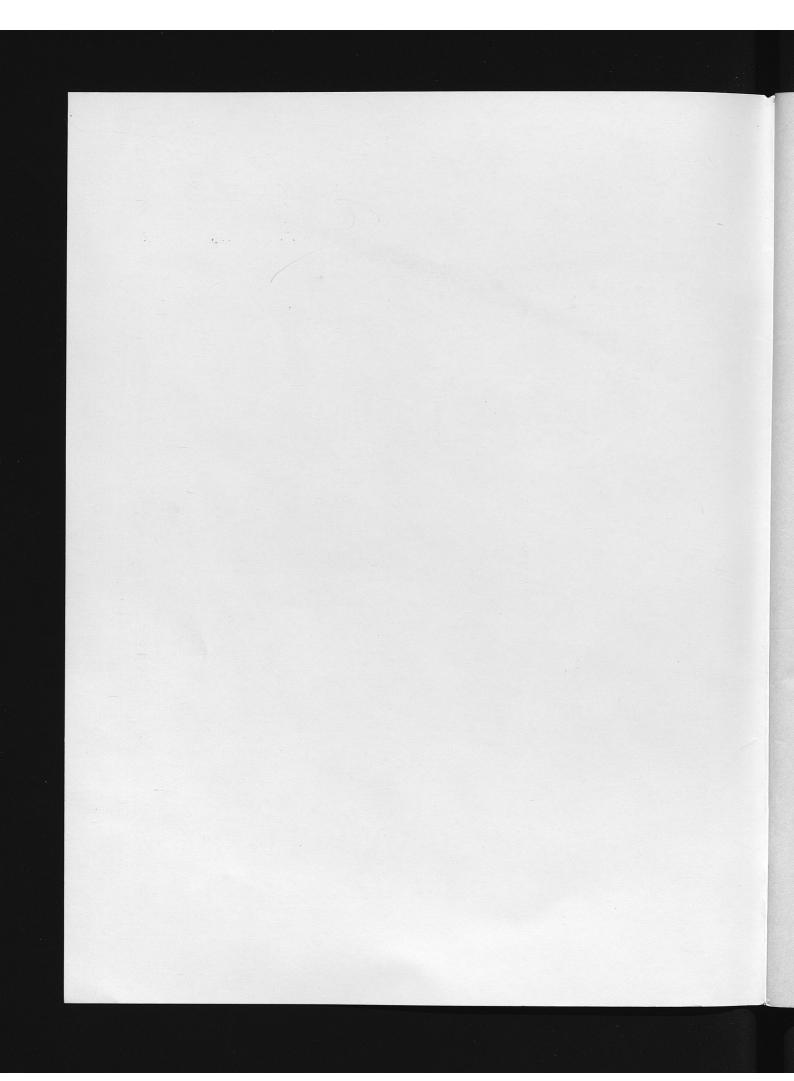
University of Kentucky Bulletin

The Graduate School 1979-80



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1979-80 The Graduate School

University of Kentucky Bulletin

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Calendar

1979 FALL SEMESTER

- June 15—Friday—Deadline for applying for admission or readmission to The Graduate School for the 1979 Fall Semester
- August 27—Monday Registration for new students
- August 28—Tuesday—Centralized add-drop for Advance Registered Students
- August 29—Wednesday Class work begins
- August 29-September 5—Wednesday through Wednesday—Late registration for returning students who did not advance register and new applicants cleared late for admission. A \$20 late fee is assessed students who register late.
- September 3—Monday Labor Day (Academic Holiday)
- September 5—Wednesday Last day to enter an organized class for the Fall Semester
- September 5—Wednesday—Last day to officially withdraw from the University and receive an 80 percent refund
- September 12-Wednesday-Last day for pay-

- ment of registration fees in order to avoid cancellation of registration
- September 12—Wednesday—Last day for new students to pick up ID cards from Billings and Collections in order to avoid replace-
- September 21—Friday—Last day for reinstatement of students cancelled for non-payment of registration fees. Required payment of registration fees plus \$50 reinstatement fee.
- September 27—Thursday—Last day for filing an application for a December degree in College Dean's office
- October 3—Wednesday—Last day to drop a course without it appearing on student's transcript
- October 3—Wednesday—Last day to change
- from credit to audit or from audit to credit

 October 22—Monday—Last day to drop a

 course
- October 22—Monday—Last day to withdraw from the University or reduce course schedule and receive any refund
- October 29—Monday—Last day to pay thesis/dissertation fees for a December degree in Billings and Collections office

- October 31—Wednesday—Deadline for applying for admission or readmission to The Graduate School for the 1980 Spring Semester
- November 12-21—Monday through Wednesday—Advance registration for 1980 Spring Semester
- November 21—Wednesday—Last day to schedule a final examination in The Graduate School for candidates for a December 1979 degree
- November 22-24—Thursday through Saturday—Thanksgiving Holidays (Academic Holidays)
- December 5—Wednesday Last day to sit for a final examination for candidates for a December 1979 degree
- December 15—Thursday—End of class work

 December 15-20—Saturday through Thursday
- December 15-20—Saturday through Thursday—Final Examinations
- December 20—Thursday Last day to submit a thesis/dissertation to The Graduate School for candidates for a December 1979 degree
- December 20—Thursday—End of Fall Semester

 December 24—Monday—Final deadline for
 submission of grades to the Registrar's Office 9 a m

1980 SPRING SEMESTER

- January 14—Monday—Registration for new students
- January 15—Tuesday—Centralized add-drop for advance registered students
- January 16—Wednesday—Class work begins
- January 16-22—Wednesday through Tuesday—Late registration for returning students who did not advance register and new applicants cleared for late admission.

 A \$20 late fee is assessed students who register late.
- January 22—Tuesday Last day to enter an organized class for Spring Semester
- January 22—Tuesday—Last day to officially withdraw from the University and receive an 80 percent refund
- January 29—Tuesday—Last day for payment of registration fees in order to avoid cancellation of registration
- January 29—Tuesday—Last day for new students to pick up ID cards from Billings and Collections in order to avoid replacement fee
- February 7—Thursday Last day for reinstate-

- ment of students cancelled for non-payment of registration fees. Requires payment of registration fees plus \$50 reinstatement fee
- February 14—Thursday—Last day for filing an application for a May degree in College Dean's office
- February 18—Monday—Last day to change from credit to audit or from audit to credit
- February 18—Monday—Last day to drop a course without it appearing on the stu-
- dent's transcript

 March 7—Friday—Last day to drop a course
- March 7—Friday Last day to withdraw from the University or reduce course schedule and receive any refund
- March 14—Friday Last day to pay thesis/dissertation fees for a May degree in Billings and Collections office
- March 17-22—Monday through Saturday— Spring vacation (Academic Holidays)
- April 1—Tuesday Last day to apply to Graduate Admissions Office for admission and readmission for all 1980 Summer Sessions
- April 10—Thursday—Last day to schedule a final examination in The Graduate School for candidates for May 1980 degree
- April 14-23-Monday through Wednesday-

- Advance registration for 1980 Fall Semester and both Summer Sessions
- April 24—Thursday Last day to sit for a final examination for candidates for a May 1980 degree
- April 30—Wednesday—Last day for Kentucky Teachers to submit all required documents to the Graduate Admissions Office for admission and readmission to all 1980 Summer Sessions
- April 30—Wednesday Last day to submit dissertation to The Graduate School for doctoral candidates who wish to receive a diploma at Commencement
- May 2—Friday End of class work
- May 5-9—Monday through Friday—Final Examinations
- May 9—Friday—Last day to submit thesis/dissertation to The Graduate School for candidates for a May 1980 degree
- May 9-Friday End of 1980 Spring Semester
- May 10—Saturday Commencement Day
- May 12—Monday—Final deadline for submission of grades to the Registrar's Office, 4
- June 15—Sunday Last day to apply to the Graduate Admissions Office for admission and readmission to the 1980 Fall Semester.

1980 FOUR-WEEK INTERSESSION

- April 1—Tuesday—Last day to apply to the Graduate Admissions Office for admission and readmission to all 1980 Summer Sessions
- April 30—Wednesday—Last day for Kentucky Teachers to submit all required documents to the Graduate Admissions Office for admission and readmission to all 1980 Summer Sessions
- May 12—Monday Registration
- May 13—Tuesday Class work begins

- May 13-16—Tuesday through Friday—Late registration for returning students who did not advance register and new applicants cleared late for admission. A \$20 late fee is assessed students who register late.
- May 16—Friday—Last day to enter an organized class for the Four-Week Intersession
- May 16—Friday Last day to officially withdraw from the University and receive an 80 percent refund
- May 21—Wednesday—Last day to drop a course without a grade
- course without a grade

 May 21—Wednesday—Last day to change from
- credit to audit or from audit to credit

 May 26—Monday—Memorial Day (Academic

 Holiday)
- May 27—Tuesday Last day to drop a course
- May 27—Tuesday—Last day to withdraw from

- the University or reduce course schedule and receive any refund
- May 27—Tuesday Last day to pay registration fees in order to avoid cancellation of registration
- June 5—Thursday—Last day for reinstatement of students cancelled for non-payment of registration fees. Requires payment of registration fees plus \$50 reinstatement fee.
- June 10—Tuesday—Final Examinations
- June 10—Tuesday—End of Four-Week Intersession
- June 13—Friday—Final deadline for submission of grades to the Registrar's Office, 12 noon.
- June 15—Sunday Last day to apply to the Graduate Admissions Office for admission and readmission to the 1980 Fall Semester

1980 EIGHT-WEEK SUMMER SESSION

- April 1—Tuesday Last day to apply to the Graduate Admissions Office for admission and readmission to all 1980 Summer Sessions
- April 30—Wednesday—Last day for Kentucky Teachers to submit all required documents to the Graduate Admissions Office for admission and readmission to all 1980 Summer Sessions
- June 11-Wednesday-Registration
- June 12—Thursday—Class work begins
- June 12-16—Thursday through Monday—Late registration for returning students who did not advance register and new applicants cleared late for admission. A \$20 late fee is assessed students who register late
- June 15—Sunday Last day to apply to the Graduate Admissions Office for admission and readmission to the 1980 Fall Semester

- June 16—Monday—Last day to enter an organized class for the 1980 Eight-Week Summer Session
- June 16—Monday Last day to officially withdraw from the University and receive an 80 percent refund
- June 25—Wednesday—Last day to pay registration fees in order to avoid cancellation of registration
- June 26—Thursday—Last day for filing an application for an August degree in College Dean's office
- June 30—Monday—Last day to change from credit to audit or from audit to credit
- June 30—Monday—Last day to drop a course without it appearing on the student's transcript
- July 4—Friday—Independence Day (Academic Holiday)
- July 7—Monday Last day for reinstatement of students cancelled for non-payment of registration fees. Requires payment of registration fees plus \$50 reinstatement fee.

- July 11—Friday Last day to pay thesis/dissertation fees for an August degree in Billings and Collections office
- July 11-Friday Last day to drop a course
- July 11—Friday Last day to withdraw from the University or reduce course schedule and receive any refund
- July 17—Thursday—Last day to schedule a final examination in The Graduate School for candidates for an August 1980 degree
- July 31—Thursday—Last day to sit for a final examination for candidates for an August 1980 degree
- August 7—Thursday—Last day to submit thesis/dissertation to The Graduate School for candidates for an August 1980 degree
- August 7—Thursday Final Examinations
- August 7—Thursday—End of Eight-Week Session
- August 11—Monday—Final deadline for submission of grades to the Registrar's Office, 12 noon

Note: For Graduation and Diploma information see pages 14 and 15.

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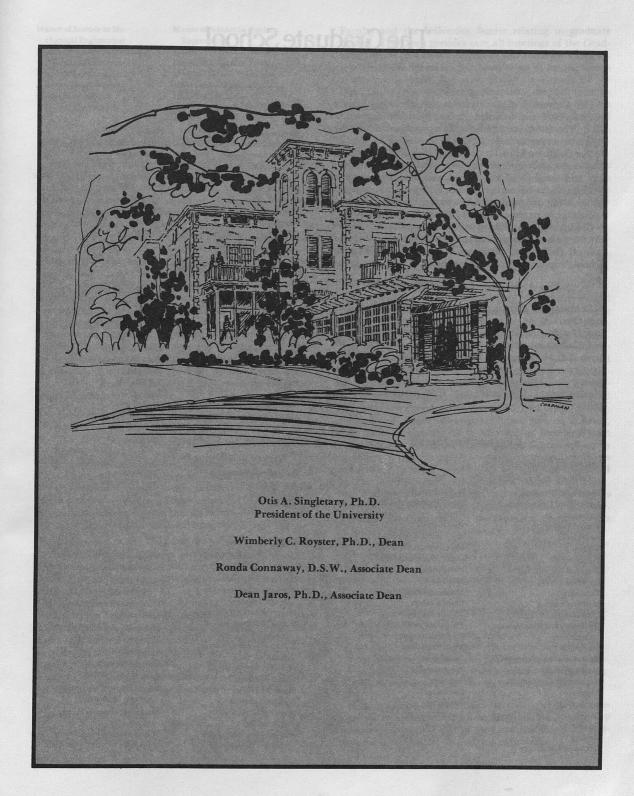
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The Graduate School

The University of Kentucky began offering graduate work in 1870 and awarded its first graduate degrees in 1876. The Graduate School became a distinct unit in the University organization in 1912.

The Graduate School is concerned with advanced study, graduate instruction and research conducted by the faculty and students of all colleges and departments. The total graduate resources of the University are merged under it for the purpose of promoting the acquisition of knowledge in an atmosphere of free and lively inquiry.

Graduate work is offered in most colleges in the University. A general description and tabulation of courses for each of the various programs is given in the Graduate School Programs section of this bulletin.

The Academic Common Market

Kentucky is a participating state in The Academic Common Market, an interstate agreement among Southern states for sharing academic programs. Students who qualify for admission may enroll in a specific program in another A.C.M. state on an in-state tuition basis. At present, the agreement has been limited to unusual graduate programs. For information write to: Southern Regional Education Board, 130 Sixth Street N.W., Atlanta, Georgia 30313.

Degrees Conferred

Doctor of Philosophy

Offered in following fields:

Agricultural Economics Agricultural Engineering Anatomy Animal Sciences

Anthropology Biology Biochemistry Chemical Engineering Chemical Physics Chemistry

Civil Engineering Crop Science Diplomacy and International

Commerce
Economics

Educational Psychology Electrical Engineering Engineering Mechanics English

Entomology French Geography Geology

Germanic Languages

and Philosophical Studies History Mathematics Mechanical Engineering Metallurgical Engineering and Materials Science Microbiology Musicology **Pharmaceutical Sciences** Pharmacology Physics and Astronomy Physiology and Biophysics Plant Pathology Plant Physiology Political Science Psychology Sociology Soil Science Spanish

Statistics

Toxicology

Veterinary Science

Higher Education and Social

Master of Arts

Offered in following fields:

Anthropology History Art Library Science Classical Languages Mathematics Communications Music Diplomacy Philosophy **Economics** Political Science English Psychology French Sociology Geography Spanish German Theatre Arts

Master of Science

Offered in following fields:

Pharmacology **Agricultural Economics** Pharmaceutical Science **Animal Sciences** Physics Biochemistry Physiology and Biophysics Biology Health, Physical Education, Chemistry Recreation Computer Science Plant Pathology **Crop Science** Plant Physiology Economics Psychology Entomology Soil Science Statistics Mathematics Toxicology

Master of Science in Agriculture

Offered in following fields:

Agricultural Economics Animal Sciences Crop Science Entomology Forestry

Horticulture Plant Pathology Sociology Soil Science

Veterinary Science

Other Degrees

Microbiology

Doctor of Business Administration
Doctor of Education
Doctor of Musical Arts in

Music Teaching Master of Arts in Education Master of Science in

Education

Master of Business Administration

istration
Master of Fine Arts
Master of Music
Master of Public

Administration
Master of Science in
Accounting
Master of Science in Agricultural Engineering

Master of Science in Clinical Nutrition

Master of Science in Chem-

Master of Science in Civil

ical Engineering

Engineering

Master of Science in Dentistry with Specialty in Orthodontics

Master of Science in Electrical Engineering Master of Science in Engineering Mechanics

Master of Science in Home Economics

Master of Science in Library

Master of Science in Mechanical Engineering Master of Science in Medical Radiation Dosimetry Master of Science in Metallurgical Engineering Master of Science in Mining Engineering Master of Science in Nuclear Engineering Master of Science in Nursing Master of Science in Radiological Health – Specialty Master in Civil Engineering Master of Social Work Specialist in Education

Organization of The Graduate School

The Graduate Faculty consists of the Dean of The Graduate School and all persons appointed thereto by the President of the University. As the chief University agency for the promotion of the ideals of graduate study, it determines the policies of The Graduate School and makes recommendations to the University Senate and to the President, or to other administrative officials as appropriate. All rules affecting graduate work and the inauguration of new graduate programs must be approved by the Graduate Faculty.

Any proposed change in the rules of The Graduate Faculty must be included in the agenda of the meeting and circulated to the Graduate Faculty at least 10 days prior to the meeting at which it is to be considered.

New Graduate Faculty members may be proposed to the Dean of The Graduate School at any time by the college deans and department chairmen concerned, or in the case of persons not attached to a college faculty, by the Vice President for Academic Affairs of the University. Eligibility qualifications are as follows:

- 1. The doctor's degree or its equivalent in scholarly reputation.
- 2. The rank of assistant professor (or equivalent), or higher.
- Scholarly maturity and professional productivity as demonstrated by publications, editorial services, research surveys, creative work, or patents; and research in progress at the time of appointment.
- Definite interest in graduate work and the willingness to participate in the graduate program.

Appointment to the Graduate Faculty is made by the President of the University on nomination by the Dean of The Graduate School after the Dean and the Graduate Council have studied the credentials submitted in support of the proposed members.

Associate members of the Graduate Faculty are appointed by the Dean of The Graduate School.

