departments for information about foreign language/research skill requirements. For further information see "Research Skill/Language Requirements" in the "Academic Policies" section of this catalog.

http://graduate.ua.edu/catalog/23600.html
11.5 COOPERATIVE EDUCATION PROGRAM

Graduate students in the College of Engineering may choose to pursue their studies under a cooperative plan of education. The program is necessarily flexible, so that the study-work experience schedule will meet the needs of individual students. The availability of the cooperative plan will be dependent on the ability of the University to secure employment of a type that is approved by the student's graduate committee.

A student in the Cooperative Education Program should be able to complete all requirements for the M.S. degree in two years. The schedule for Ph.D. candidates is arranged, in cooperation with the participating industry, to fit the needs of the individual student.
11.6.1 GENERAL ENGINEERING STUDIES (GES)

Graduate courses are offered on a regular basis in some departments, as indicated in the course listings. However, all graduate courses are taught only upon sufficient demand. In the following course listing, each description contains a set of parentheses immediately preceding the semester hours. The first number within the parentheses indicates the number of contact hours per week in lecture, recitation, or seminar. The second number indicates the number of contact hours per week in laboratory.

The College of Engineering requires that a grade of "C" or better be earned in all prerequisite courses.

Course Descriptions

GES courses are interdisciplinary and may be taken to meet individual program requirements.

GES 400 Engineering Statistics. (3-0) Three hours. (Mechanical engineering.)
Prerequisite: MATH 126. Not open to students who have earned credit for GES 255; not available for credit to industrial engineering or computer science graduate students.
Probability and basic statistical concepts. Discrete and continuous distributions; the central limit theorem; sampling distributions; point and interval estimation; hypothesis testing; regression and correlation analysis; analysis of variance.

GES 401 Operations Research. (3-0) Three hours. (Civil, construction, and environmental engineering.)
Prerequisite: Math 126.
Corequisites: GES 255, GES 400 or GES 500.
Model construction, linear programming, network models, dynamic models, stochastic models, queuing theory, and decision theory.

GES 418 Engineering Management. (3-0) Three hours. Same as IE 418. (Civil, construction, and environmental engineering.)
Prerequisite: Junior Standing.
An introduction to management principles and the management functions of planning, organizing, motivating, and controlling. Management of research, design, manufacturing, and quality will be studied.

GES 449 Radiation Safety. (3-0) Three hours. (Electrical and computer engineering.)
Prerequisites: MATH 125 and either PH 102 or PH 106.
Radiations and their interactions with matter; radiation detection, biological effects, current radiation units, and regulations.

GES 451 Matrix and Vector Analysis. (3-0) Three hours. (Aerospace engineering/mechanics.)
Prerequisite: MATH 238.
Determinants and matrix algebra; linear simultaneous equations; eigenvalues and eigenvectors; matrix functions; computer techniques; vector algebra and calculus; and integral theorems. Offered fall semester and in summer school.

GES 452 Complex Variables. (2-0) Two hours. (Aerospace engineering/mechanics.)
Prerequisite: MATH 238.
Use of complex variables in engineering; analytic functions, integrals, series, residues, and poles; conformal mapping with applications.

GES 491:492 Special Problems (Area). Variable credit.
Assigned individual problems. Credit awarded is based on the amount of work undertaken.

GES 500 Engineering Statistics. (3-0) Three hours. (Mechanical engineering.)
Prerequisite: MATH 126. Not open to students who have earned credit for GES 255 or GES 400; not available for M.S.I.E. or M.S.C.S. degree credit.
Probability and basic statistical concepts. Discrete and continuous distributions; the central limit theorem; sampling distributions; point and interval estimation; hypothesis testing; regression and correlation analysis; analysis of variance.

GES 501 Operations Research. (3-0) Three hours. (Civil, construction, and environmental engineering.)
Prerequisite: MATH 126.
Corequisite: GES 255, GES 400, or GES 500. Not open to students who have earned credit for IE 363; not available
for M.S.I.E. degree credit.
Model construction, linear programming, network models, dynamic models, stochastic models, queueing theory, and decision theory.

GES 518 Engineering Management. (3-0) Three hours. Same as IE 518. (Civil, construction, and environmental engineering.)
Prerequisite: Graduate standing.
An introduction to management principles and the management functions of planning, organizing, motivating, and controlling. Management of research, design, manufacturing, and quality will be studied.

GES 522 Quality Engineering. (3-0) Three hours. Same as IE 522. (Mechanical engineering.)
Prerequisite: GES 257 or GES 400, or GES 500.
Introduction to Taguchi methods, including loss function, orthogonal arrays, and parameter design experiments. Role of Taguchi methods in quality function deployment (QFD) process.

GES 526 Design and Analysis of Experiments. (3-0) Three hours. Same as IE 526. (Mechanical engineering.)
Prerequisite: GES 257, GES 400, or GES 500. Not open to students who have earned credit for IE 426.
Design of experiments and the application of analysis of variance, regression analysis, and related statistical methods.

GES 549 Radiation Safety. (3-0) Three hours. (Electrical and computer engineering.)
Prerequisites: MATH 125 and either PH 102 or PH 106.
Radiations and their interactions with matter; radiation detection, biological effects, current radiation units, and regulations.

GES 551 Matrix and Vector Analysis. (3-0) Three hours. (Aerospace engineering/mechanics.)
Prerequisite: MATH 253 or permission of the instructor.
This course provides a graduate level overview of linear algebra and vector analysis. Topics covered include; linear simultaneous equations, eigenvalues and eigenvectors, matrix functions, computer techniques, and transformations, vector calculus, the Laplacian, and integral theorems such as the theorems of Green and Stokes.

GES 554 Partial Differential Equations. (3-0) Three hours. (Aerospace engineering/mechanics.)
This course examines the solution of partial differential equations by focusing on three specific equations: (1) the heat equation, (2) the wave equation, and (3) Laplace's equation. Topics covered include: Fourier transforms, Sturm-Liouville problems, classification of partial differential equations, Bessel functions, and numerical methods for solving partial differential equations.

GES 575 Stochastic Processes. (3-0) Three hours. Same as ECE 575. (Electrical and computer engineering.)
Prerequisite: GES 500.
Engineering applications of probability theory; problems on sequences of random variables, convergence, stochastic processes, stationarity, ergodicity, correlation function, spectral densities, linear systems with random inputs, design of filters and predictors, Markov processes.

GES 585 Genetic Algorithms. (3-0) Three hours. 
Prerequisite: CS 110 or CS 114 and graduate standing.
Theory and application of genetic algorithms. Computer implementation and current applications in parameter and combinatorial optimization and optimal control genetics-based machine learning systems. Focus on both fundamental theory and modern applications.

GES 640 Electromagnetic Field Theory I. (3-0) Three hours. Same as ECE 640. (Electrical and computer engineering.)
Prerequisite: ECE 340.
Application of Maxwell's equations to problems of electrical engineering; boundary-value problems, wave propagation, waveguides, radiation, and scattering; and surface waves.

GES 641 Electromagnetic Field Theory II. (3-0) Three hours. Same as ECE 641. (Electrical and computer engineering.)
Prerequisite: ECE 640 or GES 640.
Plane, cylindrical, and spherical wave functions; scattering by wedges, cylinders, and spheres; radiation from aertures; perturbational and variational techniques; microwave networks.

GES 647 Acoustic Wave Theory. (3-0) Three hours. Same as ECE 647. (Electrical and computer engineering.)
Prerequisite: GES 554 or MATH 541.
Linear acoustic wave equation, radiation and scattering, Kirchoff-Helmholtz integral theorem, waveguides, stratified media, high-frequency asymptotics.

GES 649 Numerical Methods in Electromagnetics. (3-0) Three hours. Same as ECE 649. (Electrical and computer engineering.)
Prerequisite: ECE 541 or PH 531.
Formulation and computer solution of electromagnetic boundary value problems and integral equations; moment...
method relation to finite-element method and variational techniques; and applications to radiation, scattering, and guided wave geometries.

GES 658 Applied Numerical Methods. (3-0) Three hours. (Aerospace engineering/mechanics.)
Prerequisites: GES 451 and MATH 238.
Condensed coverage of numerical methods essential in engineering: interpolation, integration, root calculation, matrix algebra, eigenvalue problems, matrix differential equations, two-point boundary value problems, least square approximation, Fast Fourier Transforms, and optimization methods. Emphasis is on applications with extensive FORTRAN programming.

GES 695:696 Seminar. (1-0) One hour.
The department offers programs leading to the degrees of master of science in aerospace engineering, master of science in engineering science and mechanics, and the doctor of philosophy degree in engineering science and mechanics.

**Research.** A vigorous program of research is conducted by the faculty and students. The department houses excellent laboratory facilities and advanced computer facilities, including wind tunnels, flight simulators, extensive servo-hydraulic materials and structural testing equipment, engineering workstations, and artificial intelligence laboratories.

Major research laboratories include the Flight Dynamics Laboratory, Intelligent Control Laboratory, Aircraft Structures Laboratory, the Compressible Flow Laboratory, the Hypersonic Research Laboratory, the Impact and Penetration Mechanics Laboratory, Multiaxial Durability Laboratory, Spot Weld Manufacturing Laboratory, Composite Materials Laboratory, Navigation Laboratory, MEMS Fabrication Facility, Vibration Condition Monitoring Laboratory, Computational Mechanics Laboratory, and the Aerospace Dynamics and Control Laboratory.

Some current research projects include theoretical and experimental studies in a variety of areas, including aerodynamics, computational fluid mechanics and heat transfer, numerical methods for solidification, buckling of thin-walled shell structures, fracture mechanics, multiaxial fatigue of spot welds and automotive structures, low-cycle fatigue, high-strain rate flow studies, penetration mechanics, improved finite-element methods for thermal and structural analysis, computer simulation of aircraft and missile performance, dynamic response of rapid transit vehicles, solid rockets, flight dynamics, aircraft reliability, aerospace dynamics and control, aeroelasticity, aeroacoustics of missiles and space launch vehicles, condition monitoring in electro-mechanical systems and composites materials.

Graduate and undergraduate research assistantships are available for many of these research projects.

**Admission Requirements**
Admission requirements are outlined in the "Academic Policies" section of this catalog.

**Degree Requirements**
A list of current degree requirements and additional information can be found on the Department of Aerospace Engineering and Mechanics website: [http://aem.eng.ua.edu](http://aem.eng.ua.edu). The following departmental requirements are in addition to those specified by the College of Engineering and University.

**M.S. in Aerospace Engineering.** At least 18 hours of AEM-designated courses are required. The following core courses are required:

- Two courses selected from a list of mathematics and engineering analysis offerings; AEM 585 Genetic Algorithms or AEM 587 Neural Networks may be substituted for one mathematics course (Mathematics)
- AEM 500 Intermediate Fluid Mechanics (Aerodynamics)
- AEM 635 Finite Element Method (Structures)
- AEM 668 Advanced Dynamics of Flight (Flight Dynamics)

A “B” average in the core courses is a departmental requirement for graduation. Additionally, one of the following
areas is chosen as a field of specialization: (a) flight dynamics, controls, and simulation, (b) flight vehicle structures and materials, or (c) aerodynamics and propulsion, and a depth of study (two additional courses) is required in one of the areas above.

**M.S. in Engineering Science and Mechanics.** At least 18 hours of AEM-designated courses are required. The following core courses are required:

- GES 554 Partial Differential Equations and one course selected from a list of mathematics and engineering analysis offerings, AEM 585 Genetic Algorithms, or AEM 587 Neural Networks (Mathematics)
- AEM 500 Intermediate Fluid Mechanics (Fluid Mechanics)
- AEM 637 Theory of Elasticity (Solid Mechanics)
- AEM 562 Intermediate Dynamics (Dynamics)

A "B" average in the core courses is a departmental requirement for graduation. Additionally, one of the following areas is chosen as a field of specialization: (a) solid mechanics, (b) fluid mechanics, or (c) dynamics and a depth of study (two additional courses) is required in one of the areas above.

**Doctor of Philosophy in Engineering Science and Mechanics.** The Ph.D. is primarily a research degree. Courses are to be selected in consultation with the student's supervisory committee. The following core courses are required:

- GES 554 Partial Differential Equations and one course selected from a list of mathematics and engineering analysis offerings, AEM 585 Genetic Algorithms, or AEM 587 Neural Networks (Mathematics)
- AEM 500 Intermediate Fluid Mechanics (Fluid Mechanics)
- AEM 637 Theory of Elasticity (Solid Mechanics)
- AEM 562 Intermediate Dynamics (Dynamics)

A "B" average in the core courses is a departmental requirement for graduation. Additionally, one of the following areas is chosen as a field of specialization: (a) solid mechanics, (b) fluid mechanics, or (c) dynamics.

**Course Descriptions (AEM)**

**AEM 404 Integrated Aerospace Design II.** (1-6) Three hours.
Prerequisite: AEM 402.
Preliminary and detailed design of aircraft and space vehicles, including weight and balance, power plant selection, exterior layout, performance, stability, and control. Includes group efforts on selected projects.

**AEM 414 Experimental Aerodynamics.** (3-0) Three hours.
This course provides a laboratory counterpart to concepts discussed in aerodynamics AEM 313/413 as well as fluid mechanics AEM 311. Course topics include statistical and uncertainty analysis techniques, design of experiments, computer-based data acquisition, LabVIEW, sensors for fluid mechanic measurements, and aerodynamic measurement techniques and facilities.

**AEM 420 Fluid Transients.** (3-0) Three hours. Same as ME 420.
Prerequisites: MATH 238 and AEM 311.
Introduction to the basic mathematical concepts, engineering problems, and solution techniques associated with transient behavior of fluid systems. Analysis and design of systems to control undesirable transients.

**AEM 451 Structural Design and Testing.** (3-3) Four hours.
Prerequisite: AEM 341.
Design of tension, compression, bending, torsion, and stiffened panel members. Experimental and analytical investigations involving static and dynamic structural behavior. Writing proficiency is required for a passing grade in
this course.

AEM 455 Mechanical Behavior of Materials. (3-0) Three hours. Same as MTE 455.
Prerequisite: AEM 250.
Flow and fracture of solids; uniaxial tensile stress-strain as a reference behavior; and theories of terminal instability under impact, monotonic, sustained (creep), and repeated (fatigue) loadings of solids under various states of stress.

AEM 470 Mechanical Vibrations. (3-0) Three hours. Same as ME 470.
Prerequisites: AEM 250 and AEM 372.
For description, see ME 470.

AEM 471 Fundamentals of Acoustics. (3-0) Three hours. Same as ME 471.
Prerequisites: MATH 238, PH 106, and ECE 320 or ECE 225.
Fundamental physical principles underlying wave propagation and resonance in mechanical systems; introduces applications and provides experience in acoustic and audio measurements and the associated instrumentation.

AEM 475 Control Systems Analysis. (3-0) Three hours.
Prerequisite: AEM 372.
Classical feedback control system analysis; block diagrams, state variables, stability, root locus, and computerized analysis. Includes an introduction to modern control techniques.

AEM 491:492 Special Problems (Area). Variable credit.
Assigned problems are explored on an individual basis. Credit is based on the amount of work undertaken.

AEM 500 Intermediate Fluid Mechanics. (3-0) Three hours.
Prerequisites: MATH 238, ME 215, and AEM 311.
Development and use of the integral and differential forms of the equations of continuity, momentum, and energy with ideal fluids and compressible fluids. Advanced topics in fluid mechanics, including potential flow, boundary layer flow, compressible flow, and open channel flow.

AEM 502 V/STOL Aerodynamics. (3-0) Three hours.
Theory and design techniques applicable to hovering and slow-flying vehicles.

AEM 503 Intermediate Gas Dynamics. (3-0) Three hours. Same as ME 503.
Prerequisites: ME 215 and AEM 311.
For description, see ME 503.

AEM 513 High-Speed Aerodynamics. (3-0) Three hours.
Fundamentals of high-speed aerodynamics theory along with basic high-speed vehicle design.

AEM 516 Helicopter Theory. (3-0) Three hours.
Critical examination of the propulsive airscrew, including induced velocity relations, flow patterns, and similarity. Practical applications approached through existing theory and practice.

AEM 523 Principles of Simulation. (3-0) Three hours.
Corequisite: AEM 368, AEM 566, or AEM 668.
An overview of man-in-the-loop, real-time simulation. Includes survey of modeling, digital image generation, projection systems, principles of optics, vibration and motion cueing, and control loading. Issues of computer architecture and system integration and of fidelity and latency are discussed. The simulator in the Flight Dynamics Laboratory is used for illustration.

AEM 525 Spacecraft Attitude Dynamics and Control. (3-0) Three hours.
Prerequisite: AEM 368, AEM 372/ME 372, or ECE 475.
This course introduces the student to the theory and practice of spacecraft dynamics and control. Topics covered include kinematics and dynamics of angular motion, spacecraft stabilization, attitude control devices, and design of linear and nonlinear spacecraft control systems.

**AEM 528 Space Propulsion.** (3-0) Three hours.
Prerequisite: AEM 408/ME 308.
Descriptions and analyses of space and launch vehicle propulsion. Topics covered include advanced schemes such as nuclear, solar, and laser propulsion; power cycles; and tether systems.

**AEM 546 Intermediate Solid Mechanics.** (3-0) Three hours.
Prerequisites: MATH 238 and AEM 250.
Two-dimensional theory of elasticity; exact and approximate solutions of bending, torsion, and buckling for bars; open sections and curved beams; stresses in axisymmetric members; and finite-element and energy methods.

**AEM 552 Composite Materials.** (3-0) Three hours.
Prerequisites: AEM 250 and one other course in structures.
Mechanisms and influence of heterogeneity/anisotropy on thermomechanical behavior. The behavior, manufacturing, and test methods of continuous fiber reinforced polymeric composites are emphasized.

**AEM 554 Engineering Reliability.** (3-0) Three hours.
Prerequisite: AEM 250.
Fundamental concepts and applications of probabilistic approach to engineering design.

**AEM 556 Strengthening Mechanisms in Metallic Materials.** (3-0) Three hours.
Prerequisite: AEM 455.
For description, see MTE 556.

**AEM 562 Intermediate Dynamics.** (3-0) Three hours.
Prerequisites: MATH 238 and AEM 264.
Dynamics of systems in moving coordinate frames; Lagrangian formulation and Hamilton's principle; stability and perturbation concepts for rigid body motion; motion of systems of rigid bodies in three dimensions.

**AEM 566 Dynamics of Flight.** (3-0) Three hours.
Prerequisites: AEM 368 and AEM 249.
Introduction to the dynamics of flight vehicles; equations for static and dynamic equilibrium; criteria for stability, controllability, and maneuverability.

**AEM 567 Fundamentals of Orbital Mechanics.** (3-0) Three hours.
Fundamentals of astrodynamics and orbital mechanics.

**AEM 570 Theory of Vibrations.** (3-0) Three hours. Same as ME 570.
Prerequisites: MATH 238 and AEM 264.
Vibrations of multiple degree of freedom and elastic continuous systems; application of Hamilton's principle; Lagrange's equations; finite element method.

**AEM 571 Fundamentals of Acoustics.** (3-0) Three hours. Same as ME 571.
Prerequisites: MATH 238, PH 106, and ECE 320 or ECE 225.
Fundamental physical principles underlying wave propagation and resonance in mechanical systems; introduces applications and provides experience in acoustic and audio measurements and the associated instrumentation.

**AEM 574 Structural Dynamics.** (3-0) Three hours.
Prerequisites: AEM 349, AEM 372, and AEM 451, or by consent of the instructor.
Fundamental methods for predicting the dynamic response of structures.
AEM 577 Advanced Linear Control. (3-0) Three hours. Same as ECE/ME 577.
Prerequisite: ECE 475.
For description, see ECE 577.

AEM 578 Nonlinear Control Systems. (3-0) Three hours. Same as ECE 674/ME 578.
Prerequisite: ECE 475.
For description, see ECE 674.

AEM 579 Introductory Computational Aerodynamics. (3-0) Three hours.
Fundamentals of computational aerodynamics.

AEM 585 Genetic Algorithms in Optimization and Machine Learning. (3-0) Three hours.
Prerequisites: CS 110, or CS 114 and graduate standing.
Theory and application of genetic algorithms. Computer implementation and current applications in parameter and
combinatorial optimization and optimal control genetics-based machine learning systems. Focus on both fundamental
theory and modern applications.

AEM 587 Neural Networks. (3-0) Three hours. Same as ECE 587.
Prerequisite: Graduate standing or CS 114, CS 513.
Theory, implementation, and applications of learning automata and neural networks. Early applications from
psychology and biology; current applications in engineering and machine learning, theory of simple networks, and
introduction to complex, modern paradigms.

AEM 591:592 Special Problems. Variable credit.
Independent investigations of special problems. Credit is based on the amount of work undertaken.

AEM 594 Special Project. Two to six hours.
Planning, executing, and presenting results of individual project involving a research design, analysis, or similar
undertaking.

AEM 598 Research Not Related to Thesis. One to three hours.

AEM 599 Master's Thesis Research. One to six hours.

AEM 602 Advanced Fluid Mechanics. (3-0) Three hours.
Prerequisite: AEM 500.
Potential motion in two and three dimensions, conformal mapping, application of Schwartz-Christoffel transformation,
virtual mass, and approximate methods.

AEM 604 Compressible Flow Theory. (3-0) Three hours.
Prerequisite: AEM 313 or AEM 503.
For description, see ME 504.

AEM 610 Aerodynamic Heating. (3-0) Three hours.
Radiative and convective aerodynamic heating at hypersonic speeds in real, low, and high-density atmospheres;
includes resistive, ablative, transpiration, and heat capacity thermal protection techniques.

AEM 612 Advanced Experimental Aerodynamics. (2-3) Three hours.
Compressible flow, measurement of pressure, Mach number, temperature, density, turbulence, and heat transfer.
Some experimental work and illustration of the uses of modern wind tunnel instruments.

AEM 614 Airfoil and Wing Theory. (3-0) Three hours.
Compressible and incompressible airfoil and wing theory.

**AEM 620 Finite Difference Methods in Fluid Dynamics.** (3-0) Three hours. Same as ME 620.
Prerequisites: MATH 238 and AEM 311.
Introduction to basic mathematical concepts and engineering problems associated with numerical modeling of fluid systems. Application of state-of-the-art numerical models to engineering problems.

**AEM 621 Boundary Layer Theory I.** (3-0) Three hours. Same as ME 621.
Development of basic boundary layer equations and concepts. Classical incompressible solutions for laminar boundary layer, approximate solutions, and concepts of turbulence.

**AEM 622 Boundary Layer Theory II.** (3-0) Three hours. Same as ME 622/AEM 622.
Turbulent boundary layer theory; compressible boundary layer theory including shock interaction and heating effects; selected topics.

**AEM 624 Hypersonic Flow Theory.** (3-0) Three hours.
Nonlinear treatment of compressible flow, linearized theory, methods for blunt bodies, blast wave theory, numerical methods, and hypersonic wind tunnels.

**AEM 625 Computational Fluid Dynamics.** (3-0) Three hours.
Prerequisite: AEM 579.
Analyses of aerodynamic flow problems using a digital computer.

**AEM 628 Molecular Aerothermodynamics.** (3-0) Three hours.
Understanding gas flows and reactions by developing gas properties from an analysis of molecular interactions.

**AEM 630 Continuum Mechanics.** (3-0) Three hours.
Cartesian tensors applied to develop concepts of stress and deformation in continua. Equations of motion resulting from Newton’s laws, constitutive laws for particular solids, and boundary value problems in stress analysis and stability.

**AEM 635 Finite-Element Method in Engineering Mechanics.** (3-0) Three hours.
Prerequisites: MATH 238 and AEM 250, or permission of the instructor.
Finite-element formulations in the areas of solid mechanics, fluid mechanics, and heat conduction; isoparametric elements; assembly process; solution of stiffness equations; and convergence of results.

**AEM 637 Theory of Elasticity.** (3-0) Three hours.
Corequisite: GES 551.
Equations of linear elasticity, principal stresses and strains, stress and displacement potentials, energy principles, and numerical methods. Boundary value problems of elasticity.

**AEM 638 Introduction to Experimental Mechanics.** (2-3) Three hours.
Theory and application of electrical resistance strain gauges for stress analysis and for use as transducers. Study of circuits and instruments used for strain measurement. Theory and application of photoelasticity for measurement of stress. Fundamentals of servohydraulic testing.

**AEM 639 Aircraft Shell Structures.** (3-0) Three hours.
Theoretical analysis of plane and curved web shell structures. Diagonal tension, shear lag, multi-stringer cells, and cutouts. Theoretical analyses are correlated with available experimental evidence to obtain the most effective use of the combined knowledge for practical applications.

**AEM 640 Advanced Topics in Continuum Mechanics.** (3-0) Three hours.
Prerequisite: AEM 630.
Kinematics of finite deformation; principles of mechanics; principles of frame indifference and objectivity; theory of viscoelasticity; creep and viscoplastic model; and applications in large deformation.

AEM 641 Applied Elasticity. (3-0) Three hours.
Structural analysis as a unified theory based on the principle of virtual displacements. Minimal principles of structural theory and applications to beam columns, sandwich-type beams, and cables; the Rayleigh-Ritz method, Galerkin's method, and trigonometric series solutions.

AEM 642 Structural Behavior of Flight Vehicle Configurations. (3-0) Three hours.
Application of classical and modern numerical methods for predicting the strength, stability, and stiffness of typical aerospace structures. Includes treatment of stiffened plate and shell structures, composite materials, and determination of postbuckled configurations for selected geometries.

AEM 643 Selected Topics in Structural Analysis. (3-0) Three hours.
Selected topics in nonlinear static and dynamic stability of elastic and inelastic structures. Advanced numerical techniques of solution for large systems of differential, integral, and algebraic equations governing the linear and nonlinear behavior of structures.

AEM 644 Engineering Fracture Mechanics. (3-0) Three hours.
Prerequisites: GES 554 and AEM 637.
Linear elastic and elastic-plastic fracture mechanics. Fracture analysis using Griffith's criterion, stress intensity factors, CTOD methods, and the J-Integral.

Prerequisite: AEM 635.
Basic concepts, reduced integration with hourglass control, Navier-Stokes equations, eigenvalue problems, beam and plate elements, time integration, adaptive methods, nonlinear solid mechanics. Familiarization with general purpose codes.

AEM 646 Theory of Plates and Shells. (3-0) Three hours.
Prerequisites: AEM 635 and AEM 637.
Linear and nonlinear theories of plates and shells, analytic solutions of rectangular, circular plates and cylindrical shells and shells of revolution. Application of finite-element method to plates and shells.

AEM 648 Theory of Plasticity. (3-0) Three hours.
Prerequisite: AEM 637.
Fundamentals of inelastic behavior of solids. Basic stress-strain relations for plastic action, yield criteria of metals, plastic instability, and slip-line field theory. Applications to axial, flexural, torsional, and cylindrically symmetric loads.

AEM 649 Fatigue Analysis. (3-0) Three hours.
Presentation of the strain life and fracture mechanics approaches to fatigue analysis. Review of damage parameters, mean stress effects, and cycle counting methods for uniaxial and multiaxial loading.

AEM 653 Variational Methods in Mechanics. (3-0) Three hours.
Prerequisite: GES 554.
Survey of variational principles and methods in mechanics.

AEM 655 Advanced Composite Materials. (3-0) Three hours.
Advanced topics in composite materials, including theories of linear orthotropic elasticity, micro-mechanics of composites, nano-composites, and sandwich structures.

AEM 663 Chaotic Dynamics. (3-0) Three hours.
Prerequisite: GES 551.
Phase space concepts of nonlinear systems; equilibrium points, limit cycles, and strange attractors; chaotic behavior, Lyapunov exponents, and fractal dimension.

AEM 665 Advanced Structural Dynamics. (2-3) Three hours.
Theoretical and experimental methods for the dynamic analysis of structures.

AEM 667 Astrodynamics II. (3-0) Three hours.
Transfer orbits, orbital perturbations, multiple body problems, numerical treatments of n-body problems, propulsion, and powered system dynamics.

AEM 668 Advanced Dynamics of Flight. (3-0) Three hours.
Analysis of the rigid body dynamic motions of an aircraft; response of an airplane to actuation of controls; introduction to automatic control and stability; introduction to vehicle simulation by digital computer.

AEM 669 Principles of Guidance and Navigation. (3-0) Three hours.
Prerequisite: AEM 368 or AEM 566.
Gyroscopes as aircraft attitude indicating devices and as components of inertial navigation systems; Newton’s laws applied in various rotating and fixed reference frames used in guidance and navigation; space integrator and Schuler tuning; local geographic coordinate navigation for aircraft; semi-analytic navigation for missile guidance; and analytic (strap down) guidance systems.

AEM 670 Advanced Vibrations. (3-0) Three hours.
Prerequisites: MATH 238 and AEM 264.
Vibrations of multiple-degree-of-freedom and elastic continuous systems; application of Hamilton’s principle; Lagrange’s equations; and finite-element method.

AEM 672 Intelligent Control. (3-0) Three hours. Same as ECE 672.
Prerequisite: AEM 577/ECE 577/ME 577.
Mathematical and theoretical foundations for intelligent control methods and their combination with current practices. Real-world applications.

AEM 674 Introduction to Aeroelasticity. (3-0) Three hours.
Prerequisites: Permission of the instructor.
Interactions between static/dynamic structural deformation and steady/unsteady aerodynamic loading; control reversal, divergence and flutter; aeroelastic tailoring and aeroservoelasticity.

AEM 677 Optimal Control. (3-0) Three hours. Same as ECE 677/ME 677.
Prerequisite: AEM 577.
For description, see ECE 677.

AEM 678 Advanced Topics in Control. (3-0) Three hours. Same as ECE 678/ME 678.
For description, see ECE 678.

AEM 679 Wave Motion of Continuous Solids. (3-0) Three hours.
Prerequisites: AEM 470 and AEM 637.
The dynamics of continuous elastic bodies; the properties of wave motion and the motion of an elastic string; propagation of elastic waves in infinite and semi-infinite bodies, cylinders, rods, and beams.

AEM 681 Experimental Aeroelasticity. (2-3) Three hours.
Aeroelastic model theory applied to the design and construction of flutter models and dynamic stability models. Testing techniques and model scale aeroelastic experiments.
AEM 685 Engineering Optimization. (3-0) Three hours.
Prerequisites: GES 551 and MATH 238.
Basic principles of optimization theory, parameter optimization problems, linear and nonlinear programming.
Unconstrained and constrained problems treated by simplex, penalty function, and generalized reduced gradient
methods. Includes several computer projects concerning engineering applications.

AEM 691:692 Special Problems (Area). Variable credit.
Independent investigations of special problems. Credit is based on the amount of work undertaken.

AEM 693 Selected Topics. One to three hours.
Topics of current research in dynamics and controls, solid mechanics and structures, or thermal/fluid sciences.

AEM 694 Special Project. Two to six hours.
Planning, executing, and presenting results of an individual project involving a research design, analysis, or similar
undertaking.

AEM 695 Graduate Seminar. (1) One hour.
Prerequisite: Graduate standing.
Preparation and presentation of papers and reports on current topics.

AEM 698 Research Not Related to Dissertation. One to six hours.

AEM 699 Doctoral Dissertation Research. Three to twelve hours.
The department offers programs leading to the doctor of philosophy and the master of science in chemical engineering. The graduate program in chemical and biological engineering is designed to provide a balance between engineering science and practical applications. Faculty members work closely with students in coursework and in research.

**Admission Requirements**
Specific admission requirements for the programs in chemical and biological engineering coincide with those of the Graduate School and the College of Engineering as detailed earlier in this catalog. Admission is also contingent upon approval by the graduate faculty of the Department of Chemical and Biological Engineering. Special opportunities are available for students with undergraduate degrees in fields other than chemical engineering.

**Degree Requirements**
All graduate students in chemical and biological engineering are required to take and pass the following core graduate courses: CHE 551 Advanced Thermodynamics I, CHE 552 Transport Phenomena, CHE 553 Computation in Chemical Engineering, and CHE 554 Chemical Reaction Engineering. In addition, each chemical and biological engineering graduate student must take a qualifying examination covering chemical and biological engineering subjects. The qualifying exam is offered yearly and must be taken by students at the earliest possible offering after they have completed the core courses.