Administrative officers assigning teaching and other duties to members of the Graduate Faculty who are taking an active part in the graduate program (i.e., are heavily engaged in directing theses, carrying on productive research, etc.) should make appropriate reduction in the duties required of such faculty members.

The Role of the Dean

The Dean of The Graduate School is charged with the administration of the policies adopted by the Graduate

Faculty and the University Senate relating to graduate studies. The Dean presides over all meetings of the Graduate Faculty and calls meetings of this faculty whenever it is advisable or whenever requested to do so by one-fourth of the membership. Recommendations are made by the Dean to the Graduate Faculty respecting the requirements for advanced degrees, the regulations necessary to insure a high standard of graduate work, and all other aspects of the graduate program. The graduate programs are administered in the interest of efficient instruction and the highest attainment possible on the part of each graduate student and students are advised with regard to their studies and the requirements of The Graduate School. The Dean is responsible for determining and certifying to the Registrar candidates who have fulfilled requirements for advanced degrees.

The President, Vice President for Academic Affairs, and the Dean of the Graduate School are members ex officio of all committees of the Graduate Faculty.

The Graduate Council

The Graduate Council is composed of 14 members and the Dean of The Graduate School, who is chairman. There are 10 elected faculty representatives and two faculty members appointed by the Dean of The Graduate School. One of the elected members is from the College of Agriculture, three from the College of Arts and Sciences and Fine Arts, one from the College of Business and Economics, two from the College of Education, one from the College of Engineering, one from the College of Medicine and one from the combined Colleges of Allied Health, Communications, Home Economics, Library Science, Nursing, and Social Professions. The member or members from each of these colleges are elected by the Graduate Faculty members in that college. Two graduate student members are selected by the Council from a panel of four submitted by the Graduate and Professional Student Association. The term of office of the elected and appointed members is three years, and that of the graduate students is one year. Members may not succeed themselves until three years have elapsed since the completion of their last term.

The Graduate Council approves or disapproves proposals concerning courses offered for graduate credit, and advises and lends assistance to the Dean in executing the policies and regulations determined by the Graduate Faculty. Specifically, the Council:

- 1. Studies requests of departments relating to proposed graduate programs.
- 2. Reviews existing programs and courses.
- In cooperation with the Dean, initiates recommendations to the Graduate Faculty. (This procedure is not intended to prevent a faculty member from bringing any recommendation or request directly before the Graduate Faculty.)

The Graduate Council has such authority as is herein granted, or such as the Dean or the Graduate Faculty may delegate to it. A majority of the Graduate Council constitutes a quorum for the transaction of business.

Directors of Graduate Studies

A Director of Graduate Studies serves as program adviser to each student until the student has a thesis director. The Director of Graduate Studies then recommends that the thesis director be appointed the student's adviser or committee chairman. In areas where theses are not required, the Director of Graduate Studies is the adviser for all students not writing theses. All student schedules must be endorsed by the student's adviser.

If it is desirable, a Director of Graduate Studies may recommend that additional advisers in the area be appointed. A Director of Graduate Studies who is to be absent from the University for as long as a semester must call this fact to the attention of the Dean so that a substitute may be ap-

pointed.

The Dean of The Graduate School, with the advice of the college dean(s) and the approval of the President, may recommend to the Graduate Faculty the areas of graduate study and research into which the University may be divided. (The logical unit for an area is a department. By common consent, however, certain departments may be grouped into an area; and in exceptional cases a department may be divided into two or more areas.) The Directors of Graduate Studies for the various areas are appointed by the Dean of The Graduate School.

Establishment and Modification of Graduate Programs

An area which wishes to establish a new graduate program or modify an existing one must submit its program to the Graduate Council, which will make recommendation concerning it to the Graduate Faculty.

Student Responsibility

It is the student's responsibility to be informed concerning all regulations and procedures required by the course of study being pursued. In no case will a regulation be waived or an exception granted because a student pleads ignorance of the regulation or asserts that information was not presented by advisers or other authorities. Therefore, the student should become familiar with The Graduate School Bulletin, including (1) the section presenting the requirements for degrees and (2) the departmental offerings and requirements.

The Director of Graduate Studies in the students' major program should be consulted concerning course requirements, any deficiencies, the planning of a program, and special regulations. Departments may have degree require-

ments that are not listed in the Bulletin.

It is to be noted that the Graduate Dean interprets the Graduate Bulletin. Only the Graduate Council may waive requirements stated in this Bulletin.

Admission

An applicant for admission to the University shall not be discriminated against because of race, color, religion, sex, marital status, or national origin.

Students seeking admission to the University of Kentucky Graduate School must hold a baccalaureate degree

from a fully accredited institution of higher learning. An overall undergraduate grade-point average of 2.5 and 3.0 on all graduate work is required by The Graduate School. Individual departments may require higher grade-point averages

All applicants for admission to degree programs in The Graduate School must submit scores on the verbal and quantitative portions of the Graduate Record Examination. (See Provisional Admission.) The College of Business and Economics may substitute the Graduate Management Admission Test for M.B.A., D.B.A. and Accounting students. The Medical College Admission Test or the Dental College Admission Test may be substituted with the approval of the program concerned.

Application forms can be obtained by writing:

Graduate School Admissions
Room 304, Patterson Office Tower
University of Kentucky, Lexington, Kentucky
40506

Applications and all supporting documents must be submitted by the stated deadline (See Calendar).

It should be clearly understood that graduate students may not be able to begin immediately a full graduate program leading to the degree they desire; it may be necessary for them to satisfy prerequisites which they omitted in their undergraduate curriculum. Deficiencies are determined by the program in which the major work is to be done. Ordinarily, graduate students may begin a full program in any field in which they have a balanced undergraduate major or its equivalent.

Admission to The Graduate School entitles students to take such courses as they desire, provided they have the necessary prerequisites. However, students are not candidates for graduate degrees until they have been Admitted

to Candidacy.

Attendance in The Graduate School at the University of Kentucky is not a right. It is a privilege which may be withdrawn by the University or any area of graduate study if it is deemed necessary by the Dean of The Graduate School in order to safeguard the University's standards.

Provisional Admission

Students wishing to pursue a higher degree who are temporarily ineligible for regular graduate admission status may be recommended by the Director of Graduate Studies for provisional admission status for one or more of the following reasons:

- 1. Missing transcripts or other requirements for admission such as letters of recommendation;
- 2. Temporary waiver of the Graduate Record Examination;
- 3. Deficiencies determined by the program;
- 4. Temporary ineligibility for regular admission status

because program only reviews applications once a year;

5. Graduating University of Kentucky seniors lacking no more than six hours for graduation; the consent of the college dean and the Dean of the Graduate School and approval of the Director of Graduate Studies are necessary. The student may take no more than 12 credit hours and must complete the undergraduate degree during the semester in which they enroll in the provisional status.

Provisional status is allowed for a maximum of one semester or up to 12 hours after which the work will be reviewed, and, within 30 days into the following semester, and on recommendation of the Director of Graduate Studies, the status will be moved automatically from provisional to regular program status, or removed from the provisional status entirely.

Health Service

For information, contact University Health Service, Student Health—Family Practice Building (Medical Center, Annex 4) across Rose Street from the Medical Center.

Housing

Graduate Student Housing

Apartments are available for both single and married graduate students. For information write to Student Housing, Cooperstown, Building C.

Off-Campus Housing

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In an effort to assist students who desire to locate non-University housing, the Dean of Students Office maintains an unsolicited listing of rooms, apartments, and houses submitted by any interested lessor in the Lexington community. The University neither inspects nor approves any of this rental property. Therefore, the off-campus housing list is in no way "authorized" by the University, but merely is maintained for the students benefit.

The only University requirement for listing is that the prospective landlord sign a statement of nondiscrimination on the basis of race, religion, creed, or national origin as provided by law. This list can be obtained from Room 575 Patterson Office Tower. Also, students who have housing and wish to locate a roommate may contact this office.

Food Services

The campus has four cafeterias with a total seating capacity of 2,950. Students may eat at Blazer Hall, Donovan Hall, the Complex Commons Cafeteria, or the Student Center. The K-Lair Grille, and the Grille in the Complex Commons are short-order facilities open during peak rush

hours and in the evenings. All of these facilities are owned and operated by the University.

Foreign Applicants

All non-U.S. citizens, except permanent residents of the U.S., should request the Application Form for Foreign Students. Applicants must have excellent grades and rank in the top quarter of their classes. To be considered for entry as a graduate student an applicant must have had four years of university level work. Indian students: (a first class record is normally expected although high second class holders in non-science areas may be considered if they can offer further evidence of having been in at least the top 10 percent of their graduating class).

When credentials are submitted in support of any application, they should be either the original documents or certified copies (i.e., copies certified as "true copies" by a notary public or a United States Embassy official). An official translation must be attached to these records if they are in a language other than English. Credentials should include a record of all degrees earned, detailing all subjects taken and grades obtained. Grades must be listed in the indirectors system.

the indigenous system.

Applications will not be considered without official scores on the verbal and quantitative portions of the Graduate Record Examination (GRE). Business and Accounting applicants must substitute the Graduate Management Admissions Test (GMAT) for the GRE. If the Graduate Record Examination or the Graduate Management Admissions Test have not been taken write to the Educational Testing Service. Write Box 955, Princeton, NJ 08540, or Box 1502, Los Angeles, CA 95701, for information concerning the appropriate examination. The tests are administered five times throughout the year and test scores generally require six weeks for delivery. It is important, therefore, that the applicant take the appropriate test well in advance of the application deadline in order to allow

ample time for scores to be received in this office.

English Proficiency Requirement: The University of Kentucky requires a score of 550 on the Test of English as a Foreign Language (TOEFL) of all applicants whose native language is not English. The test is given four times each year. To register you must obtain the TOEFL Bulletin, which includes a registration form. Bulletins are available in many locations outside the U.S., usually at American embassies and consulates, offices of the United States Intercultural Communications Agency (ICA), United States educational commissions and foundations, bi-national centers, and many private organizations such as the Institute of International Educational (IIE), African American Institute (AAI), America-Mideast Educational and Training Services, Inc. (AMIDEAST), and American Kor-Asian Foundation.

Candidates who plan to take TOEFL in any countries identified below must obtain a copy of the Bulletin from, and must register through, the agency that is responsible for that country or region.

 All countries in Europe (including Cyprus, Great Britain, Ireland, and Iceland):

> CITO Postbus 1034 Arnhem 6000, Netherlands

2. All countries in the Middle East (except Israel) and North Africa:

AMIDEAST Abou Shakra Building Post Office Box 1249 Amman, Jordan

Any office of AMIDEAST in the Middle East or North Africa

3. Hong Kong:

Education Department
External Examinations Section
393, Canton Road
Kowloon, Hong Kong
or
Institute of International

Institute of Internation Education 408 J. Hotung House, Fourth Floor 5/15 Hankow Road, Kowloon, Hong Kong

4. India:

Bureau of Educational Research Ewing Christian College Allahabad, U.P., 211003, India

5. Republic of China:

Language Center, 2-1 Hsu-chow Road Taipei, Taiwan (100), Republic of China

6. Thailand

Institute of International Education National Education Commission Building Sukhotlai Road, Dusit Bangkok, Thailand

Students who cannot obtain a TOEFL Bulletin and registration form locally should write, well in advance, to: Test of English as a Foreign Language, Box 899, Princeton, New Jersey 08540.

Financial Resources Requirement. Graduate applicants must certify that they have at least \$5200 available for each 12-month period of study. It is estimated that this amount will cover the cost of tuition fees (\$1906*), books and supplies (\$200), room and meals (\$3000), health insurance (explained below) and incidentals, for a single person.

At the beginning of each registration period, the student must have \$2000 on hand to pay for tuition fees, room and board and health insurance. These items are payable in September and January and cannot be paid in monthly installments.

*Note: Fees subject to change without notice. Fees for Summer School are \$98 per credit hour.

University Housing. For information on University of Kentucky housing, write well in advance to:

Cooperstown Office University of Kentucky Lexington, Kentucky 40508

Little opportunity is available for incoming students to live in University Housing unless applications are made nine to 12 months in advance. Many students find it necessary to share a small apartment in the Lexington community.

Health Services. The University of Kentucky has an excellent health care program for its students. The Student Health Service clinic on campus is staffed with physicians, surgeons, psychiatrists and other health professionals who are specialists in the problems of young adults. Students who must be hospitalized are admitted to University Hospital.

Health Fee. There are no "free" services but students pay only a nominal fee each semester (it was \$15 in 1978-79) which covers most of the services provided by the student clinic: doctor visits, laboratory services, some drugs, allergy shots, immunizations, etc.

Health Insurance. In addition to paying the health fee, students must have health insurance to cover the cost of hospitalization, accident care and surgery. These services are not covered by the health fee and since they are very costly in the United States students must protect themselves (and their families if they are married). Foreign students must have insurance that is payable in the United States.

As a service to students who need insurance, the University makes available a Student Group Insurance Plan. The cost is about \$100 per year for a single student and about \$156 per year for a student and spouse (without maternity benefits). If there are children in the family, or if maternity benefits are desired, the cost is about \$380 per year to cover the entire family.

The premium for this insurance is paid in two installments at the beginning of each semester. The coverage of the policy begins on August 26 for those enrolling in the fall and it provides benefits anywhere in the world during the period for which the premium is paid. Two premium payments provide protection for 12 months.

Additional information about the health fee and health insurance are available at the University's Foreign Student Office and at the Health Service. It should be noted that dental care, examinations for eye glasses and some drugs are not provided by either plan and students must pay for these services themselves.

Health Report Form. The Certificate of Eligibility (Form 1-20) cannot be issued for admission until the Grad-

uate Admissions Office has received a completed health form indicating that the student has had a recent physical examination. Health Forms are mailed from the Graduate Admissions Office prior to final admission.

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Application Deadline for Foreign Students. Applications for admission and complete credentials should reach the Admissions Office at least six months before the opening of the term the student wishes to enter, that is, February 1 for the fall semester which begins in late August, June 15 for the spring semester which begins in mid-January, and October 31 for all summer sessions.

Summer Program in English for Foreign Students. The Program in English for Foreign Students is available only to foreign students who have been admitted to the Graduate School contingent upon successful completion of the program. It is offered by the English Department during the Eight-Week Summer term. No graduate credit hours may be earned for the course. The registration fee of \$275 will cover cost of instruction and certain cultural activities connected with the course; it will not cover room and board (estimated at \$500 for the eight-week period). For further information or applications, contact the Chairman of the Department of English, 12th Floor, Patterson

Readmission

Office Tower.

Former University of Kentucky students in good standing are eligible for readmission. They must file an application for readmission by the stated deadlines (See Calendar). An exception to this rule is made on behalf of students who attend only University Summer Sessions. These students do not have to apply for readmission to a Summer Session if they were enrolled for the preceding Summer Session.

Registration forms, which must be prepared in advance for any registration period, are not made for a student after one semester's absence from the University. It is only by the filing of an application for readmission in advance that the Registrar's Office can prepare the necessary registration forms for a student intending to re-enter the University.

Post-Baccalaureate Graduate Students

Students who hold a baccalaureate degree and who wish to pursue graduate study without a degree objective and students who do not fulfill the entrance requirements of The Graduate School may apply for admission as post-baccalaureate graduate students.

Admission to this status may be granted to an applicant who (1) demonstrates promise but has not qualified for admission to a degree program, or (2) intends not to complete a degree program. Students may take courses for graduate credit but may not apply more than 9 hours of credit with a grade of A or B earned in the post-baccalaureate status to any degree program leading to an advanced degree at this institution. All transfers of credit hours to a graduate program must be approved by that

program's Director of Graduate Studies and the Graduate Dean. (See section on Transfer of Credit.)

An application for admission to The Graduate School as a post-baccalaureate graduate student should be on file in the Admissions Office at least 30 days in advance of the registration date for the term in which the student plans to enroll.

Post-baccalaureate students who wish to apply for a graduate program must have a 3.0 grade-point average on all work attempted as post-baccalaureate students. Application to a program should be made to the Graduate Admissions office by the Calendar deadlines.

Post-baccalaureate graduate students have one month after the start of a semester to be admitted to a degree program in The Graduate School. After this time a student must wait until the next semester.

Permission to enter any graduate class as a post-baccalaureate student will be granted only if the student meets the prerequisites and if space is available.

Graduating Seniors as Part-Time Graduate Students

A senior in the University of Kentucky lacking no more than six credit hours for graduation and having an undergraduate average of at least 2.5 on all work attempted may register in The Graduate School in the provisional status with the consent of the undergraduate college dean and the Dean of The Graduate School. Approval of the appropriate Director of Graduate Studies is required if the student is to be an applicant for a degree. The total load of such a student may not exceed 12 credit hours. Graduate credit will be allowed for each credit hour of graduate work beyond the six or fewer credit hours needed to complete undergraduate requirements. Requirements for the undergraduate degree must be completed during the semester in which the student is allowed to register for parttime graduate work. A student applying for admission in The Graduate School under these conditions must fill out in duplicate a petition form listing the course or courses to be taken to complete the undergraduate requirements. Petition forms are available in the undergraduate departmental offices. The petition must be approved by both Deans concerned.

Scholastic Probation

When students have completed 12 or more semester hours of graduate course work with an average of less than 3.0, they will be placed on scholastic probation and are subject to dismissal from their programs.

Students will have one semester to remove the scholastic probation by attaining a 3.0 average. If probation is not removed, students will be dismissed from The Graduate School

Students who have been dismissed from The Graduate School for these reasons may reapply for admission to The

Graduate School after two semesters or one semester and the eight-week summer term.

Exceptions to this policy can be made only by the Graduate Dean.

Changes in the Graduate School Requirements

When Graduate School or degree program requirements are changed after a student has begun a course of study, the student shall have the option of fulfilling either the old or new requirements.

If the student elects to fulfill the old requirements but finds that necessary resources (e.g., courses, instruction in particular skills) are no longer available, the student may make reasonable substitutes with the approval of The Graduate School Dean upon recommendation of the Director of Graduate Studies.