**Doctor of Philosophy degree requirements.** Study in the doctoral program is contingent upon satisfactory performance on the qualifying examination described above. The department requires that students take and pass CHE 695 Seminar during the first part of the doctoral program of study and CHE 696 Seminar in the latter part of the program. These two hours of seminar are in addition to the course hours needed for graduation.

A prospectus examination is required of all candidates for the doctor of philosophy degree. This examination is given after two full years of graduate study have been completed and the supervisory committee deems the student to have adequate preparation. The examination consists of a written proposal describing the student's research activities and an oral presentation and defense of the proposal before the student's supervisory committee. The examination must be completed at least one year prior to the final dissertation defense.

**Master of Science degree requirements.** Following Plan I for the M.S.Ch.E. is standard practice; however, under exceptional circumstances a student may follow Plan II (nonthesis) with the prior approval of the department graduate faculty. Continuation in the master's program is contingent upon satisfactory performance on the qualifying examination described above. Master's degree students are required to complete the six hours of mathematics required by the College of Engineering.

**Course Descriptions**

**Advanced Undergraduate/Entry Graduate-Level Courses**

**CHE 512 Polymer Materials Engineering.** (3-0) Three hours.
Prerequisite: CH 102.
Introduction to the manufacture, processing, and applications of organic polymeric materials. This course covers the chemistry of polymer manufacture, the molecular structures of polymers, and the structure-property relationships for thermoplastic and thermosetting polymers.

**CHE 524 Air Pollution.** (3-0) Three hours. Same as CE 525.
Prerequisite: CE 420 or CHE 304.
Introduction to the sources, characteristics, and effects of air pollution and to air pollution control technology and design.

**CHE 525 Polymer Processing and Rheology.** (3-0) Three hours.
Basic and advanced concepts in rheology and polymer processing. Polymer properties and morphology, rheology of non-Newtonian fluids, polymer processing, and polymer processing design.

**CHE 535 Chemodynamics.** (3-0) Three hours.
Prerequisites: CH 102, MATH 253, GES 126 (or CS 226), CHE 304, AEM 311, or permission of the instructor.
A study of the movement and fate of man-made chemicals in the environment.

**CHE 538 Integrated Circuit Fabrication Principles.** (3-0) Three hours.
Prerequisite: MATH 238
Study of the processing tools and unit operations used in semiconductor device fabrication. Topics include semiconductor fundamentals, semiconductor device fabrication processes, interconnections and contacts, integrated circuit packaging, and chip yields.

**CHE 545 Introduction to Biochemical Engineering.** (3-0) Three hours.
Prerequisite: CH 231
Study of biological processes, application of chemical engineering skills to areas including enzyme kinetics, fermentation, cell growth, and metabolic processes.

**Graduate Core Courses**

**CHE 551 Advanced Thermodynamics I.** (3-0) Three hours.
Application of thermodynamic principles to chemical and phase equilibria.

**CHE 552 Transport Phenomena.** (3-0) Three hours.
Development of the analogy between momentum, energy, and mass transport, with applications.

**CHE 553 Computation in Chemical Engineering.** (3-0) Three hours.
Chemical-engineering applications of advanced calculus, numerical methods, and digital computer techniques, with emphasis on expressing physical situations in mathematical language.

**CHE 554 Chemical Reaction Engineering.** (3-0) Three hours.
Chemical kinetics theory and experimental techniques. Industrial reactor design by advanced methods.

**Other Graduate Courses**

**CHE 591:592 Special Problems (Area).** One to three hours.
Open to properly qualified graduate students. Advanced work of a research nature. Credit is based on the amount of work completed.

**CHE 595:596 Seminar.** (1-0) One hour (each).
Discussion of current advances and research in chemical engineering, presented by graduate students and other speakers.

**CHE 598 Research Not Related to Thesis.** One to six hours.

**CHE 599 Master's Thesis Research.** One to twelve hours. Pass/fail.

**Advanced Graduate Courses**

**CHE 602 Advanced Fluid Mechanics.** (3-0) Three hours.
Prerequisite: CHE 552.

**CHE 603 Advanced Heat Transfer.** (3-0) Three hours.
Prerequisite: CHE 522.
Use of the energy balance in heat-transfer equipment design. Transient solution of the energy balance, advanced condenser design, and computer-implemented heat-exchange equipment design.

**CHE 611 Process Dynamics and Control.** (3-0) Three hours.
Prerequisite: CHE 493 or permission of the instructor.
Advanced process control design and analysis. Control of distributed-parameter systems and nonlinear processes; self-adapting and self-tuning controllers; optimal control; distributed microprocessor controllers.

**CHE 621 Diffusional Operations.** (3-0) Three hours.
Prerequisite: CHE 552.
The latest experimental and theoretical studies in several areas involving diffusion. Includes simultaneous heat and mass transfer and mass transfer with chemical reaction.

**CHE 625 Non-Newtonian Fluid Mechanics.** (3-0) Three hours.
Prerequisite: CHE 552 or permission of the instructor.
Advanced study of the mechanics of viscoelastic and nonlinear fluids including polymeric liquids, suspensions, foams, and emulsions. Emphasis on the formulation of appropriate constitutive equations and solution of the equations of change.

**CHE 626 Advanced Stagewise Operations.** (3-0) Three hours. Prerequisite: CHE 522. An advanced treatment of stagewise operations such as distillation, absorption, and extraction, with emphasis on multicomponent systems.

**CHE 651 Advanced Thermodynamics II.** (3-0) Three hours. Prerequisite: CHE 553. Computational techniques and theoretical methods for atomic and molecular modeling of chemical processes. Covers applied quantum and statistical mechanics, Monte Carlo methods, molecular dynamics, and mesoscale simulation methods.

**CHE 691:692 Special Problems (Area).** One to three hours. Problems of current research.

**CHE 695:696 Seminar.** (1-0) One hour (each). Presentations of dissertation research.

**CHE 698 Research Not Related to Dissertation.** One to six hours.

**CHE 699 Doctoral Dissertation Research.** Three to twelve hours. Pass/fail.
11.6.4 DEPARTMENT OF CIVIL, CONSTRUCTION & ENVIRONMENTAL ENGINEERING (CCEE)

Head: Professor Kenneth Fridley, Office: 260 H. M. Comer Hall

The department offers programs leading to the master of science in engineering (environmental engineering), master of science in civil engineering, and doctor of philosophy degrees. Research programs in the department include urban environmental quality and water resources; management and safety of transportation systems; infrastructure development, assessment, renewal, and protection; and construction engineering and management. Laboratory facilities are provided for graduate research and instruction in these and other areas.

Admission Requirements

The requirements for admission to the Graduate School are detailed in an earlier section of this catalog. The Department of Civil and Environmental Engineering also embraces the requirements of the College of Engineering, summarized as follows:

1. An applicant must have earned a baccalaureate degree from an institution accredited by the Accreditation Board for Engineering and Technology (ABET), and have a grade point average of at least 3.0 on a 4.0 scale, or at least 3.0 for the last 60 hours completed.
2. Applicants who are not graduates of ABET-accredited institutions must have Graduate Record Examination general test scores of 1000 or higher, and grade point averages of 3.0 or higher on a 4.0 scale.

Degree Requirements

Master of Science degree requirements. It is expected that master's students will pursue the Plan I (thesis) option. The Plan II (nonthesis) option may be pursued only with approval of the faculty of the department. Students wishing to pursue the Plan II option must formally petition the department faculty to be considered for approval and must present substantial reasons for seeking this variance. The graduate student's supervisory committee will specify any remedial or preparatory work beyond that required by the Graduate School, as soon as practicable after its appointment.

Doctor of Philosophy degree requirements. Of the required 24 semester hours in the major field of civil engineering, at least 18 hours must be in courses primarily designated for graduate students (numbered 500 or above). In addition, at least 6 of the 12 semester hours required for each of the two minors (one of which shall be in the College of Engineering ) must also be in courses designed primarily for graduate students. The graduate student's supervisory committee will specify any remedial or preparatory work beyond that required by the Graduate School, as soon as practicable after its appointment.

Course Descriptions

Graduate students may, with permission, receive credit for six hours of 400-level credit. Graduate students may, with approval (petition), meet prerequisites with a combination of related coursework and experience.

CE 511 Advanced Rock Mechanics. (3-0) Three hours.
Prerequisite: AEM 250.
Advanced levels of theories of rock failure, ground movement, stability analysis, and the design of underground openings; rock testing methods.

CE 515 Advanced Engineering Economics. (3-0) Three hours.
Prerequisite: IE 203 or CE 366; and GES 255 or GES 400 or 500
Not open to students with credit for CE 415. Capital budgeting decision making under risk and uncertainty, utility theory, cost estimation, and design of financial control through management simulation.

CE 516 Advanced Information Systems Design. (3-0) Three hours.
Prerequisite: CE 414 or equivalent.
Not open to students with credit for CE 416. Current concepts in information systems architecture and applications, including decision support systems and expert systems. Emphasis placed on expanded use of systems design methodology.

CE 517 Advanced Project Management. (3-0) Three hours.
Prerequisite: IE 203 or CE 366; and GES 255
Not open to students who have credit for CE 417. This is an engineering management course designed to introduce students to the functions of project engineers and managers. It details the processes of planning and controlling
project scope, time, and cost.

**CE 518 Engineering Management.** (3-0) Three hours.
Prerequisite: CE 366
Not open to students who have credit for CE 418. An introduction to management principles, and the management functions of planning, organizing, motivating, and controlling. Management of engineers in research, design, manufacturing/construction, and quality will be studied.

**CE 519 Subsurface Remediation.** (3-0) Three hours.
Prerequisite: CE 320 or permission of the instructor.
Corequisite: CE 340.
Science fundamentals, site constraints, and available technologies are incorporated into a process engineering approach to addressing contaminated soils and groundwater.

**CE 522 Solid and Hazardous Waste Management.** (3-0) Three hours.
Prerequisite: CE 320 or B.S. degree in a compatible field.
Engineering design and regulatory requirements for the collection, storage, recycling, treatment, and disposal of solid wastes.

**CE 525 Air Pollution.** (3-0) Three hours.
Prerequisite: AEM 311 or CHE 304.
Introduction to the source, characteristics, and effects of air pollution and to air pollution control technology and design.

**CE 526 Physical/Chemical Processes in Water and Wastewater Treatment.** (3-0) Three hours.
Prerequisites: Graduate standing and course in differential equations; or permission of the instructor.
Discussion of fundamentals of physical/chemical processes, as they relate to environmental quality and water and wastewater treatment. Reactor principle, chemical processes, and particle removal process will be discussed from fundamental theory.

**CE 529 Unit Operations in Water and Wastewater Treatment.** (3-0) Three hours.
Prerequisites: CE 320 and CE 424.
Advanced examination of tertiary, physical, and chemical unit operations used in water and wastewater systems.

**CE 532 Advanced Structural Analysis.** (3-0) Three hours.
Prerequisite: CE 331.
Introduction to the matrix-displacement method of analysis for framed structures, including computer implementation of analysis. An introduction to finite-element analysis is also included.

**CE 536 Wood Structural Design.** (3-0) Three hours.
Corequisite: CE 331.
Modern timber engineering: design of beams, columns, trusses, and floor systems.

**CE 537 Reinforced Concrete Structures II.** (3-0) Three hours.
Prerequisite: CE 433.
Design of reinforced concrete building components including two-way slabs, slender columns, prestressed beams, slab-on-grade, and retaining walls.

**CE 538 Structural Steel Design II.** (3-0) Three hours.
Prerequisite: CE 434.
Basic and elementary design procedures for steel structures such as plate girders, mill buildings, multistory buildings, highway bridges, and light-gauge steel structures.

**CE 542 Waste Containment Facilities.** (3-0) Three hours.
Prerequisite: CE 340 or permission of instructor.
Introduction to the fundamentals of soil behavior as they relate to environmental engineering. Topics include soil behavior, soil compaction, conduction phenomena, geosynthetics, and aspects of landfill design.

**CE 544 Foundation Engineering.** (3-0) Three hours.
Prerequisite: CE 340.
Analysis and design of soil foundation systems.

**CE 551 Geometric Design of Roadways.** (3-0) Three hours.
Prerequisite: CE 350.
Application of the principles of geometric design: alignment, vertical control, drainage, traffic control, interchanges, and intersections. Design projects will be prepared to illustrate standard techniques.

**CE 552 Traffic Safety and Security.** (3-0) Three hours.
Prerequisite: CE 350.
Introduction to transportation safety and security issues. Site/situation identification techniques, risk assessment,
countermeasure analysis, cost effectiveness, construction, and evaluation.

**CE 553 Intelligent Transportation Systems--ITS.** (3-0) Three hours.
Prerequisite: CE 350.
Introduction to intelligent transportation systems including traffic management, institutional and planning issues; system architecture, and system design/construction/operation.

**CE 554 Urban Transportation Planning.** (3-0) Three hours.
Prerequisite: CE 350.
An introduction to the planning process, software associated with transportation modeling, and conducting transportation planning and traffic impact studies.

**CE 557 Pavement Design and Construction.** (3-0) Three hours.
Prerequisite: CE 340.
The thickness design of base, subbase, asphalt, and concrete layers for highway pavements, including both design and construction aspects.

**CE 558 Traffic Engineering.** (3-0) Three hours.
Prerequisite: CE 350.
Vehicle operating characteristics, traffic flow, geometric design of road and intersections, and methods of traffic control.

**CE 559 Pavement Rehabilitation.** (3-0) Three hours.
Prerequisite: CE 350.
This course covers two areas concerning care of existing highway asphalt and concrete pavements. Major maintenance includes overlay design, additional drainage, recycling, and slab repair. Routine maintenance includes distress surveys, pothole repair, and crack and joint sealing.

**CE 564 Safety Engineering.** (3-0) Three hours.
Prerequisite: GES 255 or equivalent.
Not open to students with credit for CE 464. An exposure to safety engineering and accident prevention including state and federal laws related to general and construction projects. Topics include accident theories, safety regulations, Construction Safety Act, hazards and their control, human behavior and safety, and safety management.

**CE 565 Advanced Blasting Engineering.** (3-0) Three hours.
Prerequisite: CE 340 or CE 411 or AEM 250.
Behavior of rock under dynamic loads intended to fragment or penetrate; theories of drilling, blasting, and communication; and application of theory.

**CE 570 Open Channel Flow.** (3-0) Three hours.
Prerequisite: CE 378.
Basic concepts of fluid flow, energy and momentum principles, flow resistance in nonuniform sections, channel controls and transitions, and nonuniform flow computations.

**CE 573 Statistical Applications in Civil Engineering.** (3-0) Three hours.
Prerequisite: MATH 238.
Applications of statistical and probabilistic methodologies for analysis and solution of practical civil engineering problems, including frequency and risk analysis, analyses of experimental data, and systems simulation and optimization.

**CE 575 Hydrology.** (3-0) Three hours.
Prerequisite: CE 378.
Hydrologic cycle, rainfall-runoff relations, unit hydrograph, statistical hydrology, and hydrologic simulation; includes a class project with application to flood control, water supply, and multipurpose projects.

**CE 582 Advanced Geological Engineering.** (3-0) Three hours.
Prerequisite: GEO 101 or permission of instructor.
Engineering properties of rocks and soils, surface and subsurface exploration, ground water, land subsidence, earthquakes, geophysical techniques, and application of geology to civil, mining, and environmental engineering.

**CE 591:592 Special Problems.** One to three hours.
Prerequisite: Written permission of the instructor.
Independent study. Credit is based on the amount of work undertaken.

**CE 598 Research Not Related to Thesis.** Variable credit.

**CE 599 Master's Thesis Research.** One to Twelve hours.

**CE 605 Impacts of Homeland Security on America.** (1-0) One hour.
Prerequisite: None.
An interdisciplinary seminar that explores the impacts of homeland security on the economy, politics, law, computing infrastructure, transportation, drinking water, the environment, and other fields.

**CE 622 Water Quality Engineering.** (3-0) Three hours.
Prerequisites: MATH 238 and CE 424.
Introduction to the principles of water-quality engineering and the development and use of water-quality models.

**CE 629 Environmental Regulations.** (3-0) Three hours.
Prerequisite: CE 424.
Study of environmental laws and the regulations that have resulted from those laws.

**CE 632 Advanced Structural Analysis II.** (2-3) Three hours
Prerequisite: CE 532.
Finite-element methods, three-dimensional structures.

**CE 633 Structural Stability.** (3-0) Three hours.
Prerequisite: CE 331.
Static buckling of structural elements, frames, and trusses.

**CE 635 Traffic Planning.** (3-0) Three hours.
Prerequisite: CE 350.
The role of transportation and traffic in urban planning; the relationship of traffic facilities to land use, zoning, and planning studies.

**CE 691:692 Special Problems (Area).** Variable credit.
Advanced work in some area of specialization. Credit awarded is based on the amount of work completed.

**CE 698 Research Not Related to Dissertation.** Variable credit.

**CE 699 Doctoral Dissertation Research.** Three to twelve hours.
The Department of Computer Science offers interdisciplinary graduate programs leading to the master of science and doctor of philosophy degrees. The programs are for students who are interested in professional careers in computer science. Two master's degree programs are available. The Plan I degree is a research-oriented degree, while Plan II is for students who are principally interested in design.

Research activity in the department includes active investigations in software engineering, algorithms, database management, networks, parallel and distributed computation, programming languages, robotics, and human-computer interaction. Laboratory facilities include networked connections to some of the world's most advanced computer systems.

Admission Requirements
In addition to meeting the admission requirements established by the Graduate School, students applying for graduate study in the department must also meet the following general requirements: (1) demonstrated competence in programming; (2) completion of the equivalent of the department's undergraduate core computer science curriculum; and (3) demonstration, by an appropriate score on the general test of the Graduate Record Examination, of competence in the discipline of computer science.

Each student must submit scores from the Graduate Record Examination general test. This requirement may be waived for a student who graduated from an institution accredited by CSAB (Computer Science Accreditation Board) with a GPA of 3.0 or higher on a 4.0 scale. It is strongly recommended that each student submit a score from the GRE Subject Exam in Computer Science, particularly students who wish to be considered for funding opportunities.

In addition to the above requirements, the maximum number of hours a student may transfer from another institution and apply toward the M.S. degree is 6; for the Ph.D. degree, the maximum number of transferable hours is 18. Courses may be transferred only subject to the approval of the faculty of the Department of Computer Science.

Additional details of these requirements may be obtained directly from the department. Applicants who present most but not all of these qualifications may be considered for conditional admission.

Degree Requirements
Master of Science. Departmental degree requirements for the M.S. degree, which are in addition to those established by the College and by the Graduate School, are as follows for Plan I and Plan II students:

- Each Plan I candidate must earn a minimum of 24 semester hours of credit for coursework, plus a 6-hour thesis under the direction of a faculty member.
- Each Plan II candidate must earn a minimum of 30 semester hours of credit for coursework, which may include a 3-hour nonthesis project under the direction of a faculty member.
- Unlike the general College of Engineering requirements, graduate credit may not be obtained for courses at the 400-level.
- Both plans also have core and depth requirements, which can be found at the department’s website: http://www.cs.ua.edu.

Doctor of Philosophy. The doctor of philosophy degree is regarded as a research degree and is granted on the basis of scholarly proficiency, distinctive achievement in a special field, and the capacity for independent, original investigation. The first two criteria are tested in coursework and a qualifying examination, the last by a dissertation that must present the results of substantial research clearly and effectively. A combination of these accomplishments, rather than the mere accumulation of residency and course credits, is the essential consideration in awarding the Ph.D. degree.

A minimum of 48 semester hours of course credit is required. Approval of the selection of courses must be obtained from the student's advisor and supervisory committee, and the course of study as a whole must be unified so that all its parts contribute to an organized program of study and research. Unlike the general College of Engineering
requirements, graduate credit may not be obtained for courses at the 400-level.

In addition, a student is expected to have completed at least 24 semester hours of dissertation research and to have fulfilled residency and other requirements of the Graduate School. Additional details of these requirements can be found at the department's website: http://www.cs.ua.edu.

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**Course Descriptions**

**CS 503 Programming Languages.** (3-0) Three hours.
Prerequisites: CS 325 and CS 357, and ECE 383. (Not open to students who have earned credit for CS 403.)
This course provides a graduate level presentation of Programming Languages. Formal student of programming language specification, analysis, implementation, and run-time support structures; organization of programming languages with emphasis on language constructs and mechanisms; and study of non-programming paradigms.

**CS 507 Software Interface Design.** (3-0) Three hours.
Prerequisites: CS 325 and CS 357, or MIS 320 (Not open to students who have earned credit for CS 407.)
Concepts of the human-computer interface, emphasizing the software aspects. Dialog styles, form models, user documentation and the evaluation of human-computer software interfaces.

**CS 515 Software Design and Development.** (3-0) Three hours.
Prerequisites: CS 325 and CS 357 or MIS 320 (Not open to students who have earned credit for CS 415.)
This course provides a graduate level presentation of Software Design and Development. Introduction to software engineering; the software crisis, program life-cycle, software systems analysis techniques, theory and practice of design, structured techniques, program testing methodologies, programmer team organization, and program verification and synthesis.

**CS 524 Java Programming.** (3-0) Three hours. (Not open to students who have earned credit for CS 424.)
Prerequisites: CS 325, CS 357, and ECE 383.
Object-oriented programming using the Java programming language and applications programming interfaces.

**CS 526 Introduction to Operating Systems.** (3-0) Three hours.
Prerequisites: CS 325, CS 357, and ECE 383. (Not open to students who have earned credit for CS 426.)
This course provides a graduate level presentation of Introduction to Operating Systems. Study of basic operating system concepts with an emphasis on memory processor, device, and information management.

**CS 534 Compiler Construction.** (3-0) Three hours.
Prerequisites: CS 325, CS 357, and ECE 383. (Not open to students who have earned credit for CS 434.)
This course provides a graduate level presentation of Compiler construction. Syntax and semantics of procedure-oriented languages and translation techniques used in their compilation; includes computer implementation.

**CS 535 Computer Graphics.** (3-0) Three hours. (Not open to students who have earned credit for CS 435.)
Prerequisite: CS 325, CS 357, and ECE 383.
Display memory, generation of points, vectors, etc. Interactive versus passive graphics, analog storage of images on microfilm, etc. Digitizing and digital storage, pattern recognition by features, syntax tables, and random nets. The mathematics of three dimensions, projections, and the hidden-line problem.

**CS 538 Computer Communications and Networks.** (3-0) Three hours.
Prerequisites: CS 325, CS 357, and ECE 383. (Not open to students who have earned credit for CS 438.)
This course provides a graduate level presentation of Computer Communications and Networks. The student of the issues related to Computer communications. Topics include physical topologies, switching, error detection and correction, routing, congestion control, and connection management for global networks (such as the Internet) and local area networks (such as Ethernet). In addition, network programming and applications will be considered.

**CS 557 Database Management Systems.** (3-0) Three hours.
Prerequisites: CS 325, CS 357, and ECE 383. (Not open to students who have earned credit for CS 457.)
This course provides a graduate level presentation of Database Management Systems. Constituent parts of database management (design, creation, and manipulation of databases), client-server, relational, and object-oriented data models.

**CS 567 Computer Systems Architecture.** (3-0) Three hours. Same as ECE 584.
Prerequisite: ECE 480.
For description, see ECE 584.

**CS 570 Introduction to Computer Algorithms.** (3-0) Three hours.
Prerequisites: CS 325, CS 357, ECE 383, and Math 301. (Not open to students who have earned credit for CS 470.)
This course provides a graduate level presentation of Introduction to Computer Algorithms. Construction of efficient algorithms for computer implementation.
CS 580 Computer Simulations. (3-0) Three hours. (Not open to students who have earned credit for CS 480.)
Prerequisites: CS 325, CS 357, and ECE 383.
Use of digital computer simulation in the analysis of large-scale systems. Comparison of discrete change simulation language; design of simulation experiments for optimization; validation of simulation models.

CS 591 Special Topics in Computer Science. (3-0) Three hours.
Formal courses that cover new and innovative topics in computer science and do not yet have their own course numbers. Specific course titles will be announced.

CS 592 Independent Study in Computer Science. Variable credit.
This course requires a written proposal that must be approved by the sponsoring faculty member before registration.

CS 598 Research Not Related to Thesis. Variable credit.

CS 599 Master's Thesis Research. Variable credit.

CS 600 Foundations of Software Engineering. (3-0) Three hours.
Prerequisite: CS 415 or CS 515.
Introduction to formal software development techniques; theoretical foundations of specification, design, and testing; and programming methodologies and software reuse.

CS 601 Design and Analysis of Computer Algorithms. (3-0) Three hours.
Prerequisite: CS 470 or CS 570.
A study of algorithm design techniques; analysis of performance of algorithms; and fundamental principles and concepts of algorithm construction, proof, and analysis.

CS 602 Advanced Formal Languages and Machines. (3-0) Three hours.
Prerequisite: CS 470 or CS 475 or CS 570.
Regular languages, context-free languages, recursive and recursively enumerable languages, nondeterminism, and undecidability.

CS 603 Organization of Programming Languages. (3-0) Three hours.
Prerequisite: CS 403 or CS 503.
Design and implementation of programming languages; syntax and translation; semantic structures and run-time representations; data, operations, control structures, and storage management.

CS 605 Theory of Artificial Intelligence. (3-0) Three hours.
Prerequisite: CS 465.
Concepts of artificial intelligence, with emphasis on problem solving, knowledge representation, logic and deduction, and machine learning.

CS 606 Analysis of Operating Systems. (3-0) Three hours.
Prerequisite: CS 426 or CS 526.
Design of operating systems; advanced examination of synchronization, deadlock, virtual memory, and security; and parallel and distributed systems.

CS 607 Software User Interface Design and Analysis. (3-0) Three hours.
Prerequisite: CS 407 or CS 507.
Concepts of the human-computer interface, emphasizing the software aspects. Dialog styles, form models, user documentation, and the evaluation of human-computer software interfaces.

CS 609 Database Management. (3-0) Three hours.
Prerequisite: CS 457 or CS 557.
Data model theory, comparison of existing database systems, implementation technology, selection, evaluation techniques, integrity, security, authorization and protection, and hardware architecture.

CS 610 Introduction to Cognitive Science. (3-0) Three hours.
Prerequisite: CS 465.
This course introduces the basic concepts of cognitive science. It involves cross-disciplinary study of cognitive processes in humans and machines. It explores the possibility of building truly intelligent systems.

CS 613 Computer Communications and Networks. (3-0) Three hours.
Prerequisite: CS 438 or CS 538 and either GES 255 or ST 410.
Study of computer networks, including telecommunications and related data transmission techniques. Network philosophy, design, and implementation.

CS 614 Theory and Construction of Compilers. (3-0) Three hours.
Prerequisite: CS 434 or CS 534.
Definition and specification of language syntax and semantics, lexical scans, operational notations, and compilation methods. Compiler writing systems. A formal approach to compiler theory.
CS 620 Information Storage and Retrieval. (3-0) Three hours.
Prerequisite: CS 609.
Natural language processing; analysis of textual material by statistical, syntactic, and logical methods; retrieval system models, dictionary construction, query processing, file structures, and content analysis; automatic retrieval systems and question-answering systems; and evaluation of retrieval effectiveness.

CS 626 Distributed Computing Systems. (3-0) Three hours.
Prerequisite: CS 606.
An advanced treatment of the theory and practice of constructing distributed systems, in which concurrent processes communicate by exchanging messages.

CS 630 Advanced Software Engineering Principles. (3-0) Three hours.
Prerequisite: CS 600.
Advanced study in theoretical foundations of software engineering: software process modeling, metrics, and cost estimation; formal specifications; testing and verification techniques; exposure to research methods.

CS 631 Software Engineering Practice and Experience. (3-0) Three hours.
Prerequisite: CS 600.
Introduction to the application of software engineering principles to large-scale programming projects. Emphasis is on object-based construction, CASE tools, and contemporary development environments.

CS 651 Object-Oriented and Intelligent Database Systems. (3-0) Three hours.
Prerequisite: CS 609.
Research- and design-oriented combination of the concepts of the traditional databases (relational, networked, and hierarchical) with developing concepts such as object-oriented and intelligent databases.

CS 661 Expert Systems. (3-0) Three hours.
Prerequisite: CS 605.
Advanced study of the development of expert systems. Programming technologies for designing, building, implementing, and testing expert systems are included.

CS 662 Advanced Neural Computation. (3-0) Three hours.
Prerequisite: CS 605, AEM 587, or equivalent; or permission of the instructor.
A study of artificial neural systems on computers, including modern theories of learning and neural processing. Emphasis is on neural network architectures with methodologies for designing, building, and implementing such systems.

CS 663 Connectionist Models. (3-0) Three hours.
Prerequisite: CS 610.
This course covers recent developments in research in connectionist models, especially in integrating symbolic processing and rule-based reasoning.

CS 664 Advanced Cognitive Science. (3-0) Three hours.
Prerequisite: CS 610.
This course presents some of the most important computational models in cognitive science. It contains basic approaches and methodologies for studying cognition, and it extends to the exploration of several fundamental cognitive functions.

CS 665 Fuzzy Set Theory. (3-0) Three hours.
Prerequisite: CS 605.
This course covers the various issues of uncertainty, information theory, and system complexity from a perspective based on fuzzy set theory. Mathematical foundations of fuzzy sets, various aspects of fuzzy relations, and fuzzy measures and their relation to information theory are discussed.

CS 670 Advanced Algorithms and Data Structures. (3-0) Three hours.
Prerequisite: CS 601.
This course presents selected advanced topics related to design and analysis of algorithms and data structures.

CS 671 Graph Theory and Algorithms. (3-0) Three hours.
Prerequisite: CS 601 or MATH 550.
This course presents advanced algorithms for solving graph problems. Classical results from graph theory are introduced to motivate or explain these algorithms.

CS 672 Parallel Computation. (3-0) Three hours.
Prerequisite: CS 601 or ECE 684.
This course presents techniques for designing and analyzing algorithms for many models of parallel computation.

CS 673 Computational Complexity. (3-0) Three hours.
Prerequisite: CS 601 or CS 602.
This course presents techniques for determining that certain problems are inherently difficult or even impossible to solve on any computer.

**CS 686 Advanced Computer-Human Interface.** (3-0) Three hours.
Prerequisite: CS 607.
Corequisite: IE 533.
Advanced topics in the computer-human interface, including graphical user interfaces, computer-supported cooperative work, different interface styles, user interface management systems, online documentation, and hypermedia. Software user interface design philosophy and evaluation methods.

**CS 691 Special Topics in Computer Science.** (3-0) Three hours.
Formal courses that cover new and innovative topics in computer science and do not yet have their own numbers; specific course titles will be announced.

**CS 692 Independent Study in Computer Science.** Variable credit.
This course requires a written proposal that must be approved by the sponsoring faculty member before registration.

**CS 699 Dissertation Research.** Variable credit. Three-hour minimum.
11.6.6 DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING (ECE)
Head: Professor David Jeff Jackson, Office: 317 Houser Hall

The Department of Electrical and Computer Engineering offers programs leading to the master of science and doctor of philosophy degrees. The department has focused on four main research areas: communication and control systems, computers and microelectronics, electromagnetics and materials, and power systems. These efforts are supported by the communications lab, electric power and machines lab, electromechanical systems lab, embedded systems lab, imaging professing and graphics lab, MEMS clean room, and microwave/electromagnetics lab. In addition to these department research laboratories, students have access to facilities in the Center for Materials for Information Technology. For computing purposes, students can use numerous PC and workstation networks supported by the department and the College of Engineering.

Admission Requirements
Applicants for graduate work in electrical and computer engineering must apply for admission to the Graduate School. Each applicant must submit a statement of purpose. Regular admission may be granted to an applicant who has an electrical engineering degree from an ABET-accredited program and an overall GPA above 3.0 on a 4.0 scale. Electrical engineering graduates from non-ABET accredited programs can be awarded regular admission if they have overall GPAs of 3.0 on a 4.0 scale and an acceptable general test score on the Graduate Record Examination. Conditional admission may be granted to applicants who do not meet these requirements, such as those who have degrees in related fields or GPAs below 3.0. International students must have minimum TOEFL scores of 585 for the M.S. degree program and 620 for the Ph.D. program.