In the event that a student interrupts work on a graduate degree (i.e., is not enrolled) for one calendar year or more, The Graduate School Dean shall determine, upon recommendation of the Director of Graduate Studies, whether the old requirements or the new requirements shall apply. In the event a student has not completed the requirements for the graduate degree five years after the effective date of a change in degree requirements, the new requirements shall apply unless determined otherwise by the Graduate School Dean.

Advanced Degrees for Faculty Members

Members of the faculty, excepting those in the Community College System, having a rank higher than that of Instructor may not be considered as candidates for degrees in the discipline in which they are employed or as candidates for degrees above the Master's degree in any discipline.

University of Kentucky Libraries

The University of Kentucky Library, one of the nation's top 50 research libraries, contains approximately 1,750,000 volumes, 1,700,000 microform units, and 10,000 linear feet of manuscripts. The collection also includes 125,000 maps, 7500 music records, and 125,000 pictures, tapes and miscellaneous items. The Library currently subscribes to 25,000 periodicals including 320 foreign, domestic, and Kentucky newspapers.

Strong emphasis is placed on the development of a quality collection responsive to the teaching and research needs of the University. The obligation to secure resources for the future needs of the academic community is also recognized. The collection is particularly strong in bibliography, history, coal, science and technology, agriculture, law, literature, and languages. Branch libraries housing special collections include agriculture, biological science, chemistry and physics, law, architecture, geology, engineering, mathematics, art, business, education, medicine, music, and pharmacy.

The Library is responsible for locating and obtaining for its scholars needed research materials not available in its collection. These materials are borrowed from other research libraries through interlibrary loan. Other services include reference, government documents, on-line computerized literature searching, individualized instruction in library use, academic information and referral, and replication of materials in both microform and hard copy.

Information booklets and guides to the Library and its resources are available at the King Library Circulation Desk and in the Reference Department. Of particular interest is *Graduate Students and the Library*, also available in the Reference Department.

During fall and spring semester King Library is open from 8 a.m. until 12 midnight, Monday through Thursday; 8 a.m. until 10 p.m. on Friday; 8 a.m. until 8 p.m. on Saturday, and 10 a.m. until midnight on Sunday. Certain branches within the Library System have shorter schedules. Hours of service may be obtained by contacting any of the following branches:

Branch and Associate Libraries

Agriculture	N24 Agricultural Science Center	
and mark took	North	258-2758
Architecture	200 Pence Hall	257-1533
Art	King Library North (lower level)	257-3097
Biological Sciences	313 Thomas Hunt Morgan	
	Building	258-5889
Business and	University of Reprincity spiriters	
Economics	401 Commerce Building	258-4644
Chemistry-Physics	150 Chemistry-Physics Building	258-5954
Education	205 Dickey Hall	258-4939
Engineering	355 Anderson Hall	258-2965
Geology	100 Bowman Hall	258-5730
Law	128 Law Building	258-8687
Mathematics	9 Patterson Office Tower	258-8253
Medical	135 Medical Center	233-5300
Music	116 Fine Arts Building	258-2800
Pharmacy	203 Pharmacy Building	257-1798

INFORMATION AND REQUIREMENTS FOR ALL ADVANCED DEGREES

Registration and Classification

All students expecting graduate credit must be enrolled in The Graduate School. Graduate students will conform to the general registration schedule of the University and may not enter later than the last allowable date set by the Registrar.

Before registering, graduate students must obtain their adviser's approval of their proposed program.

Graduate Record Examination

All applicants for admission to degree programs in The Graduate School must submit scores on the verbal and quantitative portions of the Graduate Record Examination. This rule may be waived in individual cases upon recommendation of the Director of Graduate Studies in the individual department or program. But in cases where waivers are granted, the GRE scores must be submitted be-

fore the end of the first semester of graduate study. The advanced portion of the GRE may be required by individual departments or programs if they so desire. (This excludes students who do not plan to work toward a graduate degree, i.e., visiting students, Rank 1, Fifth-year, and Post-baccalaureate students.)

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The College of Business and Economics may substitute the Graduate Management Admissions Test (GMAT) for the Graduate Record Examination for M.B.A., D.B.A. and Accounting students.

The Medical College Admission Test or the Dental Admission Test may be substituted in appropriate areas for the verbal and quantitative portions of the GRE with the approval of the Dean of The Graduate School.

Students who have earned an academic doctorate are exempt from the requirement of the MCAT or the GRE.

Admission to Candidacy

Students expecting to earn graduate degrees at the University must be admitted to candidacy for the degree. Even though all of the necessary course work is complete, students must be admitted to candidacy before degrees may be awarded.

The following procedure is used to process applications for Admission to Candidacy:

Master's Degree: The application for Admission to Candidacy must be filed with The Graduate School at the end of the first semester (full-time) of graduate study or when the student has completed 12 hours of graduate work. Applications are available in The Graduate School Office. To qualify for Admission to Candidacy, students must complete at least nine hours of graduate work with a minimum 3.0 grade-point average, submit GRE or GMAT scores, be recommended by the Director of Graduate Studies in the program, have no incomplete grades on their records and have the approval of the Dean of The Graduate School. Failure to meet the conditions outlined above, will result in Admission to Candidacy being deferred until completion of 18 hours with a minimum 3.0 grade-point average.

Doctoral Degrees: Students are Admitted to Candidacy after they have successfully completed the Qualifying Examinations

Graduate Courses—Grade Average

All courses numbered 500 through 799 may be counted for credit toward a graduate degree provided they are approved as an appropriate part of the student's graduate program by the students' graduate adviser or committee. Courses numbered 800 or 900 are normally not accepted for credit toward a graduate degree. Exceptions can be made if permission is granted by the Graduate Council to a program to offer specific professional courses as part of its academic program. Prior approval to take a course must be obtained from the Director of Graduate Studies, the Dean of The Graduate School and the Dean of the Professional College. Without such approval professional courses may not be counted toward satisfying degree require-

ments. Courses numbered 400G to 499G carry graduate credit for nonmajors only.

Courses numbered at the 600 or 700 level shall be taught only by members of the Graduate Faculty or by such other instructors as are approved by the Graduate Dean.

Add/Drop-Withdrawal

The Graduate School follows the rules of the University Senate as administered by the Registrar's Office.

Grades

The official grades of graduate students are recorded in the office of the Registrar.

The grading in graduate courses is done according to the following scale:

A-high achievement	4 grade points per credit
B-satisfactory achievement	3 grade points per credit
C-minimum passing grade	2 grade points per credit
E-failure	O grade points per credit
I incomplete see explanation follows	
S-satisfactory	see explanation following

A grade of I (incomplete) may be assigned to a graduate student if a part of the work of a course remains undone and there is a reasonable possibility that a passing grade will result from completion of the work. All incompletes (I grades) must be removed from a students' record unless approved by the Dean of the Graduate School.

A grade of S (satisfactory work in progress) may be recorded for students in graduate courses which carry no credit and in graduate seminars, independent work courses, and research courses which extend beyond the normal limits of a semester or summer term. The grade may not be given to a student in a course carrying credit if the student has done unsatisfactory work or failed to do a reasonable amount of work. The project must be substantially continuous in its progress. When the work has been completed, a final grade will be substituted for the S.

An over-all average of B on all work carrying graduate credit, must be attained before an advanced degree may be awarded. All graduate level courses (500-799) completed after admission to The Graduate School are computed in the grade-point average. Thus, all work attempted, including repeated courses, are computed in the graduate grade-point average. D grades are not given to graduate students. An "incomplete" (I) (unless the Dean of The Graduate School grants an extension of time) must be removed within one calendar year after the close of the term in which the I is assigned if the student is to receive credit.

Once a grade (other than an I or S) has been reported to the Registrar's Office, it may not be changed unless an error was made at the time the grade was given and recorded, and then only upon the written unanimous approval of the instructor, the Registrar, and the Dean of The Graduate School.

Credit Equivalence

Certain research courses carry no credit hours or grades but do contribute to the residence requirements of graduate degrees. For these courses the credit equivalent is stated in the course descriptions.

Academic Load

The total semester or term load of a student is the sum of all credits and credit equivalents (e.g., graduate language courses, undergraduate courses, courses audited, etc.) being carried. The normal load of a graduate student during any semester is 12 credit hours or equivalent. Under no circumstances may it exceed 15 credit hours or equivalent. During the summer term, the maximum load for the eightweek term is nine credit hours, and the four-week intersession is four credit hours.

The maximum load for any combination of the four and eight-week terms is 12 credit hours. Students satisfactorily completing nine course credits, or equivalent, of graduate level work during a semester, are classified as full-time students. Students satisfactorily completing six course credits, or equivalent, during a summer term are classified as full time. Those completing less than these amounts are classified as part time except that a teaching or research assistant may be classified as full time (for residence credit purposes) by taking six semester hours if the Director of Graduate Studies recommends and the Dean of The Graduate School approves. For the student who is a full-time teaching assistant or whose service to the University requires approximately 20 hours per week, the load shall not exceed 10 hours. This maximum may be increased to 12 hours for students with lighter service loads upon recommendation of the Director of Graduate Studies and approval of the Dean of The Graduate School.

Full-time students who fall below the minimum fulltime equivalent as the result of failing or dropping one or more courses are reclassified as part-time students for that

Master's candidates working on their theses may register for up to the equivalent of six course credits by signing for course 768 in the appropriate department and indicating the desired credit equivalent in parentheses on the registration card.

Persons holding full-time working or professional assignments, whether employed by the University or not, may not take more than six credit hours (excluding 769 courses) for graduate credit toward a degree in any single semester or term. Students may petition for a waiver of this rule when the following conditions are met: (1) has satisfactorily completed six credit hours of graduate work; (2) has attained higher than national average scores on the aptitude and advanced tests of the Graduate Record Examination; and (3) has appropriate employment facilities and conditions.

Doctoral Residence

In order to receive a semester of full-time residence credit doctoral students must satisfactorily complete nine credit

hours of graduate level work in that semester and to receive a semester of full-time residence credit during the summer, doctoral students must satisfactorily complete three credit hours during the four-week intersession and nine credit hours during 'the eight-week term. Doctoral students attending the summer term PRIOR to the Qualifying Examination must complete a minimum of nine credit hours in order to count the summer term as a full-time term.

Students Changing Programs

Students who plan to change to another program, must have the consent of the Director of Graduate Studies in the new program. A letter of acceptance must be sent to The Graduate School. Also students must request by letter that the change be made by The Graduate School.

Short Courses

Short courses are defined as courses of less than a term in length. A short course may not carry credits greater than the number of weeks during which it is offered. Two short courses of four weeks or less or two full-term courses and a short course may not be taken simultaneously. A total graduate program may not be made up of short courses.

Visiting Students

University of Kentucky graduate students who attend another Graduate School as a Visiting Student must have the permission of their University of Kentucky advisers and the Dean of The Graduate School at the University of Kentucky before the courses are taken in order to transfer credits earned. (See section on Transfer of Credits.)

Visiting Student status may be granted only to students

in good standing who are in programs.

Students who are enrolled in a Graduate program at another institution and plan to attend the University of Kentucky as a Visiting Student, need not submit transcripts. Students must, however, request a Visiting Student form from the Graduate Admissions Office when filing an application. Visiting Student admission is for one semester only and credit earned in that status is not applicable to a University of Kentucky degree.

Time Limit for Degrees

Activities which are used to satisfy degree requirements must be completed within eight years preceding the proposed date of graduation. Extensions of time will be considered by the Graduate Council only upon written recommendation by the appropriate Director of Graduate Studies. No activity completed more than 12 calendar years preceding the proposed graduation date will be considered for graduation.

Graduation

Advanced degrees may be conferred at the close of any semester or summer session, but commencement exercises are held only at the close of the academic year. Students who are eligible to receive degrees at the end of the first semester or the summer session may participate in the next commencement exercises.

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Appropriate academic costume must be worn. The thesis and dissertation fees cover the cost of binding of the thesis or dissertation, microfilming, and copyright (See sec-

tion on copyright).

To be eligible for a degree, students must file an application at the Graduate Office within 30 days after the beginning of the semester or 15 days in the Summer Ses-

Accounts Payable to the University

sion in which they expect to complete their work.

All outstanding accounts due to the University must be cleared before a degree is awarded. Candidates for degrees whose accounts are cleared close to the final deadline date for graduation clearance, should take their receipt of payment to the Registrar's office.

Diplomas

Diplomas for graduate students are ordered after certification of the degree has been completed. If a letter of certification is needed, please write The Graduate School and one will be provided.

Fees

Registration fees per semester are \$310 for residents of Kentucky, \$800 for non-residents. Part-time graduate students who are legal residents of the state pay \$35 per semester hour; non-residents pay \$89 per semester hour. Resident students in the summer will pay \$35 per semester hour; non-residents \$89 per semester hour. The Registrar determines the status of one's residence for purposes of assessing fees.

Graduate fellows, graduate assistants, and instructors may have all or part of the out-of-state tuition remitted, depending on the individual stipend. Students should check with their appropriate Director of Graduate Studies for specific amounts of tuition waived.

Doctoral Candidates registering for 769-0 pay no fees.

Fees are subject to change without notice.

GENERAL REQUIREMENTS FOR ALL MASTERS' DEGREES

(See also General Requirements for All Advanced Degrees)

On-Campus Residence

There is no Graduate School-wide sustained residence requirement for master's degrees at the University of Kentucky. However, students are advised to consult the special statement of requirements for the programs in which they are interested and consider carefully the statement about the spirit of resident graduate work in the section on residence. Students who contemplate continuing in a doctor-

al program should take into account at the outset the residence requirements for the doctoral degree.

Transfer of Credits

With the approval of the student's adviser, or major professor, the Director of Graduate Studies, and the Graduate Dean, a maximum of nine semester hours of regular graduate course credits earned prior to admission to a given graduate degree program may be credited toward the minimum requirements of the Master's or Specialist degree in that graduate program provided that the grades earned were A or B. For example, such credits may be earned (1) as a student in another graduate program at the University of Kentucky, (2) as a post-baccalaureate graduate student at the University of Kentucky, or (3) as a graduate student at another accredited graduate school. In the event a student offers credits in more than one of these categories, the total to be credited toward the degree still may not exceed nine hours. In no case will independent work, research, thesis or dissertation credit completed as a part of degree requirements for one program be considered to satisfy requirements of a subsequent master's program.

Correspondence Courses

No graduate credit is given for courses taken by correspondence.

Courses and Curricula

Graduate students are eligible to take regular courses which meet as organized classes and independent-study or research courses in which each student carries on investigations independent of class meetings. Independent study or research courses must not duplicate thesis work; thesis work must be done in addition to the minimum course requirements. At least two-thirds of the minimum requirements for the master's degree must be in regular courses, and at least half of the minimum requirements must be in courses numbered on the 600 or 700 level. Exceptions to this rule may be made only with the approval of the Graduate Council.

Second Master's Degree

Two degrees will not be granted at the same time and simultaneous enrollment in two or more programs is not permitted. (See Section on **Transfer of Credit**.)

Final Examination

A final examination (oral and/or written) is given all candidates for master's degrees not later than eight days before the last day of classes of the semester in which the degree is to be awarded. The examination is scheduled by the Graduate Dean and the report is returned to the Dean upon completion of the examination, which in no case may be later than two weeks after the start of the examination. The examining committee consists of at least three qualified members recommended by the Director of Graduate

Studies and appointed by the Dean of The Graduate School. The recommendation for a final examination must be filed with The Graduate School at least two weeks prior to the date of the examination. If a thesis is written, see the Thesis Section under Requirements for the Degree of Master of Arts and Master of Science for procedures.

If the candidate fails the final examination, the committee may recommend to the Graduate Council the conditions under which a second examination may be administered. Insofar as it is practicable the same examining committee gives this examination. In all decisions the majority opinion of the committee prevails. If the committee is evenly divided, the candidate fails. A third examination is not allowed.

Degrees of Master of Arts and Master of Science

The Graduate School authorizes all graduate programs to permit students to satisfy the requirements for the M.A. and the M.S. degrees by either of two plans.

PLANA

In addition to meeting all general requirements for masters' degrees (see section on General Requirements for All Advanced Degrees) the candidate must complete at least 24 semester credit hours of graduate course work with a standing of 3.0 (B) or higher, satisfy the language requirements, and write a thesis. A candidate must have a major area (defined usually as an academic department) and must (with the exceptions noted below) take at least twothirds of the course work in this area; the other one-third may be taken in this area or in graduate areas which have a relationship to it. In Education, Agriculture, and Communications only one-half of the work must be in the major area. When the setting up of major topics seems to require it, the Graduate Council may, on recommendation of the appropriate Director of Graduate Studies, authorize courses taught outside the major to count on the major.

Thesis

Theses must be developed under the direction of a member or associate member of the Graduate Faculty. Collaborative effort by two or more graduate students is not forbidden. However, there must be enough independent effort to enable each student to make a separate contribution and to prepare an individual thesis.

Theses must be in conformity with the instructions prepared by The Graduate School. For specific instructions regarding the format of theses, the student should obtain a copy of the leaflet, *Instructions for the Preparation of The*ses and Dissertations, from The Graduate School office.

Before the final examination the thesis director and the appropriate Director of Graduate Studies must indicate to The Graduate School that the student's thesis satisfies all requirements of The Graduate School and is complete in content and format with the exception of pagination, and that the student is ready to be examined. If the final examination committee indicates that the student has passed the

final examination, the modifications in the thesis which the committee specifies must be made.

The final copies are submitted to The Graduate School after the Director of Graduate Studies and the Thesis Director have signed that they are complete.

Theses must be presented and accepted by the Graduate School by the last day of the semester if a student plans to graduate that semester.

Each student will pay a fee for the binding of the thesis. Payment will be made at the Billings and Collection office.