Degree Requirements

Master of Science. The department offers M.S. degrees with a thesis (Plan I) and a nonthesis (Plan II) option. Plan I requires 32 credit hours with at least 24 at the graduate level (i.e., at the 500 or 600 level). These credit hours must include at least 12 hours in a major electrical engineering field, 6 hours in mathematics, 6 hours in an approved elective area, 2 hours of seminar, and 6 hours of thesis research. Majoring in some areas of specialization may require specific courses in that area. The student must pass a final examination, which typically is a presentation and defense of the thesis. In addition, the student must satisfy all the University and College of Engineering requirements defined elsewhere in this catalog.

Doctor of Philosophy. In the electrical and computer engineering department, the Ph.D. degree requires a minimum of 48 credit hours of coursework. This must include 24 credit hours of closely related coursework in the major area with at least 18 at the 500- or 600-level. In addition, each student’s program must include 12 hours in a minor field of electrical engineering or other approved area, 12 hours in mathematics, 2 hours of seminar at the 600 level, and 24 hours of dissertation research. All candidates must pass a qualifying examination, usually administered after the student completes most of his or her coursework, and a final examination, which generally is a presentation and defense of the dissertation. In addition, the student must satisfy all the University and College of Engineering requirements defined elsewhere in this catalog.

Course Descriptions

With permission, master’s degree students may earn graduate credit for six hours of 400-level credit.

ECE 406 Computer Communications and Networks. (3-0) Three hours. Same as CS 613.
Prerequisites: CS 325, CS 357, and CS 426.
For description, see CS 613.

ECE 407 Communications I. (3-0) Three hours.
Prerequisite: ECE 370.
Corequisite: MATH 355.
Introduction to baseband and passband digital communication systems. Students develop the skills necessary to analyze system performance in the presence of noise and learn to determine methods for improving system performance.

ECE 408 Communications II. (3-0) Three hours.
Prerequisites: ECE 370, ECE 407, and MATH 355.
Introduction to analog communications systems. Students analyze system performance in the presence of noise; examine advanced analog-to-digital encoding techniques and advanced digital modulation techniques; and develop data compression and error-control codes.
ECE 409 Communications Systems Laboratory. (0-3) One hour.
Corequisite: ECE 407.
Modeling communication systems; familiarization with specialized communications equipment and techniques; and theory of laboratory instruments.

ECE 430 Digital Integrated Circuit Design. (3-0) Three hours.
Prerequisites: ECE 333 and ECE 383.
Corequisites: ECE 431 and either MATH 237 or GES 451.
Introduction to digital integrated circuit design, analysis, and layout, and use of tools for creating VLSI circuits and subsystems.

ECE 431 Digital Integrated Circuit Design Laboratory. (0-3) One hour.
Prerequisites: ECE 333 and ECE 383.
Corequisites: ECE 430 and either MATH 237 or GES 451.
Assignments and design projects provide hands-on experience with digital integrated circuit design, analysis, and layout. VLSI design tools and graphics workstations are used.

ECE 432 Analog Integrated Circuit Design. (3-0) Three hours.
Prerequisite: ECE 333.
Corequisite: ECE 433.
Study of analog integrated circuit design, analysis, and layout. Topics include bipolar and CMOS layout, fabrications, design methodologies, and software tools.

ECE 433 Analog Integrated Circuit Design Laboratory. (0-3) One hour.
Prerequisite: ECE 333.
Corequisite: ECE 432.
A laboratory experience with bipolar and CMOS layout, fabrication, software layout, and simulation tools.

ECE 434 High-Frequency Electronics. (3-0) Three hours.
Prerequisite: ECE 333.
Corequisite: ECE 435.
Introduces the concepts of RF/microwave electronics system design. Topics include amplifier design, matching, filter design, oscillator and mixer design, modulation techniques, and receivers.

ECE 435 High-Frequency Electronics Laboratory. (0-3) One hour.
Prerequisite: ECE 333.
Corequisite: ECE 434.
Introduces the concepts of RF and microwave electronics system design through device measurement and simulation. Laboratory topics include amplifier design, matching, filter design, oscillator and mixer design, modulation, and receivers.

ECE 438 Integrated Circuit Fabrication Principles. (3-0) Three hours.
Prerequisite: ECE 333, MTE 271, or permission of the instructor.
Study of the processing tools used in semiconductor device fabrication. Topics include semiconductor fundamentals, semiconductor device fabrication processes, interconnections and contacts, integrated circuit packaging, and chip yield.

ECE 445 Antennas. (3-0) Three hours.
Prerequisite: ECE 340 or PH 332.
Transmission and reception of power and information in free space; antennas as interface elements; impedance and radiation characteristics of modern antennas.

ECE 446 Microwave Engineering. (3-0) Three hours.
Prerequisite: ECE 340 or PH 332.
Guided waves; scattering matrix description of microwave circuit elements; computer analysis and optimization of cascaded two-ports; and microwave integrated circuits.

ECE 447 Electromagnetics Laboratory. (0-3) One hour.
Prerequisite: ECE 340 or PH 332.
Electrical measurements of electromagnetic waves and phenomena in the microwave region; slotted line techniques; and measurement of frequency, wavelength, power, impedance, VSWR, and antenna radiation patterns.

ECE 448 Radar Systems. (3-0) Three hours.
Prerequisite: ECE 340 or PH 332.
The radar equation; detection of radar signals in noise; extraction of information and waveform design, CW, MTI, and pulse Doppler radar; and tracking radar.

ECE 453 Electric Machines and Drives. (3-0) Three hours.
Prerequisites: ECE 326 and ECE 350.
Detailed study of the theory and operation of rotating electric machines. Introduction to power electronics and...
ECE 455 Power/Machines Laboratory. (0-3) One hour.
Prerequisite: ECE 350.
Test and analysis of power/machines devices; and design of systems using these devices.

ECE 456 Power Systems I. (3-0) Three hours.
Prerequisite: ECE 350.
Corequisite: GES 451 or MATH 237.
Basic power system concepts and per-unit quantities; transmission line, transformer, and rotating machine modeling; and power flow.

ECE 457 Power Systems II. (3-0) Three hours.
Prerequisite: ECE 456.
Economic operation, fault analysis, symmetrical components, and system protection.

ECE 467 Engineering Optics. (3-0) Three hours.
Prerequisites: ECE 340 or PH 332 and either GES 451 or MATH 237.
Corequisite: ECE 370.
Principles of laser holography, optical communication, and image processing and their engineering applications (including propagation, polarization, diffraction, coherence and interference, and spatial Fourier transformation of light waves).

ECE 475 Control Systems Analysis. (3-0) Three hours.
Prerequisite: ECE 326.
Classical and modern feedback control system methods; stability; and Bode, root locus, state variable, and computer analysis.

ECE 476 Control Systems Laboratory. (0-3) One hour. Same as AEM 476.
Corequisite: ECE 475.
Practical analysis and design of feedback control systems and components; and electrical, mechanical, and electromechanical systems.

ECE 479 Digital Control Systems. (3-0) Three hours.
Prerequisites: ECE 370, ECE 475, and either GES 451 or MATH 237.
Frequency and time methods in discrete time control systems; sampling of continuous-time signals, stability, transform design techniques, and state variable analysis and design techniques.

ECE 480 Digital Systems Design. (3-0) Three hours.
Prerequisite: ECE 383.
Corequisite: ECE 481.
Digital systems design with hardware description languages, programmable implementation technologies, electronic design automation design flows, design considerations and constraints, design for test, system on a chip designs, IP cores, reconfigurable computing, digital system design examples and applications.

ECE 481 Digital Systems Design Laboratory. (0-3) One hour.
Prerequisite: ECE 383.
Corequisite: ECE 480.
Logic design and simulation via hardware description languages, use of electronic design automation tools, and CPU design.

ECE 482 Computer Vision and Digital Image Processing. (3-0) Three hours.
Prerequisites: MATH 355 and CS 124, or permission of the instructor.
Introduction to computer vision and digital image processing with an emphasis on image representation, transforms, filtering, compression, boundary detection, and pattern matching.

ECE 483 Computer Graphics Design. (3-0) Three hours. Same as CS 435.
Prerequisite: ECE 383.
Selected topics in computer graphics and graphics algorithms; design projects.

ECE 484 Computer Architecture. (3-0) Three hours.
Prerequisite: ECE 480.
Computer architectures, computer design, memory systems design, parallel processing concepts, supercomputers, networks, and multiprocessor systems.

ECE 486 Embedded Systems. (3-0) Three hours.
Prerequisite: ECE 383
Corequisite: ECE 487
Integration of microprocessors into digital systems. Includes hardware interfacing, bus protocols and peripheral systems, embedded and real-time operating systems, real-time constraints, networking and distributed process...
control.

**ECE 487 Embedded Systems Laboratory.** (0-3) One hour.
Prerequisite: ECE 383
Corequisite: ECE 486
Design and implementation experience with microcontrollers, interfacing, digital control systems, bus protocols and peripheral systems, real-time constraints, embedded and real-time operating systems, distribution process control.

**ECE 488 Microcontrollers.** (3-0) Three hours.
Prerequisite: ECE 383.
Corequisite: ECE 489.
Microcontrollers, digital control systems, hardware interfacing, networking, distributed process control, and robotics.

**ECE 489 Microcontrollers Laboratory.** (0-3) One hour.
Prerequisite: ECE 383.
Corequisite: ECE 488.
Design and implementation experience with microcontrollers, digital control systems, interfacing, operating systems, automated manufacturing processes, robotics, and networking.

**ECE 491 Special Problems.** One to eight hours.
Investigations usually involving research with a staff member. Credit awarded is based on the individual problem assignment.

**ECE 493 Selected Topics (Area).** Variable credit.
Special course offerings in all areas of electrical engineering, made as the need arises. Credit awarded is based on the course requirements.

**ECE 502 Digital Communication Systems.** (3-0) Three hours.
Prerequisites: ECE 370 and MATH 355.
Analyze performance of binary and M-ary digital communication systems in the presence of noise. Examine advanced analog-to-digital encoding techniques, data-compression techniques, and error-control codes.

**ECE 506 Computer Communications and Networks.** (3-0) Three hours. Same as CS 613.
Prerequisites: CS 325, CS 357, and CS 426.
For description, see CS 613.

**ECE 530 Digital Integrated Circuit Design.** (3-0) Three hours.
Prerequisites: ECE 333 and ECE 383.
Corequisites: ECE 531 and either GES 451 or MATH 237.
Introduction to digital integrated circuit design, analysis, and layout and use of tools for creating VLSI circuits and subsystems.

**ECE 531 Digital Integrated Circuit Design Laboratory.** (0-3) One hour.
Prerequisites: ECE 333 and ECE 383.
Corequisites: ECE 530 and either GES 451 or MATH 237.
Assignments and design projects provide hands-on digital integrated circuit design, analysis, and layout experience with VLSI design tools and graphics workstations.

**ECE 532 Analog Integrated Circuit Design.** (3-0) Three hours.
Prerequisite: ECE 333.
Corequisite: ECE 533.
Study of analog integrated circuit design, analysis, and layout. Topics include bipolar and CMOS layout, fabrication, design methodologies, and software tools.

**ECE 533 Analog Integrated Circuit Design Laboratory.** (0-3) One hour.
Prerequisite: ECE 333.
Corequisite: ECE 532. A laboratory experience with bipolar and CMOS integrated circuit design. Topics include bipolar and CMOS layout, fabrication, and software layout and simulation tools.

**ECE 534 High-Frequency Electronics.** (3-0) Three hours.
Prerequisite: ECE 333.
Corequisite: ECE 535.
Introduces the concepts of RF/microwave electronic system design. Topics include amplifier design, matching, filter design, oscillator and mixer design, modulation techniques, and receivers.

**ECE 535 High-Frequency Electronics Laboratory.** (0-3) One hour.
Prerequisite: ECE 333.
Corequisite: ECE 534.
Introduces the concepts of RF and microwave electronic system design through device measurement and simulation. Laboratory topics include amplifier design, matching, filter design, oscillator and mixer design, modulation, and
receivers.

**ECE 538 Integrated Circuit Fabrication Principles.** (3-0) Three hours.
Prerequisite: ECE 333, MTE 271, or permission of the instructor.
Study of the processing tools used in semiconductor device fabrication. Topics include semiconductor fundamentals, semiconductor device fabrication processes, interconnections and contacts, integrated circuit packaging, and chip yield. Oral presentation and advance analytical work required.

**ECE 545 Antennas.** (3-0) Three hours.
Prerequisite: ECE 340 or PH 332.
Transmission and reception of power and information in free space; antennas as interface elements; impedance and radiation characteristics of modern antennas.

**ECE 546 Microwave Engineering.** (3-0) Three hours.
Prerequisite: ECE 340 or PH 332.
Guided waves, scattering matrix description of microwave circuit elements, computer analysis, and optimization of cascaded two-ports microwave integrated circuits.

**ECE 547 Electromagnetic Laboratory.** (0-3) One hour.
Prerequisite: ECE 340 or PH 332.
Electrical measurements of electromagnetic waves and phenomena in the microwave region; slotted line techniques; and measurement of frequency, wavelength, power, impedance, VSWR, and antenna radiation patterns.

**ECE 548 Radar Systems.** (3-0) Three hours.
Prerequisite: ECE 340 or PH 332.
The radar equation; detection of radar signals in noise; extraction of information and waveform design, CW, MTI, and pulse Doppler radar; and tracking radar.

**ECE 553 Electric Machines and Drives.** (3-0) Three hours.
Prerequisites: ECE 326 and ECE 350.
Detaied study on the theory and operation of rotating electric machines. Introduction to power electronics and machine drives.

**ECE 557 Power Systems II.** (3-0) Three hours.
Prerequisite: ECE 456. Not open to students who have earned credit for ECE 457.
Economic operation, fault analysis, symmetrical components, system protection. Special projects are required.

**ECE 561 Quantum Electronics.** (3-0) Three hours.
Prerequisite: ECE 340 or PH 332.
Matrix formulation of quantum mechanics; quantization of lattice vibrations and electromagnetic radiation; diamagnetism and paramagnetism; paramagnetic resonance and paramagnetism in crystals; and interaction of radiation and atoms.

**ECE 575 Stochastic Processes.** (3-0) Three hours. Same as GES 575.
Prerequisite: GES 500.
Engineering applications of probability theory. Problems on sequences of random variables, convergence, stochastic processes, stationarity, ergodicity, correlation function, spectral densities, linear systems with random inputs, design of filters and predictors, and Markov processes.

**ECE 577 Advanced Linear Control.** (3-0) Three hours. Same as AEM/ME 577.
Prerequisite: ECE 475.
Modern techniques for the analysis and design of linear control systems. Matrix formulation; multivariable control systems; state-variable concepts; discrete-time systems; optimization; and statistical design methods.

**ECE 579 Digital Control Systems.** (3-0) Three hours.
Prerequisites: ECE 370, ECE 475, and either GES 451 or MATH 237.
Frequency and time domain methods in discrete time control systems; sampling of continuous-time signals, stability, transform design techniques, state variable analysis, and design techniques.

**ECE 580 Digital Systems Design.** (3-0) Three hours.
Prerequisite: ECE 383.
Corequisite: ECE 581.
Digital systems design with hardware description languages, programmable implementation technologies, electronic design automation design flows, design considerations and constraints, design for test, system on a chip designs, IP cores, reconfigurable computing, digital system design examples and applications.

**ECE 581 Digital Systems Design Laboratory.** (0-3) One hour.
Prerequisite: ECE 383.
Corequisite: ECE 580.
Logic design and simulation via hardware description languages, use of electronic design automation tools, and CPU
design.

ECE 582 Computer Vision and Digital Image Processing. (3-0) Three hours.
Prerequisites: MATH 355 and CS 124, or permission of the instructor.
Introduction to computer vision and digital image processing with an emphasis on image representation, transforms, filtering, compression, boundary detection, and pattern matching.

ECE 583 Computer Graphics Design. (3-0) Three hours. Same as CS 535.
Prerequisite: ECE 383.
Selected topics in computer graphics and graphics algorithms. Design projects.

ECE 584 Advanced Computer Architecture. (3-0) Three hours. Same as CS 567.
Prerequisite: ECE 480.
Computer architectures, computer design, memory systems design, parallel processing concepts, supercomputers, networks, and multiprocessing systems.

ECE 586 Embedded Systems. (3-0) Three hours.
Prerequisite: ECE 383
Coerequisite: ECE 487
Integration of microprocessors into digital systems. Includes hardware interfacing, bus protocols and peripheral systems, embedded and real-time operating systems, real-time constraints, networking and distributed process control.

ECE 587 Embedded Systems Laboratory. (0-3) One hour.
Prerequisite: ECE 383
Corequisite: ECE 486
Design and implementation experience with microcontrollers, interfacing, digital control systems, bus protocols and peripheral systems, real-time constraints, embedded and real-time operating systems, distributed process control.

ECE 588 Microcontrollers. (3-0) Three hours.
Prerequisite: ECE 383.
Corequisite: ECE 589.
Microcontrollers, digital control systems, hardware interfacing, networking, distributed process control, and robotics.

ECE 589 Microcontrollers Laboratory. (0-3) One hour.
Prerequisite: ECE 383.
Corequisite: ECE 588.
Design and implementation experience with microcontrollers, digital control systems, interfacing, operating systems, automated manufacturing processes, robotics, and networking.

ECE 593 Special Topics (Area). Variable credit.
Advanced topics of a specialized nature.

ECE 598 Research Not Related to Thesis. One to six hours.

ECE 599 Master's Thesis Research. One to twelve hours.

ECE 601 Digital Signal Processing. (3-0) Three hours.
Prerequisite: ECE 370 or equivalent.
Discrete-time signals and systems; discrete Fourier and transforms; basic network structures. Design of FIR and IIR filters using digital simulation programs.

ECE 602 Information Theory and Error Control Coding. (3-0) Three hours.
Prerequisites: GES 500 and ECE 502.
The principles of information theory relevant to the development and analysis of source (data compaction/compression) and channel (error control) codes.

ECE 640 Electromagnetic Field Theory I. (3-0) Three hours. Same as GES 640.
Prerequisite: ECE 340.
Application of Maxwell's equations to problems of electrical engineering; boundary-value problems, wave propagation, waveguides, radiation, and scattering; and surface waves.

ECE 641 Electromagnetic Field Theory II. (3-0) Three hours. Same as GES 641.
Prerequisite: ECE 640.
Plane, cylindrical, and spherical wave functions; scattering by wedges, cylinder, and spheres; radiation from apertures; perturbational and variational techniques; and microwave networks.

ECE 646 Microwave Circuits II. (3-0) Three hours.
Prerequisite: ECE 546.
Analysis and design of electromagnetic resonators, periodic structures, and filters; and advanced current topics in
passive microwave devices and active circuits.

**ECE 649 Numerical Methods in Electromagnetics.** (3-0) Three hours. Same as GES 649.
Prerequisite: ECE 640 or PH 531.
Formulation and computer solution of electromagnetic boundary value problems and integral equations; moment method relation to finite-element method and variational techniques; and applications to radiation, scattering, and guided wave geometries.

**ECE 650 Power System Stability.** (3-0) Three hours.
Prerequisite: ECE 456.
Modeling of the transmission system, loads, generators, exciters, and governors; prefault and postfault conditions; effect of system protection schemes on stability; computer solutions.

**ECE 651 Power Systems in Steady State.** (3-0) Three hours.
Prerequisite: ECE 456.
Strategies for the optimum steady-state operation of the system; economic commitment of generating units, economic allocation of generation of real and reactive power, and online computation of control signals; computational aspects of load-flow solutions; system security considerations.

**ECE 652 Operation and Control of Power Systems.** (3-0) Three hours.
Prerequisite: ECE 651 or equivalent.
State estimation in power systems; automatic generation control; load forecasting; economic dispatch; power pools and interchange evaluation; energy production costing; voltage collapse.

**ECE 654 Large-Scale Network Simulation.** (3-0) Three hours.
Prerequisites: ECE 326 and MATH 255; GES 451; or permission of the instructor.
Linear graph theory and operations research based algorithms for computer generation of the algebraic and differential equations describing large-scale networks; and multiple simulation algorithms.

**ECE 674 Nonlinear Control Systems.** (3-0) Three hours. Same as AEM/ME 578.
Prerequisite: ECE 475.
Classical and modern methods for the analysis and design of nonlinear automatic control systems. State variables, phase plane, describing functions, relay control, and optimal and adaptive control systems are covered.

**ECE 678 Advanced Topics in Control.** (3-0) Three hours. Same as AEM/ME 678.
Advanced topics in nonlinear, discrete-time, optimal, and learning systems.

**ECE 679 Kalman Filtering and Stochastic Control.** (3-0) Three hours. Same as AEM/ME 679.
Prerequisites: ECE 575 or GES 575 and AEM/ECE/ME 577.
Kalman filter, steady state theory, parameter estimation and extended Kalman filter; stochastic control; linear quadratic Gaussian (LQG) problems; and loop transfer recovery (LQG/LTR).

**ECE 684 Parallel and Distributed Processing.** (3-0) Three hours. Same as CS 684.
Prerequisites: ECE 484 and either ECE 485 or ECE 584.
Architectures for parallel processing, parallel processing interconnection networks, hardware issues in parallel processing, and representative parallel systems.

**ECE 693 Special Topics (Area).** One to five hours.
Advanced topics of a specialized nature.

**ECE 697 Seminar.** (1-0) One hour.
The overall course objective is to introduce graduate students to current research topics in the field of electrical and computer engineering. Emphasis is on techniques of oral communication, to include use of audiovisual aids. Usually taken in the first semester of residence in the graduate program and taken in subsequent semesters to present thesis or dissertation research results.

**ECE 698 Research Not Related to Dissertation.** One to six hours.

**ECE 699 Doctoral Dissertation Research.** Three to twelve hours.
For many years the Department of Industrial Engineering offered the master of science in industrial engineering. However, the Department ceased to exist on August 15, 2007. There is now an Industrial Engineering Program that reports to the Dean of the College of Engineering, and Dr. Robert Batson serves as the Coordinator of the program. The MSIE degree program terminates on August 15, 2009. That is the date by which MSIE students must have completed all degree requirements in order to receive the degree.

There were two prerequisites required of every student in the M.S.I.E. degree program:

**Simulation.** Each candidate for the M.S.I.E. degree must have had a simulation course in his or her undergraduate program, or must pass with "C" or better at least 3 hours (typically IE 561 during spring of the first year) of simulation as part of the graduate program.

**Work design and human performance.** Each candidate for the M.S.I.E. degree shall have completed IE 402 or equivalent in his or her undergraduate program, or must pass IE 502 Work Design and Human Performance during the first year of his or her graduate program.

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**Degree Requirements**

Graduate students currently in the M.S.I.E. degree program have coursework available to support research (thesis or nonthesis) in one of the following areas of faculty expertise:

- information and decision support
- risk analysis and quality engineering
- engineering and quality management
- intelligent manufacturing systems
- logistics engineering and supply chains
- industrial engineering applications in the automotive industry

Minimum credit hour requirements are 24 hours of acceptable coursework and 6 hours of thesis research under Plan I, or 33 hours under Plan II. In all cases, the student's supervisory committee determines which courses are required, which courses are acceptable, and any permissible substitution or exceptions. Other general degree requirements are as follows:

1. Six hours of mathematics are required in addition to the minimum College of Engineering requirements, either during undergraduate or graduate study. In industrial engineering, these requirements are typically met by taking 6 hours of either operations research or engineering statistics courses with IE designations. In particular, GES 500 Engineering Statistics and GES 501 Operations Research, taken as remedial prerequisite courses, will constitute the 6 hours in mathematics even though they may not be counted toward the minimum hours required to graduate.

2. As detailed above, each student must satisfy the M.S.I.E. prerequisite requirements.

3. Major requirements: 18 hours of 500-level or above IE courses, which are in an area(s) approved by the supervisory committee. Six of these hours may be IE 599 Master's Thesis Research under Plan I. Hours earned in IE 598 Research Not Related to Thesis may not be used to satisfy the major requirements, but do count in the 33 hours total for Plan II students.

4. Six hours of graduate-level courses in a minor approved by the student's committee. Minors outside the department are acceptable, with the approval of the student's committee. Note that courses taken as part of the 6 hours for the minor cannot be counted in the 18 hours of major requirements.

5. Six hours of thesis research (IE 599) under Plan I, or 3–6 hours of nonthesis research (IE 598) under Plan II. (More than 6 hours of thesis or nonthesis research may be scheduled, but a maximum of 6 hours can be applied toward the M.S.I.E. degree.) Under Plan I, a thesis is produced that must meet all standards set forth by the Graduate School. Under Plan II, a research report is produced which is to be of the style and quality of a thesis but is not reviewed for acceptability beyond the examining committee. The 6 hours for thesis research should be distributed over two semesters, or one semester and the summer terms. The department encourages, but does not require, a 6-hour effort on nonthesis research. If 6 hours of nonthesis research are conducted, these hours are normally distributed over two semesters, but under exceptional circumstances and with approval of the supervisory committee, a student may take 6 hours in one semester or during two consecutive summer terms.
6. Six hours of approved electives under Plan I or 9 hours of approved electives under Plan II.
7. A student must enroll in the one-hour-per-week IE 595 Seminar each semester in which he or she is enrolled up to a maximum of three semesters, except the semester in which he or she plans to graduate. That semester, the student enrolls in IE 596 Seminar for one hour's credit. This seminar is an important part of the development of the student into a professional industrial engineer. It also promotes camaraderie among IE graduate students. Attendance and participation are mandatory.

Course Descriptions

IE 402 Work Design Human Performance. (4-0) Four hours.
Prerequisite: PY 101, CS 114, IE 203, and GES 255.
Methodology related to the design, improvement, and evaluation of non-machine systems with emphasis on the principles of human factors and work measurement.

IE 415 Advanced Engineering Economics. (3-0) Three hours.
Prerequisites: IE 203 or CE 366, and either GES 255, GES 400, or GES 500.
Capital budgeting, decision making under risk and uncertainty, utility theory, cost estimation, and design of financial control through management simulation.

IE 417 Project Management. (3-0) Three hours.
Prerequisites: IE 203 or CHE 479, and GES 255 or equivalent.
This is an engineering management course designed to introduce students to the functions of project engineers and managers. It details the process of planning and controlling project scope, time, and cost.

IE 418 Engineering Management. (3-0) Three hours. Same as GES 418.
Prerequisite: IE 203 or equivalent or the consent of instructor.
An introduction to management principles and the management functions of planning, organizing, motivating, and controlling. Management of research, design, manufacturing, and quality will be studied.

IE 420 Artificial Intelligence for Manufacturing Systems. (3-9) Three hours.
Prerequisite: GES 257 or equivalent.
The course covers the basic concepts in fuzzy set theory, fuzzy logic and approximate reasoning. Relation between fuzzy set theory, probability theory, and possibility is discussed. Applications of fuzzy set theory in manufacturing systems are outlined.

IE 421 Reliability, Maintainability, and Total Productive Maintenance. (3-0) Three hours.
Prerequisite: GES 255 or GES 500.
Measures and methods of reliability engineering, maintainability engineering, and total productive maintenance, as used in the system design process.

IE 422 Quality Engineering. (3-0) Three hours.
Prerequisite: GES 257 or GES 400 or 500.
Introduction to quality planning approaches, including quality function deployment and robust product and process design.

IE 425 Statistical Quality Control. (3-0) Three hours.
Prerequisite: GES 255 or GES 500.
Use of statistical tools and techniques in the control of quality of manufactured products. Shewhart control charts; advanced control charts; capability analysis; single, double, and multiple sampling inspection plans.

IE 426 Design and Analysis of Experiments. (3-0) Three hours.
Prerequisite: GES 257 or GES 400 or GES 500.
Design of experiments and application of analysis of variance, regression analysis, and related statistical methods.

IE 430 Advanced Productivity Engineering. (3-0) Three hours.
Prerequisites: IE 253 and either GES 257, GES 400, or GES 500.
Advanced study and design of productivity improvement systems; study of productivity management philosophies and methods; and thorough study of systems to assess white-collar, indirect-labor, and direct-labor productivity.

IE 434 Ergonomics of Cumulative Trauma Disorders. (3-0) Three hours.
Prerequisite: IE 351.
Theory and application of ergonomics interventions to control occupation-related cumulative musculoskeletal injuries in industry. Field trips and design projects will provide experience in application of theoretical material.

IE 446 Advanced Information Systems Design. (3-0) Three hours.
Prerequisite: IE 464.
Current concepts in information systems architecture and applications. Including decision support systems and CASE tools. Emphasis placed on expanded use of systems design methodology.
IE 448 Expert Systems in Manufacturing. (3-0) Three hours.
Prerequisite: IE 464.
The objective of this course is to detail the methods by which expert systems technology may be applied to the manufacturing environment. Emphasis will be placed on knowledge-engineering techniques and the use of expert system shells.

IE 454 Safety Engineering. (3-0) Three hours.
Prerequisites: GES 255 or equivalent, consent of the instructor.
An introduction to safety engineering and accident prevention, including related state and federal laws. Topics include impact of accidents on industry, state and federal regulatory laws, hazard identification, analysis, control techniques, accident investigation, and environmental and human factors.

IE 455 Product Safety Management. (3-0) Three hours.
Prerequisites: GES 255 or equivalent, consent of the instructor.
Government regulations, court cases, and problems and solutions concerning product safety, for current and potential engineering and business managers. Reports, projects, discussions, and local field trips involving a wide range of products and services of interest to students.

IE 460 Facilities Planning and Design. (3-0) Three hours.
Prerequisite: IE 402.
Corequisites: IE 321 and IE 363.
Economic factors in and techniques for the location and layout of a manufacturing facility; relationship of material handling and layout; and analysis and design of integrated material-handling systems.

IE 461 Systems Simulation. (2-3) Three hours.
Prerequisites: CS 114 and GES 257, consent of the instructor.
Corequisite: IE 364.
Simulation methodology, emphasizing discrete, computer-simulation modeling. Writing proficiency is required for a passing grade in this course.

IE 462 Material Handling and Distribution in Discrete Manufacturing. (3-0) Three hours.
Prerequisites: IE 364 and IE 321.
an investigation of material flow and physical distribution systems in discrete parts manufacturing. Topics include principles and techniques for the analysis and design of material handling systems, unit load design, equipment selection and justification, and warehousing and distribution logistics.

IE 463 Systems Design I. (2-3) Three hours.
Prerequisites: IE 402, IE 363, and IE 460.
Corequisites: IE 417 and IE 425.
Application of the morphology and iterative process of systems design, with emphasis on designing and implementing solutions to actual industrial problems. Students function independently in manufacturing and service systems. Writing proficiency is required for a passing grade in this course.

IE 464 Information Systems Design. (2-3) Three hours.
Prerequisites: IE 321 and CS 114.
An overview of management information systems (MIS) focusing on the practical aspects, applications, and methodology of MIS, particularly from the industrial engineer’s perspective. Information systems design methodology is covered in detail.

IE 466 Manufacturing Systems Design. (3-0) Three hours.
Prerequisites: IE 321 and IE 364.
Investigation of design issues and approaches for the analysis and design of manufacturing systems.

IE 467 Production Planning and Control. (3-0) Three hours.
Prerequisites: GES 255 or GES 500, and IE 363 or GES 501.
Forecasting and estimation; aggregate planning; charts and network models; resource allocation; inventory control; sequencing and scheduling; flow control; bills of materials; and requirements planning.

IE 468 Inventory Systems. (3-0) Three hours.
Prerequisite: IE 467.
Introduction to the planning and operation of inventory systems, including independent demand models, hierarchical systems, in-process planning, just-in-time, and aggregate inventory considerations.

IE 470 Supply Chain Engineering. (3-0) Three hours.
Prerequisite: None.
The application of constrained models to supply chain planning and design, emphasizing facilities, routes, and inventories. Interface with production planning systems and transactional databases.