Theses submitted by candidates become the physical property of the University of Kentucky and authors agree that the University may decide the conditions under which they may be used or published. The University protects the authors' rights by placing certain restrictions upon borrowers' use of theses as long as they are unpublished. A copy of the following regulations (to be prepared by the student) is placed before the title page of every thesis:

Unpublished theses submitted for the masters' and doctors' degrees and deposited in the University of Kentucky Library are as a rule open for inspection, but are to be used only with due regard to the rights of the authors. Bibiographical references may be noted, but quotations or summaries of parts may be published only with the permission of the author, and with the usual scholarly acknowledgements.

Extensive copying or publication of the thesis in whole or in part requires also the consent of the Dean of The Graduate School of the University of Kentucky.

A library which borrows this thesis for use by its patrons is expected to secure the signature of each user.

PLAN B

Plan B has the same minimum requirements as Plan A except that six or more credit hours of course work may be submitted for a thesis. A student may follow this plan only with approval of the program concerned.

Students should consult their adviser for any additional requirements that may have been set up for Plan B by their area of study.

Foreign Language Requirement

Many programs require a reading knowledge of a modern foreign language for the Master's degree. French, German, or Russian are the accepted languages. However, another modern language pertinent to the student's program may be substituted on the recommendation of the adviser and with the approval of the Director of Graduate Studies and the Graduate Dean. The language requirement may be satisfied by:

- 1. Completing one of the accelerated graduate level language courses with a B or better grade.
- 2. Completing the Educational Testing Service examination with a minimum score of 450.
- 3. Completing four semesters (or equivalent) of a modern foreign language with a grade-point average of B or better as an undergraduate at the University of Kentucky.
- 4. Completing, with a grade of B or better, Special Examina-

tions given for the graduate reading courses. Forms may be obtained from the Registrar's Office, Gillis Building. Other types of special examinations are scheduled in The Graduate School Records Office.

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5. Transferring a language taken to satisfy the requirements for a Master's degree at another university.

Candidates for degrees must be proficient in English.

Degree of Doctor of Philosophy

The Ph.D. degree is intended to represent the demonstration, through intensive study, of independent and comprehensive scholarship in a specific field. Such scholarship must be manifested by both the student's mastery of subject matter and capacity to do research.

The degree of Doctor of Philosophy is conferred upon a candidate who after completing graduate work devoted to study of a special field of knowledge (1) passes comprehensive examinations in the chosen field and the dissertation subject, (2) presents a satisfactory dissertation, and (3) shows evidence of scholarly attainment.

Students should note that some doctoral programs have degree requirements that may exceed the minimum requirements of The Graduate School.

The Major Professor and Advisory Committee

Each student's program is guided by a Major Professor and Advisory Committee throughout the graduate career. Their purpose is to give continuity of direction and counsel and provide intellectual stimulation from the earliest days of residency through the completion of the doctorate.

The Director of Graduate Studies, or designee, serves as adviser to beginning graduate students. The Director of Graduate Studies, or designee, signs schedule cards and performs other advisory functions until the Advisory Committee is appointed, normally not later than the point at which 18 credit hours of graduate work have been accumulated and in any event at least one year prior to the Qualifying Examinations. The Major Professor then assumes primary advisory functions and chairs the Advisory Committee. The Dissertation Director, when selected, serves as the Major Professor. The Advisory Committee also provides advice to the student and specifically sets requirements (within applicable Program, Graduate School, and University regulations) which the student must meet in pursuit of the doctorate. The Major Professor and Advisory Committee are appointed by the Graduate Dean after consultation with the appropriate Director of Graduate Studies

The Advisory Committee has a core of five members. This core consists of the Major Professor as Chairman, two or three other members from the major area, and at least one representative from any minor area(s). At least one representative must be from outside the academic program (department). All members of the core must be members of the Graduate Faculty of the University of Kentucky and

three (including the Major Professor) must possess full Graduate Faculty status. Additional faculty members may serve as members of the Advisory Committee. The core of the Advisory Committee must be kept at its full complement thoughout the graduate career of the individual student. Thus, in the event of a vacancy on the Committee (occasioned by resignation, faculty leave, or inability to serve), an appropriate replacement must be made prior to the making of any committee decision.

All decisions of the Advisory Committee are by majority vote of its Graduate Faculty members. Advisory Committee decisions must be reported promptly to the appropriate Director of Graduate Studies who will be responsible for transmitting them to the Dean of The Graduate School.

In addition to advising and program planning, the Advisory Committee is also involved with the administration of the Qualifying Examination, the supervision of the preparation of the dissertation, and the administration of the Final Examination on the dissertation (see appropriate section below).

Major and Minor Subjects

Every applicant for the Ph.D. degree must select a major area of study. The major area is one in which the student's efforts are concentrated. Some programs also require one or more minor areas. Minor(s) must be approved by the student's Advisory Committee.

Residence Requirements

The purpose of a residence requirement is to encourage contact with the academic community in which doctoral students may become fully involved with colleagues, libraries, laboratories, on-going programs of research and inquiry, and experience the intellectual ferment which characterizes a university. Such experience is generally as important as formal classwork in the process of intellectual development. While the residence requirements are, by necessity, given in terms of full or part-time enrollment, the intent of the requirement is to ensure that the student becomes fully involved in an essential part of scholarly life.

Requirements for the doctorate may be completed in three years of full-time graduate work or the equivalent in combined full-time and part-time study;* however, more time may be required. In unusual cases approval of a program of study involving less time may be secured from the Graduate Dean. It should be understood that scholarly accomplishment is the ultimate basis on which requirements are met, not semester hours completed or time spent in the program. On the recommendation of the Director of Graduate Studies and with the concurrence of the Graduate Dean, successful completion of a master's degree may be considered the equivalent of the first of the three years.

Each student pursuing the doctorate must spend at least two consecutive semesters enrolled in a degree program on campus in intensive study. Such enrollment must occur prior to passing the Qualifying Examination. During these two semesters the student must be enrolled as a full-time student, carrying nine or more hours. If the summer term is to be used in lieu of one of these semesters, enrollment

for nine hours is required.

Each candidate for the doctorate must complete two semesters of full-time dissertation study immediately following the Qualifying Examination. Normally this is accomplished by registering for nine hours of 769 (which is called Residence Credit) each semester and completed with a grade of S. With the written recommendation of a candidate's Advisory Committee and with the approval of the appropriate Director of Graduate Studies and the Graduate Dean, specified graduate course work may be taken in lieu of all or part of this residence credit (769) requirement. If a summer term is substituted for one of the semesters, three credits must be taken in the four-week session and a minimum of six credits in the eight-week session. The student need not be physically present on campus while enrolled for credit after the Qualifying Examination. While there is generally no formal class work attached to these credits, and in some cases the student may not be on the campus, full tuition costs are assessed in that students who are preparing their dissertations are utilizing University resources such as libraries, Computing Center, and Major Professors' and Committee members' time and energy.

The semester during which the student takes the Qualifying Examination may be counted for credit for dissertation study only if the date of successful passage is within six weeks (three weeks for the eight-week summer session) of

the first day of classes.

Students who have fulfilled these requirements, but who have not yet defended the dissertation, are required to enroll for 760 (0-9 credit hours) each semester until the dissertation is completed and defended. Such registration enables the University to keep accurate records of degree candidates and facilitates rapid and accurate information processing. Some programs have additional residence requirements which must also be met.

In general, the two required semesters of presence on campus and the two semesters of residence credit (769) will not satisfy the study requirements for the doctorate as the latter normally requires at least the equivalent of three years. The difference is to be made up by additional full or part-time work as appropriate. Further, it should be understood that the above represents the minimum requirements of The Graduate School, although some programs have additional requirements.

*In those situations where part-time course work toward the doctorate may be used in lieu of full-time enrollment, each nine hours of course credit earned on a part-time basis is considered the equivalent of a fulltime semester.

Language Requirements

As stated in the specific program description, an applicant must have a reading knowledge of one or two modern foreign languages. The language(s) accepted are French, German, or Russian. However, any modern foreign language more appropriate to the student's field of study may be selected on the recommendation of the Advisory Committee and with the approval of the Director of Graduate

Studies and the Graduate Dean. Arrangements must be made through the Office of the Graduate Dean for examinations in languages not regularly taught at the University of Kentucky.

If the foreign language requirement has not been satisfied after four semesters of full-time graduate work (i.e., post baccalaureate), the student must register for a graduate level language course as part of the course load. The language requirement must be satisfied before the applicant may be admitted to the Qualifying Examination. The acceptable ways for satisfying this requirement are given in the section, "Requirements for the Degrees of Master of Arts and Master of Sciences."

The Qualifying Examination

A Qualifying Examination consisting of both written and oral components is required of all doctoral students. Its purpose is to verify that students have sufficient understanding of and competence in their fields to become candidates for the degree. In most programs an indivdual Qualifying Examination is prepared and administered by the Advisory Committee; in some cases that committee also judges the results of the examination. A majority vote of the core of the Advisory Committee is required for successful completion of the Qualifying Examination. Programs which give uniform written Qualifying Examinations to all of their candidates shall have rules (filed with the Graduate Dean) governing the role of the Advisory Committee in the preparation, administration, and evaluation of the Qualifying Examination. The examination is usually given after four semesters of graduate work or the equivalent.

The Qualifying Examination must be scheduled through the Director of Graduate Studies and approved two weeks in advance by The Graduate School. Failure to meet this scheduling requirement may result in a student's not having proper University status and can cause omissions in records, loss of credits, or delay of graduation. Students should check with the Director of Graduate Studies to make sure that the Qualifying Examination has been

appropriately scheduled.

The results of the examination must be reported by the Director of Graduate Studies to The Graduate School within 10 days of its conclusion. If the result is failure, the Committee determines the conditions to be met before another examination may be given. The minimum time between examinations is four months. A second examination must be taken within one year after taking the first examination. A third examination is not permitted.

The Dissertation

Each student must present a dissertation which is the result of original research. The Major Professor is the primary source of guidance in the planning and preparation of the dissertation. However, other members of the Advisory Committee may be involved in the process as well. All core members of the Advisory Committee must read the dissertation prior to signing the Approval Form. It is the responsibility of the Advisory Committee to make sugges-

tions for revisions before the Final Examination. A majority of the Advisory Committee core members must indicate that the form and substance of the dissertation are adequate to justify the scheduling of the Final Examination. The Final Examination on the dissertation may not be scheduled without the signatures of a majority of the Advisory Committee's members on the Approval Form.

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The style and form of the dissertation must be in conformity with the instructions prepared by The Graduate School. For specific instructions regarding the format of the dissertation, the student should obtain a copy of the *Instructions for the Preparation of Theses and Dissertation* from The Graduate School Office.

Each graduating doctoral student will pay dissertation fees. Payment will be made at the University Billings and Collections Office.

Copyright

Dissertations may be copyrighted by the student (1) signing the Copyright Authorization on the Microfilm Agreement Form which is completed after the thesis format check in The Graduate School, (2) paying the copyright fee of \$20 (this copyright fee is in addition to the \$30 dissertation fee), and (3) including a copyright notice in the front of the dissertation. The notice is a single sheet on which is centered the heading:

Copyright by (name of student) (year)

The Final Examination

The Final Examination includes a defense of the dissertation and may be as comprehensive in the major and minor areas as the Advisory Committee chooses to make it. It is conducted by an expanded Advisory Committee chaired by the Director of Graduate Studies or someone designated by the Director. The Graduate Dean and President of the University are ex officio members of all final examination committees. The examination is a public event and its scheduling is published and announced beforehand. Any member of the University community may attend.

At least four weeks prior to the Final Examination, following notification by the Major Professor that the dissertation has been distributed to members of the Advisory Committee, the Director of Graduate Studies will advise The Graduate School of the intent to examine. At this time the Graduate Dean appoints an Outside Examiner as a core member of the Advisory Committee. The specific time and date of the examination must be designated by The Graduate School at least two weeks prior to the actual examination. All members of the Committee except the Outside Examiner have had an opportunity to suggest revisions prior to signing the Dissertation Approval Form. Thus, most revisions should have been completed at an earlier time. The Final Examination must take place no

later than eight days prior to the last day of class of the semester in which the student expects to graduate.

The Dissertation Approval Form, along with a typewritten copy of the dissertation, must be presented to The Graduate School at the time the Final Examination is established. The draft of the dissertation submitted must be complete in content, including all footnotes, tables, figures, and appendices. A full bibliography or set of references must be included as must a title page and abstract.

In all decisions, the majority opinion of the Graduate Faculty members of the Advisory Committee prevails. It the Advisory Committee is evenly divided, the candidate fails.

In the event of failure, the Advisory Committee recommends to the Graduate Dean conditions under which the candidate may be re-examined, if re-examination is deemed appropriate. When conditions set by the Graduate Dean have been met, the candidate may be re-examined. Should any vacancies on the Committee occur between the two examinations, the Graduate Dean shall appoint replacements. A third examination is not permitted.

After the Final Examination is passed, the final copy of the dissertation is prepared. Final copies are then submitted to The Graduate School along with the signatures of the Major Professor and the Director of Graduate Studies. The dissertation in its final form must be received in the Graduate School Office within 60 days of the Final Examination. If this deadline is not met, the candidate must undergo a second examination.

Combined Medical and Graduate Studies

Students combining studies toward an M.D. degree and a Ph.D. degree in one of the established programs of The Graduate School must be admitted to both programs. Before applying for admission to The Graduate School the applicant should consult with the Director of Graduate Studies of the graduate area of interest.

Students admitted to combined programs will register both in the College of Medicine and in The Graduate School during each semester in which work applying to both degrees is being taken. Graduate courses (500 level) which are regular parts of the medical curriculum also require dual registration if they are to apply toward the graduate degree. In view of the different grading systems currently employed, instructors of courses requiring dual registration will provide H, P or U grades to the College of Medicine and A, B, C, or E grades to The Graduate School.

Students enrolled in the regular medical curriculum will pay the tuition and fees of the College of Medicine. When not enrolled in the regular medical curriculum, they will pay Graduate School fees in proportion to the amount of graduate work taken.

Doctor of Business Administration

(See program section.)

Doctor of Musical Arts

(See program section.)

Joint-Doctoral Programs With Other Universities

Doctoral programs in education are offered jointly between the University of Kentucky and the other state universities: Eastern, Morehead, Murray, and Western. These programs permit qualified candidates to complete approximately one year of graduate work above the master's degree at the cooperating university. A minimum of 18 credit hours of course work, the Qualifying Examination and the dissertation must be completed at the University of Kentucky, and a minimum of one academic year must be spent in full-time residence on the Lexington campus. The work of each candidate is directed by a joint faculty committee from both institutions.

Persons interested in these programs should confer with the Dean of The Graduate School at the cooperating university, or the Associate Dean for Graduate Studies in Education at the University of Kentucky. Applications may be filed for review by a joint screening committee. Admission will depend upon academic standing, scores on standardized examinations, and personal references.

There are available joint programs in Musicology and Pharmacology between the University of Kentucky and the University of Louisville. Inquiries for Pharmacology should be directed to the Director of Graduate Studies, University of Kentucky. Information concerning the Musicology program is available in the offices of the Associate Deans, University of Louisville and University of Kentucky.

REGULATIONS GOVERNING GRADUATE WORK IN THE COLLEGE OF EDUCATION

The College offers the following degrees: Master of Arts in Education, Master of Science in Education, Master of Science (only in the Department of Health, Physical Education, and Recreation), Specialist in Education, Doctor of Education, and Doctor of Philosophy.

Graduate work is also provided for persons seeking Rank I or II classification.

Rank II classification may be achieved by the completion of a master's degree or the "Planned Fifth Year Program." The "Fifth Year" is a program of 32 semester hours for persons who hold bachelor's degrees and a teaching certificate. A minimum of 18 hours must be completed at the University of Kentucky. Of the 32 hours at least 12 must be in professional education, and at least 12 must be in fields outside education.

Rank I classification requires the completion of: (1) 30 hours of approved graduate level credit in addition to the requirements for a Rank II classification, or (2) 60 hours of approved graduate level credit including the master's degree.

Each student's graduate curriculum must be a well-rounded program of courses related to the student's major interest and approved by the adviser. In cases of deficient preparation the adviser, with the approval of the Associate Dean for Graduate Studies in Education, determines pre-requisite undergraduate courses to be taken. Each department has designated one or more faculty members to direct graduate studies in that department. Specific questions regarding programs may be referred to the Directors of Graduate Studies.

The two plans which lead to the degree of Master of Arts in Education or Master of Science in Education are Plan A and B, described earlier under requirements for the M.A. and M.S. degrees.

Master of Arts in Education

The Master of Arts in Education is the program selected by candidates seeking initial or renewal certification for work in school settings. The Master of Science in Education is the program selected by candidates seeking to pursue non-certificate areas of concentration within Education and/or to prepare in fields auxiliary to education such as community counseling, rehabilitation counseling, etc.

A Master of Arts in Education degree will lead to a Standard Certificate and Rank II for pay purposes.

The plan which leads to the degree of Master of Arts in Education is outlined below:

- All candidates for the Master of Arts in Education degree must meet the requirements for a valid teaching certificate, based on a four-year baccalaureate program. These requirements are outlined in the general catalog of the University. If deficiencies are found, they should be overcome before proceeding with graduate work. The work required to overcome these deficiencies is in addition to the minimum graduate requirements for the degree.
- 2. a. A minimum of 24 semester hours of graduate work, with at least 12 semester hours in courses numbered 600 or higher, must be completed and a thesis presented, or b. A minimum of 30 semester hours of graduate work, with
- at least 15 semester hours in courses numbered 600 or 700, must be completed.
- 3. At least 12 semester hours of graduate work must be in Education.
- 4. The total number of credits presented in Education, undergraduate and graduate, must be at least 30 semester hours.
- At least 12 semester hours must be outside the College of Education for both elementary and secondary teachers except for teachers of vocational agriculture who take six hours outside Education.
- An overall grade-point average of 3.0 (an average of B) or better must be earned in all graduate studies.
- 7. With the approval of his graduate adviser and the Dean of The Graduate School, a student may transfer from another accredited graduate school up to nine semester hours toward the satisfaction of the minimum requirements for a master's degree.
- 8. No graduate credit is given for courses taken by correspondence

9. The Graduate Record Examination is required of all applicants prior to admission to graduate school. A final examination, either written and/or oral, shall be required. This examination is to be taken just prior to or during the session in which the degree is to be conferred.