IE 478 Advanced Linear Programming. (3-0) Three hours.
Prerequisite: IE 363 or GES 501.
Linear programming, duality, postoptimality analysis, decomposition principle, bounded and discrete variables, goal programming, and multi-objective programming.

**IE 483 Computer-Aided Manufacturing.** (3-0) Three hours.
Prerequisites: DR 125 or DR 133, and ME 383.
Introduction and application of several technologies used in computer-aided design/manufacturing including computer-aided design, solid modeling, rapid prototyping, geometric dimensioning and tolerancing, machining process optimization, NC programming CNC machines, software-based product and process design in machining.

**IE 485 Systems Design II.** (1-6) Three hours.
Prerequisite: IE 463.
Corequisite: IE 467, IE 364, or IE 461.
Continuation of IE 463 Systems Design I, with emphasis on designing and implementing solutions to actual industrial problems. Students learn to function as team members to solve problems in manufacturing and service systems.

**IE 491:492 Special Problems (Area).** One to six hours.
Prerequisite: Permission of the instructor.
Special topics courses designed to study in depth one or more topics related to industrial engineering. Credit awarded is based on the amount of work undertaken.

**IE 498 Honors Research Project.** (3-0) Three hours
Prerequisites: None.
Course provides an opportunity for students in the Industrial Engineering Program to conduct in-depth independent study in a research topic of their choosing.

**IE 499 Honors Design Project.** (3-0) Three hours.
Course provides an opportunity for students in the Industrial Engineering Program to conduct in-depth independent study in a design topic of their choosing.

**IE 502 Work Design and Human Performance.** (2-2) Three hours.
Corequisite: GES 500 or equivalent. Not open to students who have earned credit for IE 402 or IE 351.
Design and evaluation of human-machine systems and working environments to optimize human productivity and performance, with emphasis on the industrial environment.

**IE 515 Advanced Engineering Economics.** (3-0) Three hours.
Prerequisites: IE 203 or CE 366, and either GES 255, GES 400, or GES 500. Not open to students who have earned credit for IE 415.
Capital budgeting, decision making under risk and uncertainty, utility theory, cost estimation, and design of financial control through management simulation.

**IE 517 Project Management.** (3-0) Three hours.
Prerequisites: IE 203 or CE 366, and GES 255. Not open to students who have earned credit for IE 417.
This is an engineering management course designed to introduce students to the functions of project engineers and managers. It details the processes of planning and controlling project scope, time, and cost.

**IE 518 Engineering Management.** (3-0) Three hours. Same as GES 518.
Prerequisite: IE 203 or CE 366. Not open to students who have earned credit for IE 418.
An introduction to management principles and the management functions of planning, organizing, motivating, and controlling. Management of research, design, manufacturing, and quality will be studied.

**IE 520 Artificial Intelligence for Manufacturing Systems.** (3-9) Three hours.
Prerequisite: GES 257 or equivalent.
The course covers the basic concepts in fuzzy set theory, fuzzy logic, and approximate reasoning. Relation between fuzzy set theory, probability theory, and possibility is discussed. Applications of fuzzy set theory in manufacturing systems are outlined.

**IE 521 Reliability, Maintainability, and Total Productive Maintenance.** (3-0) Three hours.
Prerequisite: GES 255 or GES 500. Not open to students who have earned credit for IE 421.
Measures and methods of reliability engineering, maintainability engineering, and total productive maintenance, as used in the system design process.

**IE 522 Quality Engineering.** (3-0) Three hours.
Prerequisites: GES 257 or GES 400/500.
Introduction to Taguchi methods, including loss function, orthogonal arrays, and parameter design experiments; also the role of Taguchi methods in quality function deployment (QFD) process.

**IE 525 Statistical Quality Control.** (3-0) Three hours.
Prerequisite: GES 255 or GES 500. Not open to students who have earned credit for IE 425.
Use of statistical tools and techniques in the control of quality of manufactured products. Shewhart control charts;
advanced control charts; capability analysis; single, double, and multiple sampling inspection plans.

**IE 526 Design and Analysis of Experiments.** (3-0) Three hours. (Also GES 526.)
Prerequisite: GES 257, GES 400, or GES 500. Not open to students who have earned credit for IE 426.
Design of experiments and application of analysis of variance, regression analysis, and related statistical methods.

**IE 528 Advanced Design of Experiments.** (3-0) Three hours.
Prerequisite: IE 426, IE 526, or GES 526.
Theory and application of experimental design, including randomized block, Latin squares, factorial, fractional factorial, and nested designs.

**IE 530 Advanced Productivity Engineering.** (3-0) Three hours.
Prerequisites: IE 402 and either GES 257, GES 400, or GES 500. Not open to students who have earned credit for IE 430.
Advanced study and design of productivity improvement systems. Study of productivity management philosophies and methods. Thorough study of systems to assess white-collar, indirect-labor, and direct-labor productivity.

**IE 534 Ergonomics of Cumulative Trauma Disorders.** (3-0) Three hours.
Prerequisite: IE 402 or IE 502. Not open to students who have earned credit for IE 434.
Theory and application of ergonomics interventions to control occupationally-related cumulative musculoskeletal injuries in industry. Field trips and design projects will provide experience in application of theoretical material.

**IE 546 Advanced Information Systems Design.** (3-0) Three hours.
Prerequisite: IE 464 or equivalent. Not open to students who have earned credit for IE 446.
Current concepts in information systems architecture and applications, including decision support systems and CASE tools. Emphasis is on expanded use of systems design methodology.

**IE 548 Expert Systems in Manufacturing.** (3-0) Three hours.
Prerequisite: IE 464 or IE 546. Not open to students who have earned credit for IE 448.
The objective of this course is to detail the methods by which expert systems technology may be applied to the manufacturing environment. Emphasis will be placed on knowledge engineering techniques and the use of expert system shells.

**IE 554 Safety Engineering.** (3-0) Three hours.
Prerequisite: GES 255 or equivalent. Not open to students who have earned credit for IE 454, IE 502, or equivalent.
An introduction to safety engineering and accident prevention, including related state and federal laws. Topics include impact of accidents on industry, state and federal regulatory laws, hazard identification, analysis, control techniques, accident investigation, and environmental and human factors.

**IE 560 Facilities Planning and Design.** (3-0) Three hours.
Prerequisite: IE 402 or IE 502. Not open to students who have earned credit for IE 460.
Corequisites: IE 321 and IE 363 or GES 501.
Economic factors in and techniques for the location and layout of a manufacturing facility; relationship of material handling and layout; analysis and design of integrated material-handling systems.

**IE 561 Systems Simulation.** (3-3) Three hours.
Prerequisites: IE 203 and CS 114, or consent of the instructor.
Corequisite: GES 257 or GES 500. Not open to students with credit for IE 461.
Simulation methodology, emphasizing discrete, computer-simulation modeling.

**IE 562 Material Handling and Distribution in Discrete Manufacturing.** (3-0) Three hours.
Prerequisites: IE 364 or GES 501, and IE 321 or equivalent. Not open to students who have earned credit for IE 462.
An investigation of material flow and physical distribution systems in discrete parts manufacturing. Topics include principles and techniques for the analysis and design of material handling systems, unit load design, equipment selection and justification, and warehousing and distribution logistics.

**IE 565 Advanced Systems Simulation.** (3-0) Three hours.
Prerequisites: IE 461 or IE 561 and IE 321.
Simulation methodology; simulation modeling of complex systems using digital computers; computer models simulating operating characteristics of manufacturing plants and service industries.

**IE 566 Manufacturing Systems Design.** (3-0) Three hours.
Prerequisites: IE 321 and either GES 501 or IE 364. Not open to students who have earned credit for IE 466.
Investigation of design issues and approaches for the analysis and design of manufacturing systems.

**IE 567 Production Planning and Control.** (3-0) Three hours.
Prerequisites: GES 255 or GES 500, and either IE 363 or GES 501. Not open to students who have earned credit for IE 467.
Forecasting and estimation; aggregate planning; charts and network models; resource allocation; inventory control; sequencing and scheduling; dispatching; flow control; bills of materials; and requirements planning.
IE 568 Inventory Systems. (3-0) Three hours.
Prerequisite: IE 363 or GES 501. Not open to students who have earned credit for IE 468.
Introduction to the planning and operation of inventory systems, including independent demand models, hierarchical systems, in-process planning, just-in-time, and aggregate inventory considerations.

IE 570 Supply Chain Engineering. (3-0) Three hours.
Prerequisite: IE 363 or GES 501 or equivalent.
The application of constrained models to supply chain planning and design, emphasizing facilities, routes, and inventories. Interface with production planning systems and transactional databases.

IE 578 Advanced Linear Programming. (3-0) Three hours.
Prerequisite: IE 363 or GES 501. Not open to students who have earned credit for IE 478.
Linear programming, duality, postoptimality analysis, the decomposition principle, bounded and discrete variables, goal programming, and multi-objective programming.

IE 583 Computer-Aided Manufacturing. (3-0) Three hours.
Prerequisites: DR 125 or DR 133, and ME 383
Introduction and application of several technologies used in computer-aided design/manufacturing, including computer-aided design, solid modeling, rapid prototyping, geometric dimensioning and tolerancing, machining process optimization, NC programming CNC machines, software-based product and process design in machining.

IE 591:592 Special Problems (Area). One to six hours.
Prerequisite: Permission of the instructor.

IE 595:596 Seminar. (1-0) One hour (each).
Presentation and discussion of recent journal articles of importance to the field of industrial engineering. Required each semester for industrial engineering students.

IE 598 Research Not Related to Thesis. Variable credit.

IE 599 Master's Thesis Research. Variable credit.

IE 613 Systems Engineering I. (3-0) Three hours.
Prerequisite: Permission of the instructor.
Modern practices and theory of design and analysis of systems in industry.

IE 614 Systems Engineering II. (3-0) Three hours.
Prerequisite: IE 613.
Continuation of IE 613 Systems Engineering I.

IE 631 Occupational Biomechanics. (3-0) Three hours.
Prerequisites: IE 402 or IE 502 and GES 257 or GES 400/500.
The human musculoskeletal system; statics and dynamics of anthropometry; analysis and measurement of body motions; analysis of force systems in the body; and applications of biomechanics in the design of the workplace, tasks, and hand tools to improve productivity and reduce injuries.

IE 632 Work Physiology. (3-0) Three hours.
Prerequisites: IE 402 or IE 502 and GES 257 or GES 400/500.
Theory and techniques for measurement of the physiological costs of physical work, with applications in job design and worker selection.

IE 633 Human Information Processing. (3-0) Three hours.
Prerequisites: IE 402 or IE 502 and GES 257 or GES 400/500.
Human mental capabilities and limitations, human-machine interfaces, mental workload, human-computer interfaces, human error, and system design.

IE 634 Research Techniques in Human Engineering. (0-3) Three hours.
Prerequisites: IE 526 or GES 526, and IE 631 or IE 632, or IE 633.
Research design, laboratory vs. field experiments, methods of measurement, observation, data collection, and statistical analysis.

IE 671 Decision and Value Theory. (3-0) Three hours.
Prerequisite: GES 501 and IE 364.
Decision models; utility curves; subjective probability; uncertain payoffs; value of information; revision of prior probability; decision trees; multi-attribute utility models; and risk sharing and group decisions.

IE 679 Nonlinear Programming. (3-0) Three hours.
Prerequisite: GES 501 or IE 363.
Theory of and solution algorithms for nonlinear programs; and optimality conditions, convexity, linear approximation,
gradient methods, search techniques, and geometric programming.

**IE 680 Network Optimization.** (3-0) Three hours.
Prerequisite: GES 501 or IE 363 or equivalent.
Theories, algorithms, and applications for networks and graphs: shortest path, K-shortest, traveling salesman, multi-terminal flow, minimum cost flow, and multi-commodity problems.

**IE 682 Integer Programming.** (3-0) Three hours.
Prerequisite: IE 363 or GES 501 or MGS 500 or equivalent.
Optimization in integer variables by cutting planes, branch-and-bound, group theoretic, and implicit enumeration.
11.6.8 DEPARTMENT OF MECHANICAL ENGINEERING (ME)
Head: Professor William H. Sutton, Office: 290 Hardaway Hall

The department offers programs leading to the master of science in mechanical engineering degree and the doctor of philosophy degree in the area of mechanical engineering.

Two basic plans are available for earning an M.S. degree, one requiring a thesis (Plan I) and one not requiring a thesis (Plan II). During the first semester in residence, a student enrolled in any graduate program should form a supervisory committee and, in counsel with an advisor, submit a program of courses for the degree. Forms and information for this purpose can be obtained in the departmental office.

Research. The department has active research programs in automotive engineering, acoustics, biomedical engineering, combustion, computational modeling and simulation, IC engines, control systems, energy systems, air-conditioning (HVAC), manufacturing, propulsion and space exploration, vibrations, and vehicle dynamics. To support research, the department maintains well-equipped laboratories for engines, computer-aided automation, HVAC, numerical modeling, vibro-acoustics and sound quality, metrology and precision engineering, combustion, and propulsion and space exploration. The department also maintains a modularized area capable of supporting many separate projects, as well as a student machine shop. Students have easy access to modern computer facilities, including a departmental computer room.

Admission Requirements
Information on the University’s policies and requirements regarding admission is in the “Academic Policies” section of this catalog. An applicant for a mechanical engineering graduate program should normally have a baccalaureate degree in mechanical engineering from an ABET-accredited curriculum or a recognized international university. Applicants in related areas such as science and mathematics are encouraged; however, prerequisite undergraduate courses will be required that will not apply for graduate credit.

Admission to the Ph.D. program usually requires completion of a Master’s degree; however, exceptionally qualified applicants may be admitted directly to the Ph.D. program from the Bachelor’s degree.

The GRE is not required for graduates from ABET-accredited programs. All other applicants must submit GRE scores. International students must generally submit TOEFL or equivalent scores in English language proficiency.

Degree Requirements
Also refer to the “Graduate Handbook” on-line on the departmental homepage.

Plan I. All students on teaching or research assistantships in the department are expected to pursue the Plan I option. The following are the department’s requirements for the Plan I Master’s degree:

1. A minimum of 24 semester hours of approved courses that together satisfy all other course requirements for the degree
2. A minimum of 12 semester hours in a major area, of which 3 hours may be in a closely related supporting area; at least 12 of the major hours must be at the 500 and/or 600 level
3. A minimum of 6 semester hours of mathematics taken in the Department of Mathematics or the College of Engineering
4. An approved thesis and a minimum of 6 semester hours of ME 599.

Plan II. The following are the department’s requirements for the Plan II Master’s degree:

1. minimum of 33 semester hours of approved courses that together satisfy all other course requirements for the degree
2. A minimum of 18 semester hours in a major area, of which 6 hours may be in closely related supporting areas
3. A minimum of 6 semester hours of mathematics taken in the Department of Mathematics or the College of Engineering
4. A comprehensive exam.
Doctor of Philosophy. The following are the department's requirements for the Ph.D. degree:

1. A minimum of 48 semester hours of approved courses that together satisfy all other course requirements for the degree
2. A minimum of 24 semester hours of coursework in the major technical area, of which 9 hours may be in closely related supporting areas
3. A minimum of 12 semester hours in any minor technical areas included in the student’s program of study
4. A comprehensive exam
5. An approved dissertation and a minimum of 24 semester hours of ME 699.

Course Descriptions

**ME 500 Intermediate Fluid Mechanics.** (3-0) Three hours. Same as AEM 500.  
Prerequisites: MATH 238, ME 215, and AEM 311.  
For description, see AEM 500.

**ME 501 Mechanical Engineering Analysis I.** (3-0) Three hours.  
Prerequisites: ME 309, ME 349, and ME 372.  
Analysis of mechanical engineering systems; presentations and application of advanced analysis techniques for continuous and discrete dynamic systems.

**ME 502 Transport Phenomena.** (3-0) Three hours.  
Prerequisites: ME 215 and AEM 311.  
Steady and transient mass; energy and momentum transport in ideal and real substances.

**ME 503 Intermediate Gas Dynamics.** (3-0) Three hours. Same as AEM 503.  
Prerequisites: ME 215 and AEM 311.  
Basic equations and concepts of compressible flow; shock and expansion waves; and development of the generalized one-dimensional equations and solution of these equations for various types of flow, using computer software.

**ME 506 Foundations of Thermal Power Generation.** (3-0) Three hours.  
Prerequisite: Graduate standing. Not open to students who have taken ME 406.  
Thermal power systems; components, process analysis and modeling, fuels, combustion, environmental aspects, and availability analysis in steam and gas turbine plants. Examination of recent trends such as cogeneration and combined cycles.

**ME 509 Intermediate Heat Transfer.** (3-0) Three hours.  
Prerequisites: ME 309 and AEM 311.  
Intermediate treatment of conduction, convection, and radiation heat transfer.

**ME 516 Foundations of Energy Conservation and Management.** (3-0) Three hours.  
Prerequisite: Graduate standing. Not open to students who have taken ME 416.  
Analysis and management of energy use in residential, commercial, and industrial applications, including lighting, heating and cooling, controls, and energy management systems. Topics include economics, auditing, energy management, and alternative energy sources.

**ME 518 Principles of Combustion I.** (3-0) Three hours.  
Combustion thermodynamics, flame temperature and equilibrium compositions, ignition processes, detonation and deflagration, diffusion flames, and similitude; assigned papers.

**ME 541 Introduction to Biomedical Engineering.** (3-0) Three hours.  
Prerequisites: MATH 238, PH 106, and either AEM 201 or AEM 361.  
Introduction to the relationship between engineering and medicine. Modeling musculoskeletal and cardiovascular systems. Review of medical devices such as non-invasive imaging devices, biopotential electrodes and amplifiers, and assistive technology.

**ME 550 Advanced Mechanical Design.** (3-0) Three hours.  
Constitutive relationships, Castigliano’s method, fatigue, stochastic relationships, time-dependent properties, and other advanced topics.
ME 553 Mechanical Reliability. (3-0) Three hours.
Prerequisites: ME 350 and ME 450.
Probabilistic methodology for assessing the reliability of a mechanical system at the design stage.

ME 561 Techniques in Experimental Research. (2-3) Three hours.
Prerequisite: ME 360.
Design of experimental research systems; study of instrumentation, transducers, and related electronic components; data acquisition, error analysis, experiment planning, and proposal writing.

ME 562 Intermediate Dynamics. (3-9) Three hours. Same as AEM 562.
Prerequisites: MATH 238 and AEM 264, or permission of the instructor.
Dynamics of systems in moving coordinate frames; Lagrangian formulation and Hamilton 's principle; stability and perturbation concepts for rigid body motion; motion of systems of rigid bodies in three dimensions.

ME 567 Robotics and Control Hardware. (3-0) Three hours.
Prerequisites: Graduate standing and ME 360.
Corequisite: ME 475. Not open to students who have earned credit for ME 467.
Familiarizes graduate students with the design of robots and control systems, with an emphasis on hardware used in real-world implementations. Extra outside reading assignments and projects distinguish ME 567 from its undergraduate counterpart, ME 467.

ME 570 Mechanical Vibrations. (3-0) Three hours. Same as AEM 570.
Prerequisites: ME 372 and AEM 250.
Formulation and solution of free and forced vibration problems with single and multiple DOFs. Both modal and frequency response techniques are discussed.

ME 571 Fundamentals of Acoustics. (3-0) Three hours. Same as AEM 571.
Prerequisites: MATH 238, PH 106, and either ECE 320 or ECE 225.
Fundamental physical principles underlying wave propagation and resonance in mechanical systems. Introduces applications and provides experience in acoustic and audio measurements and the associated instrumentation.

ME 577 Advanced Linear Control. (3-0) Three hours. Same as AEM/ECE 577.
Prerequisite: ME 475.
For description, see ECE 577.

ME 578 Nonlinear Control Systems. (3-0) Three hours. Same as ECE 674/AEM 578.
Prerequisite: ME 475.
For description, see ECE 674.

ME 591 Special Problems (Area). Variable credit.
Credit awarded is based on the amount of work undertaken.

ME 594 Special Project. Two to six hours.
Planning, executing, and presenting results of an individual project involving a research design, analysis, or similar undertaking.

ME 598 Research Not Related to Thesis. Variable credit.

ME 599 Master's Thesis Research. One to six hours.

ME 605 Classical Thermodynamics. (3-0) Three hours.
Prerequisite: ME 215.
Classical macroscopic thermodynamic analysis of systems, pure substances, mixtures, and reacting systems.

ME 607 Conduction Heat Transfer. (3-0) Three hours.
Prerequisite: AEM 309 or equivalent.
Transient, multidimensional heat conduction in various geometries, and the mathematical and numerical means to analyze them.

ME 609 Convection Heat Transfer. (3-0) Three hours.
Prerequisite: ME 309 or equivalent.
Laminar and turbulent internal and external flow, natural convection, and the mathematical and numerical means to analyze them.

ME 611 Finite-Element Analysis of Convective Heat Transfer. (3-0) Three hours.
Prerequisites: ME 309, AEM 311, and ME 349; or permission of the instructor.
Introduction to finite-element theory; Galerkin method of weighted residuals; shape functions; isoparametric elements; finite-element convective-diffusion equation; upwind methods; turbulence modeling; and utilization of commercial finite-element codes for analysis of convective heat transfer.
ME 615 Statistical Thermodynamics. (3-0) Three hours.
Prerequisite: Permission of the instructor.

ME 618 Principles of Combustion II. (3-0) Three hours.
Prerequisite: ME 518.
Parameters of confined combustion; evaporation of fuel, velocity of flames, detonation, and chamber design; dynamic effects; and measuring techniques. Assigned papers.

ME 620 Finite Difference Methods in Fluid Dynamics. (3-0) Three hours. Same as AEM 620.
Prerequisites: GES 132, MATH 238, and AEM 311.
For description, see AEM 620.

ME 621 Boundary Layer Theory I. (3-0) Three hours. Same as AEM 621.
For description, see AEM 621.

ME 629 Radiation Heat Transfer. (3-0) Three hours.
Prerequisite: ME 309.
Physical laws of thermal radiation; implications of entropy and probability; view factors; geometrical and spectral characteristics; and absorbing-scattering media.

ME 662 Advanced Dynamics. (3-0) Three hours.
Prerequisite: ME 562.
Stability of autonomous and non-autonomous dynamical systems; Hamilton mechanics and canonical systems; analytical solution applying perturbation techniques; and analysis of dynamic behavior using geometric theory.

ME 665 Advanced Design of Automated Manufacturing Systems. (3-0) Three hours.
Prerequisite: ME 465.
Advanced studies in the design of industrial robotic systems using analytical and interactive computer-graphics techniques. Topics include robot kinematics and dynamics, the reverse kinematics problem, numerical techniques, adaptive control theory, robot motion planning, and trajectory specifications.

ME 677 Optimal Control. (3-0) Three hours. Same as ECE 677.
Prerequisite: ME 577.
For description, see ECE 677.

ME 678 Advanced Topics in Control. (3-0) Three hours. Same as ECE 678.
For description, see ECE 678.

ME 691:692 Special Problems (Area). Variable credit. Credit awarded is based on the amount of work undertaken.

ME 693 Selected Topics (Area). One to three hours.
Topics of current research in dynamics and controls, solid mechanics and structures, or thermal/fluid sciences; applications to mechanical engineering.

ME 694 Special Project. Two to six hours.
Planning, executing, and presenting results of an individual project involving a research design, analysis, or similar undertaking.

ME 698 Research Not Related to Dissertation. One to six hours.

ME 699 Doctoral Dissertation Research. Three to twelve hours.
The department offers programs leading to the master of science in metallurgical engineering degree and to the doctor of philosophy degree in the area of materials/metallurgical engineering.

An interdisciplinary Ph.D. degree in materials science is also offered (see the section "Interdisciplinary Programs" in this catalog). The graduate program in metallurgical and materials engineering allows for close association between graduate students and the faculty.

Research. Research interests of the department include thermodynamics and kinetics of molten metal processes, chemical metallurgy, metal-casting, corrosion phenomena, computer modeling of solidification and other metallurgical processes, electrodynamics of molten metals, metal matrix composites, thin-film technology, tribology, magnetic materials, microgravity effects in solidification, modeling microstructural evolution, and micromechanical behavior in cast materials, fracture mechanics, refractories, molten salts, electronic materials, thin films, and fuel cells, and phase equilibria. Facilities are available for directional and high-speed solidification, levitation melting, sputtering and chemical vapor-deposition, optical and electron microscopy, X-ray diffraction, corrosion, nanoindentation, and electrochemistry, materials characterization facilities, MEMS and thermal properties, and thermodynamic properties. A metal-casting facility is equipped with up-to-date metal melting and casting equipment and is one of the finest facilities in the United States for teaching, research, and service to the metal-casting and processing industry. Well-qualified machinists are available for construction of highly specialized research equipment.

Computational facilities are comprehensive, ranging from workstations, minicomputers, and PC units with associated data-acquisition peripherals to access the campus mainframe equipment.

Admission Requirements
Admission requirements are outlined in the "Academic Policies" section of this catalog.

Degree Requirements

Master of Science. Plan I is the standard M.S. degree plan. However, in exceptional cases, a student who has the approval of his or her supervisory committee may follow Plan II. A student who believes there are valid reasons for using Plan II must submit a written request detailing these reasons to the department head no later than midterm of the first semester in residence.

All graduate students, during the first part and the last part of their programs, will be required to satisfactorily complete MTE 595 Seminar (first part) and MTE 596 Seminar (last part). This hour of required credit is in addition to the other degree requirements.

Doctor of Philosophy. The program for the degree of doctor of philosophy in the area of materials/metallurgical engineering is conducted jointly with The University of Alabama at Birmingham (UAB). This arrangement permits sharing of facilities, exchange of faculty, joint seminars, and a wide choice of dissertation advisors. The Ph.D. degree in the area of materials science is also offered, in collaboration with UAB and The University of Alabama in Huntsville. Full details of this program may be found in this catalog in the section "Interdisciplinary Programs."

Course Descriptions

MTE 412 Polymer Materials Engineering. (3-0) Three hours. Prerequisite: CH 102.
Introduction to the manufacture, processing, and applications of organic polymeric materials. The chemistry of polymer manufacture, the molecular structure of polymers, and the structure-property relationships for thermoplastic and thermosetting polymers are covered.

MTE 416 Fundamentals of Foundry Processing. (3-0) Three hours. Prerequisite: MTE 380 and MTE 362.
Metal-casting principles, including pattern design, molding materials, molding methods, sand testing, solidification, risering and gating of castings, casting design, and casting defects.

Advanced study of application of fundamental sciences to processing, microstructure formation, and properties of
iron-base alloys; physico-chemistry of liquid metal as applied to melting and refining; solidification science and
thermodynamics of iron-carbon alloys; processing microstructure-properties correlation in steel and cast iron.

**MTE 418 Special Casting Procedures.** (2-3) Three hours.
Prerequisite: MTE 380.
Corequisite: MTE 362 and MTE 373.
Advanced study of application of fundamental sciences to processing, microstructure formation, and properties of
advanced nonferrous alloys; thermodynamics of melting and refining; solidification processing of nonferrous alloys
including aluminum, aluminum-lithium, titanium, superalloys, and magnesium; processing-microstructure-properties
correlation in nonferrous alloys.

**MTE 439 Metallurgy of Welding.** (3-0) Three hours.
Prerequisite: MTE 380 or permission of instructor.
Corequisite: MTE 373.
Thermal, chemical, and mechanical aspects of welding using fusion welding process. The metallurgical aspects of
welding including microstructure and properties of the weld are also covered.

**MTE 441 Chemical Metallurgy.** (3-0) Three hours.
Prerequisites: MTE 353 and MTE 362.
Application of thermodynamics, fluid flow, and heat and mass transfer to the design and operation of chemical
metallurgical processes; roasting, agglomerating, oxidation and reduction reactions, smelting, converting, and
refining.

**MTE 442 Magnetic Recording Media.** (3-0) Three hours. Same as ECE 442.
Prerequisite: ECE 341 or MTE 271.
Basic ferromagnetism, preparation and properties of magnetic recording materials, magnetic particles, thin magnetic
films, soft and hard film media, multilayered magnetoresistive media, and magneto-optical disk media.

**MTE 443 Materials Engineering Design I.** (2-0) Two hours.
Prerequisites: MTE 455 or permission of the instructor.
Corequisites: MTE 441 and MTE 481.
Design of devices, components, processes or systems using physical, chemical, mechanical, economic, and ethical
principles; project planning and cost analysis; application of computer-based design tools; analysis of problems,
design and development of solutions; concepts of shared responsibility, teamwork, and communication; oral and
written presentation.

**MTE 444 Hydrometallurgy and Chemical Processing.** (3-0) Three hours.
Prerequisites: MTE 353 and MTE 362.
Current hydrometallurgical practice as applied to mineral processing, metal extraction, and recovery; recent
developments in technology; thermodynamics and kinetics of hydrometallurgical processes; leaching and solvent
extraction.

**MTE 445 Materials Engineering Design II.** (0-3) Three hours.
Prerequisite: MTE 443.
Implementation of the research plan developed in MTE 443; interim and final design reviews with oral and written
reports.

**MTE 449 Powder Metallurgy.** (3-0) Three hours.
Prerequisite: MTE 373 and MTE 380.
The course will cover the topic of powder metallurgy, describing the various types of powder processing and how
these affect properties of the components made. Current issues in the subject area, from high production to
nanomaterials, will be discussed.

**MTE 450 Plasma Processing of Thin Films: Basics and Applications.** (3-0) Three hours.
Prerequisite: By permission of instructor.
Fundamental physics and materials science of plasma processes for thin film deposition and etch are covered. Topics
include evaporation, sputtering (special emphasis), ion beam deposition, chemical vapor deposition, and reactive ion
etching. Applications to semiconductor devices, displays and data storage are discussed.

**MTE 455 Mechanical Behavior of Materials.** (3-0) Three hours.
Prerequisite: AEM 201
Flow and fracture of solids; uniaxial stress-strain as a reference behavior; theories of terminal instability under
impact; monotonic, sustained (creep) and repeated (fatigue) loadings of solids under various states of stress.

**MTE 476 Physical Ceramics.** (3-0) Three hours.
Prerequisites: MTE 271 and MTE 362.
Topics include ceramic raw materials, refractories, thermal properties, mechanical properties, processing, and
advanced ceramics.
MTE 481 Materials Characterization. (2-3) Three hours.
Prerequisite: MTE 271 or permission of the instructor.
Crystallography, physics of X-rays, diffraction by crystalline materials, application of X-ray, electron and neutron
diffraction, and spectrometric analysis of materials.

MTE 487 Corrosion Science and Engineering. (3-0) Three hours.
Prerequisites: MTE 271 and CH 102 or permission of the instructor.
Fundamental causes of corrosion problems and failures. Emphasis is placed on tools and knowledge necessary for
predicting corrosion, measuring corrosion rates, and combining this with prevention and materials selection.

MTE 491-492 Special Problems (Area). One to three hours.
Assigned individual problem. Credit awarded is based on the amount of work undertaken.

MTE 495 and MTE 496 Seminar/Senior Thesis. (1-0) One hour each semester.
Prerequisite: Senior standing in the College of Engineering.
Phases of metallurgical engineering not included in other courses are reviewed. Specialized topics are presented by
visiting lecturers. Abstracts and projects are prepared and presented by students.

MTE 519 Principles of Casting and Solidification Processing. (3-0) Three hours.
Prerequisites: MTE 362 and MTE 373, MTE 353, or permission of the instructor.
Thermodynamics of solidification, atomic scale phenomena (nucleation and growth), microscale phenomena (interface
dynamics and formation of microstructure), and macroscale phenomena (macro-mass, heat transfer, and formation
of macrostructure).

MTE 520 Metallurgy of Cast Alloys. (3-0) Three hours.
Prerequisite: MTE 417.
Thermodynamics of the liquid-solid transformation in alloys; growth of normal and anomalous eutectics;
thermodynamics of iron-carbon and related phase diagrams; solidification and properties of cast iron; preconditions
and liquid treatment of cast-iron melts; solidification and properties of aluminum-silicon alloys; and solidification and
properties of in-situ composites.

MTE 539 Metallurgy of Welding. (3-0) Three hours.
Prerequisite: MTE 380 or permission of the instructor.
Thermal, chemical, and mechanical aspects of welding using the fusion welding process. The metallurgical aspects of
welding, including microstructure and properties of the weld, are also covered. Various topics on recent trends in
welding research.

MTE 542 Magnetic Recording Media. (3-0) Three hours. Same as ECE 542.
Prerequisite: MTE 271.
Basic ferromagnetism, preparation and properties of magnetic recording materials, magnetic particles, thin magnetic
films, soft and hard film media, multilayered magnetoresistive media, and magneto-optical disk media.

MTE 546 Macroscopic Transport in Materials Processing. (3-0) Three hours.
Prerequisite: MTE 353 or permission of the instructor.
Elements of laminar and turbulent flow; heat transfer by conduction, convection, and radiation; and mass transfer in
laminar and in turbulent flow; mathematical modeling of transport phenomena in metallurgical systems including
melting and refining processes, solidification processes, packed bed systems, and fluidized bed systems.

MTE 549 Powder Metallurgy. (3-0) Three hours.
Prerequisite: MTE 380 or permission of the instructor.
Describing the various types of powder processing and how these affect properties of the components made. Current
issues in the subject area from high-production to nanomaterials will be discussed.

MTE 550 Plasma Processing of Thin Films: Basics and Applications. (3-0) Three hours.
Prerequisite: By permission of instructor.
Fundamental physics and materials science of plasma processes for thin film deposition and etch are covered. Topics
include evaporation, sputtering (special emphasis), ion beam deposition, chemical vapor deposition, and reactive ion
etching. Applications to semiconductor devices, displays, and data storage are discussed.

MTE 556 Advanced Mechanical Behavior of Materials I: Strengthening Methods in Solids. (3-0) Three hours.
Same as AEM 556.
Prerequisite: MTE 455 or permission of the instructor.
Topics include elementary elasticity, plasticity, and dislocation theory; strengthening by dislocation substructure, and
solid solution strengthening; precipitation and dispersion strengthening; fiber reinforcement; martensitic
strengthening; grain-size strengthening; order hardening; dual phase microstructures, etc.

MTE 562 Metallurgical Thermodynamics. (3-0) Three hours.
Prerequisite: MTE 362 or permission of instructor.
Laws of thermodynamics, equilibria, chemical potentials and equilibria in heterogeneous systems, activity functions,
chemical reactions, phase diagrams, and electrochemical equilibria; thermodynamic models and computations; and
application to metallurgical processes.

**MTE 574 Phase Transformation in Solids.** (3-0) Three hours.
Prerequisites: MTE 373 and or permission of the instructor.
Topics include applied thermodynamics, nucleation theory, diffusional growth, and precipitation.

**MTE 579 Foundations of Materials Science.** (3-0) Three hours.
Prerequisite: Permission of the instructor.
Graduate-level treatments of the fundamentals of symmetry, crystallography, crystal structures, defects in crystals (including dislocation theory), and atomic diffusion.

**MTE 583 Advanced Structure of Metals.** (3-0) Three hours.
Prerequisite: Permission of the instructor.
The use of X-ray analysis for the study of single crystals and deformation texture of polycrystalline materials.

**MTE 585 Materials at Elevated Temperatures.** (3-0) Three hours.
Prerequisite: Permission of the instructor.
Influence of temperatures on behavior and properties of materials.

**MTE 587 Corrosion Science and Engineering.** (3-0) Three hours.
Prerequisite: MTE 271 and either CH 102 or permission of the instructor.
Fundamental causes of corrosion problems and failures. Emphasis is placed on tools and knowledge necessary for predicting corrosion, measuring corrosion rates, and combining this with prevention and materials selection.

**MTE 591:592 Special Problems (Area).** One to three hours.
Advanced work of an investigative nature. Credit awarded is based on the work accomplished.

**MTE 595:596 Seminar.** (1-0) One hour.
Discussion of current advances and research in metallurgical engineering; presented by graduate students and the staff.

**MTE 598 Research Not Related to Thesis.** One to six hours.

**MTE 599 Master's Thesis Research.** One to twelve hours. Pass/fail.

**MTE 622 Advanced Solidification Science and Processing.** (3-0) Three hours.
Prerequisite: MTE 519.
Advances in solidification processing (skull melting, continuous casting, pressure-assisted casting, semisolid casting, spray casting), advanced casting materials (superalloys; aluminum-lithium, magnesium, and titanium alloys; intermetallics; metal matrix composites), issues in solidification science, and modeling of solidification.

**MTE 643 Magnetic Recording.** (3-0) Three hours. Same as ECE 643.
Prerequisite: ECE 341 or MTE 271.
Static magnetic fields; inductive head fields; playback process in recording; recording process; recording noise; and MR heads.

**MTE 644 Optical Data Storage.** (3-0) Three hours. Same as ECE 644.
Prerequisite: ECE 341 or MTE 271.
Characteristics of optical disk systems; read-only (CD-ROM) systems; write-once (WORM) disks; erasable disks; M-O recording materials; optical heads; laser diodes; focus and tracking servos; and signal channels.

**MTE 655 Electron Microscopy of Materials.** (3-3) Four hours.
Prerequisite: MTE 481 or permission of the instructor.
Topics include basic principles of operation of the transmission electron microscope, principles of electron diffraction, image interpretation, and various analytical electron-microscopy techniques as they apply to crystalline materials.

**MTE 670 Scanning Electron Microscopy.** (2-3) Three hours
Theory, construction, and operation of the scanning electron microscope. Both imaging and x-ray spectroscopy are covered. Emphasis is placed on application and uses in metallurgical engineering and materials-related fields.

**MTE 680 Advanced Phase Diagrams.** (3-0) Three hours.
Prerequisite: MTE 362 or permission of the instructor.
Advanced phase studies of binary, ternary, and more complex systems; experimental methods of construction and interpretation.

**MTE 684 Fundamentals of Solid State Engineering.** (3-0) Three hours.
Prerequisite: Modern physics, physics with calculus, or by permission of the instructor.
Fundamentals of solid state physics and quantum mechanics are covered to explain the physical principles underlying the design and operation of semiconductor devices. The second part covers applications to semiconductor microdevices and nanodevices such as diodes, transistors, lasers, and photodetectors incorporating quantum
structures.

**MTE 685 Materials at Elevated Temperatures.** (3-0) Three hours.  
Prerequisite: Permission of the instructor.  
Influence of temperature on behavior and properties of materials.

**MTE 691:692 Special Problems (Area).** One to six hours.  
Credit awarded is based on the amount of work undertaken.

**MTE 693 Selected Topics (Area).** One to six hours.  
Topics of current research in thermodynamics of melts, phase equilibria, computer modeling of solidification, 
electrodynamics of molten metals, corrosion phenomena, microstructural evolution, and specialized alloy systems, 
nanomaterials, fuel cells, and composite materials.

**MTE 694 Special Project.** One to six hours.  
Proposing, planning, executing, and presenting the results of an individual project.

**MTE 695:696 Seminar.** (1-0) One hour.  
Presentations on dissertation-related research or on items of current interest in materials and metallurgical 
engineering.

**MTE 698 Research Not Related to Dissertation.** One to six hours.

**MTE 699 Doctoral Dissertation Research.** Three to twelve hours. Pass/Fail.
12.1 COLLEGE OF HUMAN ENVIRONMENTAL SCIENCES

GRADUATE PROGRAM LEADING TO THE MASTER OF SCIENCE DEGREE IN HUMAN ENVIRONMENTAL SCIENCES

Admission Requirements. The master of science degree offered through the College of Human Environmental Sciences reflects a diverse range of missions and objectives. Enrollment in all specializations is limited and competitive. Admissions are supervised by committees of the graduate faculty in each of the specializations. General application and admission requirements are outlined in the "Academic Policies" section of this catalog. Students with deficiencies in undergraduate preparation may be required to complete designated undergraduate requirements before admission to the program.

General Degree Requirements. The following is a brief summary of requirements; students should confer with their department heads for additional information. A program plan for completing course requirements for the master's degree must be approved by the student's major advisor and committee and filed in the office of the dean of the College of Human Environmental Sciences no later than the beginning of the second semester of graduate study. Program plans are based on undergraduate preparation, previous experiences, and expressed objectives for graduate study. Students pursuing the master of science in human environmental sciences can specialize in one of the following areas: clothing, textiles, and interior design; consumer sciences; human nutrition; human development and family studies; and general studies in human environmental sciences. Students may complete degree requirements following Plan I (with thesis) or Plan II (without thesis).

All Plan I students must earn a minimum of 24 semester hours of credit, including HES 509, one course in statistics, and 18 hours in courses in the area of specialization and in areas supporting the specialization. A grade of "B" or better must be earned in all courses taken in the College of Human Environmental Sciences for application toward degree requirements. In addition, all Plan I students must complete at least 6 semester hours of thesis research and write a thesis. The format of the thesis may vary, depending on the advice and consent of the thesis committee. A final oral examination is required upon completion of the thesis, and a manuscript of publishable quality based on the thesis research is expected of each Plan I degree candidate.

Students pursuing the master of science in human environmental sciences degree under Plan II complete 30 hours of coursework, including HES 509, and a final evaluation as determined by departmental guidelines.

Repeating courses in selected programs. Students majoring in Human Nutrition, Consumer Sciences, or Human Development and Family Studies are permitted to repeat a course in which a grade of C was earned. The option to repeat a course is not available to HES students in any program other than these three. Both grades earned will be recorded on the transcript and will be included in the computation of the grade point average. Only one attempt will count in the Plan of Study, and the second attempt will not reduce the minimum number of hours required for the degree.

(The Graduate Council approved the above paragraph as a waiver to the policy on not being able to repeat a course in which a C was earned. Effective date: September 25, 2007)
12.1.1 AREAS OF SPECIALIZATION

- Clothing, Textiles, and Interior Design
- Consumer Sciences
- General Studies in Human Environmental Sciences
- Human Development & Family Studies
- Human Nutrition

Clothing, Textiles, and Interior Design. The specialization in clothing, textiles, and interior design provides preparation for careers in higher education, business and industry, and government services, and for admission to doctoral programs in clothing, textiles, and interior design and related fields. The specialization is designed to stimulate independent thought and develop skills in problem solving, creativity, and research methods. Individualized programs of study are planned to develop professional competence in the student's area of interest. Students applying for admission to the specialization in clothing, textiles, and interior design refer to the requirements for admission detailed in an earlier section of this catalog. All applicants must submit test scores from either the Graduate Record Examination or the Miller Analogies Test in support of the application. All applicants in interior design must also submit portfolios for review. A grade of B or higher must be earned in all courses taken in the Department of Clothing, Textiles & Interior Design for application toward degree requirements.

Consumer Sciences. The consumer sciences specialization offers preparation for careers in government, consumer protection, financial services, and extension, and for further study leading to the doctoral degree. Each student's curriculum is determined individually, based on career goals and research interests. Students applying for admission to the specialization in consumer sciences refer to the requirements for admission detailed in an earlier section of this catalog. All applicants must submit test scores from either the Graduate Record Examination or the Miller Analogies Test in support of the application.

Core courses required of all students include HES 509, ST 550, and ST 551. Thesis research offers each student the opportunity to work with faculty. Current research topics in the field include family and personal expenditure patterns; effects of credit use; time use; and individual and family resource management. Students who wish to specialize in family financial planning and counseling should have completed the following courses or equivalents at the undergraduate level EC 110, EC 111, ST 260, and CSM 204.

The program in Consumer Sciences participates in the University Scholars Program. Qualified students begin graduate study in the senior year. This program leads to the completion of requirements for both the bachelor's and master's degrees. A student who wishes to exercise this option will normally apply to Phase I of the program in the sophomore year; however, students may apply directly to Phase II of the program at the end of the junior year. Procedures are detailed in the "Academic Policies" section of this catalog.

General Studies in Human Environmental Sciences. The specialization in general human environmental sciences is designed to permit students to pursue work in more than one area of human environmental sciences and/or to strengthen professional competence by selecting courses that support or complement an area of human environmental sciences, including hospitality management, interactive technology, sports management, consumer quality management, rural community health, and the certificate in family financial planning and counseling. Students interested in this specialization may complete in-depth studies in interactive technology, sports management, or restaurant and hospitality management. Students may work under Plan I or Plan II.

Students applying for admission to the specialization in general studies refer to the requirements for admission detailed in an earlier section of this catalog. With the exception of students applying to the sports management specialization, a student with a cumulative grade point average of 3.0, a GPA of 3.0 in the last 60 hours of coursework, or a GPA of 3.0 in a master's degree program is not required to submit standardized test scores.

Human Development & Family Studies. The specialization in human development and family studies provides students with the theoretical foundation and research skills necessary to pursue doctoral work and for advanced employment in a wide variety of occupations serving children, adults, and families. Students can choose to concentrate in human development, child life, or family studies. Students interested in the family studies concentration can apply for admission into the marriage and family therapy curriculum. Completion of the marriage and family therapy curriculum enables students to take the licensure examination leading to Clinical Membership in the American Association for Marriage and Family Therapy. Opportunities for research and experiential learning are provided in the College's child development laboratories. Students in human development and family studies have opportunities to work with faculty members conducting research in the following areas: language development; personality and social development of children and adolescents; psychosocial care of children in health care settings;
risk factors associated with child development outcomes; assessment of early intervention programs; social support and well-being of adults; family strengths; and the work/family interface.

Students applying for admission to the specialization in human development and family studies refer to the requirements for admission detailed in an earlier section of this catalog. All applicants must submit test scores from either the Graduate Record Examination or the Miller Analogies Test in support of the application.

A Ph.D. in Educational Psychology with a concentration in human development is available through a collaborative arrangement with the Department of Human Development and Family Studies and the Educational Psychology program in the College of Education. Contact the chairperson of the educational psychology program at (205) 348-7575 for more information.

**Human Nutrition.** The specialization in human nutrition prepares students to pursue doctoral study and to practice dietetics at an advanced level. The program develops research skills, stimulates independent thought, and provides detailed up-to-date knowledge of the subject matter. A student seeking eligibility to take the national examination to become a registered dietitian may apply for admission to the coordinated program in dietetics. Students specializing in human nutrition must complete NHM 560, NHM 561, NHM 562, and 9 hours of electives offered in the department. In addition, students must attend NHM 595 Seminar in Nutrition and Food during each semester they enroll for 6 or more hours of graduate credit.

The thesis for the human nutrition specialization should focus on current nutritional concerns in which the student has a special interest. Students also have opportunities to participate in research with faculty members. Examples of faculty research include obesity and dieting practices, maternal and infant nutrition, healthy eating patterns, nutrition education and service delivery, and nutrient analysis of foods.

The program in human nutrition participates in the University Scholars Program. Qualified students begin graduate study in the senior year. This program leads to the completion of requirements for both the bachelor's and master's degrees. A student who wishes to exercise this option will normally apply to Phase I of the program in the sophomore year; however, students may apply directly to Phase II of the program at the end of the junior year. Procedures are detailed in the "Academic Policies" section of this catalog. Students applying for admission to the specialization in human nutrition refer to the requirements for admission detailed in an earlier section of this catalog. A student with a cumulative grade point average of 3.0, a GPA of 3.0 in the last 60 hours of coursework, or a GPA of 3.0 in a master's degree program is not required to submit standardized test scores.
12.2 HEALTH SCIENCES

GRADUATE PROGRAMS

Master of Arts

The Department of Health Science offers the program in Health Studies leading to the Master of Arts degree. Students complete one of two concentrations: health promotion or sports medicine health care. Graduates are trained to conduct needs assessments, develop intervention programs, and implement health promotion programs in a variety of settings. The master's degree program emphasizes programming relative to adolescent health, minority health, community health, health promotion, disease prevention (work site and hospital), and athletic training. The degree may be pursued under Plan I (thesis) or Plan II (nonthesis).

A student applying for admission to the master of arts in health studies graduate program with a cumulative grade point average of 3.0, a GPA of 3.0 in the last 60 hours of coursework, or a GPA of 3.0 in a master's degree program is not required to submit standardized test scores.

Doctor of Philosophy

The doctor of philosophy (Ph.D.) degree is also offered, specializing in health education and health promotion. Candidates are supervised under a mentoring model that matches students with program faculty in areas of their research interests within the field of health education and health promotion. The degree program is offered jointly by three programs located in the College of Human Environmental Sciences at The University of Alabama, the School of Public Health at The University of Alabama at Birmingham (UAB), and the School of Education at UAB. Due to the nature of the program, it has special admission and program requirements. For information, please contact the chairperson of the Department of Health Science, Box 870311, Tuscaloosa, AL 35487-0311.

Admission and Degree Requirements

Admission and degree requirements for the Graduate School are detailed in an earlier section of this catalog. Admission requirements specific to the program and in addition to those of the Graduate School, College, and department include the following:

- A grade point average of 3.0 overall (on a 4.0 scale), or in the last 60 hours in a bachelor-level program
- An acceptable score on the Graduate Record Examination general test or Miller Analogies Test
- A 3.25 grade point average in all graduate work
- In addition, the following criteria will be considered: (a) evidence of scholarship, (b) statement of career goals, and (c) recommendations from faculty or other health professionals capable of judging the applicant's ability to complete graduate work

Students can be admitted to either the UA or UAB campus. In either case, students must be approved for admission by a joint admission committee of the Ph.D. program. Candidates for admission must have completed a bachelor's or master's degree from an accredited institution in health education or a health-related field.
Course Descriptions:

**HES 509 Research Methods.** Three hours.
Introduction to theories and methods of research appropriate for human sciences; examination and evaluation of current research. Selection and planning of a research project are required.

**HES 510 Interpretation of Statistical Research Findings.** Three hours.
Evaluation and analysis of research findings in the area of home economics.

**HES 551 Seminar: Sport Facilities and Event Management.** Three hours.
Designed for sport professionals desiring to increase their knowledge and understanding of sport facilities and event management.

**HES 552 Trends and Issues.** Three hours.
Developed for sport professionals to gain knowledge and understanding of ethics, risk management, and contemporary trends and issues in sport management.

**HES 554 Organizational Issues in Management.** Three hours.
Designed for sport professionals desiring to increase their knowledge and understanding of management and leadership issues in sport settings and ethical considerations in sport management.

**HES 558 Applied Research.** Three hours.
Development of scholarly research for publication, obtainment of grant/external finding, or design of technology/multimedia product in sport management.

**HES 559 Management Strategies.** Three hours.
In-depth analysis for sport professionals to study and review management and leadership strategies utilized in various sport organizations.

**HES 560 Sport Management.** Three hours.
Introduction for professionals desiring to increase their sport management knowledge; career opportunities, human resource management, sport governance, managing sport facilities, sport licensing, budgeting, financing sport, and sport tourism will be addressed.

**HES 565 Legal and Ethical Issues in Sport.** Three hours.
This course is designed for sport professionals desiring to increase their knowledge and understanding of legal and ethical issues in sport.

**HES 570 Fellowship.** Three hours.
Under the supervision of a qualified sport management professional, the student will complete a 200-hour fellowship and complete a job-specific research project in sport management.

**HES 590 Special Problems.** Three to six hours.

**HES 592 Special Problems in Sports Management.** Three to six hours.
This course is designed for sport professionals desiring to increase their knowledge and understanding of sport management trends and issues.

**HES 598 Research Not Related to Thesis.** One to three hours.
Development of a professional paper on a topic selected by the student and approved by the graduate committee.

**HES 650 Special Topics in Human Environmental Sciences.** Three hours.
Critical analysis of current issues in selected areas of human environmental sciences. May be taken up to a total of four times.
CTD 425 Advanced Residential Design/Historic Documentation. Four hours. One lecture, three laboratories. Prerequisites: CTD 325 and CTD 326. Problems in the design of the home environment are presented for individual and group problem solving. Emphasis is on historic preservation principles and practices for interior designers.

CTD 426 Advanced Nonresidential Design. Four hours. One lecture, three laboratories. Prerequisites: CTD 325 and CTD 326. Problems in the design of business and professional interiors are presented for individual and group problem solving.

CTD 447 Textiles and Apparel in International Trade. Three hours. Prerequisites: EC 110 or EC 111, and CTD 281. Study of the evolution of the textile industry and its products, with emphasis on multinational characteristics and contemporary issues.

CTD 524 Advanced Programming and Project Development. Three hours. Problem analysis, research, and programming as a basis for design decisions in project development.

CTD 525 Interior Design V. Three hours. Planning, executing, and presenting results of an individual project, utilizing theories and applications to solve residential interior design problems.

CTD 526 Interior Design VI. Three hours. Planning, executing and presenting results of an individual project, utilizing theories and applications to solve contract interior design problems.

CTD 546 Cultural Dynamics of Apparel and Textiles. Three hours. Examination of the impact of cultural dynamics on apparel and textile production and marketing.

CTD 548 History of Costume. Three hours. Study of costume development from prehistoric to modern times; includes cultural forces in relation to the evolution of costume.

CTD 549 Socio-Psychological Aspects of Clothing. Three hours. Prerequisite: Six hours or equivalent in sociology and psychology. Application of behavioral-science theories to clothing.

CTD 550 Apparel Design. Three hours. Application of design principles to apparel through research and problem-solving techniques; recognition of special clothing needs.

CTD 561 Experimental Textiles. Three hours. Prerequisite: CTD 461. Planning, executing, and reporting textile research based on experimental methods.

CTD 562 Textile Analysis and Evaluation. Three hours. One lecture, two laboratories. Study of chemical and physical analysis of fibers and fabrics.

CTD 581 Practicum in Clothing and Textiles. One to three hours. Prerequisite: Permission of the department head and professor. Supervised experience in a business related to the major field of study.

CTD 582 Practicum in Interior Design. Three hours. Prerequisite: Permission of the department head and professor. Supervised experience in a business related to the major field of study.

CTD 590 Special Problems in Clothing. One to four hours. Independent investigation of selected topics in clothing.

CTD 591 Special Problems in Interior Design. One to four hours. Independent investigation of selected topics in interior design.
CTD 592 Special Problems in Textiles. One to four hours. 
Independent investigation of selected topics in textiles.

CTD 593 Readings in Clothing and Textiles. Three hours. 
Comprehensive review and critical evaluation of the literature in clothing and textiles.

CTD 594 Readings in Interior Design. One to four hours. 
Comprehensive review and critical evaluation of the literature in interior design.

CTD 595 Clothing, Textiles, and Interior Design Research I. Three hours. 
Discussions emphasizing contemporary issues, trends, relevant research, professional problems, and interests of students.

CTD 596 Research II in Clothing and Textiles. Three hours. 
Survey and evaluation of current research in clothing and textiles.

CTD 597 Research II in Interior Design. One to four hours. 
Survey and evaluation of current research in interior design.

CTD 598 Research Not Related to Thesis. One to three hours. 
Development of a professional paper on an apparel, textile, or interior design topic selected by the student and approved by the graduate program committee.

CTD 599 Thesis Research. One to six hours.
12.3.3 DEPARTMENT OF CONSUMER SCIENCES (CSM)

Head: Professor Milla Boschung, Office: 212 Adams Hall

Information on prerequisites and scheduling of courses should be obtained from the head of the department.

CSM 500 Personal Insurance Planning and Management. Three hours.
A survey of the myriad of personal risks facing consumers and families throughout the life cycle. An emphasis is placed on the fundamentals of risk management. Includes a comprehensive study of insurance products.

CSM 501 Consumer Protection. Three hours.
Study of laws and agencies affecting the consumer's well-being, sources of consumer information, and discussion of current consumer issues.

Addresses current social and economic problems facing the American family.

CSM 503 Recent Developments in Family Economics. Three hours.
Prerequisites: Undergraduate study in the area and a basic understanding of economic principles.
Current theories in the management of family resources, consumer behavior and demand, and wealth and welfare are presented.

CSM 504 Personal Investment Planning and Management. Three hours.
This course is about personal investing in marketable securities. It covers the basics of investing, including detailed definitions of investment terms, descriptive material on how securities are purchased and sold, theoretical models of security valuation and practical examples on how to calculate growth rates.

CSM 505 Public Policy: Analysis of Family and Community Resources. Three hours.
Identification, utilization, and evaluation of community resources; evaluation of the impact of public policy on families.

CSM 506 Consumer Quality Management Quality Assurance. Three hours.
Provides in-depth coverage of the primary theories and methods necessary for quality assurance in a wide range of organization settings.

CSM 507 Consumer Quality Management Facilitation Skills. Three hours.
Provides a comprehensive study of facilitation skills necessary to lead an organization in continuous improvement.

CSM 508 Consumer Quality Management Systems. Three hours.
Provides an in-depth analysis of management systems as a method of organizing and leading business, educational, and health care institutions. This course will cover the primary issues related to management systems.

CSM 510 Personal Retirement Planning and Employee Benefits. Three hours.
Fundamentals of personal retirement planning and the selection of employee benefits.

CSM 515 Customer Service. Three hours.
Provides an in-depth study of the functions and structures of customer relations as it applies to business and government agencies. Analyzes consumer needs, complaints and education.

CSM 520 Personal Estate Planning. Three hours.
Techniques of personal estate planning within the family life cycle.

CSM 521 Consumer Communications. Three hours.
Principles, methods, techniques, and resources used in developing, presenting, and evaluating a complete consumer communications program.

CSM 525 Consumer Conflict Resolution. Three hours.
Exploration of practical conflict management and a survey of the theory and practice of formal mediation. Explores the history, nomenclature, strategies, and approaches to conflict mediation.

CSM 530 Family and Consumer Law. Three hours.
The study of family and consumer law in specific issues of marriage, parent-child relationships, divorce, and the economic consequences of divorce, as well as consumerism and a general understanding of the legal system and adversarial proceedings.

CSM 537 Developing the Leader Within. Three hours.
In-depth analysis of leadership principles, qualities, styles and models with a focus on developing leadership skills, potential within the individual students. Designed to assist students in identifying opportunities for improvement.

**CSM 540 Evaluation of Household Equipment.** Three hours.
Designed for the student with limited undergraduate study in household equipment. Evaluation of equipment designed for use in the home; planning and conducting performance tests.

**CSM 541 Development of Household Equipment.** Three hours.
Prerequisite: CSM 240 or CSM 540.
Traces the development of household equipment from the focus group through all developmental processes to the final marketing.

**CSM 545 Microcomputers in Consumer Sciences.** Three hours.
Encompasses technical skills and scientific methodologies that can be used to create computer-based solutions to real problems encountered in home economics.

**CSM 547 Digital Resources for Multimedia, Electronic Portfolio and Internet Applications.** Three hours.
Prerequisites: Completion of required modules.
Provides students with skills to live and work in a digital environment by developing technological skills in use and application of computers, internet and other digital tools.

**CSM 548 Web-Based Consumer Instruction.** Three hours.
Prepares consumer educators for the virtual training environment. Provides overview of processes used in developing a Web-based consumer course. Overview of online instructional techniques.

**CSM 550 Consumer Economics.** Three hours.
Examination of the role of the consumer in the economy; economic analysis of market and non-market consumption activities, incorporating relevant social, psychological, political, and ecological considerations.

**CSM 554 Personal Income Tax Management and Planning.** Three hours.
An analysis of personal income tax management and planning as it relates to consumers and families throughout the life cycle.

**CSM 555 Food Economics.** Three hours.
Study of the world's food supplies and population; food consumption patterns and nutritional adequacy in the U.S.; and national and international policies and programs to combat hunger and malnutrition.

**CSM 559 Techniques of Consumer Counseling.** Three hours.
The course introduces students to basic interactional interviewing skills and strategies. The course is beneficial for those who plan to enter the fields of financial planning, business, management, sales, or any commercial activity that involves interpersonal communication. Students who plan to supervise and manage others would benefit by expanding theory with practical application. Students’ with career goals involving counseling families, couples, and individuals regarding life decisions will benefit from this course.

**CSM 560 Techniques of Personal Financial Planning and Counseling.** Three hours.
Prerequisites: CSM 500, 504, 510, 520, and 554.
A systems approach to financial management for individuals and families from the perspective of planner/counselor. Emphasis on identification of client goals and development of appropriate strategies for meeting client goals. Focus on mastery of various calculations and analytical techniques.

**CSM 562 Cognition, Strategies, and Technology.** Three hours.
Prerequisite: Graduate Standing.
This course lays some of the cornerstones of the program emphasis in interactive technology, guiding students in the development of their philosophy and understanding about the use of technology in teaching and learning as well as human interactions. Topics will include synchronous vs. asynchronous learning, paradigm shifts in how people learn, and a review of the theory serving to underpin this topic.

**CSM 564 Digital Tools.** Three hours.
Prerequisite: Graduate Standing.
The focus of this course is the use of a broad range of digital tools, including the skills considered core skills required to function in the asynchronous environment of this online degree program. Tools to be included are those related to the efficient use of e-mail and file sharing and editing in a collaborative environment; also included will be tools specific to the development of tutorials, presentation media and other development tools.

**CSM 566 Multimedia Design and Development.** Three hours.
Prerequisites: CSM 562 or current enrollment in CSM 564.
Students enrolled in this course will review the basic schools of thought and major theorists in the field of electronic design and development. In addition, students will learn advanced development tools in the context of actual design and development projects. Students will have an opportunity to combine an understanding of the theory of design and development with advanced tools.
CSM 568 Introduction to Networking Systems. Three hours.
Prerequisite: Graduate standing.
This course provides an overview of the essential components of local area and wireless networking and their application to schools, businesses, and organizations. Topics include fundamental wireless communication concepts, wireless local area networks (LANs) and ethics and privacy issues will be addressed.

CSM 570 Coordination and Delivery of Information Using Digital Technologies. Three hours.
Prerequisite: CSM 564 and CSM 566 or concurrent enrollment.
An ever-growing range of options are available for delivering information via digital technologies, including web-based tutorials, online courses, video conferencing, multimedia presentations, computer-assisted instruction delivered over a network or at a free-standing machine, and, using wireless, hand held devices. Therefore, the tools needed to coordinate these technologies will be addressed from the viewpoint of developer and content manager.

CSM 572 Needs Assessment, Planning and Evaluation. Three hours.
Prerequisite: Graduate standing.
Course outcomes include demonstrated understanding of program evaluation strategies based on systems theory model for comprehensive planning, formative and summative evaluation. These evaluation activities focus on elearning environments and applications in wide range of settings. Planning models are also introduced around which projects and action research can be structured.

CSM 575 Entrepreneurship in HES. Three hours.
Offers sound advice and vital practical help on developing an idea into a business and the different aspects of managing a home-based or small business. Examines each segment of creating and managing a small business.

CSM 580 E-Commerce at CHES. Three hours.
Gives sound advice and vital practical help on developing an idea into a business on the Internet. Addresses the different aspects of designing a website, Internet marketing, the role of search engines, and measuring the effectiveness of an Internet strategy.

CSM 581 Practicum. Three hours.
Prerequisite: Permission of the department head and professor.
Supervised experience in a related business, industry, or social agency.

CSM 586 Consumer Management of Human Capital. Three hours.
A survey of the theory and practice of employee/consumer assistance programs (EAP).

CSM 590 Special Problems in Consumer Affairs. Two to six hours.

CSM 591 Special Problems in Consumer and Family Economics. Two to six hours.
Prerequisite: Study in family economics approved by the department.

CSM 592 Special Problems in Family Financial Planning and Counseling. Two to six hours.

CSM 595 Seminar. One to four hours.
Current developments and research in selected areas are presented.

CSM 599 Thesis Research. One to six hours.
Course Descriptions (HAT)

An overview of current research and theories as they relate to the physically active population.

HAT 552 Seminar in Sports Medicine Health Care. Three hours.
A review of historical, philosophical, educational, and managerial issues in sports medicine health care.

HAT 554 Preventive Techniques in Sports Medicine Health Care. Three hours.
Designed to examine preventive techniques that reduce the occurrences of injury to physically active individuals.

HAT 555 Pharmacology and Pathology in Athletic Training. Three hours.
The study of acute and chronic illnesses and their response to, and impact on, physical activity. Discussion of pharmacological agents used on athletes and others engaged in physical activity.

Prerequisites: HAT 550, HAT 552, HAT 554, and HAT 560.
This course is designed to assist the allied health professional in submission of scholarly research for publication, development of technology / multimedia product, or obtainment of grant.