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Master of Science in Education

The Master of Science in Education degree is normally awarded to students pursuing programs of study which do not lead to certification. However, if a student already holds a valid teaching certificate, the Master of Science in Education degree will give Rank II for pay purposes and may, under some circumstances, renew the certificate. The Master of Science in Education degree may also endorse a valid teaching certificate for another approved teaching subject or fields.

The plan which leads to the degree of Master of Science in Education is outlined below:

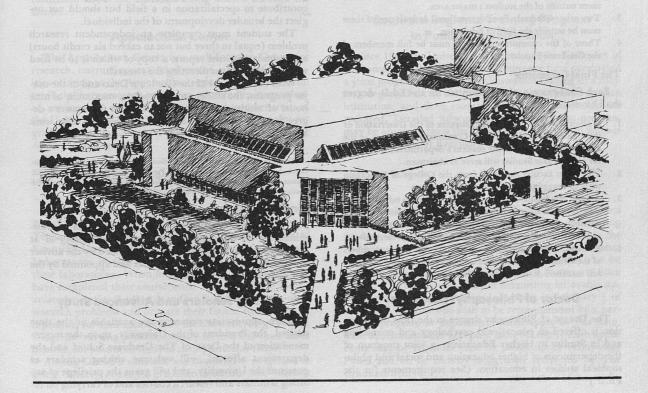
- a. A minimum of 24 semester hours of graduate work, with at least 12 semester hours in courses numbered 600 or higher, must be completed and a thesis presented, or
 b. A minimum of 30 semester hours of graduate work, with at least 15 semester hours in courses numbered 600 or 700, must be completed.
- A minimum of 12 semester hours of graduate work in the College of Education is required.

- A minimum of six hours outside the College of Education is required, but individual programs may require additional work outside the College.
- An overall grade-point average of 3.0 (an average of B) or better must be earned in all graduate studies.
- 5. With the approval of his graduate adviser and the Dean of the Graduate School, a student may transfer from another accredited graduate school up to nine semester hours toward the satisfaction of the minimum requirements for the master's degree.
- No graduate credit is given for courses taken by correspondence.
- 7. The Graduate Record Examination is required of all applicants prior to admission to graduate school. A final examination, either written and/or oral shall be required. This examination is to be taken just prior to or during the session in which the degree is to be conferred.

Doctor of Education

The requirements for the degree of Doctor of Education are the same as for the degree of Doctor of Philosophy with the following exceptions:

- 1. No foreign languages are required for the Ed.D. degree.
- 2. A minimum of 72 credit hours is required beyond the baccalaureate with a distribution providing for:
 - a. Completion of at least 21 credit hours within a single



area of concentration. (See section on Education for options.)

- b. At least 18 additional credit hours in supporting departments within Education, with a minimum of six hours in each of two departments outside the area of concentration.
- c. At least 24 credit hours in disciplines outside Education which are supportive to the area of concentration.

d. A minimum of nine credit hours in research tool studies appropriate for this program.

 Applicants shall declare at least one area outside the area of concentration at the time their advisory committees are appointed in order to facilitate the appointment of a committee member from outside Education.

The Committee on Graduate Admissions and Standards of the College of Education and the Graduate Dean will evaluate credits and residence to be allowed transfer students. It is understood, however, that the advisory committee may accept only such courses as contribute to the graduate program of the student.

The Advisory Committee

Each advisory committee for the Ed.D. degree will consist of the following:

- A committee chairman from the department in which the candidate is majoring.
- Two other Graduate Faculty members from the College of Education. At least one of these will come from a department outside of the student's major area.
- 3. Two other Graduate Faculty members. At least one of these must be outside the field of Education.
- Three of the committee members must be full members of the Graduate Faculty.

The Final Committee

Each final examination committee for the Ed.D. degree shall have:

- A chairman who is either the Director of the Dissertation or the Chairman of the Advisory Committee. If neither of the above are members of the student's department, the Director of Graduate Studies will serve as chairman.
- 2. Two other faculty members from the College of Education without regard to department affiliation.
- 3. At least one faculty member from the student's minor area.
- One person from outside the College of Education who is not connected with the minor field. This person is the traditional outside member or The Graduate School representative.
- Five committee members must be Full or Associate members of the Graduate Faculty, and at least three members must be full members of the Graduate Faculty.

Doctor of Philosophy (Education)

The Doctor of Philosophy degree in the field of education is offered in educational psychology and counseling and in Studies in Higher Education—a joint program of the departments of higher education and social and philosophical studies in education. (See requirements for the Ph.D.)

Specialist in Education

The degree of Specialist in Education is conferred upon a candidate who satisfactorily completes a post master's planned program in education under the general requirements of The Graduate School and the following special requirements:

Admission

The student, prior to admission to the program must (1) have a master's degree, (2) ordinarily have a standing of 3.4 or higher on all graduate work, (3) meet the requirements for a teaching certificate or have credentials appropriate to the field of specialization, and (4) have at least 30 credit hours in courses in education (undergraduate and graduate).

The student should file application with the Associate Dean for Graduate Studies in Education. The application will be considered by the department and by an admissions committee of the college. A student must be recommended by the major program and by the Committee on Graduate Admissions and Standards.

Program*

The student must earn a minimum of 30 credit hours of graduate work beyond the master's degree, of which at least 15 must be in courses numbered 600 or above.

A departmental committee is responsible for helping students plan individual programs. The program should contribute to specialization in a field but should not neglect the broader development of the individual.

The student must complete an independent research problem (equal to three but not to exceed six credit hours) and submit a written report, a copy of which is to be filed with the department directing the research.

With the approval of the Graduate Dean and of the major program, the student may transfer a maximum of nine hours of residence credit earned beyond the master's degree from an institution which is approved to offer work above the master's level.

Final Examination

The final examination required of all candidates is administered by an examining committee consisting of at least three qualified members recommended by the adviser and the Director of Graduate Studies and appointed by the Dean of The Graduate School.

Visiting Scholars and Advanced Study

When appropriate resources are available at the time desired, the President of the University, upon the recommendation of the Dean of The Graduate School and the department affected, will welcome visiting scholars as guests of the University, and will grant the privilege of auditing seminars and research courses and of carrying on re-

^{*}The Specialist in Education degree is offered in Administration and Supervison, Curriculum and Instruction, Educational Psychology and Counseling, Higher Education, Social and Philosophical Studies, Special Education, and Vocational Education.

search in laboratories and libraries. Normally there will be no charge except for laboratory expenses. Negotiations for such arrangements should be conducted in advance through the Graduate Office.

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Postdoctoral Fellowships

Post-doctoral fellowships are available in various research departments. Information concerning the terms of the fellowships is available in the department. Post-doctoral fellows are required to register with The Graduate School through their department.

UK-NKU Graduate Center

The University of Kentucky and Northern Kentucky University established a Graduate Center at Northern Kentucky University beginning the fall semester of 1977 for the purpose of meeting graduate education needs for the Northern Kentucky region in some fields which have not been met, previously.

The Graduate Center utilizes faculty from the University of Kentucky and some faculty from Northern Kentucky University where there is expertise in one of the fields being offered in the Center.

Students interested in taking graduate courses at the Northern Kentucky Graduate Center should either contact the Center office at Northern Kentucky University or The Graduate School at the University of Kentucky for information about the curricula being offered through the Center.

Appalachian Center

The Appalachian Center is a multifunction Center for research, instruction, extended service, and archival activities relating to the Appalachian region. It administers interdisciplinary research programs, coordinates instructional, service, and archival programs based in other units of the University. It provides assistance and a focal point for graduate students who are interested in the study of the Appalachian region.

Research Program at Oak Ridge Associated Universities

The University is one of the sponsoring universities of the Oak Ridge Associated Universities located at Oak Ridge, Tennessee. Through this association, the University of Kentucky has available to it the facilities of the National Laboratories in Oak Ridge and of the research staffs of these laboratories. When masters and doctoral candidates have completed their course work, it is possible by special arrangement for them to go to Oak Ridge to work on their research problems and prepare their theses. In addition, it is possible for staff members of the University to go to Oak Ridge for varying periods, usually for not less than three months, for advanced study in their particular fields.

Among ORAU's activities are competitive programs to bring undergraduates, graduate students and faculty

members to work on research problems at the research facilities of the Energy Research and Development Administration. Participants are selected by ORAU and the staffs of the facilities participating in the ORAU programs, which are Oak Ridge National Laboratory; the Oak Ridge Y-12 Plant; the Oak Ridge Gaseous Diffusion Plant; the Atmospheric Turbulence and Diffusion Laboratory in Oak Ridge; the Savannah River Laboratory and Savannah River Ecology Laboratory in Aiken, S.C.; the Comparative Animal Research Laboratory in Oak Ridge; the Puerto Rico Nuclear Research Center; and the Energy Research Centers at Bartlesville, Okla., Pittsburgh, Pa., and Morgantown, W.Va. The ORAU Institute for Energy Analysis, the Special Training Division, the Medical and Health Sciences Division and its other programs are also open to qualified students and faculty members.

Students on Oak Ridge Graduate Fellowships receive stipends which vary according to the number of their dependents and the level of work they are doing. Staff members may work in Oak Ridge on stipends commensurate with their present salary and rank.

Information concerning stipends and other matters may be obtained from the office of The Graduate School or from the Chairman of the University Relations Division of the Oak Ridge Associated Universities, Box 117, Oak Ridge, Tennessee 37831.

Bulletins may be obtained by writing to the University Programs Office, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, Tennessee, 37830.

Southern Regional Training Program in Public Administration

Since 1945 the University of Kentucky, the University of Alabama, and the University of Tennessee have conducted a joint program in public administration leading to a master's degree. Part of the course work is completed at each institution, and three months of successful internship are required. Detailed information concerning the program may be obtained from the Department of Political Science of the University of Kentucky.

Nonservice Fellowships

Academic Year Fellowships: The Graduate School awards a number of nonservice fellowships to outstanding graduate students. Application forms are contained in the "Application packet" which is sent to all persons requesting information on admission. These forms may also be obtained from the Fellowship Office, 329 Patterson Office Tower. The normal deadline for submitting fellowship application and all supporting documents is February 1 of each year. Persons who wish to be recommended by a particular program or department must apply by this date. Late applications are accepted until March 1. Late applicants may be recommended by the Minority Fellowships Panel and/or be directly designated recipients by The Graduate School.

Fellowship applications must be supported by the same documents as are required for admissions applications. Applicants should check with the Director of Graduate Studies in the relevant department or program to determine whether additional materials, such as letters of recommendation, are required at that level. Late applicants and minority applicants should submit letters of recommendation directly to the Associate Dean for Research, The Graduate School.

The stipend for Academic Year Fellowships is \$3400. In addition, fellowship recipients are not required to pay the out-of-state portion of tuition charges, as that amount is paid by The Graduate School in their behalf. These fellowships have a tenure of one academic year and are competitively renewable for a second.

Recipients of Academic Year Fellowships must be registered as full-time students and may not earn more than \$1500 from other sources during their tenure (i.e., during the academic year).

Many of the Academic Year awards are Haggin Fellowships. These fellowships are endowed by Margaret Voorhis Haggin in the memory of her father, George Voorhis.

Other Academic Year awards are funded directly by The Graduate School.

University of Kentucky Research Foundation Fellowships: The University of Kentucky Research Foundation supports fellowships of \$4500 for one academic year to assist graduate programs in recruiting outstanding students. While the awards are not renewable, UKRF Fellowship holders may apply for other fellowships offered by The Graduate School. The general conditions and requirements attaching to these awards are the same as for Academic Year Fellowships. Academic Year Fellowship applicants are automatically considered for UKRF awards. No special application is required.

The Dr. Paul I. Murrill Memorial Scholarship in Chemistry: This scholarship was established by Mrs. Paul I. Murrill in memory of her husband, who was a graduate of the University of Kentucky. It pays an attractive stipend for one academic year to a student who possesses outstanding qualities of character and aptitude for graduate work. Preference is given to scholars in the field of chemistry. The conditions and requirements attaching to these awards are generally the same as for Academic Year Fellowships. Academic Year Fellowship applicants are automatically considered for Murrill awards. There is no special application form. However, interested applicants should contact the Director of Graduate Studies in the Department of Chemistry well before the February 1 deadline.

The Robert N. Jeffrey Fellowship in Tobacco Research: These fellowships are supported by the Jeffrey Memorial Endowment Fund set up by Mrs. Helen Lasby Jeffrey in honor of her husband, Robert N. Jeffrey, who was formerly Plant Physiologist at the Agricultural Experiment Station. These fellowships pay an attractive stipend for one academic year and are subject to renewal if the progress of the student is satisfactory. They are open to Ph.D. students in all areas of the University concerned with tobacco re-

search. The conditions and requirements attaching to these awards are generally the same as for Academic Year Fellowships. Academic Year Fellowship applicants will be considered for Jeffrey awards. There is no special application form. However, interested applicants should contact the Chairman of the Jeffrey Fellowship Committee, c/o Associate Dean for Research, The Graduate School, well before the February 1 deadline.

Patterson Fellowships in Diplomacy and International Commerce: Patterson Fellowships are available from an endowment established by Dr. James K. Patterson, the first president of the University. These fellowships are available to highly qualified applicants enrolled in the Patterson School interdisciplinary M.A. program in Diplomacy and International Commerce. The awards are offered at various stipend levels ranging up to the full stipend level of the Graduate School Academic Year Fellowships. In addition. the Patterson School from time to time has supplementary fellowship resources from donors and other benefactors. The conditions and requirements attaching to these awards are generally the same as for Academic Year Fellowships. There is no special application form; interested persons must submit the Academic Year Fellowship application forms in the usual manner by February 1, and must contact the Director of Admissions, Patterson School of Diplomacy, in advance of that deadline.

The George W. Pirtle Fellowship in Geology: The George W. Pirtle Fellowship is a grant of \$1000 per year given by Mr. Pirtle, the first student to obtain the Master's Degree in Geology from the University, to a graduate student majoring in Geology. The award is made upon the recommendations of the faculty of the Department of Geology and is based on need and promise of future achievement in the geological field.

Dissertation Year Fellowships: One-year awards are made to doctoral students who have passed the Qualifying Examinations. Recipients must work full time on the dissertation and must be registered full time generally for post-Qualifying Examination residence credits. The stipend (1979-80) is \$3700. The out-of-state portion of tuition fees need not be paid. The fellowship is not renewable. The application deadline is February 23. Application forms and details of the requirements are available from the Fellowship Office.

Summer Fellowships: These fellowships are available for the two summer months (July, August) on a competitive basis to students who have been enrolled in The Graduate School for a minimum of two semesters. The stipend is \$350 per month. These awards are for the support of significant research. The application deadline is April 11. Application forms and details of the requirements are available from the Fellowship Office.

Research

The University of Kentucky is the land grant institution for the State and also the major graduate and research institution in the State. It is committed to conducting programs in both basic and applied research. Research programs not only represent the lifeblood of graduate research and education but also expand the boundaries of knowledge in areas related to our society. Research programs, along with the attendant education programs, are essential for providing intellectual and cultural leadership and the many highly qualified people required to cope with the problems of a highly complex society.

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on noUniversity Research is supported by federal, state, local and private organizations in a manner which is consistent with the mission of the University. The University faculty and research staff are involved in research and scholarly activity in areas varying from the creative arts, humanities, basic science, mechanical sciences to government, health, social services and education. Research programs range from the philosophical and ethical problems raised by advances in biological sciences, physical sciences and medicine to the delivery of education materials throughout the Appalachian Region by satellite.

The University is involved heavily in applied and mission orientated research in such fields as coal, oil, shale, tobacco and health, transportation, education, crops, soils and nutrition. Large research programs in coal and energy are conducted by University faculty and The Institute of Mining and Minerals Research. Similarily, programs in tobacco and health are conducted by University faculty, The College of Agriculture and The Tobacco and Health Research Institute. There is a Center for Multidisciplinary Research in Aging and a center for conducting cancer research.

Recently, there has been a trend by agencies which sponsor research to support more heavily the mission-oriented, applied type of research such as energy-related areas, health and education delivery systems. The University participates in this type of research whenever it provides an opportunity to support the educational mission of the University. Basic research and creativeness are still the essential ingredients in the education process.

The research efforts and activities at the University have increased markedly over the past five years. The number of projects supported and the amount of support has doubled in less than 10 years. This has been accomplished during a period of retrenchment in many agencies. The level of support has remained about constant over the past year or so. The University has ranked from 46th to 52nd among the top 100 research and doctoral granting universities in the last five years. The ranking is calculated on the expenditure of federal funds during the fiscal year.

Research and Teaching Assistantships

Most departments employ part-time teaching and research assistants whose holders pay the same fees as are assessed Kentucky residents. The stipends vary with the departments. Information concerning assistantships may be obtained from the various departments.

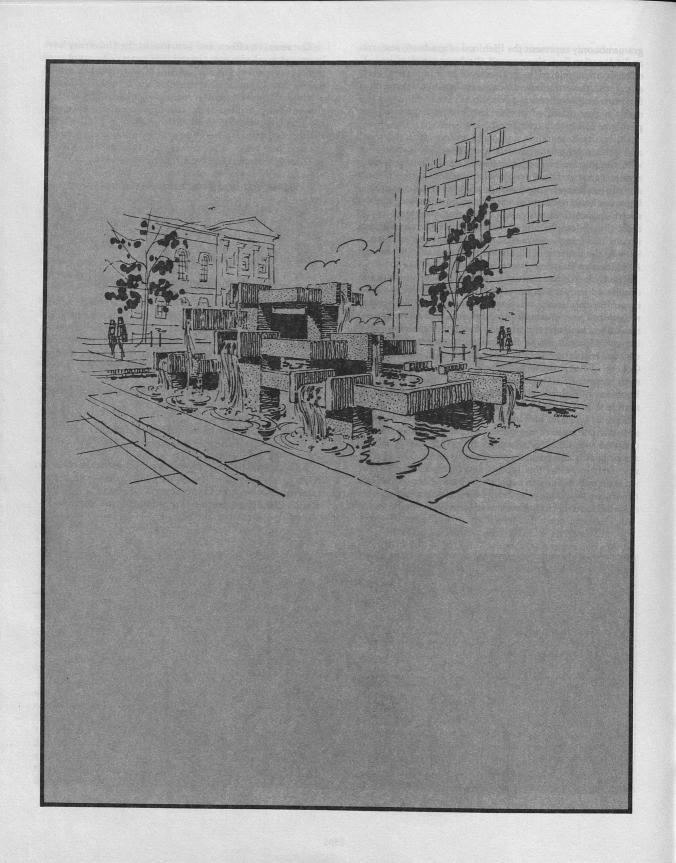
Miscellaneous Financial Support

Students may request funds from The Graduate School to defray partially certain expenses relating to their graduate education. These include funds for travel expenses necessary to dissertation research; certain dissertation costs, e.g., obtaining microfilm, reproducing and mailing questionnaires, etc.; for travel expenses incurred in presenting papers based on dissertation research at national meetings. Application forms are available in the Fellowship Office.

Graduate and Professional Student Association

The Graduate and Professional Student Association (GPSA) was formed in the spring of 1969 to provide a permanent channel for communication between the administration and the graduate and professional students.

	1978-	1979
	Graduate	e Council
Robert Hemenway		Ronald K. Atwood
English	1978-1979	Curriculum & Instruction
Rupert Pickens		Judith Worell
French	1978-1979	Educational Psychology & Counseling 1978-198
Kathy Thornburg		William Dennen
Home Economics	1978-1979	Geology
William J. Stober		George Mitchell
Economics	1976-1979	Animal Sciences
Robert W. Kiser		Alfred D. Winer
Chemistry	1976-1979	Biochemistry
John A. Deacon		
Civil Engineering	1976-1979	



Degree Requirements

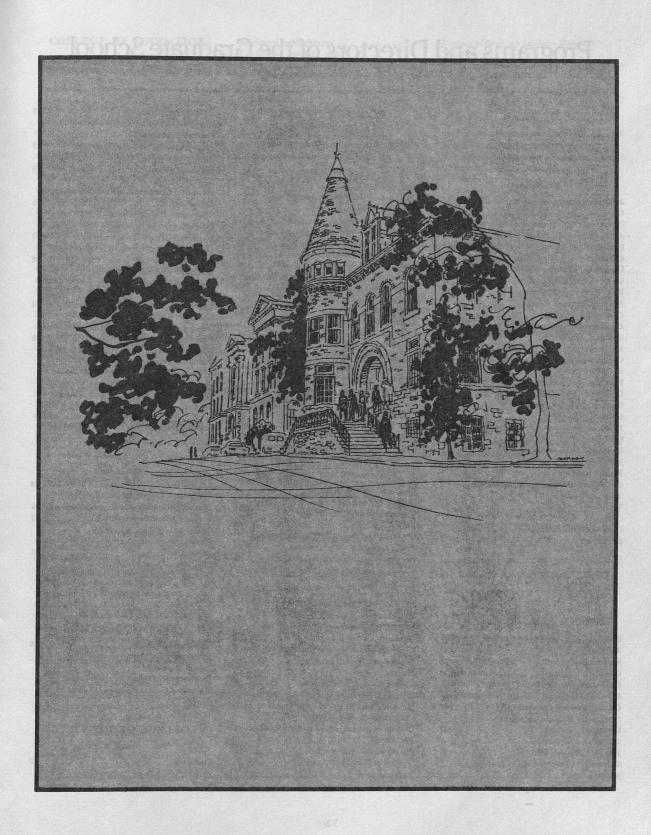
This chart outlines minimum requirements for all graduate programs. Individual requirements may vary according to the need of the student. Where asterisks are listed, consult the Director of Graduate Studies in the specific program.

PROGRAM		DEGREE	Non- Thesis thesis Option Option	Language Required	Credit Hours Required	
\$ <u>C</u>			received of Arra in Education	nense	usad videopasă	
Accounting		Master of Science in Accounting	moderate SS at Ania X reason		30	
Administration and Supe	rvision	Doctor of Education	A X a sub first remote 2 to repeat		72*	
A : 15 15 :		Specialist in Education	movinos bil en conservit X respublic		30*	
Agricultural Economics		Doctor of Philosophy	X lossopulates and to season	One	Copylian Early Co	
		Master of Science	X		24	
		Master of Science	Additional in and X retails.		36	
		Master of Science in Agriculture	X Substitution and the engage		24	
		Master of Science in Agriculture	X		36	
Agricultural Engineering		Doctor of Philosophy	X	One		
		Master of Science in Agricultural Engineering	X		24	
MS 24		Master of Science in Agricultural Engineering	And the restricted		30	
Anatomy		Doctor of Philosophy	X Stock by religible	One		
		Master of Science	X season find to sense 0		24	
		Master of Science	And the second of the second o		30	
Animal Sciences		Doctor of Philosophy	X appropriative Me	One		
		Master of Science	X		24	
		Master of Science	vidabatie X islas@		36	
		Master of Science in Agriculture	X		24	
		Master of Science in Agriculture	X		36	
Anthropology		Doctor of Philosophy	X	Two		
Option: General Anthr	opology	Master of Arts	X	One	24	
Option: Applied Anthropology/Cultura	l	Master of Arts	multipulità in panetra los retroines		33*	
Art (Studio)		Master of Fine Arts	X 2016 in agreement to select the		45	
(Education)		Master of Arts	X sphareoned to consul		30	
(History)		Master of Arts	Movement of the Committee of the Committ	Two	24	
Biochemistry		Doctor of Philosophy	Mount of Screens a from X Engineering	Two		
		Master of Science	X Yespapies is saled	One	24	
		Master of Science	A soluble with the restriction and the X	One	30	
Biology		Doctor of Philosophy	Wanted of Service and X and the service service and the service service and the service servic	One	•	
		Master of Science	X vitage sent to up and		24	
Business Administration		Doctor of Business Administration	X and the second		•	
		Master of Business Administration	X many		30	
Chemical Engineering		Doctor of Philosophy	X Vingount Philadelphy X	One	vigot units	
		Master of Science in Chemical Engineering	X Annual Constitution		24	
		Master of Science in Chemical Engineering	Windowski X		30	
Chemical Physics		Doctor of Philosophy	X Thin A ex extremal to remark	One	•	
Chemistry		Doctor of Philosophy	X processing to miniscia.	One		
		Master of Science	X	One	24	
		Master of Science	X	One	30	
Civil Engineering		Doctor of Philosophy	X Magazera (Magazera)	One	Villa Libe	
		Master of Science in Civil Engineering	X and formulate		24	
Option: I		Master of Science in Civil Engineering	X		30*	
Option: II		Master of Science in Civil Engineering	X		36	
25 a Shikulaga		Master of Civil Engineering	X		30	
Classical Languages and Literature		Master of Arts	X Village Report to Account	One	24	
Assemble of		Master of Arts	X	One .	30	
Clinical Nutrition		Master of Science in Clinical Nutrition	X		30	
Communication		Master of Arts	X		30	
Coiomeanon		Master of Arts	X		30*	
Computer Science		Master of Science	X make a second of X	One	24	
23polor ocioneo		Master of Science	X	One	30	

PROGRAM	DEGREE	Thesis Option	Non- thesis Option	Language Required	Credit Hours Required
Crop Science (Agronomy)	Doctor of Philosophy	X		One	*
	Master of Science	X			24
	Master of Science		X		30
	Master of Science in Agriculture	X			24
Curriculum and Instruction	Master of Science in Agriculture		X		36
Confesion and mandenon	Doctor of Education Specialist in Education	X			72*
Options: Reading.	Master of Arts in Education	V	X		30*
Secondary Education	Master of Arts in Education	X X			30
and Elementary Education	Master of Arts in Education		X		24 30
	Master of Science in Education	X			24*
	Master of Science in Education		X		30*
Option: Early Childhood Education	Master of Arts in Education	X			30
	Master of Arts in Education		X		36
Option: Clinical and College Teaching	Master of Science in Education		X		36
Dentistry	Master of Science in Dentistry	X		\	30
Diplomacy and International	Doctor of Philosophy	X		Two	*
Commerce					
	Master of Arts	X		One	24
Economics	Master of Arts		X	One	30
Leonomics	Doctor of Philosophy Master of Arts	X		One	
	Master of Science		X	One	30
Ed			X		30
Educational Psychology and Counseling	Doctor of Philosophy	X		One	•
	Doctor of Education	X			72*
	Specialist in Education		X		30*
	Master of Arts in Education	X			30*
	Master of Arts in Education Master of Science in Education		X		36*
	Master of Science in Education	X			30*
Electrical Engineering	Doctor of Philosophy		X		36*
33	Master of Science in Electrical Engineering	×		One	
	Master of Science in Electrical Engineering	^			24
Engineering Mechanics	Doctor of Philosophy	×	×		30
	Master of Science in Engineering Mechanics	x		One	•
	Master of Science in Engineering Mechanics		×		24 30
English	Doctor of Philosophy	×		Two	*
	Master of Arts	×		One	24
	Master of Arts		×	One	30
Entomology	Doctor of Philosophy	X		One	*
	Master of Science	X			24
	Master of Science in Agriculture	·x			24
Forestry	Master of Science in Agriculture	×			24
French Language and Literature	Doctor of Philosophy	X		Two	
	Master of Arts		×	One	30
Geography	Doctor of Philosophy	X		One	•
	Master of Arts	X			24
Geology	Master of Arts		X		30
Ceciogy	Doctor of Philosophy	X		One	
Germanic Languages and	Master of Science Doctor of Philosophy	X			24
Literatures	Doctor of Philosophy	X		One	
	Master of Arts	X		One	24
	Master of Arts		×	One	30
Health, Physical Education and Recreation	Master of Science	X			24
	Master of Science		×		30
Health Radiation Sciences	Master of Science in Medical Radiation Dosimetry		X		31
	Master of Science in Radiological Health		×		32

PROGRAM	DEGREE	Thesis Option	Non- thesis Option	Language Required	Credit Hours Required
Higher Education	Doctor of Philosophy**	X		One	•
	Doctor of Education	X			75*
	Specialist in Education		X		30*
	Master of Science in Education		X		30*
	Doctor of Philosophy offered as Joint Program with Social and Philosophical Studies**				
History	Doctor of Philosophy	×		Two	
	Master of Arts	×		One	24
	Master of Arts		×	One	36
Home Economics	Master of Science in Home Economics	x		One	24*
	Master of Science in Home Economics		×		36
Option: Early Childhood	Master of Science in Home Economics	×	^		24
	Master of Science in Home Economics	^	×		36
Horticulture and Landscape	Master of Science in Agriculture	x	^		24
Architecture	Master of octonice in Agriculture	^			24
	Master of Science in Agriculture		X		36
Library Science	Master of Arts	X		One	30
	Master of Arts		X	One	36
	Master of Science in Library Science		X		36
Mathematics	Doctor of Philosophy	X		Two	•
	Master of Science		×		36
	Master of Arts	X		One	30
	Master of Arts		X	One	30
Mechanical Engineering	Doctor of Philosophy	X		One	
	Master of Science in Mechanical Engineering	X			24
	Master of Science in Mechanical Engineering		×		30*
	Master of Science in Nuclear Engineering	X			24
	Master of Science in Nuclear Engineering		X		30*
Metallurgical Engineering and Materials Science	Doctor of Philosophy	×		One	•
	Master of Science in Metallurgical Engineering	X			24
	Master of Science in Metallurgical		×		30
	Engineering				
Microbiology	Doctor of Philosophy	X		One	•
	Master of Science	X			24
	Master of Science		X		30
School of Music	Doctor of Philosophy	x		Two	
	Doctor of Musical Arts	x		One	•
	Master of Music	x			24
	Master of Music		x		30
	Master of Arts	x		One	24
Nursing	Master of Science in Nursing	X			34
	Master of Science in Nursing		x		34
Pharmaceutical Sciences	Doctor of Philosophy	x		One	
	Master of Science	x		One	24
	Master of Science		x	One	30
Pharmacology	Doctor of Philosophy	x		One	
	Master of Science	X			24
	Master of Science		x		30
Philosophy	Master of Arts	x		One	24
	Master of Arts	•	x	One	30
	Doctor of Philosophy	x		Two	*
Physics and Astronomy	DOCTOR OF A HINDSOPHY			1 WU	
Physics and Astronomy		Y		One	94
Physics and Astronomy	Master of Science	X	¥	One	24
Physics and Astronomy Physiology and Biophysics		X X	x	One One One	24 30

PROGRAM	DEGREE	Thesis Option	Non- thesis Option	Language Required	Credit Hours
	Master of Science		X	One	30
Plant Pathology	Doctor of Philosophy	X		One	
	Master of Science	X some			24
	Master of Science in Agriculture	X and X			24
	Master of Science in Agriculture		X		36
Plant Physiology	Doctor of Philosophy	X made		One	*
	Master of Science	X			24
Political Science	Doctor of Philosophy	×		Two	
	Master of Arts	X		One	24
	Master of Arts		X	One	30
Psychology	Doctor of Philosophy	X vide		One	ogei o la
	Master of Arts	X			24
	Master of Science	X			24
Public Administration	Master of Public Administration		X		45
Social and Philosophical Studies in Education	Doctor of Philosophy**	Salara profit a Xing all a		One	363
Siddles in Eddcallon	Dootes of Education	animuonad emoit ni			
	Doctor of Education Specialist in Education				72*
	Master of Arts in Education		Small to X hands		
	Master of Arts in Education	X			25
	Master of Science in Education		X		31
	Master of Science in Education	X			25
	Doctor of Philosophy offered as Jo		X		31
	Program with Higher Education**	int			
Social Professions	Master of Social Work		x and a x		manus autoria
Sociology	Doctor of Philosophy	×	areing to menda.	0	54
TO NO.	Master of Arts	x		One	
	Master of Arts	1	and to X took		24
	Master of Science in Agriculture	×	Discourage Philoso		30
	Master of Science in Agriculture	growth language in	×		24
Soil Science (Agronomy)	Doctor of Philosophy	A STATE OF THE PARTY OF THE PAR	namical to resoure	0	36
	Master of Science	emperation with a second		One	
	Master of Science	primerings teatros au a	X COM		24
	Master of Science in Agriculture	X and a	Decree of Philose		30 24
	Master of Science in Agriculture		×		36
Spanish and Italian Languages	Doctor of Philosophy	Accordance of the Control of the Con	Menself Scherold	Two	*
and Literatures				IWO	
	Master of Arts	X		One	24
	Master of Arts		X	One	30
Special Education	Doctor of Education	X			72*
	Specialist in Education		X		30*
	Master of Arts in Education	X			24*
	Master of Arts in Education		edath la Xaset		30*
	Master of Science in Education	X shall			24*
o	Master of Science in Education		Santé le X au M		30*
Statistics	Doctor of Philosophy	X		One	
	Master of Science	X			29
	Master of Science		X		35
Theatre Arts	Master of Arts		aresta la X an M		30
Toxicology	Doctor of Philosophy	X yalqa		One	Pratural entre
	Master of Science	X			24
Veterinary Science	Doctor of Philosophy			One service	
, 500000	Master of Science			One	rgologi gradij
Vocational Education	Doctor of Education	X			24
22227011	Specialist in Education	×	odical is used M. Bin		72*
	Master of Arts in Education	•	X		30*
	Master of Arts in Education	×	arra to comple		24
	Master of Science in Education	9049	X		
	Master of Science in Education	×	muriding absolute		24
			X		30



Programs and Directors of the Graduate School

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Director of Graduate Studies -
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Chairman - A. S. Williams
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Charles Elton	Chairman-Joe B. Buttram	
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The Graduate School Programs

The course listings in The Graduate School Bulletin include all courses approved through March 1, 1979.

GS 600 Special Topical Graduate Course. (2-3) An interdisciplinary, topical or experimental course to be approved by the dean of The Graduate School. A particular course can be offered no more than twice under the number, GS 600. May be repeated to a maximum of six credits. Prereq: Consent of the instructor.

Accounting

Graduate Faculty: Professors Paul Michael Davis (Director of Graduate Studies), William W. Ecton (Dean), James A. Knoblett (Chairman), Donald L. Madden, Levis D. McCullers, Albert W. Patrick, Associate Professors Manuel L. Tipgas, Relmond P. Van-Daniker.

Emeritus Professor: Robert Haun.

Master of Science in Accounting

The principal objectives of the Master of Science Program in Accounting are to develop the ability to perform, and report upon, significant research and to further the understanding of the relationship between accounting and other disciplines. Since the specific needs of individuals for advanced study differ, the program has been structured to provide maximum flexibility. Plan B is offered.

Requirements

- 1. Admission to the advanced degree program is open to students who hold a bachelor's degree from any accredited college or university, an undergraduate grade-point average of 2.7 or above, and at least 450 on the Graduate Management Admission Test.
- Graduate study in accounting presumes a minimal preparation in economics and business, including the following areas (undergraduate credit can be applied). In certain cases, these areas may be satisfied within the M.S. program upon approval of the Director of Graduate Studies:

or adduce bradie	
	Crs.
Principles of Economics	6
Principles of Accounting	6
Statistical Method	6
Business Finance	3
Marketing	3
Management	3
Business Policy	3

Additional minimal preparation is one course each in intermediate accounting, cost accounting, income taxation, and auditing.