HAT 559 Management Strategies for Allied Health Professionals. Three hours.
Designed for the entry-level allied health professional to study, review, and implement management strategies and competencies that relate to the physically active population.

HAT 560 Practicum in Sports Medicine Health Care. Three hours.
Prerequisites: HAT 550, HAT 552, and HAT 554.
Under the supervision of a qualified health care professional, the graduate student will experience scholarly activities related to job-specific tasks in a sports medicine health care setting.

HAT 570 Fellowship in Sports Medicine Health Care. Three to nine hours.
Prerequisites: HAT 550, HAT 552, HAT 554, and HAT 560.
Under the supervision of a qualified health care professional, the graduate student will experience scholarly activities related to job-specific tasks in a sports medicine health care setting.

Course Descriptions (HHE)

HHE 495:595 Workshop in Health Education. One to six hours.
Short-term, concentrated course with emphasis on selected aspects of school, work site, community, or college programs in health education.

HHE 500 Rural Environment/Occupational Health. Three hours.
Prerequisite: Standing as a Rural Medical Scholar or permission of the instructor.
The goal of the course is to help the student recognize environmental and occupational health hazards in the rural setting, the effects of exposure to these hazards, and preventive measures that should be taken to avoid them.

HHE 502 Current Research in Health Promotion. Three hours.
A broad review of current published research in health promotion, with emphasis on practical application of research findings.

HHE 503 Problems in Health Education. Three hours.
Detailed individual study of problems in health education and health promotion.

HHE 504 Health Counseling. Three hours.
Diagnoses of individual needs and study of typical counseling cases; includes counseling, theory, and process related to health promotion.

HHE 505 Health Education Curriculum and Instruction. Three hours.
Discussion of curriculum development. Emphasis is on evaluation of objectives, principles, methods, materials, and curriculum guides in health education.

**HHE 506 Techniques of Research.** Three hours.
Designed to acquaint the student with the types of research and the methods and materials necessary for scientific inquiry; includes development of a research proposal, with emphasis on form and style.

**HHE 515 Advances in Health Promotion.** Three hours.
Open to graduate students in all divisions of the University. Designed to provide understanding pertaining to advances in the health sciences.

**HHE 520 Health Behavior.** Three hours.
Designed to review research literature regarding health behavior and to analyze various models developed to explain health behavior.

**HHE 521 Basic Epidemiology.** Three hours.
Prerequisite: CHS 425 or equivalent.
A course for students in health-related fields. The basic epidemiologic approach is developed; principles and methods are learned through readings (text and published studies), lectures, discussions, and the preparation of a research design by each student.

**HHE 525 Human Sexuality and Sex Education for Educators.** Three hours.
Study of current scientific knowledge of human sexuality. Emphasis is given to the role of formal and informal educational approaches.

**HHE 526 Biostatistics.** Three hours.
A course in statistical methods and concepts particularly appropriate for biomedical research and health-related subjects. Topics include descriptive statistics, probability, parametric and nonparametric procedures for one-group and two-group problems, contingency tables, and computer applications.

**HHE 530 Health Promotional Techniques.** Three hours.
Study of current health promotional techniques and programs, designed to facilitate health behavioral change. Emphasis on review of scientific literature concerning the development, implementation, and evaluation of health promotion schemes.

**HHE 540 Stress: Theory, Disease, and Management.** Three hours.
An examination of the physiological nature of stress and its interrelationships with health and disease. Emphasis is on review of scientific literature.

**HHE 542 Practical Issues in Behavioral Medicine.** Three hours.
Lectures and readings examine behaviors compromising overall health status, such as tobacco use, noncompliance; and behavioral aspects of medical conditions, such as heart disease, cancer, pain. Topics include bioethics, racial/ethnic disparities, and rural mental health. ONLY Rural Medical Scholars may register

**HHE 550 Minority Health Issues.** Three hours.
Designed to investigate health issues as they relate to minority populations. Emphasis is on development of strategies to effectively address health problems of minorities.

**HHE 566 Evaluation in Health Education.** Three hours.
Formative, process, and outcome evaluation methods used to effectively evaluate health education/health promotion activities and programs in the community, school and work site are reviewed.

**HHE 585 Laboratory and Field Experience.** One to six hours each.
Provides for teaching laboratory, internship, and/or practicum experiences for students, according to individual needs and goals.

**HHE 595 Workshop in Health Promotion.** One to six hours.
Advanced study of special topics in health education and health promotion.
HHE 596 Independent Study in Health Education. One to six hours.
Designed to provide the opportunity for independent research in any area of health education.

**HHE 598 Nonthesis Research.** Three hours.
Experimental or analytical investigation of health promotion problems.

**HHE 599 Thesis Research.** One to six hours.
Research study in a selected area of health promotion.

**HHE 602 Readings in Health Education.** Three hours.
An independent readings course for doctoral students.
HHE 603 Special Projects in Health Education. Three hours.
Experimental or analytical investigations of problems in health education. Arranged on an independent basis for doctoral students.

HHE 604 Seminar in Health Education. Three hours.
Critical and emerging issues in health education and health promotion.

HHE 605 Advanced Theoretical and Scientific Basis of Health and Health Promotion. Three hours.
Examination of theoretical, scientific, historical, and philosophical issues that serve as a basis for health education and health promotion.

HHE 606 Planning and Administration of Health Education and Promotion Programs. Three hours.
A comprehensive examination of models for planning health education and health promotion programs.

HHE 607 Health Communication Research. Three hours.
An examination of theoretical tenets and practical applications of health communication initiatives.

HHE 667 Organization and Implementation of Health Education and Health Promotion Programs. Three hours.
Study of planning and evaluation methods and procedures for health education and promotion programs; emphasis on review of current scientific literature.

HHE 685 Field Work and Laboratory Experience. One to six hours.
Arranged on an independent basis for doctoral students. Participation and research in schools, communities, or work site settings.

HHE 698 Research. Three hours.
Prerequisite: Doctoral student standing.
Experimental or analytical investigation of problems in health.

HHE 699 Dissertation Research. Three to twelve hours.
Design, research, and/or analytical investigation of a problem in the area of health to satisfy the dissertation requirement for the doctoral degree.
12.3.5 DEPARTMENT OF HUMAN DEVELOPMENT AND FAMILY STUDIES (HD)
Chair: Professor Carroll Tingle, Office: 226 Child Development Research Center

HD 501 Child Development. Three hours.
Covers principles of growth and development, chief areas of concern in the field, and supporting research.

HD 502 Infant Development. Three hours.
Examination of theoretical bases for behavior in infancy, and review of research literature on attachment behavior and various topics of major concern.

HD 512 Adult Development. Three hours.
Theories of and research on development throughout adulthood—young adulthood, middle years, and aging are presented.

HD 513 Adult Development: Exploring Intergenerational Commonalities. Three hours.
This course extends students’ cross-generational understanding through active learning, experiences with older adults.

HD 518 Adult Development: Exploring Intergenerational Commonalities. Three hours.
Extends students a cross-generational understanding through active learning experiences with older adults.

HD 525 Infant/Toddler Curriculum and Program Design. Three hours.
Offers students opportunities to evaluate appropriate curricular practices as they apply to infant and toddler programs. Through the study of past and contemporary educational thought, basic principles of curriculum and program design will be evaluated.

HD 533 Cultural Influences on Children and Families. Three hours.
Study of the impact of cultural factors on the developing child and the family.

Theories and research on parent/child relationships and an examination of how the parent/child relationship influences aspects of child development. Basic models of parent education and parent involvement are also examined.

HD 550 Hospitalized Children and Youth. Three hours.
The developmental and psychological theories involved in the practice of child life in health care settings.

HD 551 Loss and Bereavement. Three hours.
Provides students with a general overview of the grief processes as they impact children and families. Examines issues surrounding children's grief/bereavement and studies issues surrounding complicated mourning.

HD 552 Clinical Skills Development in Child Life (seminar). Three hours.
Designed to examine basic assessment skills necessary for working in the field of child life.

HD 556 Seminar in Human Sexuality. Three hours.

Discussion and analysis of underlying issues in human sexuality research.

**HD 577 Psychology of Morality.** Three hours.
An overview of the psychology of morality with a focus on the chief areas of research in the field, including measurement, gender, cross-cultural, and educational issues.

**HD 591 Special Problems in Human Development and Family Studies.** One to six hours.
Prerequisite: Permission of the department head and professor.
Provides an opportunity to pursue special needs and interests. Students work primarily on their own, but under supervision.

**HD 592 Special Problems in Child Life.** One to six hours.
Prerequisite: Permission of the department head and professor.
Provides an opportunity to pursue special needs and interests. Students work primarily on their own, but under supervision.

**HD 595 Seminar in Human Development and Family Studies.** One hour.
Concerns, issues, and research trends and developments in the discipline of human development and family studies are covered.

**HD 598 Research Practicum.** One to six hours.
Prerequisite: Permission of instructor.
Participation in a cooperative faculty/student research project related to human development.

**HD 599 Thesis Research.** One to six hours.
HD 602 Advanced Infant Development. Three hours.
Integration of theory and research related to infant behavior and development.

**HD 603 Adolescent Development.** Three hours.
Theories of and research on adolescent development are presented. Includes an examination of physical, cognitive, and personality/social development within the context of the family, schools, and peer relations.

**HD 612 Advanced Adult Development.** Three hours.
Evaluation of theories and research on development throughout adulthood.

**HD 626 Observational Methods in Developmental Research.** Three hours.
An examination of the theory and practice of various observational techniques for studying children and parent-child interaction.

**HD 631 Readings in Human Development.** Three hours.
With an interdisciplinary approach to issues and concerns in life-span development, the course examines theory and research on selected topics.

**HD 661 Theoretical Issues in Family Studies.** Three hours.
Examination of contemporary theoretical approaches for understanding family behavior.

**HD 664 Family Crises.** Three hours.
Research and theory related to family stresses, hardships, and coping strategies in response to normative and non-normative life events are presented. Emphasis is on the importance of family resources and social networks in stress management.

**HD 667 Practicum in Marriage and Family Therapy II.** Three hours.
Prerequisite: Permission of the instructor and HD 567 and HD 568.
Advanced supervised practice in marriage and family therapy.

**HD 668 Internship in Marriage and Family Therapy.** Six hours.
Prerequisite: Permission of the instructor.
Supervised field experience in an appropriate job setting in marriage and family therapy.

**HD 689 Practicum in Human Development.** Three to six hours.
Prerequisite: Permission of the department head and professor.
Experience with human development in classroom teaching or agency settings.

**HD 698 Nondissertation Research.** Variable credit.
Prerequisite: Permission of the professor.
Participation in a cooperative faculty/student research project related to human development.
NHM 501 Nutrition for Health Professionals. Three hours. Practical application of principles of normal nutrition, including nutritive value of foods; introduction to nutrition in diseased states. Primarily for health-careers students not intended for Human Nutrition Majors.

NHM 509 Outcomes in Nutrition and Other Health-Related Services. Three hours. Students will learn how outcome measures and indicators are used in clinical decision making, evaluation, and organizational and process improvement activities.

NHM 532 Nutrition Counseling and Education. Three hours. Prerequisites: NHM 560 or permission of the instructor. Focuses on developing competency in learning-system design: special emphasis on the teaching and counseling of nutrition in various settings.

NHM 554 Experimental Food Science. Three hours. Experimental approach to studying the chemical and/or physical nature of food; related research literature; and individual experimentation.

NHM 555 Recent Advances in Food and Nutrition. Three hours. Individual study and group discussions of topics related to recent advances and current problems in food and nutrition.

NHM 557 Childhood Obesity. Three hours. Focuses on the physiological, genetic, environmental, and behavioral factors that predispose children and adolescents to obesity; explores the clinical and public health strategies for treatment and prevention.

NHM 560 Nutrition in the Life Cycle. Three hours. Application of basic principles and research findings to nutrition needs throughout the life cycle; methods of assessing nutritional status are included.

NHM 561 Advanced Nutrition. Three hours. Prerequisite: Biochemistry and NHM 362. Lectures and reports on and discussions of the functions of vitamins and minerals in physiological processes.

NHM 562 Advanced Nutrition. Three hours. Prerequisite: Biochemistry and NHM 362. Lectures and reports on and discussions of the functions of proteins, carbohydrates, and lipids in physiological processes.

NHM 565 Methods of Food and Nutrition Investigation. Three hours. Principles of food science and nutrition research are covered.

NHM 566 Advanced Clinical Nutrition. Three hours. Prerequisite or corequisite: Biochemistry, Human Anatomy, Human Physiology, and NHM 365. Critical review of the physiological basis for nutritional management in the prevention and/or treatment of diseases of the cardiovascular, gastrointestinal, endocrine, hepatic, and renal systems.

NHM 567 Nutrition Support for the Critically III. Three hours. Prerequisite or corequisite: NHM 561 or NHM 562. Methods of assessing nutritional requirements of the critically ill patient and of delivering and monitoring enteral and parenteral nutrition are presented.

NHM 569 Advanced Community Nutrition. Three hours. Analysis of the structure and function of community nutrition programs.

NHM 581 Practicum in Clinical Nutrition. Three to six hours. Prerequisites: NHM 566. Planned clinical practice in specialized areas such as neonatal intensive care, pediatrics, gastroenterology, cardiology, nephrology, and nutrition support service.

NHM 582 Practicum in Community Nutrition. Three to six hours. Prerequisite: NHM 569. Supervised opportunity to apply knowledge and skills in areas such as nutrition service delivery, program planning,
community assessment, and program evaluation.

**NHM 587 Integration of Food Systems Management.** Three hours. Current problems in food systems management are presented, with emphasis on theories of management and integration of management functions.

**NHM 590 Special Problems in Nutrition.** Three to six hours.

**NHM 591 Special Problems in Food Science.** Three to six hours.

**NHM 592 Special Problems in Institution Administration.** Three to six hours.

**NHM 595 Seminar in Nutrition and Food.** One hour each semester.

**NHM 598 Nonthesis Research.** Three hours.
Prerequisite: Graduate status and permission of the instructor. Experimental or analytical investigation of a food or nutrition-related issue. This course may be the capstone experience for the masters degree under Plan II and should be the last course the student takes prior to graduating.

**NHM 599 Thesis Research.** One to six hours.

**NHM 601 Advanced Nutrition for Health Professionals.** Three hours. Study of normal nutrition as it relates to health promotion and disease prevention. Provides an introduction to nutrition in disease states. Not intended for Human Nutrition Majors.

**NHM 625 Nutritional Epidemiology.** Three hours.
Introduction to the principles of epidemiology and their application to nutrition. This course addresses the role of nutrition in investigating the epidemiology of chronic diseases. The course is intended for students in health-related professions.

**NHM 648 Secondary Analysis of Survey Data.** Three hours.
Prerequisite: Graduate-level statistics course. An applied seminar in the secondary analysis of survey data.

**NHM 659 Nutrition Policy.** Three hours.
Prerequisite: NHM 569 or permission of the instructor. A critical analysis of U.S. Food and Nutrition Policy.

**NHM 698 Nondissertation Research.** Variable credit. Participation in a cooperative faculty-student research project related to nutrition or food science.

**RHM 521. Legal Issues in Hospitality Management.** Three hours.
Exploration of legal problems facing the hospitality industry. Legal cases related to restaurants, hotels and meeting facilities are examined.

**RHM 570. Leadership and Management in the Hospitality Industry.** Three hours.
An examination of contemporary leadership and management theories and practices used in the hospitality industry

**RHM 571. Management of Human Resources.** Three hours.
Seminar exploring significant issues in Human resources management within the hospitality industry including labor laws, motivation and other critical issues affecting human performance

**RHM 573. Marketing of Hospitality Services.** Three hours.
Seminar examining marketing techniques and strategies used to enhance hospitality organization’s performance

**RHM 574. Resources Management for Hospitality Operations.** Three hours.
Exploration of financial tools and techniques used in making effective managerial, business and operational decisions in hospitality organizations.

**RHM 588. Current Trends in Food Systems Management.** Three hours.
An exploration of a variety of issues of importance to effective management of food service operations. Topics vary to meet students’ interests and issues facing the food service industry.

**RHM 592. Special Problems in Hospitality Management.** Three to six hours.
Problems related to the operations of hospitality organizations such as hotel, restaurants, clubs and conventions and meeting management facilities.

**RHM 596. Seminar in Hospitality Management.** Three hours.
Discussion, reading and exploration of operational issues related to the hospitality industry.
The University of Alabama (UA), The University of Alabama at Birmingham (UAB), and The University of Alabama in Huntsville (UAH) offer a joint interdisciplinary program leading to a doctor of philosophy degree in materials science. The Ph.D. program in materials science is coordinated by the Tricampus Materials Science Coordinating Committee. On each campus, the program is administered by the Campus Materials Science Program Committee.

For practical purposes, students will matriculate at a single campus. Once the student chooses a campus, that campus becomes the home campus, and the student’s records will be managed by the graduate school on that campus. However, once registered at one campus, a student is free to pursue, with minimum barriers, coursework or research opportunities at the other University of Alabama System campuses.

At all three universities, the interdisciplinary Ph.D. program in materials science draws on various academic divisions. At UA, the program is supported by departments in both the College of Arts and Sciences and the College of Engineering. At UAB, the Schools of Medicine, Dentistry, and Optometry are involved, as are the School of Engineering and the School of Natural Science and Mathematics. At UAH, the College of Engineering and the College of Science participate in the program. The degree awarded to each successful candidate is the Ph.D. Degree in Materials Science.

Admission Requirements
In order to be regularly admitted to the doctoral program, a student must have satisfied the following minimum requirements common to all three universities:

1. A bachelor’s degree (or its equivalent) from an accredited college or university in engineering or one of the physical sciences
2. "B"-level scholarship, either overall or for the last 60 semester hours of undergraduate and graduate credit
3. A minimum score of 1000 on the Graduate Record Examination general test
4. A TOEFL score greater than 550 (or the equivalent on other acceptable language examinations), for international students
5. Letters of reference

An applicant whose scholastic record reveals a deficiency in one of the first three categories above may, upon recommendation of the Campus Materials Science Program Committee chairperson (on the campus to which the student has applied) and with approval of the respective graduate dean, be admitted on a provisional basis, as provided in graduate school regulations at each campus. However, that student must follow the appropriate graduate school’s policies in achieving regularly admitted status prior to taking Program Examination I (the examination on core material).

Advisement. Prior to a student’s admission to the program, the student will usually discuss (perhaps via email) possible research areas with one or more faculty members. If the student is admitted to the program, the letter of admission will designate a faculty member as the tentative dissertation advisor. The advisor and/or research area can be changed during the course of study if it appears beneficial to the student, with the approval of the Campus Materials Science Program Committee. The advisor will assist the student in program planning and other academic matters. The letter of admission will also designate one of the participating departments as the tentative home department (normally the department of the tentative advisor), and state whether the student will be financially supported by a Materials Science Program assistantship (some students have support from outside the program instead.)

A graduate committee will be appointed for the Ph.D. student as soon as he or she passes Program Examination I and chooses a research project. The student and the advisor are responsible for recommending committee members, which must then be approved by the Campus Coordinator. The graduate committee normally includes the research advisor (as chairperson) and at least four other members. The graduate committee members are selected based on the student’s academic interests and area of research. At least one of the committee members is from the student’s research area at one of the other UA campuses, and another is from a department other than the home department on the home campus. The graduate committee is charged with supervision and approval of the student’s research and course of study toward the completion of all requirements leading to the degree.
Campus Materials Science Program Committee. This committee administers the program on each campus. Coordination encompasses some functions that are usually handled by a single-discipline department. The Campus Materials Science Program Committee is chaired by the campus program coordinator, who acts as director or chairperson for the program.

Degree Requirements

Qualifying, comprehensive, and other program examinations. Program Examination I is a three-part examination over the program's core material. It qualifies the student to enter the advanced program. It is administered simultaneously system-wide by the Tri-campus Coordinating Committee, at pre-announced dates, at least once per year (sometimes once per semester). The individual campus program committees will solicit input from the faculty and assist in preparing and grading the system-wide examination. The student may choose to take two or three parts of Program Examination I at a sitting (unless only one part remains to be taken). All parts of the examination must be completed within a total of three years, or by the fourth administration of the exam if this occurs later than three years after admission. Failure to pass all parts of the examination after this time disqualifies a student from the Ph.D. program.

Program Examination II includes a comprehensive examination covering material in the student's specialization, as well as a dissertation proposal defense. This examination is normally taken near the end of formal coursework and is prepared, administered, and graded by the student's graduate committee.

The last exam is an oral exam, the dissertation defense.

A student handbook describing the details of Program Examinations and other aspects of the Program is on the Program's UA Campus website, http://bama.ua.edu/~uasmatls/ua.

Candidacy and Dissertation Requirements. Admission to candidacy for the doctoral degree is contingent upon the successful completion of Program Examinations I and II (which includes the successful presentation of a dissertation research proposal.) Normally, a student is considered eligible to take Program Examination II when all of the required coursework has been completed. After being admitted to candidacy, the student must complete the remaining requirements for the degree, the main requirement being the doctoral research and dissertation. A minimum of 48 credit hours of graduate coursework and 24 hours of dissertation research are required. These courses may be in any department, but the course program must be worked out in consultation with the advisor and approved by the dissertation committee. A maximum of 24 of the 48 coursework hours may be transferred from another institution, subject to approval. Credits in materials-related courses earned toward a master's degree at The University of Alabama may be applied to the doctoral degree.

Residency Requirement. The minimum period in which the doctoral degree can be earned is three full academic years of graduate study. The student must spend the final or penultimate academic year in continuous residence as a full-time graduate student at one of the campuses.

Time Limits. All requirements for the doctoral degree must be completed within a period of seven years of the date of admission.
14.1 MASTER OF SCIENCE IN NURSING PROGRAM

NURSING CASE MANAGEMENT The Capstone College of Nursing offers the distance-based master of science in nursing (M.S.N.) with most courses offered online. This program prepares advanced practice nurses to provide case management for rural populations. Case management has been defined as a "collaborative process which assesses, plans, implements, coordinates, monitors, and evaluates options and services to meet an individual's health needs through communication and available resources to promote quality, cost-effective outcomes."* Specifically, the program offers courses leading to preparation for the role of nurse case manager. Graduates of this program will be able to practice in a variety of settings assuming positions as nurse case managers. *Case Management Society of America (CMSA), Standards of Practice for Case Management (Little Rock, Arkansas: CMSA, 2002), p. 5.

Admission Requirements Admission requirements are consistent with those of the Graduate School. Applicants for the M.S.N. degree program will be considered on a competitive basis. The following are requirements for admission into all graduate level nursing programs.

For admission to the master's program, an applicant must possess a functional level of capability to perform the duties required of an advanced practice nurse. These abilities include but are not limited to (a) adequate vision such as that required to observe changes in physical conditions, to read small print on labels and laboratory reports, and to discern subtle changes in color; (b) adequate hearing such as that required to distinguish muted sounds through a stethoscope; (c) fine motor skills and manual dexterity such as that required to turn and assist with lifting adults and to lift and carry children; (d) the mobility to respond quickly to emergency situations; (e) the ability to engage in two-way conversation and interact effectively with others orally and in writing; (f) the ability to detect odors; (g) the ability to implement the advanced practice role in delivering health care service in one or more delivery systems, including acute, ambulatory, managed, and integrated systems; and (h) the ability to consistently and dependably engage in critical thinking to make safe and ethical clinical judgments.

The graduate faculty of the Capstone College of Nursing has identified the skills and professional behaviors that are essential to pursue a course of study and to practice in an advanced practice role in nursing. These skills include but are not limited to the skills presented in The Essentials of Master's Education for Advanced Practice Nursing, a publication of the American Association of Colleges of Nursing. If these skills and professional behaviors cannot be developed by the individual, either unassisted or with the dependable use of assistive devices, the faculty reserves the right to not admit the individual or to disenroll the student from clinical courses. A copy of The Essentials of Master's Education for Advanced Practice Nursing is available upon request from the College's Office of Nursing Student Services.

Admission Requirements for Nursing Case Management

- For regular admission, a grade point average of at least 3.0 overall (based on a 4.0 system) or 3.0 for the last 60 semester hours of undergraduate work
- For conditional admission, a grade point average of at least 2.5 overall (based on a 4.0 system) for undergraduate work, and a score of at least 900 on the Graduate Record Examination (GRE) general test or at least the 40th percentile on the Miller Analogies Test (MAT)
- baccalaureate degree in nursing from an accredited school of nursing
- current unencumbered RN licensure in the United States and eligibility for an Alabama license

Degree Requirements The degree of master of science in nursing will be awarded to the student who has met the following requirements:

- successful completion of the required coursework
- GPA of 3.0 or higher
- good standing at the time of graduation

To fulfill the research requirements of the program, students may choose from two options described below: thesis option or nonthesis option.

Thesis option. A thesis is original research conducted by one student and directed by a graduate committee. The
student is awarded three semester hours of thesis research credit for a successfully completed thesis. An oral public defense of the thesis is required. The thesis must conform to the guidelines of the Graduate School.

**Nonthesis option.** Students who choose the nontthesis option participate in courses, seminars, or other faculty-directed experiences that will give them an acquaintance with the methods of research and an appreciation of the place and function of original investigation in the field.

**Curriculum.** The master of science in nursing program can be completed in one year of full-time study or two or more years of part-time study. Students in the nursing program at The University of Alabama who take specified core courses at UAB or UAH— institutions cooperating in UA’s M.S.N. (nurse case management) program—may transfer the courses to UA even if the overall GPA at the cooperating institution is below 3.0. Students must still have overall GPAs of 3.0 at UA in order to graduate. The GPA must be at least 3.0 at institutions other than UAB or UAH to transfer courses to UA.

**SAMPLE PROGRAM OF STUDY (FULL-TIME)**

**Fall (first semester)**
- **Course**
  - NUR 501 Theoretical Models for Advanced Nursing Practice with Rural Populations: 3
  - NUR 505 Advanced Health Assessment: 3
  - NUR 5_  " Pathophysiology: 3
  - NUR 502 Issues in Community-Based Care for Rural Populations: 2

  Total semester hours: 11

**Spring (second semester)**
- **Course**
  - CHS 520 Basic Epidemiology: 3
  - NHM 580* Research and Statistics for Health Professionals: 3
  - NUR 520 Evidence Based Practice: Roles and Processes: 4
  - NUR 522 Human Relations Management: 3

  Total semester hours: 13

**Summer (third semester)**
- **Course**
  - NUR 530 Practicum: 6
  - NUR 580 Fiscal Resource Management: 3
  - NUR 595 Issues in Pharmacotherapeutics: 3

  Total semester hours: 12

**Thesis (optional)**
- **Course**
  - NUR 599 Thesis Option: 3

  Total semester hours: 35-38

*These courses may be taken at UAB or UAH, if available. Talk to the faculty advisor for other options.

**SAMPLE PROGRAM OF STUDY (PART-TIME)**

**Fall (first semester)**
- **Course**
  - NUR 501 Theoretical Models for Advanced Practice: 3
  - NUR 5_  " Pathophysiology: 3

  Total semester hours: 6

**Spring (second semester)**
These courses may be taken at UAB or UAH, if available. Talk to the faculty advisor for other options.

MASTER OF SCIENCE IN NURSING PROGRAM: CLINICAL NURSE LEADER

The Capstone College of Nursing offers the distance-based master of science in nursing (M.S.N.) with all courses offered online. This program prepares nurses to assume the role of clinical nurse leader (CNL) for rural populations. The CNL is a masters prepared generalist; accountable for clinical and health care environmental outcomes. The CNL functions at the microsystem level; overseeing care coordination of a distinct group of patients, serving as a resource for clinical decision making and serving as a lateral integrator of care. The CNL puts evidence-based practice into action, collects and evaluates patient outcomes, assesses cohort risk, and has the decision-making authority to change care plans when necessary. This clinician functions as part of an interdisciplinary team by communicating, planning, and implementing care directly with other health care professionals. The CNL is a leader in the health care delivery system across all settings in which health care in delivered.* Graduates of this program will be eligible to take the CNL certification examination offered by AACN and assume the role of Clinical Nurse Leader in a variety of health care settings.*


Admission Requirements for the Clinical Nurse Leader

Admission requirements are consistent with those of the Graduate School. Applicants for the M.S.N. degree program will be considered on a competitive basis. The following are minimum requirements for admission into the master of science in nursing program focusing on the CNL.

- **For regular admission**, a grade point average of at least 3.0 overall (based on a 4.0 system) or 3.0 for the last 60 semester hours of undergraduate work
- **For conditional admission**, a grade point average of at least 2.5 overall (based on a 4.0 system) for undergraduate work, and a score of at least 900 on the Graduate Record Examination (GRE) general test or at least the 40th percentile on the Miller Analogies Test (MAT)
- baccalaureate degree in nursing from an accredited school of nursing
- current unencumbered RN licensure in the United States and eligibility for an Alabama license

Degree Requirements

The degree of master of science in nursing will be awarded to the student who has met the
following requirements:

- successful completion of the required coursework
- GPA of 3.0 or higher
- good standing at the time of graduation

To fulfill the research requirements of the program, students may choose from two options described below: thesis option or nonthesis option.

**Thesis option.** A thesis is original research conducted by one student and directed by a graduate committee. The student is awarded three semester hours of thesis research credit for a successfully completed thesis. An oral public defense of the thesis is required. The thesis must conform to the guidelines of the Graduate School.

**Nonthesis option.** Students who choose the nonthesis option participate in courses, seminars, or other faculty-directed experiences that will give them an acquaintance with the methods of research and an appreciation of the place and function of original investigation in the field.

**Curriculum.** The master of science in nursing program can be completed in one year of full-time study or two or more years of part-time study.

Students in the nursing program at The University of Alabama who take specified core courses at UAB or UAH [institutions cooperating in UA's M.S.N. program] may transfer the courses to UA even if the overall GPA at the cooperating institution is below 3.0. Students must still have overall GPAs of 3.0 at UA in order to graduate. The GPA must be at least 3.0 at institutions other than UAB or UAH to transfer courses to UA.

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**SAMPLE PROGRAM OF STUDY (FULL-TIME)**

| Fall (first semester) | Course | NUR 501 Theoretical Models for Advanced Nursing Practice with Rural Populations | 3 |
| | NUR 505 Advanced Health Assessment | 3 |
| | NUR 5 Pathophysiology | 3 |
| | NUR 502 Issues in Community-Based Care for Rural Populations | 2 |

Total semester hours | 11 |

| Spring (second semester) | Course | CHS 520 Basic Epidemiology | 3 |
| | NHM 580* Research and Statistics for Health Professionals | 3 |
| | NUR 520 Evidence-Based Practice Roles and Processes | 4 |
| | NUR 522 Human Relations Management | 3 |

Total semester hours | 13 |

| Summer (third semester) | Course | NUR 530 Clinical Immersion Experience | 6 |
| | NUR 580 Fiscal Resource Management | 3 |
| | NUR 595 Issues in Pharmacotherapeutics | 3 |

Total semester hours | 12 |

**Thesis (optional)**

| Course | NUR 599 Thesis Option | 3 |

Total semester hours | 36-39 |

*These courses may be taken at UAB or UAH, if available. Talk to the faculty advisor for other options.
**SAMPLE PROGRAM OF STUDY (PART-TIME)**

**Fall (first semester)**

Course
- NUR 501 Theoretical Models for Advanced Practice Nursing with Rural Populations 3
- NUR 5__ "Pathophysiology 3

Total semester hours 6

**Spring (second semester)**

Course
- CHS 520 Basic Epidemiology 3
- NHM 580* Research and Statistics for Health Professionals 3

Total semester hours 6

**Summer (third semester)**

Course
- NUR 580 Fiscal Resource Management 3
- NUR 505 Advanced Health Assessment 3

Total semester hours 6

**Fall (fourth semester)**

Course
- NUR 502 Issues in Community-Based Care for Rural Populations 2
- NUR 522 Human Relations Management 3

Total semester hours 5

**Spring (fifth semester)**

Course
- NUR 520 Evidence-Based Practice Role and Processes 4
- NUR 595 Issues in Pharmacotherapeutics 3

Total semester hours 7

**Summer (sixth semester)**

Course
- NUR 530 Clinical Immersion Experience 6

Total semester hours for degree completion 36

*These courses may be taken at UAB or UAH, if available. Talk to the faculty advisor for other options.
14.2 RN TO B.S.N./M.S.N. TRACK

The RN to B.S.N./M.S.N. track is an accelerated track for the experienced, highly qualified RN who holds an associate degree or diploma in nursing and who wants to obtain an advanced degree in nursing. RNs who meet M.S.N. program admission criteria can apply for early admission to the Graduate School while completing the B.S.N. requirements. The RN to B.S.N./M.S.N. track decreases the time required to complete both the B.S.N. and M.S.N. degree programs. The program of study includes six to eight semester hours of credit in each of the six semesters required of the track. The B.S.N. degree is awarded after completion of all B.S.N. requirements in the fourth semester, and the M.S.N. degree is awarded after completion of all M.S.N. requirements in the sixth semester.