- 3. A minimum of 30 semester hours must be presented in courses carrying graduate credit. At least 18 semester hours must be in courses reserved exclusively for graduate students and at least 12 of these must be in accounting.
- . The course requirements are:
 - One course in each of the following fields: Advanced Managerial Accounting, Income Taxation, Attest Function, Accounting Theory.
 - At least six semester hours of graduate credit outside the Department of Accounting, three of which must be production related.
 - A Computer Science or Data Processing.
- The candidate must submit evidence of competence in statistics (successful completion of six semester hours of course work at the upper division level).
- 6. Minimal average of grade B in all courses attempted for graduate credit after being admitted to Graduate School. A minimal average of grade B must similarly be achieved for all accounting courses attempted after being admitted to Graduate School. Students obtaining two grades of C below a B average will be dropped by the Department.
- 7. Successful completion of a comprehensive examination.

401G Accounting Thes

1016	Accounting I neory	(3)
4030	Auditing	(3)
4080	Cost Accounting	(3)
4100	Not-For-Profit Accounting	
4160		(3)
4170		(4)
4220	Functions of Accounting	(3)
515	C.P.A. Problems	(3)
517	Corporate Taxation	(2)
518	Controllership	(3)
527	Taxation of Partnership and Subchapter	(0)
	S Corporations	(2)
537	Estate and Gift Taxation	(2)
547	State and Local Tax Accounting	(2)
601	Research in Accounting Theory	(3)
603	Attest Function	(3)
608	Advanced Managerial Accounting	(3)
615	Advanced Professional Problems	(3)
		(0)

617	Income Tax Development (3)
619	Independent Study in Accounting (1-3)
624	Accountametrics (3)
628	Accounting for Control and planning (3)
701	Seminar in Accounting (3)
703	Topical Seminar in Auditing (1)
704	Topical Seminar in Data Processing (1)
705	Topical Seminar in Statistical and
	Mathematical Applications in Accounting (1)
706	Topical Seminar in Accounting Theory (1)
707	Topical Seminar in Taxation (1)
708	Seminar in Management Accounting 3
709	Topical Seminar in Not-For-Profit and
	Regulatory Accounting (1)
795	Independent Study in Accounting (1-6)

Administration and Supervision

Graduate Faculty: Professors Charles Faber (Chairman and Director of Graduate Studies), James B. Kincheloe, James Ogletree.

Associate Members: Professor Fred Edmonds, Assistant Professor Kenneth Brooks

Emeritus Professor: W. Paul Street

The Department of Administration and Supervision offers programs leading to the Specialist in Education (Ed.S.) degree and the Doctor of Education (Ed.D.) degree. These advanced degree programs are designed to prepare candidates for leadership positions in public schools and other educational agencies or for the professorship in educational administration. The Department participates in a Joint Doctoral Program with regional universities.

In addition, the Department also offers programs leading to professional certification and to Rank I classification (for Kentucky salary purposes) for various types of administrative and supervisory positions, as follows:

- 1. Superintendent of Schools
- 2. Elementary Principal
- 3. Secondary Principal
- 4. Supervisor of Instruction
- 5. Director of Pupil Personnel Services

All certification programs require that the candidate must have earned a master's degree in an appropriate teaching field prior to completion of the program in administration and supervision.

The University of Kentucky is an active member of the University Council for Educational Administration, which was formed to promote, through inter-institutional cooperation, improvement in the professional preparation of administrative personnel. A number of services are available to graduate students through this membership.

The University is a partner with the University of Louisville and the Jefferson County Public Schools in the operation of the Jefferson County Education Consortium, which provides a laboratory for research and development work in urban education. Internships for graduate students can be arranged with public school systems and other educational agencies.

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A limited number of graduate assistant-ships are available through the Department. These involve up to 20 hours per week of service to the Department or some other unit of the University, designed in such a way that the work contributes to the educational development of the student. A modest stipend is paid for this service. The University also provides some financial aid, in the form of loans and fellowships.

For further information, write to the Director of Graduate Studies in the Department of Administration and Supervision, College of Education, University of Kentucky, Lexington, Kentucky 40506, requesting one or more of the following sets of materials:

1.	Admissions Procedures and Forms	
2.	Requirements for Professional Certific	ate
	and Rank I Programs	
3.	Requirements for the Specialist in Edution degree	ıca-
4.	Information on Doctoral Study in Adm	in-
100	istration and Supervision	
502	The Administration of Pupil Personnel	(3)
601	Administration of Educational	
	Organizations	(3)
602	Organization and Administration of	
	American Education	(3)
603	Constitutional and Legal Basis of Public	
	School Administration	(3)
604	School Buildings and Equipment	(3)
608	Internship in Educational Administration	
	and Supervision	(3)
628	Field Studies in Educational Administration	n
	and Supervision	(3)
629	The Principal	(3)
633	Administration and Supervision of	
	Instructional Programs	(3)
634	Administration of Educational Personnel.	(3)
635	Business Administration and Finance of	
	Public Education	(3)
639	The Supervisor	(3)
649	The School Superintendency	(3)
769	Residence Credit for the Doctor's	

Degree..... (0-12)

771 Seminar in Administration..... (1-3)

772 Seminar in Education (1)

785	Independent Work in School	
	Administration	(3)
792	Research in Educational Administration	
	and Supervision	(3)

Agricultural Economics

Graduate Faculty: Professors Kurt Anschel (Director of Graduate Studies), Garnett Bradford, Russell Brannon, Fred Justus, Alan Randall, John Redman, Robert Rudd (Chairman), Milton Shuffett, Eldon Smith. Associate Professors Robert Beck, Barry Bobst, David Debertin, Loys Mather.

Associate Members: Associate Professor Harry Hall; Assistant Professors Joe Davis, Larry Jones, Harold Love (Extension), Angelos Pagoulatos, and Lynn Robbins.

Emeritus Professors: George Byers and Dana Card.

The degrees of Master of Science, Master of Science in Agriculture (Plan B available), and Doctor of Philosophy may be earned with a major in agricultural economics. The student is expected to concentrate, in addition to agricultural economics, in economics and subjects relating to research methodology. Those without sufficient background or training are expected to make up deficiencies indicated by the Department.

The beginning graduate student is advised to choose between two program emphases, applied or research, according to his career interests. The applied sequence prepares the student broadly in subjects that will have a continuing usefulness in farm management, agri-business, business, agricultural program administration, extension, foreign service and the like. Students in the applied program are not required to submit theses but must complete 36 graduate credits. The applied emphasis is designed for those who do not plan to undertake Ph.D. programs. The research emphasis in the M.S. program involves more work in the basic fields of economic theory, statistics and research methodology and is designed to prepare the student for the Ph.D. level work or a research related career. Students in the research program must submit a thesis and complete 24 graduate credits. Those with the applied emphasis in the M.S. Program will ordinarily require an additional semester of study to eliminate deficiencies in the basic fields if they decide to pursue Ph.D.

All students seeking the Ph.D. must satisfactorily complete a core curriculum of courses in statistics, economics, and agricultural economics, and demonstrate a reading knowledge of one modern foreign

language. A dissertation must be completed. UK graduates with Ph.D. degrees in agricultural economics are now employed in administrative positions in academic institutions, business, government programs for agriculture, and foreign technical assistance in addition to those holding research, teaching, or extension appointments in academic institutions.

Study areas which the Ph.D. or Master's student may emphasize include agricultural marketing and price analysis, farm management and production economics, agricultural policy, resource, and environmental economics, and economic development. In addition to taking courses in these areas within agricultural economics, the student may select courses from a broad array of agricultural and social science disciplines which will complement his particular professional career interest. A graduate student handbook is available which provides information on the Department's graduate program and details the Ph.D. core curriculum and the recommended content of the two emphases in the Master's Degree program.

AGRICULTURAL MARKET ORGANIZATION AND PERFORMANCE

	1-3)
lems in Agricultural	
	(3)
lems in Agricultural	
RICULTURAL ECONOMIC	S
and Economics Development	(3)
Development of Rural Regions	(3)
MICS DEVELOPMENT	
gricultural Prices	(3)
Price Analysis	(3)
al Financial Management	(3)
RAL PRICES AND FINANC	E
	(3)
	(3)
	(0)
ICTION ECONOMICS	
Estate Appraisal	(3)
arm Management	(3)
ds and Business Analysis	(3)
M MANAGEMENT	
gricultural Policy	(3)
	(3)
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	ds and Business Analysis

590	Introduction to Quantitative Economics (3)
624	Advanced Quantitative Methods in
	Agricultural Economics(3)
660	Research Methods in Agricultural
	Economics
661	Programming Models in Agricultural
	Economics
768	Residence Credit for the Master's Degree . (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
770	Agricultural Economic Seminars (0)
780	Special Problems in Agricultural
	Economics (1-3)
	NATURAL RESOURCES AND
	ENVIRONMENTAL ECONOMICS

Agricultural Engineering

Natural Resource and Environmental

Intertemporal Allocation of Natural

Natural Resource Economics. (3)

445G Introduction to Resource and

545

Graduate Faculty: Professors Billy Barfield, Tom Haan, Blaine Parker, Joe Ross (Director of Graduate Studies), Edward Smith, John Walker (Chairman). Associate Professors Joe Bunn, Wiley Henson, Otto Loewer (Extension), Gerald White.

Associate Members: Associate Professor Linus Walton (Adjunct), Assistant Professor Larry Wells.

The Agricultural Engineering Department offers programs leading to the M.S. in Agricultural Engineering (Plan A and Plan B available) and the Ph.D. degree.

The agricultural engineering graduate program has as its objectives the development of:

- The ability to plan and conduct research and design involving the application of the engineering science to biological and agricultural systems.
- The understanding of the mathematical, physical, and biological sciences to permit the reading and understanding of the present and future literature in these and related fields.
- The skills required to use precision instruments, techniques and computers useful in research and design.
- The ability to make sound engineering and management decisions.
- The ability to teach college level courses in agricultural engineering, particularly at the doctoral level.

In the attainment of the above objectives the graduate student will combine courses in agricultural engineering, the physical sciences, other engineering fields, and the biological sciences in developing a program of study. The advanced degrees, however, are primarily research degrees awarded for significant creative research

accomplishment, not for the completion of a specified number of courses. Therefore, the program concentrates on a strong thesis or dissertation problem done under the supervision of the graduate faculty of the Department. Strong course support is essential if the thesis or dissertation problem is to be properly undertaken and completed.

The design-oriented non-thesis option is available for the Master's degree.

406	
	Environment
417	G Introduction to Design of
	Agricultural Machinery (3
427	G Design of Agricultural Structures (3
431	G Watershed Hydrology
437	G Soil and Water Conservation
	Engineering(3
447	
503	Animal Waste Management (3
505	Engineering Analysis
519	Plant, Soil and Machinery Relationships . (3
525	Environmental Design for Biological
	Systems
536	Fluvial Hydraulics (3
537	Irrigation and Drainage Engineering (3
548	Advanced Agricultural Processing (3
550	Analysis and Simulation of Agricultural,
	Biological and Industrial Systems (3)
599	Topics in Agricultural Engineering (2-3)
606	Micrometeorology (3)
618	Advanced Plant, Soil, and Machinery
	Relationships(3)
628	Advanced Design of Structures for
	Biological Systems (3)
635	Applied Statistical Methods in Water
	Resources
645	Electromagnetic Radiation in Agricultural
	Engineering(3)
648	Energy and Mass Transfer in Agricultural
	Processing
658	Instrumentation in Agricultural
	Engineering Research (3)
660	Similitude in Engineering (3)
750	Special Problems in Agricultural
	Engineering (1-3)
768	Residence Credit for Master's Degree (1-6)
769	Residence Credit for Doctor's
	Degree (0-12)
775	Seminar
795	Thesis
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	Agronomy

Agronomy

The Department of Agronomy offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees with majors in Crop Science or Soil Science. The Department also participates in an interdepartmental graduate program leading to the Ph.D. degree with a major in Plant Physiology.

See Crop Science, Soil Science, or Plant Physiology for detailed information about these graduate programs.

Allied Health

500	Organization and Supervision in Health
	Care Delivery
595	Directed Studies (1-3)
660	Advanced Clinical Practicum in Allied
	Health (1-6)
670	Advanced Seminar in Allied Health (1-3)
690	Research Problems in Allied Health (3)
MD	500 Special Topics Course (1-3)
MT	501 Seminar in Advanced Hematology (2)

Anatomy

Graduate Faculty: Professors Robert Benton, Peter Bosomworth, William Cotter, Ira Fowler, Harold Parks, Harold Traurig (Director of Graduate Studies), Miroslava Winer. Associate Professors William Elwood, Roger Lambson, Daniel Matulionis, Raymond Papka, and Stephen Smith.

Associate Members: Assistant Professor William Martin. Associate Professors William Gochenour and Norman Goodman are unassigned members of the Graduate Faculty from the College of Medicine.

Emeritus Professor: Lois Gillilan.

The program of graduate studies in Anatomy is intended to provide educational opportunities for people with several different objectives. Some students will pursue graduate work in Anatomy with the intention of teaching in departments of anatomy; some will have already obtained a professional degree, such as an M.D. or D.M.D., and may be interested in obtaining specific training in some region or system of the body to complement their professional education. Others may study in Anatomy as a minor or simply for specific credit.

Preparation for graduate work in anatomy should include some course work in biological science along with other grounding in the sciences to the minimal extent of course work in quantitative analysis and organic chemistry, a term of calculus, and a year of college physics. Students with deficiencies in any of these areas may be admitted, but will be expected to complete their background early in the course of their graduate studies.

The Department is prepared to offer the M.S. and Ph.D. degrees with major training in gross human anatomy, microscopic human anatomy, embryology, endocrinology, genetics, and neuroanatomy. Also, a major interest can center in tissues, organs, regions or systems of the body, in which, for example, professional graduates such as dentists or orthopedic surgeons might wish to take specific training. Certain students with special needs will, with permission of the Director of Grad-

uate Studies, be permitted to work toward the M.S. degree on Plan B, however, in most cases students will follow Plan A.

Potential applicants for graduate work in Anatomy are requested to write directly to the Director of Graduate Studies in the Department of Anatomy.

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503	Independent Work in Anatomy (3)
511	
512	
	Microscopy and Ultrastructure (3)
513	Developmental Anatomy (2)
516	Anatomy of the Nervous System (3)
529	Concepts of Morphology (2)
530	Combined Histology and Special Oral
	Microanatomy (5)
532	Systemic Gross Anatomy (2)
533	Oral Histology (2)
534	Anatomy of the Human Head and Neck (3)
536	Human Embryology, An Abbreviated
	Course
538	Human Neuroanatomy, an Abbreviated
	Course
611	Regional Gross Anatomy (8)
629	Techniques of Anatomical Research (2)
631	Advanced Gross Anatomy (3-5)
633	Advanced Developmental Anatomy (2-5)
634	Advanced Endocrinology (2-5)
636	Advanced Neuroanatomy (3-5)
638	The Genetic Basis of Human
	Morphology (2-5)
651	Special Projects in Anatomy of Head and
	Neck Correlated with Neuroanatomy (3-5)
662	Ultrastructural Anatomy (2-5)
768	Residence Credit for Master's Degree (1-6)
769	Residence Credit for Doctor's
CERT	Degree (0-12)
MD	500 Special Topics Course (1-3)
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Animal Sciences

Graduate Faculty: Professors John Baker, Charles Barnhart, James Boling, Neil Bradley, Gary Cromwell, Donald Ely, Virgil Hays (Chairman and Co-Director of Graduate Studies), Roger Hemken, James Kemp, Bruce Langlois, Oran Little, George Mitchell (Co-Director of Graduate Studies), William Moody, Durward Olds, Frederick Thrift, Patch Woolfolk. Associate Professors, John Begin, Leonard S. Bull, Joe Fox, Robert Goodwill, Gerald Schelling, Paul Thornton, Ray Tucker.

Associate Members: Professor Nelson Gay. Assistant Professor Lee A. Edgerton, Clair Hicks, Tim Stahly. Emeritus Professors: Ray Dutt, T. R. Freeman, W. P. Garrigus, W. P. Insko, Jr., Donald MacLaury, Dwight Seath and Dewey Steele.

The degrees of Master of Science, Master of Science in Agriculture (Plan A and Plan B are available) and Doctor of Philosophy are available with majors in the animal sciences. Programs in the Department are divided in the disciplinary areas of Animal Nutrition, Food Science, Genetics and Physiology. Special interests in beef cattle, dairy cattle, horses, poultry, sheep, swine, meats, muscle biology, dairy tech-

nology and food microbiology may be pursued within these areas.

Candidates for the Ph.D. degree are required to have a reading knowledge of one modern foreign language and to declare a minor outside the Department. On approval of the student's special committee, a minimum of 12 credits in not more than two departments may be substituted for the minor.

404G Sheep Science	(3)
406G Beef Cattle Science	(3)
408G Swine Science	(3)
410G Horse Sciences	(3)
	(3)
	(3)
	(3)
442G Poultry Science	(3)
462G Artificial Insemination and Fertility	
of Farm Animals	(2)
	(5)
	(5)
	(4)
	(4)
538 Food Fermentation and Thermal	
	(4)
	(3)
	(3)
	(3)
600 Methods and Techniques in Animal	
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	(3)
680 Laboratory Methods in Animal	,
	(4)
	(2)
	(2)
	(3)
	(2)
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	(2)
	(2)
768 Residence Credit for the Master's	-/
Degree(1-	6)
769 Residence Credit for the Doctor's	٠,
Degree(0-1	2)
	(1)
780 Special Problems in Animal Derived	
Foods(1-	4)
	1,
Physiology (1-	4)
781 Special Problems in Genetics or Physiology	-/
Nutrition (1-	4)
700 Personah in Animal Davigad	-/
Foods	6)
791 Research in Genetics or	
Physiology	-6
792 Research in Animal Nutrition (1-	
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Anthropology

Graduate Faculty: Professors William Adams, Art Gallaher, Jr., Donald Hochstrasser, Marion Pearsall. Associate Professors Albert Bacdayan (Director of Graduate Studies), Robert Biggerstaff, Michael Collins, Lathel Duffield, John Van Willigen (Chairman), Richard Warren. Associate Members: Assistant Professors: Susan Abbott, Billie DeWalt, Richard Levy, W. Precourt, Eugenie Scott, Helen Wiese.