Admission Requirements

1. Admission/promotion to the B.S.N. program
   a. Admission to lower division to complete current lower division requirements:
      - 3.0 GPA in last 60 semester hours of coursework
      - Unencumbered RN license and eligibility for licensure in Alabama
   b. No later than the spring semester of the year of initial enrollment, apply for promotion to the upper division
      Requirements:
      - 3.0 GPA in last 60 semester hours of coursework
      - Unencumbered Alabama RN license
      - Two years of clinical nursing experience

2. Admission to Graduate School
   By October 15 of fall I of the program of study, apply for early, expedited admission to the M.S.N. program, contingent on completion of the first semester of B.S.N. coursework with a GPA of 3.0 or higher, and completion of all undergraduate core requirements. Criteria:
   - Completion of at least 97 semester hours of specified coursework in B.S.N. program
   - 3.0 GPA in last 60 semester hours of coursework
   - Unencumbered Alabama RN license
   - Two years of clinical nursing experience

Degree Requirements

The degree will be awarded to students who (1) successfully complete the required hours of coursework with a 3.0 or higher GPA and (2) are in good standing at the time of graduation.

Curriculum

The RN to B.S.N./M.S.N. track can be completed in six semesters of part-time study.

Sample Program of Study

<table>
<thead>
<tr>
<th>Fall I</th>
<th>Course</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 319 Nursing Informatics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUR 348 Role Transition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUR 449 Community Health for Registered Nurses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total semester hours 12

(See undergraduate catalog for the above course descriptions.)
### Spring I

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHM 580†* Research and Statistics for Health Professionals</td>
<td>3</td>
</tr>
<tr>
<td>CHS 520 Basic Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>NUR 502 Issues in Community-Based Care for Rural Populations</td>
<td>2</td>
</tr>
</tbody>
</table>

Total semester hours **8**

### Summer I

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 580† Fiscal Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>NUR 505† Advanced Health Assessment</td>
<td>3</td>
</tr>
</tbody>
</table>

Total semester hours **6**

### Fall II

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 501 Theoretical Models for Advanced Nursing Practice with Rural Populations</td>
<td>3</td>
</tr>
<tr>
<td>NUR 522† Human Relations Management</td>
<td>3</td>
</tr>
<tr>
<td>NUR 5__ †* Pathophysiology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total semester hours **9**

### Spring II

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 520 Evidence Based Practice: Roles and Processes</td>
<td>4</td>
</tr>
<tr>
<td>NUR 595 Issues in Pharmacotherapeutics</td>
<td>3</td>
</tr>
</tbody>
</table>

Total semester hours **7**

### Summer II

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 530 Practicum</td>
<td>6</td>
</tr>
</tbody>
</table>

Total semester hours for degree completion **43**

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†Courses count toward completion of B.S.N. and M.S.N. degree requirements.

*These courses may be taken at UAB or UAH, if available. Talk to the faculty advisor for other options.
14.3 DUAL M.S.N./M.A. DEGREES

The Capstone College of Nursing and the Manderson Graduate School of Business offer dual degrees including the master of science in nursing (M.S.N.) and the master of arts (M.A.) in management. This program of study provides students with an educational background for clinical practice in nursing case management as well as health care management. Admission to this program of study is available in the fall semester.

Admission Requirements
Applicants must apply for admission to the Graduate School, meet criteria for admission to the master of science in nursing and the master of arts in management, and be recommended for admission by both the Capstone College of Nursing graduate program and the Manderson Graduate School of Business.

Degree Requirements
The degrees will be awarded to students who (1) successfully complete the required hours of coursework with a 3.0 or higher GPA and (2) are in good standing at the time of graduation.
The degrees must be completed simultaneously.

If a student is enrolled in the dual-degree program of study and opts out of one of the degrees, the student must complete the "regular" version of the degree program. That is, the student would not be able to earn the degree by completing only the truncated set of requirements for the dual degree.

If a student opts out of one of the degrees and completes the other, then later decides to pursue the remaining degree, the student cannot complete the truncated version of that program's requirements to earn the degree. The "maximum 6 hours from a previous degree" policy would be in effect for the second degree.

Curriculum
The dual M.S.N./M.A. degrees can be completed in two years of full-time study. Part-time study is available.

SAMPLE PROGRAM OF STUDY

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**Fall I**

<table>
<thead>
<tr>
<th>Course</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HCM 576 Advanced Principles of Long-Term Care or HCM 473 Health Care Issues</td>
<td>3</td>
</tr>
<tr>
<td>MGT 542 Management Communication</td>
<td>3</td>
</tr>
<tr>
<td>NUR 501 Theoretical Models of Advanced Practice Nursing with Rural Populations</td>
<td>3</td>
</tr>
<tr>
<td>NUR 502 Issues in Community-Based Care for Rural Populations</td>
<td>2</td>
</tr>
</tbody>
</table>

Total semester hours 11

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**Spring I**

<table>
<thead>
<tr>
<th>Course</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT 527 Strategic Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT 532 Employee Relations</td>
<td>3</td>
</tr>
<tr>
<td>NHM 580 Research and Statistics for Health Professionals</td>
<td>3</td>
</tr>
</tbody>
</table>

Total semester hours 9
<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer I</td>
<td>NUR 580 Fiscal Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>Fall II</td>
<td>MGT 520 Change Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>MGT 597 Contemporary Issues in Performance Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total semester hours</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>Spring II</td>
<td>NUR 520 Evidence Based Practice: Roles and Processes</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>MGT 511 Recruitment, Selection, Placement</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>HCM 577 Advanced Principles of Ambulatory Care or HCM 575</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Advanced Principles of Managed Care</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total semester hours</strong></td>
<td><strong>10</strong></td>
</tr>
<tr>
<td>Summer II</td>
<td>NUR 530 Practicum</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>NUR 595 Issues in Pharmacotherapeutics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total semester hours</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total semester hours for degree completion</strong></td>
<td><strong>48</strong></td>
</tr>
</tbody>
</table>

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The Graduate School | UA Catalogs | Graduate Publications | Contact
Update: Sep. 2007

http://graduate.ua.edu/catalog/25900.html
14.4 MSN AND DOCTOR OF EDUCATION with NURSE EDUCATOR SPECIALIZATION

The UA College of Education and the Capstone College of Nursing offer an MSN leading to a Doctorate of Education (Ed.D.) with Nurse Educator Specialization and an Ed.D. with Nurse Educator Specialization. Both programs are designed to prepare practicing nurses for nursing faculty positions. Graduates are prepared to teach nursing in community or four-year colleges and universities in their area of expertise.

In this program, baccalaureate prepared nurses obtain a Master of Science in Nursing (MSN) degree and a Doctorate in Education (Ed.D.) in Instructional Leadership with nurse educator specialization. Nurses that have an MSN degree enter the Ed.D. program to earn an Ed.D. in Instructional Leadership with Nurse Educator Specialization. Coursework for the MSN/Ed.D. and Ed.D. programs can be completed in three or three and one-half years of full-time study, respectively.

The curricula for the MSN/Ed.D. and Ed.D. with Nurse Educator Specialization support the competencies for nurse educators specified by the National League for Nursing (NLN) and the Southern Regional Education Board Council on Collegiate Education in Nursing (SCCEN).

Doctor of Education Program Planning
See the College of Education and Instructional Leadership sections of this catalog for additional policies and procedures relevant to the Ed.D. with Nurse Educator Specialization program.

Time limits for doctoral study. Doctoral programs of study may include appropriate coursework that has been earned six years prior to the date of the student's admission to the doctoral program. All degree requirements must be completed within seven years of the date of the student's admission to and enrollment in the doctoral program.

Admission Requirements for MSN/Ed.D. and Ed.D. with Nurse Educator Specialization
Admission requirements are consistent with those of the Graduate School. Applicants for the M.S.N./Ed.D. and Ed.D. with Nurse Educator Specialization degree programs will be considered on a competitive basis. Nurses who are interested in the programs, are encouraged to contact the Capstone College of Nursing, Director of Graduate Programs. The following are minimum requirements for admission for both programs.

- For regular admission, a grade point average of at least 3.0 overall (based on a 4.0 system) or 3.0 for the last 60 semester hours of undergraduate work
- For conditional admission, a grade point average of at least 2.5 overall (based on a 4.0 system) for undergraduate work, and a score of at least 900 on the Graduate Record Examination (GRE) general test or at least the 40th percentile on the Miller Analogies Test (MAT)
- current unencumbered RN licensure in the United States and eligibility for an Alabama license
- an entrance examination score no lower than the 50th percentile on either of the following examinations: Miller Analogies Test (MAT) or Graduate Record Examination General Test (GRE)
- Complete the Graduate School application process – two applications are required: one for the MSN and one for the Ed.D.
- Complete the Instructional Leadership application process to include:
  - Instructional Leadership application form to be found at http://education.ua.edu/leader/degrees.html
  - Curriculum Vitae
  - Sample of academic writing
  - Three letters of reference written on professional letterhead
  - Appropriate prior educational preparation from an accredited school of nursing (Master's degree in nursing for Ed.D. with nurse educator specialization; Baccalaureate degree in nursing for MSN/Ed.D.)

Degree Requirements
The degrees of Master of Science in Nursing and the Ed.D. with Nurse Educator Specialization will be awarded to the student who has met the following requirements:

- GPA of 3.0 or higher
good standing at the time of graduation
successful defense of the final dissertation
for the MSN/Ed.D. program, successful completion of the required coursework and dissertation hours
for the Ed.D. program, successful completion of the required coursework and dissertation hours
The degrees must be completed simultaneously.

If a student is enrolled in the dual-degree program of study and opts out of one of the degrees, the student must complete the "regular" version of the degree program. That is, the student would not be able to earn the degree by completing only the truncated set of requirements for the dual degree.

If a student opts out of one of the degrees and completes the other, then later decides to pursue the remaining degree, the student cannot complete the truncated version of that program’s requirements to earn the degree. The "maximum 6 hours from a previous degree" policy would be in effect for the second degree.

Curriculum. The MSN/Ed.D. and Ed.D. with Nurse Educator Specialization programs can be completed in three years of full-time study or study.

<table>
<thead>
<tr>
<th>MSN/Ed.D. SAMPLE PROGRAM OF STUDY – subject to revision</th>
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<tbody>
<tr>
<td>Term</td>
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<tr>
<td>Fall I</td>
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<td>Spring III</td>
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</tbody>
</table>

Comprehensive Exams
### Ed.D. SAMPLE PROGRAM OF STUDY – subject to revision

<table>
<thead>
<tr>
<th>Term</th>
<th>Course Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall I</td>
<td>AEL 667 Multicultural and Social Education for Leadership Personnel</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>AIL 600 Integration of Technology in Education and Training</td>
<td>3</td>
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<tr>
<td></td>
<td>NUR 531 Nursing Faculty Roles and Responsibilities</td>
<td>3</td>
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<td>9</td>
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<tr>
<td>Spring I</td>
<td>BEF 644 Philosophy of Science and Its Relation to Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>AIL 602 Electronic Instructional Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NHM 580 Research and Statistics for Health Professionals</td>
<td>3</td>
</tr>
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<td></td>
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<td>9</td>
</tr>
<tr>
<td>Summer I</td>
<td>BER 631 Inquiry as Interpretation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BEP 541 Learning Theories and Design of Learning Environments</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BER 540 Statistical Methods in Education</td>
<td>3</td>
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<tr>
<td>Fall II</td>
<td>NUR 532 Instructional Media in Nursing Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>AEL 620 Curriculum: Theory and Practice</td>
<td>3</td>
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<tr>
<td></td>
<td>AIL 604 Distance Technologies (online)</td>
<td>3</td>
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<td>9</td>
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<tr>
<td>Spring II</td>
<td>AHE 603 College and University Teaching</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NUR 540 Nurse Educator Practicum</td>
<td>6</td>
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<td>9</td>
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<tr>
<td>Summer II</td>
<td>AIL 671 Survey of Instructional Supervision</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NUR 696 Seminar in Quantitative Research (or BER 632)</td>
<td>3</td>
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<tr>
<td></td>
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<tr>
<td>Fall III</td>
<td>BEF 641 Studies in the Social Foundations of Education</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BER 632 Qualitative Methods (or NUR 696)</td>
<td>3</td>
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<td></td>
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<td>6</td>
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<tr>
<td>Spring III</td>
<td>AEL 681 Ethics and Education</td>
<td>3</td>
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<td></td>
<td><em>Comprehensive Exams</em></td>
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<tr>
<td></td>
<td>AEL 699 Dissertation Research</td>
<td>12</td>
</tr>
</tbody>
</table>
14.5 POST-MASTER'S CERTIFICATE IN NURSING

The master of science in nursing program, upon which the post-master's track is based, is designed to prepare advanced practice nurses at the master's level to practice as case managers for rural populations. Nurses who are already prepared at the master's level for roles such as nurse practitioner, clinical specialist, or nurse administrator and who need case management knowledge and expertise to enact the nurse case manager role can apply for the post-master's track. Students in the post-master's track will enroll in the existing case management courses, but they will not be required to complete the nursing core courses, such as research and theory, if they were completed in the master's program.

Admission Requirements
Requirements for admission are limited to the following:

- Master's degree in nursing from an accredited graduate program in nursing or a master's degree in a health-related field with a baccalaureate degree in nursing from an accredited program.
- Current unencumbered RN licensure and eligibility for licensure in Alabama. Applicants will follow the existing Graduate School admission process.

Application for Certification
Candidates for certification must apply in writing to the associate dean for academic programs in the Capstone College of Nursing one semester before completion of certification requirements is anticipated.

Sample Program of Study

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
<td></td>
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<tr>
<td>NUR 522 Human Relations Management</td>
<td>3</td>
</tr>
<tr>
<td><strong>Spring</strong></td>
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<tr>
<td>NUR 520* Evidence Based Practice: Roles and Processes</td>
<td>4</td>
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<tr>
<td><strong>Summer</strong></td>
<td></td>
</tr>
<tr>
<td>NUR 530* Practicum</td>
<td>6</td>
</tr>
<tr>
<td>NUR 580 Fiscal Resource Management</td>
<td>3</td>
</tr>
</tbody>
</table>

Total semester hours 9

Total semester hours for certificate completion 16

*This is a required course.

The student's transcript and portfolio will be assessed for the following courses or proven expertise. In the absence of transcript credit or expertise evidenced via the portfolio, the courses must be completed. A minimum of 16 semester hours must be completed at UA.

- NUR 501 Theoretical Models for Advanced Nursing Practice with Rural Populations
- NUR 502 Issues in Community-Based Care for Rural Populations
- NUR 595 Issues in Pharmacotherapeutics
- **NHM 580** Research and Statistics for Health Professionals
- **NUR 5___** Pathophysiology
- **NUR 505** Advanced Health Assessment
- **CHS 520** Basic Epidemiology

**These courses may be taken at UAB or UAH, if available. Talk to the faculty advisor for other options.**

Students with graduate degrees in health-related fields may need to take the following additional coursework at UA.

- **NUR 501** Theoretical Models for Advanced Nursing Practice with Rural Populations
- **NUR 5___** Advanced Pathophysiology
- **NUR 502** Issues in Community-Based Care for Rural Populations
14.6 COLLEGE OF NURSING: COURSE DESCRIPTIONS

These courses are offered at UA. The additional courses in the curriculum may be offered through UAB or UAH. Full curriculum outlines are available through the Capstone College of Nursing administrative offices.

NUR 501 Theoretical Models for Advanced Nursing Practice with Rural Populations. Two hours. Pertinent theories with relevance to health care for rural populations from nursing and related fields will provide the framework for consideration of nursing roles in case management. Specifically, the content will be derived from rural nursing theory, ethics, teaching/learning, communication, nursing, health care delivery systems, management theory, change, role delineation, and decision making. Students will apply the theoretical bases to their advanced practice case management role.

NUR 502 Issues in Community-Based Care for Rural Populations. Two hours. Students will examine selected issues that affect health care. The organization and financing of health care for rural populations will receive considerable attention. The advanced practice nurse case manager student will gain understanding of the development of health care policy and the ethical, political, economic, sociocultural, and technological forces influencing the delivery of care.

NUR 505 Advanced Health Assessment. Three hours. This course will assist the graduate nursing student to further develop health assessment skills for obtaining and recording a systematic health history as well as advanced holistic health assessment of individuals across the life span.

NUR 520 Evidence Based Practice: Roles and Processes. Four hours. Includes the case manager functions of assessing, planning, intervening, monitoring, and evaluating. Emphasized in the course are clinical, financial, functional, and satisfaction outcomes at the individual and population levels; responding to complex patient demands and systems requirements; implementing a coordinated, multidisciplinary, collaborative approach to care; and developing, using, and refining case management founded on evidenced-based practice. Application of these concepts is begun in the clinical portion of the course.

NUR 522 Human Relations Management. Three hours. Focuses on establishing relationships with clients and families, group dynamics, team building, leadership and management skills, negotiation, human diversity in health and illness, conflict management, and rural health issues relevant for case management of rural populations.

NUR 530 Case Management Practicum/CNL Immersion Experience. Six hours. Provides a synthesis experience for students regarding assessing, planning, intervening, monitoring, and evaluating health care. Opportunities for student interaction to facilitate synthesis are provided.

NUR 531 Nursing Faculty Roles and Responsibilities. Three hours. This online course will provide an in depth analysis of the roles and responsibilities nursing faculty. This will prepare faculty to participate in the process of designing, implementing, and evaluating a nursing curriculum. This course will include didactic, clinical and administrative roles and responsibilities, of faculty.

NUR 532 Instructional Media for Nursing Education. Three hours. This course will provide students with an overview of instructional technology and media that can be used in undergraduate and graduate level instruction in nursing education programs. This course will provide students with skills to begin on site and online instruction. It will explore the use of computers, software, models, simulators, and other instructional media.

NUR 540 Nurse Educator Practicum. Six hours. This course focuses on the application of the nurse educator's functions of assessing, planning, intervening, monitoring, and evaluating nursing education in the academic environment. Emphasis is placed on implementing a coordinated, interdisciplinary, collaborative, technologically appropriate and integrated approach to nursing curriculum, design, implementation and evaluation. Web-based conferences will assist students in the exploration and application of teaching and learning issues in self-selected academic experiences.

NUR 580 Fiscal Resource Management. Three hours. Addresses principles of fiscal resources management and their application to case management. Concepts include cost analysis, budgeting, contract development, financial aspects of program development and evaluation, and cost accounting and tracking for rural populations.

NUR 595 Issues in Pharmacotherapeutics. Three hours. This course provides the students with the opportunity to explore issues in pharmacotherapeutics which affect clinical management of individuals and rural populations. Issues to be explored included: evidence-based and cost-effective strategies; traditional and alternative interventions; technological advances in the development, distribution and
administration of pharmacotherapeutics; legal issues; and, new developments in clinical pharmacology.

**NUR 599 Thesis Project.** Three hours.  
Focuses on the actual implementation of the research process, including the development of the proposal, institutional review board (IRB) approval, data collection, data analysis, and writing the research report.

**NUR 696 Seminar in Quantitative Research.** Three hours.  
In this course students are expected to utilize knowledge from quantitative methodology and statistics in this course. The seminar will provide students with opportunities to synthesize knowledge gained in this and other courses in order to address topics of for research in nursing education.
The School of Social Work offers educational programs leading to the master of social work degree and the doctor of philosophy degree.

At the master's level, the School prepares social workers to plan, administer, deliver, and evaluate social services for citizens of the state, region, and nation. The master of social work prepares the graduate for advanced, specialized practice. The doctor of philosophy prepares graduates to develop and impart knowledge to advance the profession. The faculty of the School engages in research and professional activities designed to enrich educational programs, improve social conditions, and meet special needs of the state, region, and nation.

The School is housed in Little Hall in the central area of the University campus. The building is designed to provide access and mobility for persons with physical disabilities. The Social Work Reading Room is located in the Gorgas Library and is staffed to provide assistance to students and faculty.
15.1 MASTER OF SOCIAL WORK PROGRAM
Chairperson: Professor Debra Nelson-Gardell, Office: 118 Little Hall

Admission Requirements
Admission requirements of the School of Social Work are consistent with those of the Graduate School. To be considered for admission to the Master of Social Work Program, a person must meet the following requirements prior to enrollment in the M.S.W. Program:

1. A bachelor's degree from an accredited institution, including completion of a minimum of four courses in the humanities and/or fine arts, four courses in behavioral science and/or social science, one course in natural science, one course in college mathematics, and two courses in English composition (or the equivalent)
2. For regular admission. A grade point average of at least 3.0 overall (based on a 4.0 system) or 3.0 for the last 60 semester hours of undergraduate work based on transcripts from all institutions attended
   For conditional admission. A GPA of at least 2.5 overall (based on a 4.0 system) for undergraduate work, and score at the 40th percentile on the Miller Analogies Test (MAT) or a combined score of 900 or higher on the Graduate Record Exam (GRE) on the general test verbal and quantitative sections.
3. A two-part written statement of purpose satisfactory to the M.S.W. admissions committee
4. Three letters of recommendation are required by the School of Social Work. The references should be able to objectively speak to your ability for graduate study and potential for social work. Letters from former professors are preferred, and at least one must be from a professor in your undergraduate major. If you have been employed in human services for one or more years, letters will be accepted from an employment supervisor. Letters from family members and friends are not appropriate.
5. Reactivated admissions, transfers, and intermitting students will be evaluated according to admission policies and procedures for the academic year in which admission is requested.
6. International students must meet the Graduate School's requirements for admission including the equivalent of a four-year bachelor's degree from an accredited institution. A student whose first language is not English must submit an official score report for the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS), or must have earned a degree from an accredited U.S. college or university within the last three years. The minimum score for conditional admission to the Graduate School on the TOEFL is 550, or 213 on the computer-based TOEFL, and 6.5 on the IELTS.

No academic credit, course waivers, or credit for field practicum shall be granted for life experience or previous work experience.

Admission with Advanced Standing. Students who hold the bachelor of social work degree from an institution accredited by the Council on Social Work Education may be admitted to the M.S.W. program with advanced standing. Advanced-standing students enroll in M.S.W. study for one full summer or spring session and one full academic year. In addition to the satisfaction of all admission requirements of the School, admission with advanced standing also requires a "B" average or better in all professional foundation courses, with no more than one "C" in professional courses and grades of "B" or better in field education courses.

The admissions committee reserves the right to make exceptions to admissions requirements in highly unusual situations and to determine the number of students that can be admitted to each program. In addition, the committee will seek to admit a cohort of students that is diverse in sex, racial and ethnic background, and geographic origin. The committee reserves the right to interview applicants.

Application Procedure. Applicants must provide the following:

1. Application for admission to The University of Alabama, including nonrefundable $30 fee for online applications and $35 for paper applications (payment of the fee must be in the form of a check or money order payable to The University of Alabama or payment online by credit card when applying online)
2. Application materials for admission to the Graduate School
3. Supplemental application materials or online application for admission to the School of Social Work
4. Score report for the Graduate Record Examination or Miller Analogies Test, if required

In order for an application to be ready for review by the admissions committee of the School of Social Work, the Graduate School file must be completed and forwarded to the School of Social Work. Applicants must specify on the application whether they are applying for the two-year weekday program, the first-year Saturday program, or the advanced-standing program. Applications to the School of Social Work should be completed by February 1 for priority consideration for admission in the summer or fall term and for financial aid awards and by Sept. 1 for the spring advanced-standing program. However, the Graduate School requests that their components of the application be
Applications may be accepted on a space-available basis until April 1 for admission with advanced standing for summer term or the first-year Saturday program; until July 1 for admission in the fall term; and until November 1 for admission with advanced standing for spring semester.

If an applicant is interested in transferring graduate credit to the MSW program from another institution or graduate program, a formal request may be made after admission to the program. Decisions regarding transfer of graduate credits will be made by the MSW Program Chair, after the applicant is admitted.

Application forms and other information may be obtained by writing to The University of Alabama, Associate Dean of the School of Social Work, Box 870314, Tuscaloosa, AL 35487-0314. Applicants may also obtain application materials at the School's website, http://socialwork.ua.edu.

Financial Aid
Financial assistance through stipends, grants, and scholarships is available through the School of Social Work. Some stipends are available directly from the School; others are related to traineeships, with specified field education placements and/or curriculum requirements. Stipends and traineeships that may be available include Alabama Department of Human Resources stipends; an Alabama Disabilities Advocacy Program stipend; child welfare traineeships; Sparks Clinics traineeships; Pediatric Pulmonary Health Care traineeships; Taylor Hardin Secure Medical Facility stipends; Bryce State Psychiatric stipends; Alabama Department of Youth Services traineeships; and Veterans Administration traineeships. Additional traineeships become available on a year-by-year basis.

Contact The University of Alabama, Associate Dean of the School of Social Work, Box 870314, Tuscaloosa, AL 35487-0314, or telephone (205) 348-6791, for application forms and further information. Students may also contact the UA Office of Student Financial Aid, Box 870162, Tuscaloosa, AL 35487-0162, or telephone (205) 348-6756, for applications for University-sponsored and other financial aid such as federal loans.

Degree Requirements
The master of social work (M.S.W.) degree will be awarded to the student who has met the following requirements:

1. Successful completion of 60 hours of approved courses including field education or 42 hours for students admitted with advanced standing
2. Evidence of the capacity to perform in all aspects of the student's educational program at a satisfactory and responsible level, as judged by the faculty, and promise of further professional development (see the Master's Degree Program Student Handbook for further details)
3. Students are expected to demonstrate writing proficiency at a graduate level. Writing skills may be evaluated through specialized assignments in foundation or advanced-standing courses, or through a proficiency examination. The student may be required to attend tutorial sessions until proficiency is demonstrated.

Time Limit Requirement. Work toward the M.S.W. degree must be completed within four calendar years from the time the first class is taken.

M.S.W. Program
The goal of the master of social work program of the University of Alabama School of Social Work is to educate social workers for advanced practice with an emphasis on public and non-profit social services and on community advocacy. The goal encompasses education for advanced practice in specific types of direct practice and in program assessment and administration, advocacy, and policy and reform roles. The program emphasizes preparation for practice specifically intended to benefit disadvantaged or oppressed people at the state and regional levels, and the program provides opportunities for students to prepare for practice based on this commitment at the national and international levels.

Building on the professional social work foundation, and within a focused area of study, the program prepares graduates for advanced social work practice in an area of concentration who will provide leadership in planning, administering, delivering, and evaluating social services who will advocate for social causes and justice, and work on reform efforts who will demonstrate a commitment to practice and service to benefit poor, oppressed, and other socially disadvantaged people, and to work toward the elimination of poverty, oppression, and discrimination who value human diversity and display sensitivity to the uniqueness, commonalities, and richness of cultures and their constituents

http://graduate.ua.edu/catalog/26400.html
who are committed to the values and ethics of social work
who engage in a continuous process of professional development through systematic inquiry, analysis, reflection, and participation in organized professional educational opportunities
who will contribute to the development of the profession of social work within the state, region, and nation and/or international communities

Curriculum. The M.S.W. program is fully accredited by the Council on Social Work Education. The curriculum follows the curriculum policy requirements of the Council on Social Work Education and provides a balanced, integrated approach that includes a professional foundation and a choice of concentrations. The professional foundation curriculum taken the first year consists of coursework in the following:

- **Social work practice.** This area of the curriculum is designed to provide practice knowledge and competencies in working with individuals, groups, families, communities, and organizations.
- **Human behavior and the social environment.** This area of the curriculum helps the student to understand the whole person and the process of growth, change, adaptation, social functioning, and dysfunctioning in the environmental context, including family, groups, formal organizations, and communities. Courses in this area cover prenatal stages through the process of aging.
- **Social welfare policy and services.** This area of the curriculum is designed to help the student identify, appraise, analyze, and understand social change in its dynamic perspectives; the role and responsibility of social work as a profession in influencing social policy; and the delivery of service to individuals and society.
- **Research methods.** This area of the curriculum is designed to help the student understand social work and related research and the use of research for the improvement of services to individuals, groups, organizations, and communities.
- **Field education.** This area of the curriculum provides opportunities for students to integrate and apply knowledge, skills, and values in a social work practice context.

M.S.W. Curriculum Themes:

The M.S.W. program will emphasize the following five themes underpinning the foundation and the concentration year objectives. These themes are:

- **Life Course Perspective:** Social workers understand that the growth and development of individuals, families, groups, organizations, and communities are influenced by a range of psychological, social, historical, political, and economic factors. The interaction of these factors with life events and life transitions contribute to the subsequent outcomes. This theme also serves as the conceptual framework for the entire MSW curriculum.
- **Valuing Diversity:** Social workers value and work respectfully with people who are different from themselves.
- **Critical and Reflective Thinking:** Critical and reflective thinking that challenges assumptions, and that is based on evidence to arrive at creative solutions, is the basis for competent social work practice.
- **Evidence-Based Practice:** Social workers favor interventions with demonstrated effectiveness. They are prepared to carefully evaluate practice and program outcomes.
- **Services to the Poor and Underserved:** Alabama’s poor and underserved receive social services primarily from public and non-profit social service agencies. Social workers must be prepared to practice in these contexts and to challenge social injustice.

MSW Program Foundation Objectives:

Foundation Year MSW students will demonstrate the ability to:

1. Apply critical thinking skills within the context of professional social work practice.
2. Understand the value base of the profession and its ethical standards and principles, and practice accordingly.
3. Practice without discrimination and with respect, knowledge, and skills related to clients’ age, class, color, culture, disability, ethnicity, family structure, gender, marital status, national origin, race, religion, sex, and sexual orientation.
4. Understand the forms and mechanisms of oppression and discrimination and apply strategies of advocacy and social change that advance social and economic justice.
5. Understand and interpret the history of the social work profession and its contemporary structures and issues.
6. Apply the knowledge and skills of generalist social work perspective to practice with systems of all sizes.
7. Use theoretical frameworks supported by empirical evidence to understand individual development and
behavior across the life span and the interactions among individuals and between individual and families, groups, organizations, and communities.

8. Analyze, formulate, and influence social policies.
9. Evaluate research studies, apply research findings to practice, and evaluate their own practice interventions.
10. Use communications skills differentially across client populations, colleagues, and communities.
11. Use supervision and consultation appropriate to social work practice.
12. Function within the structure of organizations and service delivery systems and seek necessary organizational change.

Concentration Objectives
In professional social work intervention with children, youth, and their families, or adults and their families, students will demonstrate:

1. The ability to effectively apply selected models and methods of advanced social work practice, consistent with social work values and ethics, with an emphasis in public and non-profit social services.
2. The ability to use reflectively the theoretical approaches and knowledge bases underlying their practice with particular attention to the life course perspective.
3. The ability to evaluate their own practice.
4. The ability to analyze the impact of social welfare policies on clients and practice situations.
5. The ability to practice in ways that are culturally and gender appropriate with low income persons and with those who have experienced social and economic injustice.
15.2 PROGRAM REQUIREMENTS

First-year foundation core requirements. The professional foundation year of common core courses prepares students to use a range of social work knowledge, methods, and skills to facilitate change within a continuum of client systems, from individual to societal. Field education in the foundation year is generic in focus, exposing students to a wide range of clients and programs.

Challenge Examinations. The master of social work program permits admitted M.S.W. students to demonstrate a mastery of specific course content areas by passing a challenge examination. Challenges are permitted in the areas of policy, research, and human behavior. Thus, students in the advanced program may request to challenge SW 576 Intermediate Social Work Research, SW 577 Components of Human Development and Social Systems, and/or SW 578 Social Welfare Policies and Delivery Systems, Social Problems, and the History of Social Welfare. Students in either the Saturday program or the weekday program may request to challenge SW 500 Social Welfare Policy: History, Problems, Programs, and Analysis; SW 510 Human Behavior and Social Environment; and/or SW 520 Research Methods for Social Work Practice. A student who successfully challenges a course will be permitted to take a substitute course in lieu of the required foundation course. The degree-hour requirements remain the same.

First-Year Required Courses
Note: First-year Saturday courses in Tuscaloosa, Gadsden, Montgomery, Mobile, and courses in Hong Kong, and other locations may vary slightly, but are the same total number of hours.

<table>
<thead>
<tr>
<th>Fall Semester</th>
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<tbody>
<tr>
<td>SW 500 Social Welfare Policy — History, Problems, Programs, and Analysis</td>
<td>3</td>
</tr>
<tr>
<td>SW 510 Human Behavior and Social Environments I</td>
<td>3</td>
</tr>
<tr>
<td>SW 540 Social Work Practice with Individuals and Families</td>
<td>3</td>
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<tr>
<td>SW 541 Social Work Practice with Groups</td>
<td>3</td>
</tr>
<tr>
<td>SW 542 Social Work Practice with Communities and Organizations</td>
<td>3</td>
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<tr>
<td><strong>Total semester hours</strong></td>
<td><strong>15</strong></td>
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<thead>
<tr>
<th>Spring Semester</th>
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</thead>
<tbody>
<tr>
<td>SW 511 Human Behavior and Social Environments II</td>
<td>2</td>
</tr>
<tr>
<td>SW 520 Research Methods for Social Work Practice</td>
<td>3</td>
</tr>
<tr>
<td>SW 534 Integrative Seminar I</td>
<td>1</td>
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<tr>
<td>SW 590 Field Education I</td>
<td>9</td>
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<tr>
<td><strong>Total semester hours</strong></td>
<td><strong>15</strong></td>
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Saturday Program. The School offers a Saturday program that provides students the opportunity to complete first-year classroom coursework on Saturdays. The Saturday program offers first-year (foundation-year) courses each year in Tuscaloosa and at distance sites (Mobile, Montgomery, and Gadsden) in alternating years. The second-year courses are not available on Saturdays. Saturday program students are also required to complete a 500-clock-hour field experience. The field experience cannot be completed on Saturdays and at least 16 hours per week must be completed during customary work days and hours (M-F, 8:00am to 6:00pm). Concentration courses are offered only in weekday sessions, with some courses available evenings especially at distant sites.

Advanced-Standing Program. Students admitted with advanced standing must complete 12 hours of coursework preceding the second year of the M.S.W. program.

Required Courses—Advanced-Standing Students
(Spring or Summer Prior to Second Year of M.S.W. Program)
Hong Kong courses. The School of Social Work, under contract with Hong Kong Shue Yan University, allows students to complete the first year of the master's degree program in Hong Kong. All standards and policies of the School of Social Work and the Graduate School, including admissions requirements, apply to students taking these courses.

Field education placement procedures. The major objective in the placement process is to match the student with the field education setting that offers the best potential for promoting the student's professional development. The School is responsive to personal factors related to location of placements and specific agencies, but it cannot assure an assignment tailored to personal situations. In accepting admission to the School and registering in the M.S.W. program, the student has agreed to accept field education placements assigned by the School of Social Work, as per the statement signed by the student on the admission application. Students who are employees of organizations that meet the School's criteria for field education agencies and that agree to the School's requirements may apply to the coordinator of field education to arrange a placement with that agency as one of the required field education experiences.

Field placements are in the Tuscaloosa area and throughout the state. Students are responsible for arranging transportation and paying any expenses related to field education. Students may not enroll in field education unless they have completed the required courses for the year in which they are enrolled, or unless they are concurrently enrolled in those courses. A student who has a grade of "I" on his or her record will not be allowed to enter field education. Any incompletes must be removed prior to entering field education, unless a specific exception has been made by the M.S.W. Program Committee.

A student who is unable to meet minimum standards in field education may be dropped from field education at any time. A student dropped from field education is also discontinued from other courses requiring concurrent enrollment in field education.

Washington, D.C., placements. The M.S.W. program provides the opportunity for students to complete the second-year field education requirement and other specific program requirements in Washington, D.C. These placements offer special opportunities to obtain field experience not ordinarily available in Alabama.

Second-year concentrations. The curriculum stresses specialized knowledge; the ability to understand complex theories, methods, and models of social work practice; and the ability to apply knowledge and skills differentially in the process of selecting alternatives in both policy and practice. The purpose of the second, or concentration, year of the social work curriculum is the preparation of social workers for advanced practice in one of two concentrations: Social Work with Children Adolescents, and their Families or Social Work with Adults and their Families. An emphasis on Program Planning and Administration (PAA) is available with either of the concentrations. The concentration year is built on a liberal arts perspective and professional foundation content, with particular emphasis on populations at risk.

Each concentration includes two required courses, the opportunity for three electives (which can be courses from other concentrations), and a field placement related to the concentration. Two other courses will also be required during the second or concentration year: Evaluation Research, and Social Welfare Policy: Advanced Policy Analysis. Students will have the opportunity, in collaboration with their academic advisors and course availability, to tailor their concentrations to reflect their own unique and individualized preferences. An emphasis in Program and Agency Administration in either concentration requires that students complete SW 506 Social Service Planning and Program Development and SW 536 Social Service Program and Agency Administration along with completing a placement that provides an opportunity to implement the knowledge gained in these two courses. The School reserves the right to alter the concentration requirements as necessary.

Currently all students in the concentration year are required to take the following courses:

Required Courses for ALL Concentrations

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW 525</td>
<td>Evaluation Research</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

Total semester hours 12

http://graduate.ua.edu/catalog/26500.html
Required Courses—Social Work with Children, Adolescents, and their Families

- SW 564 Models and Methods of Social Work Practice with Children and Adolescents in Mental Health 3
- SW 595 Field Education II Social Work Practice with Children, Adolescents and, and their Families 9

Total semester hours 15

Required Courses—Social Work with Adults and their Families

- SW 532 Models and Methods of Social Work Practice with Adults in Mental Health 3
- SW 533 Models and Methods of Gerontological Social Work Practice 3
- SW 595 Field Education II Social Work Practice with Adults and their Families 9

Total semester hours 15

Electives:
All students must complete 9 hours of electives. Electives may be taken at any time after admission into the program (i.e., interim term, summer, fall, or spring semesters), if prerequisites are met. Electives may include, if openings exist, required courses from the other concentration. If an emphasis in Program and Agency Administration is desired, two of the three electives must include SW 506 Social Service Planning and Program Development and SW 536 Social Service Program and Agency Administration. Electives may also be taken outside of the School of Social Work with advisor approval. Students are encouraged to consult their advisors to plan their academic programs.
The University of Alabama School of Social Work in Tuscaloosa and the University of Alabama at Birmingham School of Public Health's Department of Maternal and Child Health jointly offer an M.S.W./M.P.H. dual-degree program designed for people with career goals in community-oriented health services for families and children. A program of study leading to both degrees requires 84 semester hours of coursework. Contact Chairperson, M.S.W. Program, School of Social Work, The University of Alabama, Box 870314, Tuscaloosa, AL 35487-0314; telephone (205) 348-7027 for more information.
15.3 M.S.W. COURSE DESCRIPTIONS (SW)

Courses are subject to modification without advance notice.

Admission to 500-level courses is limited to graduate social work students only, unless consent of the instructor and the associate dean is obtained. See the School of Social Work Master's Degree Program Student Handbook for additional course eligibility requirements.

**SW 500 Social Welfare Policy: History, Problems, Programs, and Analysis.** Three hours.
Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
Overview of the evolution of social welfare policies and services, and of how social problems affect societal groups. Includes examination of the tools and approaches that social workers might use in analysis and policy formulation.

Prerequisite: SW 500 or SW 578.
The focus of this course is on social welfare policy analysis with particular emphasis on the influence of economic and political issues. This course emphasizes comparative research at both state and national levels.

**SW 506 Social Service Planning and Program Development.** Three hours.
Prerequisite: M.S.W. concentration-year standing or permission of M.S.W. program chair and instructor.
Application and analysis of theory applicable to the field of planning and developing social services and programs.

**SW 510 Human Behavior and Social Environments I.** Three hours.
Prerequisite: Graduate standing with admission to the M.S.W. Program. With special permission of the M.S.W. program chair, graduate students outside the School of Social Work make take this course.
Critical concepts, theories, and research related to human bio-psychosocial development across the life span; human development and behavior in the environmental contexts of family, groups, organizations, and communities; and the impact of human diversity on human development and behavior. This course is part of a two course sequence and focuses on earlier stages of human development from conception through adolescence.

**SW 511 Human Behavior and Social Environments II.** Two hours.
Prerequisites: SW 510 or permission of M.S.W. program chair.
This course introduces students to an overarching conceptual framework and selected theories for understanding human behavior across the life course. This course is part of a two-course sequence and focuses on the later stages of human development from young adulthood to advanced old age.

**SW 513 Models and Methods of Social Work Practice in Health Care.** Three hours.
Prerequisite: M.S.W. concentration-year or advanced standing.
This course prepares students for advanced social work practice in health care settings. Using the Life Course Perspective, health and health care issues relevant to health care social work are addressed.

**SW 514 Chemical Dependency.** Three hours.
Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
Introduction to major theories of addiction, state and federal policies regarding drug control, and the effects of substance abuse.

**SW 515 Psychopathology.** Three hours.
Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
Presents diagnostic criteria used in recognition and treatment of mental disorders, and theory and research on the etiology of these disorders.

**SW 520 Research Methods for Social Work Practice.** Three hours.
Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
First of a two-course sequence. This course focuses on facilitating the student’s ability to critically consume both qualitative and quantitative research.

**SW 523 Family Preservation.** Three hours.
Prerequisite: SW 565 pre- or corequisite, or permission of M.S.W. program chair and instructor.
Overview of family preservation theory and practice. Students demonstrate skills with high risk children and families in their home setting.

**SW 524 Family Violence.** Three hours.
Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
Students learn about various forms of family violence across the lifespan, selected theories and their application in prevention and intervention.

**SW 525 Evaluation Research.** Three hours.
Prerequisite: Graduate standing; completion of SW 520 or SW 576 (or equivalent).
Students learn to design a practice or program evaluation project, demonstrating the link between designing and conducting research and the practice of social work.

**SW 526 "Isms" and Advocacy in Social Work.** Three hours.
Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
Introduction to various forms of oppression, social injustice and advocacy to prevent and intervene.

**SW 527 School-based Social Work Practice.** Three hours.
Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
This course prepares students for school-based social work practice. Advocacy, program design, and evaluation are also taught.

**SW 528 Spirituality in Social Work Practice.** Three hours.
Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
Provides an overview of major issues relevant to spiritually sensitive social work practice with emphasis on the role of spirituality in interventions.

**SW 529 Advanced Clinical Social Work Practice.** Three hours.
Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
The course provides advanced level information about the application of selected theoretical frameworks and models of practice, assessment strategies and techniques, the formulation of treatment plans, practice interventions, and practice evaluation.

**SW 532 Models and Methods of Social Work Practice with Adults in Mental Health.** Three hours.
Prerequisite: Concentration-year standing in the M.S.W. program.
This course emphasizes evidence-based practice models and methods of intervention for effective social work practice with adults experiencing mental health problems.

**SW 533 Models and Methods of Gerontological Social Work Practice.** Three hours.
Prerequisite: M.S.W. concentration-year standing or permission of M.S.W. program chair and instructor.
Focuses on evidence-based practice models and methods of social work intervention with older persons and their families.

**SW 534 Integrative Seminar.** One hour.
Corequisite: SW 590.
Integration of foundation course content and field education.

**SW 536 Social Service Program and Agency Administration.** Three hours.
Prerequisite: Concentration-year standing or permission of M.S.W. program chair and instructor.
Students learn selected theoretical frameworks and apply the knowledge and skills for administration of social service programs and agencies.

**SW 537 Forensic Social Work.** Three hours.
Prerequisite: M.S.W. concentration-year standing or permission of M.S.W. program chair and instructor.
This course is designed to provide students with the knowledge and critical thinking skills necessary for specialized practice in the area of forensic social work.

**SW 540 Social Work Practice with Individuals and Families.** Three hours.
Prerequisites or corequisites: SW 510 and enrollment in the M.S.W. program.
Theory and practice of social work with individuals and families are explored.

**SW 541 Social Work Practice with Groups.** Three hours.
Prerequisites or corequisites: SW 510 and enrollment in the M.S.W. program.
The course provides a framework for systematic study of components and issues involved in the practice of social work with groups.

**SW 542 Social Work Practice with Communities and Organizations.** Three hours.
Prerequisite or corequisite: SW 510 and enrollment in the M.S.W. Program.
Exploration of theories of social work practice for intervention at the community level, including selected macro-models of practice, and community practice within human-service organizations.

**SW 549 Crisis Intervention.** Three hours.
Prerequisite: M.S.W. concentration year standing or permission of M.S.W. program chair and instructor.
Focuses on treatment theories and models of intervention that provide a focused approach to the client in crisis.

**SW 553 Independent Study.** Three hours.
Prerequisite: Permission of the instructor, advisor, and the M.S.W. program chairperson and associate dean.
Proposals must be completely approved by the last day of class of the semester prior to the semester in which the course is to be taken.
Independent learning experience, under faculty direction, with a contract for an outcome such as a publishable research document.

**SW 557 Selected Topics in Social Work Practice.** Variable credit.
Prerequisite: Enrollment in M.S.W. program or permission of M.S.W. program chair and instructor.
Intensive study of an area of or specific approach to social work practice. Topics vary from semester to semester. May be repeated.

**SW 559 Pediatric Pulmonary Care: An Interdisciplinary Approach.** Three hours.
Prerequisite: Enrollment in M.S.W. program and acceptance as a pediatric pulmonary trainee or permission of M.S.W. program chair and instructor.
Introduces social work students to pediatric pulmonary diseases and to research literature in this area of health care. Offered according to demand.

**SW 564 Models and Methods of Social Work Practice with Children and Adolescents in Mental Health.** Three hours.
Prerequisite: Concentration year standing in the M.S.W. program.
This course emphasizes evidence-based practice models and methods of intervention for effective social work practice with children, adolescents, and their families experiencing mental health problems.

Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
This course emphasizes evidence-based practice models of intervention for effective social work practice in child welfare and family services settings.

**SW 576 Intermediate Social Work Research.** Three hours.
Prerequisite: Admission to M.S.W. advanced-standing program or permission of M.S.W. program chair and instructor.
Required for advanced standing students. Prepares the student to engage in research at a level of sophistication and complexity appropriate for entry in the second-year research course.

**SW 577 Components of Human Development and Social Systems.** Three hours.
Prerequisite: Admission to M.S.W. advanced-standing program or permission of M.S.W. program chair and instructor.
Required for advanced standing students. Provides students with instruction in the major psychological and sociological theories of human behavior that support and enhance social work practice.

Prerequisite: Admission to advanced standing in social work.
Required for advanced standing students. Prepares advanced standing students for second-year policy and policy-related courses.

**SW 579 Components of Social Work Practice.** Three hours.
Prerequisite: Admission to advanced standing in social work.
Required for advanced standing students. Designed to provide a foundation for social work practice with individuals, families, groups, and communities, in preparation for second-year practice courses.

**SW 580 Aging in a Social Context.** Three hours.
Prerequisite: Admission to M.S.W. program or permission of M.S.W. program chair and instructor.
Examines aging in social, economic, and political contexts. Special attention is given to various social theories of aging; needs and problems of disadvantaged subpopulations of older people; and social policies and programs affecting older people.

**SW 589 Social Work Practice in End-of-Life Care.** Three hours.
Prerequisite: Concentration-year standing or permission of M.S.W. program chair and instructor.
This course provides students with an understanding of the practical and emotional aspects of providing social work services to people who are dying and their families.

**SW 590 Field Education I.** Nine hours.
Prerequisites: SW 500, SW 510, SW 511, SW 540, SW 541, and SW 542.
Corequisite: SW 534.
Planned field experience in human service programs. The student is typically required to be in the field four days and in class one day each week, for a 16-week period. The objective of SW 590 is broad experience in social work practice.

**SW 595 Field Education II.** Nine hours.
Prerequisite: Completion of SW 590, concentration courses, and SW 525 as pre- or co-requisite.
Placements are individualized according to each student's concentration, career interest, and educational needs. The time requirements are the same as for SW 590.
FIELD EDUCATION AGENCIES
The following list is provided for example only, and is subject to change.

**Tuscaloosa Area**
Alabama Disabilities Advocacy Program
Brewer-Porch Children's Center
Bryce Hospital
Caring Hands Hospice
Children's Rehabilitation Service
Community Service Programs of West Alabama
Counseling Center, The University of Alabama
DCH Northport
DCH Regional Medical Center
Department of Human Resources
Department of Public Health
Family Counseling Service of Tuscaloosa County
Family Options
GambroHospice of West Alabama
Mary Starke Harper Geriatric Psychiatry center
Northport Hospital-DCHOice of Public Defender, Tuscaloosa County Courthouse
Taylor-Hardin Secure Medical Facility
Temporary Emergency Services
Tuscaloosa City Schools
Tuscaloosa County Schools
Tuscaloosa Housing AuthorityTuscaloosa’s One Place, A Family Resource Center
University Medical Center
Veterans Affairs Medical Center
W. D. Partlow Developmental Center

**Birmingham Area**
Aids Alabama
Alabama AEGIS, Inc.
Area Agency on Aging
Baptist Medical Center Princeton
Birmingham Aids Outreach
Catholic Family Services
Children's Aid Society
Children’s Hospital
Collat Jewish Family Services
Cooper Green Hospital
Department of Youth Services, Chalkville
Department of Human Resources
Gateway
Glenwood
Hill Crest Hospital
Jefferson, Blount, and Shelby Mental Health Authority
Jefferson County Housing Authority
Lifeline Village
Office of Senior Citizens
Pathways
Prescott House
Spain Rehabilitation Center
Sparks Clinic, UAB Civitan Center
UAB, Department of Psychiatry
UAB Hospital
UAB, 1917 Clinic
United Way of Central Alabama, Inc.
Veterans Affairs Medical Center
YWCA

**Gadsden Area**
Alabama Baptist Children’s Home
Big Brothers/Big Sisters
Calhoun-Cleburne Mental Health Center, Anniston
Catholic Social Services, Huntsville
Cherokee-Etowah-DeKalb Mental Health Center
Cheaha Mental Health Center
Corporate University Huntsville Hospital
Department of Human Resources
Department of Public Health
Family Options
FIRST Family Resource Center
Huntsville Day Spring Counseling Center
Mt. View Hospital
Mt. View Family Services
Parkway Medical Center
Presbyterian Home for Children
The Bridge

Mobile Area
Alabama Baptist Children's Home
Area Agency on Aging
Baldwin County Mental Health Center
Covenant Hospice
Department of Human Resources
FIT Homes
Franklin Primary Health Center
EAP Lifestyle Management
Mobile Mental Health Center
New Way Out Corporation
Providence Hospital
St. Mary’s Home
Thomas Hospital
USA Medical Center
USA Women’s and Children’s Hospital
United Methodist Children's Home
Wilmer Hall

Montgomery Area
AGAPE of Central Alabama
Baptist Medical Center
Barbour County Juvenile Court
Central Alabama Aging Consortium
Children’s Rehabilitation Services
Dallas County Juvenile Probation Department
Department of Human Services
Department of Youth Services, Mt. Meigs
Group Homes for Children
Lee County Development Center
Montgomery Area Mental Health Authority
Montgomery County Department of Human Resources
Russell Medical Center
Safety Net Academy
Seraaj Family Homes
Southeast Alabama Medical Center
United Methodist Children's Home
Veteran’s Affairs Medical Center, Tuskegee

Washington, D.C.
Administration on Aging: HHS
Administration for Children and Families, U.S. Department of Health and Human Services
American Healthcare Association
Bethesda Baptist House for Children & Families
Children's National Medical Center
DOCTOR OF PHILOSOPHY IN SOCIAL WORK PROGRAM
Jordan Kosberg, Chairperson

Admission Requirements

Graduate School requirements. The Graduate School determines eligibility for regular or conditional admission, primarily on the basis of standardized test scores and previous academic record. Successful applicants must meet the minimum admission requirements of the Graduate School, which are as follows:

- a grade point average (GPA) of at least 3.0 on a 4.0 scale (overall) or a GPA of at least 3.0 for the last 60 hours of the previous degree program, or 3.0 for a completed graduate degree program
- an acceptable score on an appropriate entrance examination as set by the department or school

An applicant may be considered for conditional admission if he or she has a GPA of 2.5 overall and an acceptable score on the appropriate admission examination, or a GPA of 3.0 and less than the minimum score on the admission examination.

Ph.D. Program Requirements. Once the application is complete, it is sent to the Ph.D. program office in the School of Social Work for evaluation. Listed below are the requirements for unconditional admission to the social work Ph.D. program:

- a minimum composite score of 1000 on the Graduate Record Examination (GRE) general test verbal and quantitative sections. In addition, the faculty will consider the score on the analytical writing section of the GRE together with the essay submitted to the School of Social Work as part of the application to the Ph.D. program. Applicants from non-English-speaking countries must submit evidence of English language proficiency by means of a Test of English as a Foreign Language (TOEFL) score of at least 550, or 213 on the computer-based TOEFL, or a score of at least 6.5 on the International English Language Testing System (IELTS).
- letters from three references, one of whom must be an experienced social worker with firsthand knowledge of the applicant's capability and one of whom must be a former university instructor who has personal knowledge of the applicant's intellectual and scholarly abilities. If the applicant has earned the M.S.W. degree, at least one letter must be from a former instructor in the applicant's M.S.W. program.
- a statement of purpose indicating the reasons the applicant wishes to pursue a doctoral degree in social work and indicating the applicant's research interests.
- evidence of scholarly and conceptual ability, supported by evidence the applicant supplies (e.g., a paper published in a journal or presented at a conference or workshop, a design of a service program or a research proposal, and/or a course syllabus written by the applicant)

An Admissions Committee composed of members of the Ph.D. Program Committee reviews application materials and a recommendation is made to the Graduate School, which formally notifies the applicant of the admission decision. Applicants seeking admission to the program who do not meet the above requirements are considered on an individual basis. If an applicant desires such consideration, he or she should file all application materials as directed above. In addition to the materials required of all students, he or she should file, along with the School of Social Work application form, a petition for exemption from one or more requirements. The petition should state the requirement from which exemption is sought and should provide information supporting the petition. After the file is complete and referred to the Ph.D. program by the Graduate School, the applicant may be invited to schedule an interview with the program chair or other member of the admissions committee, in order to assess individually the applicant's qualifications for doctoral studies in social work. A summary of this interview and the petition for an exception will be made available to the Admissions Committee for consideration prior to its decision regarding an admissions recommendation.

If seeking exemption from the requirements, the applicant should be aware that he or she may be required to register for courses other than the standard curriculum, including courses at the M.S.W. level. The amount and type of such work may be decided by the Admissions Committee before admission and/or by the applicant's academic advisor after admission.

The M.S.W. degree. In addition to the above program requirements, it is recommended that the applicant also possess the following:

- a master's degree in social work from a program accredited by the Council on Social Work Education
Many schools of social work require the M.S.W. degree and at least two years of post-M.S.W. practice experience for admission to the doctoral program in social work. In this program, they are highly recommended but not required. Students may be able to transfer up to 12 hours of M.S.W. coursework into the Ph.D. program, subject to Graduate School policies on transfer of credit. In addition, students with the M.S.W. and practice experience will have more context in which to interpret the content of social work core courses. Finally, the B.S.W. or M.S.W. and practice experience will permit the applicant, under current C.S.W.E. accreditation standards, to engage in the full range of teaching and advising assignments at accredited schools of social work. Thus, the applicant will have a competitive advantage in the job market over someone who does not have the B.S.W. or M.S.W. and post-M.S.W. practice experience.

Students who are admitted without the M.S.W. will be required to complete makeup courses determined by the student’s academic advisor. These may be M.S.W. courses required to supply the background needed to get maximum benefit from doctoral courses. While the number of hours needed may vary from one situation to another, a minimum of twelve hours of social work courses are required for students admitted without the M.S.W. degree. Inquiries concerning the program or application may be made to the following address: The University of Alabama School of Social Work, Office of Admissions—Doctoral Program, Box 870314, Tuscaloosa, AL 35487-0314

**Special students.** A few experienced social workers who are not seeking the doctoral degree may be admitted as special students. Special programs are arranged for them. These students may transfer up to 12 hours of courses earned in non-degree status if they are subsequently admitted to a graduate degree program within six years of the earliest course.

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**Ph.D. Degree Requirements**

In all, the Ph.D. requires a minimum of 53 semester hours of credit for coursework. Credit earned to fulfill the statistical research requirement and credit earned for dissertation research may not be counted toward this 53-hour minimum. Specific requirements of the doctor of philosophy in social work degree program are as follows:

1. Twenty-nine semester hours of core social work courses, including two one-credit seminars, four courses in substantive areas and five courses in research methodology (credit for prior graduate work may be granted, based on the student’s own particular program of study and research; consult the program chairperson for details)
2. Twelve semester hours in a minor field taken from one or more areas outside the School
3. A statistical research competency demonstrated by successful completion of a research sequence of courses chosen from the educational research course sequence BER 540, BER 545, and BER 546; the political science course sequence PSC 522 and PSC 621; the College of Community Health Sciences course sequence CHS 525 and CHS 526; or the biostatistics course sequence at the UAB School of Public Health, PHG 501 and PHG 502.* Alternatives may be approved.
4. A dissertation showing the student’s ability to conduct independent research that adds to the knowledge of the profession (includes a minimum of 24 hours of dissertation credit)
5. Completion of all courses with a grade point average of "B" or better

*Some students in the Ph.D. program choose public health as a minor field or earn the master of public health degree at UAB.

These requirements are minimum standards. Additional work may be required, depending on the student’s preparation and career interests. Doctoral study must be completed within seven years.

**Residency Requirements.** The minimum period in which the Ph.D. degree can be earned is three academic years of full-time graduate study (or the equivalent in a set of shorter segments). Both the fall and spring semesters of either the second or third academic year of study must be spent in continuous residence as a full-time student (as an alternative, the full-time residence may be completed by full-time enrollment during a summer session, including both summer terms, preceded or followed by a regular semester). Full-time residence study is defined as an academic load of 9 semester hours or more during a period when the student's principal activity is academic work.

**Ph.D. Program.** The purpose of this program is to prepare persons who hold the master's degree in social work, or a related discipline or profession, for scholarly roles by advancing their knowledge and increasing their skills in theory-building, research methods, and the critical evaluation of social work policies and practice.
The doctoral program builds on a base of professional knowledge and practice in social work. It provides all students with advanced knowledge of research, social policy, and practice. In addition to a grounding in research methods, the program offers students the opportunity to develop a comprehensive understanding of a selected area of concentration and, through the dissertation, contribute to knowledge development in that area. To supplement this concentration area, students may select a minor area in a single academic discipline or develop a comprehensive interdisciplinary minor. As soon as they enter the program, students are assigned to a Ph.D. faculty advisor for program planning and guidance.

The program is notable among social work doctoral curricula for the range and depth of its research foundation courses and electives. Exceptional opportunities are available for students interested in research in mental health, aging, and child welfare. There are opportunities for overseas experience as well as for collaboration with the Center for Mental Health and Aging, the Institute for Rural Health Research, the Institute for Social Science Research, the Program for Rural Services and Research, and the Youth Services Institute, with other colleges and departments of the University; and with various units of The University of Alabama at Birmingham (UAB).

Obtaining Information. Inquiries about the program and requests for application materials should be made to: The University of Alabama School of Social Work, Ph.D. Program Office, Box 870314, Tuscaloosa, AL 35487-0314; telephone (205) 348-9785; fax (205) 348-9419.

Financial Aid. Some financial aid is available from the School of Social Work, including graduate assistantships and the Ben Avis Orcutt and Leslie J. Shellhase endowed scholarships, which are administered by the Ph.D. program. For information on financial aid from other sources, visit: http://graduate.ua.edu/financial/.

Financial aid commonly takes the form of graduate teaching or research assistantships, special grants or fellowships, student loans, work-study, and/or part-time employment in a local social agency.
SW 600 Social Work and the Welfare State. Three hours. 
Prerequisite: Admission to the Ph.D. program or permission of the instructor. 
Introduction to needs and opportunities for research in social welfare policy and its implementation, past and present. Examination of the development of the welfare state and current research on social welfare policy and its implementation.

SW 601 Seminar in Doctoral Education. One hour. 
Provides students with an introduction to the Ph.D. program, expectations for doctoral-level study, and familiarity with faculty and their research interests.

SW 602 Career Development in Social Work Education. One hour. 
Provides an introduction to the process and structure of social work education in the United States, social work as a discipline and a research tradition, and academic career issues, including career advancement, accreditation, faculty committees, administrative roles, and faculty and student recruitment.

SW 620 Social Work Research I. Three hours. 
Prerequisite: Admission to the Ph.D. program or permission of the instructor. 
Prerequisite or corequisite: An approved statistics course. Examination of some of the key theoretical issues of qualitative and quantitative social science research and the basic processes of theory formulation and knowledge building.

SW 621 Social Work Research II. Three hours. 
Prerequisite: SW 620. 
Prerequisite or corequisite: Completion of the statistics requirement or enrollment in an approved statistics course. Continuation of SW 620. Prepares students to design and carry out quantitative, qualitative, and multi-method research appropriate and adequate for answering social work research questions. Focuses on research design, sampling, data collection and analysis, and dissemination of results and conclusions.

SW 622 Observation and Measurement. Three hours. 
Prerequisites: SW 621 and completion of the statistics requirement or permission of the instructor. Focuses on the theoretical foundations of observation and measurement in social research and on the practical skills for measuring social phenomena, including assessment of the psychometric properties of research instruments and the design of reliable and valid instruments.

SW 623 Seminar in Qualitative Research. Three hours. 
Prerequisites: SW 621 and completion of the statistics requirement or permission of the instructor. Advanced study of key concepts in qualitative research, with applications for social work practice research and evaluation.

SW 624 Seminar in Research on Social Work Practice. Three hours. 
Prerequisites: SW 621 and completion of the statistics requirement or permission of the instructor. Intensive study of selected research problems and relevant research methods concerning social work practice.

SW 625 Research Seminar in Social Welfare History. Three hours. 
Prerequisites: SW 621 and completion of the statistics requirement or permission of the instructor. Introduction to historical research in social welfare, examination of major works in the history of American social welfare, and completion of an original investigation based on primary sources.

SW 628 Research Practicum. Three hours. 
Prerequisite: SW 621 and completion of the statistics requirement. Development of a social work research proposal, including the conceptualization of the research question, review of pertinent literature, project administration, arrangements for community collaboration, and IRB approval. Participation in ongoing research under faculty supervision.

SW 629 Seminar in Special Topics in Social Work Research. Three hours. 
Prerequisites: SW 621 and completion of the statistics requirement or permission of the instructor. Study of an advanced quantitative or qualitative method, approach, or technique with emphasis on knowledge-building applications of the method, approach, or technique.

SW 640 Concepts and Theories of Social Work Practice. Three hours. 
Prerequisite: Admission to the Ph.D. program or permission of the instructor.
Components of social work practice theory, including historical forces shaping conceptualizations of practice, the ideological and epistemological assumptions of both normative and empirical conceptualizations of practice, and the contributions of science and other approaches to knowledge and skill building.

**SW 648 Seminar in Social Work: Special Topics.** Three hours. Prerequisite: Admission to the Ph.D. program or permission of the instructor. Integrative seminar on special topics.

**SW 660 Independent Study.** Three hours. Prerequisite: Completion of the doctoral core courses or permission of the instructor.

**SW 698 Nondissertation Research.** Variable credit.

**SW 699 Dissertation Research.** Variable credit. Three-hour minimum.