Emeritus Professors: Margaret Lantis and Philip

The Department of Anthropology offers courses and research options leading to the Ph.D. degree in the areas of Applied Social Anthropology, Culture History (Ethnohistory and Archaeology), and Ethnology. The Applied Social Anthropology program offers specialization in Developmental Change, Education and Medicine. The Department offers two M.A. options: a general anthropology degree (Plan A) certifying a broad background in anthropology, plus research competence in the collection and processing of primary data, and an applied anthropology degree (Plan B) which prepares the student for non-academic employment in Cultural Resource Management or in Applied Cultural Anthropology. The Plan A program requires a thesis and the Plan B program requires a

The Plan A Master's degree also functions as the entry into the departmental Ph.D. program. All incoming graduate students without the M.A. are treated initially as candidates for this degree. These students are expected to satisfy the requirements for the M.A. program, and take the equivalent topical courses specified by the Department. Students who (1) excel in this program and (2) demonstrate satisfactory research competence, may petition to bypass the master's thesis. A reading knowledge of one modern foreign language is required for the M.A. degree in anthropology. The Ph.D. program requires either a reading knowledge of two foreign languages or a high degree of proficiency in reading, writing, and speaking one foreign language.

Students who complete the requirements of the Plan B Master's must meet the requirements of the Plan A degree before proceeding to the Ph.D. degree.

Incoming students who have earned a Master's Degree at other institutions will be expected to demonstrate the same broad background in anthropology as is required to earn the M.A. at the University of Kentucky. If deficient in this regard they may be required to take appropriate course work which is normally part of the M.A. program, before proceeding to work toward the Ph.D.

The following areas are represented in the individual research experience of members of the anthropology faculty: Oceania, Southeast Asia, South Asia, North Africa and the Near East, Sub-Saharan Africa, Europe, Latin America, and North America. Several members of the faculty have expertise in the study of rural English-speaking sub-cultures.

The Department participates in interdisciplinary research in the University's Center for Developmental Change and in the Water Resources Institute. The Department of Behavioral Science, College of Medicine, includes anthropologists on its staff, and students with interests in medical anthropology are encouraged to take the behavioral science concentration. There are also anthropologists in the Department of Community Medicine (College of Medicine) and the Department of Social and Philosophical Studies (College of Education). Anthropology graduate students with appropriate interests are eligible for assistantships in the above fields.

Department standards for admission to graduate work in anthropology include an undergraduate department over-all average of B or better, a satisfactory score on the verbal and quantitative tests of the Graduate Record Examination, completion of a separate departmental application form, and three letters of recommendation. Write the Chairman, Admissions Committee, Department of Anthropology for additional information on departmental requirements and opportunities for financial assistance.

4210	North American Indians	. (3)
4280	Contemporaty Cultures and Societies	
	in Southeast Asia	(3)
4300		(3)
4380		(0)
	North Africa	(3)
4420		(3)
510	History of Anthropological Theory	(3)
512	Comparative Civilizations	(3)
515	Phonological Analysis	(3)
516	Grammatical Analysis	
518	Language in Culture	(3)
519	Historical Linguistics	(3)
520	North American Indian Languages	(3)
523	Ethnology of Oceania	(3)
524	Mythology	(3)
525	Applied Anthropology	(3)
526	Culture and Personality	(3)
527	Culture Change	(3)
529	Survey of Medical Anthropology	(3)
530	Contemporary Latin American Cultures	(3)
531	Cultures and Societies of	(0)
	Sub-Saharan Africa	(3)
532	Legal and Political Anthropology	(3)
533	Social Anthropology	(3)
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534	The Southern Appalachians: A
	Sociological Interpretation (3)
536	Peasant Societies(3)
538	Economic Anthropology (3)
541	Archaeological Theory and Method (3)
542	North American Archaeology (3)
546	Prehistoric Meso-America and Peru (3)
548	European and Near Eastern Archaeology . (3)
550	Field Studies in Anthropology (1-6)
555	Eastern North American Archaeology (3)
560	Ethnographic Principles and Practice (3)
570	Regional New World Ethnography (3)
580	Topics in Anthropology(3)
581	Independent Work in Anthropology (1-4)
582	Tutorial Seminar(3)
585	Field Laboratory in Archaeological
	Research
605	Seminar in Method and Theory in
	Anthropology(3)
610	History of Anthropology (3)
611	Seminar in Ethnology (3)
612	Seminar in Culture History (3)
613	Seminar in Physical Anthropology (3)
614	Field Methods in Linguistics (3)
670	Seminar on Role Theory (3)
690	Advanced Pre-Field Study Seminar (3)
710	Seminar in Physical Anthropology (3)
720	Seminar in Cultural Anthropology (3)
721	Seminar in Regional Ethnography (3)
725	Seminar in Applied Anthropology (3)
727	Seminar on Socio-Cultural Change (3)
731	Seminar in Comparative Social
	Organization
741	Seminar in Regional Archaeology (3)
742	Advanced Seminar in Culture History (3)
750	Graduate Field Study in Anthropology . (1-6)
764	Topical Seminar in Psychological
	Anthropology(3)
765	Research Problems in Medical
	Anthropology(3)
767	Practicum in Applied Anthropology (1-6)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree
770	Seminar
790	Research Problems in Anthropology (3)
	620 Regular Mandata and Alexander 1885

Art

Graduate Faculty: Professors James Pierce (Director of Graduate Studies-Art History), John Tuska. Associate Professors Gerald Ferstman, Elizabeth Finkenstaedt, Donald Hoffman, Leonard L. Huntee (Director of Graduate Studies-Art Education), Arthur Jones, Deborah Frederick, Lowell Jones, Arturo Sandoval, Robert Tharsing, Derrick Woodham (Director of Graduate Studies, Studio).

Asociate Members: Assistant Professors Georgia Collins, Christine Havice and Jane Peters.

Emeritus Professor: Clifford Amyx.

The Department of Art offers graduate course work in three areas: Art Studio, Art History and Art Education. Both the Art History Area and the Art Education Area confer the Master of Arts degree with a major in the respective area. Studio degree recipients are awarded the M.F.A.

Master of Arts

Major in Art History: Students admitted to the graduate program in art history are expected to have completed course work equivalent to an undergraduate major in art history (in no case, less than 18 hours of art history or less than 12 hours of art studio). Work toward the master's degree is undertaken under Plan A (see Requirements for the Degrees of Master of Arts and Master of Sciences, Plan A) with a total of 24 hours including the required Graduate Art History Seminar (A-H 560). At least two-thirds of the required hours must be in Art History or Museum Training courses. A satisfactory thesis must be presented and a final examination passed. It is also required that the student offer either course work or substantial proof of ability to use more than one foreign language.

Major in Art Education: Students admitted to the graduate program in art education are expected to have completed course work equivalent to an undergraduate major in Art Education (in no case less than 18 hours in Art Education and Education, 12 hours in Art History, and 18 hours in Art Studio). Prospective students who do not meet these requirements should seek the counsel of the Program Faculty Committee to make up deficits prior to acceptance into the program. (In addition, candidates must submit for review by the Program Faculty Committee, a portfolio of recent studio work (slides) and/or professional writing and other evidence of professional attainment, along with a 300-500 word statement of interest and/or objectives.)

Work toward the Master's degree is pursued under Plan A (see Requirements for the Degrees of Master of Arts and Master of Sciences, Plan A). Successful candidates for the Master of Arts with a major in art education are to satisfactorily complete: (1) thesis preparation demonstrating substantial research or theoretical inquiry in Art Education; (2) a finished thesis and an oral/written examination; (3) 30 credit hours of graduate course work to be divided as follows: (1) nine to 12 graduate credit hours in art education (excluding A-E 575, 577, 579, or other Art Education courses required for initial certification); (2) nine to 12 graduate credit hours in Art History or Art Studio; (3) the remaining nine graduate credit hours may be taken in related course work in the College of Fine

Arts, the College of Education or elsewhere in the University as well as in the Department of Art.

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Master of Fine Arts

Application for admission to graduate work leading to the degree, Master of Fine Arts, including application for graduate assistantships, must be accompanied by a portfolio of creative work or photographs, or transparencies of such work. This work must be submitted to the Art Department by March 15th. Applicants wishing to be considered for fellowships should apply to The Graduate School and submit portfolios to the Art Department by February 1. In no case will this requirement be waived. Undergraduate art work must be substantially equal in quality, scope, and number of hours to the undergraduate major at the University of Kentucky.

The degree, Master of Fine Arts (M.F.A.), will be awarded on the completion of 45 hours of graduate courses. Of this, 36 hours must be in studio and closely related work; six hours must be in art history, and three hours must be in the Graduate Studio Seminar (A-S 793), which must be taken for three semesters.

The student will designate a major area, with the advice of a senior professor, at the outset of graduate work and will carry at least 12 hours in that area under the guidance of one professor selected as thesis adviser. A foreign language will not be required.

The degree, Master of Fine Arts, will be awarded not solely on the basis of work in formal courses, but also on the basis of creative work resulting in a satisfactory thesis exhibition, and the preparation of a written and photographic record in proper form for submission to the Graduate School. A-S 767 (Studio Thesis Project) to a total of six credits will be required for the preparation of the thesis. Work toward the thesis exhibition will begin at a time determined by the Department.

Candidates for the M.F.A. degree who hold an M.A degree in studio work from another school will be required to complete a year's residence and 18 credits of graduate work at the University, including two semesters of Graduate Studio Seminar (A-S 793) and all other requirements for the degree.

GENERAL COURSES

	501	Basic Museum Training: Historical Art	(3)
502	502	Basic Museum Training: Contemporary	
		Art	(3)

768	Residence Credit for Master's Degree	(1-6)

ART EDUCATION 515 Introduction to Art Therapy (3) 525 The Elderly and the Arts (3) 538 Advanced Arts and Crafts in the Elementary . (3) Topical Studies in Art Education (Subtitle Art in Elementary Schools (3) Art in Secondary Schools (3) Seminar in Art Education (2) Independent Work: Art Education (1-3) Topical Research in Art Education (Subtitle Required)......(3) School and Community Art (3) ART-HISTORY 510 Studies in Ancient Art (3) 520 Studies in Modern Art (3) 550 Selected Topics in the History of

570 Art History and the Artist (3) 580 Historical Techniques of Drawing, Painting, and Printmaking (3) 590 Topical Studies in Art History (3) 592 Aesthetics (3) 594 Art Theory and Criticism (3) 598 Coordinate Study (3) 610 Problems in Ancient Art (3) 620 Problems in Medieval Art (3) 630 Problems in Renaissance Art (3)

780 Independent Work: Art History (3) ART-STUDIO

Problems in Modern Art (3)

Topical Problems in Art History (3)

510	Painting III
511	Painting IV
520	Printmaking III(3)
521	Printmaking IV(3)
530	Advanced Drawing (3)
550	Fiber III
551	Fiber IV
560	Sculpture III
561	Sculpture IV (3)
570	Ceramics III
571	Ceramics IV
595	Independent Work: Art Studio (3)
596	Workshop (1-6)
610	Traitional and Experimental Media
	in Painting (3)
740	Problems in Fiber (3)
750	Problems in Sculpture (3)
767	M.F.A. Studio Thesis Project (1-6)
770	Problems in Ceramics (3)
780	Problems in Design(3)
793	Graduate Studio Seminar (1)
799	Problems in Painting and Printmaking (3)

Behavioral Science

Graduate Faculty: Professors Eugene Gallagher, John Haley, Garth Olde, Marion Pearsall (Director of Graduate Studies), Robert Straus (Chairman). Associate Professors Russell Jones, Thomas Garrity, Philip Moody. Associate Members: Associate Professor H. Jean Wiese and Assistant Professor John F. Wilson.

A program of concentration or a minor in medical behavioral science is offered for doctoral candidates in sociology, anthropology, psychology or other behavioral science disciplines through the Department of Behavioral Science in the Medical Center. The concentration has three objectives:

- 1. Research training in a health-medical setting, designed to afford each student an opportunity to learn the basic skills and approaches to research design, data acquisition, and data analysis, through personalized, supervised participation in one or more research projects. Such training is arranged to include experimental, survey, and casestudy methods, to insure the integration of research training with a student's program of courses and to culminate in a health-related topic for the doctoral dissertation. As far as possible, students in the concentration are provided office space in the Medical Center so that they may have ready access to resources and events.
- An orientation to medical settings, including an enculturation to the social structure, attitudes, beliefs, values and objectives of health personnel and organizations, and the nature of behavioral science research in these areas.
- An orientation to the several behavioral sciences; to their areas of overlap and interrelation as well as to their discrete contents, theories and methods.

Students may elect to minor in medical behavioral science by taking a group of approved courses with the sponsorship and guidance of a designated faculty member.

The concentration is partially supported by a training grant from the National Institute of Mental Health for Research Training in the Social Sciences, under which selected students are provided with traineeship stipends. A limited number of assistantships are also available to qualified students.

527	Society and Health(3)
529	Survey of Medical Anthropology (3)
546	Social Factors in Mental Health (3)
670	Seminar on Role Theory (3)
738	Seminar: Drug use as Deviant Behavior (3)
761	Interpersonal Processes in Critical
	Situations (3)
764	Topical Seminar in Psychological
	Anthropology(3)
765	Research Problems in Medical
	Anthropology(3)
766	Concepts in Medical Sociology (3)
767	Research Problems in Medical Social
	Psychology
772	Topical Seminar in Medical Behavioral
	Science (1-3)

776	Seminar in Dependency Behavior (3)
777	Seminar in Mental Illness Concepts,
	Research and Policy(3)
778	Behavioral Factors in Selected Diseases (3)
779	Behavioral Factors in Death and Dying (3)
790	Research in Medical Behavioral Science (1-6)
500	Special Topics Course (1-3)

Biochemistry

Graduate Faculty: Professors Charles Ambrose, Alfred Hu, John Hutton, Robert Lester (Chairman and Director of Graduate Studies), George Schwert. Associate Professors S. K. Chan, Eric James, Alfred Winer.

Associate Members: Assistant Professors Mary Barkley, Mary Sue Coleman, Robert Dickson, Roger Laine, and Robert Rhoads.

The program of graduate studies in biochemistry is designed primarily for doctoral candidates who plan to pursue a research career in this field. Creative research in biochemistry requires broader training and more extensive laboratory experience than can be achieved at the master's level. Therefore, candidates for the master's degree will be accepted only under unusual circumstances.

As preparation for graduate work in biochemistry, students should have completed courses in chemistry through physical chemistry, in mathematics through the calculus and must have had one year of work in physics and in one of the biological sciences. Although students who have deficiencies in their preparation may be admitted to graduate study in the Department of Biochemistry, the time necessary for completion of their work will necessarily be lengthened. Although programs of study will be fitted to the preparation and interests of individiual students, it is anticipated that most students will take advanced courses in chemistry and in physiology, cell biology, microbiology, zoology or botany.

Inquiries concerning availability of financial support for graduate students should be addressed to the chairman of the department.

401G	Fundamentals of Biochemistry	(3)
501	General Biochemistry	
502	General Biochemistry	
503	Plant Biochemistry	
504	Physical Biochemisty	
517	Experimental Methods in Biochemistry	
610	Biochemistry of Lipids and Membranes	(3)
611	Biochemistry and Cell Biology of	
	Nucleic Acids	(3)
612	Structure and Function of Proteins	
	and Enzymes	
618	Seminar in Biochemistry	(1)

619	Seminar in Biochemistry (1)
640	Research in Biochemistry (1-15)
769	Residence Credit for Doctor's
	Degree (0-12)
780	Topics in Biochemistry (1-3)

Thomas Hunt Morgan School of Biological Sciences

The Thomas Hunt Morgan School of Biological Sciences provides programs in biology leading to the Masters and Doctor of Philosophy degrees. The programs draw upon the various courses and faculty members in the biological sciences. The purpose of the graduate programs is to train participants as well-rounded biologists familiar with the main branches of the biological sciences and the auxiliary fields of mathematics, physics, and chemistry.

A student who receives a degree under the programs also will be sufficiently welltrained in one of the major branches of biology to be able to conduct research in that special field, as well as broadly enough trained to participate in the teaching program of a department of biology. Students will be expected to have a background of course work in the principal areas of biology, calculus and organic chemistry before starting their doctoral program.

Major work under the biological sciences program would be arranged to suit the preparation, needs and interests of the individual student. The work could be, for example in genetics and cytogenetics, ecology and evolution, vertebrate zoology, invertebrate zoology, microbiology, entomology, developmental biology, histology, parasitology, plant physiology, plant morphogenesis, algology, systematic botany, mycology, cellular biology, radiation biology, ultrastructure, etc.

Laboratory facilities and equipment are excellent for doctoral work in all branches of biology. A very good biology library containing over 32,000 volumes, and including many important American and foreign periodicals is available and is supplemented by over 200,000 volumes concerned with biology in the libraries of the College of Agriculture, the College of Medicine and the Departments of Chemistry, Physics, and Geology.

For appropriate courses see the listings in the various areas of biology.

Graduate programs offered within the Thomas Hunt Morgan School of Biological Sciences are Master of Arts or Science and Ph.D. degree program in Biology, and a Master of Science and Ph.D. program in Microbiology. School faculty also participate in a University-wide Plant Physiology program.

Biology

Graduate Faculty: Professors R. W. Barbour, T. C. Barr, W. J. Birge, Branley Branson (Adjunct), S. F. Conti (Director), E. C. Crawford, W. H. Davis, John Harley (Adjunct), J. E. Sisken. Associate Professors J. M. Baskin, J. C. Calkins, Leo Demski, D. O. Harris, Clirector of Graduate Studies), J. J. Just, R. A. Kuehne, W. Meijer, William Martin (Adjunct), N. J. Piscano, D. J. Prior, G. Rosenthal, P.S. Sabharwal.

Associate Members: Assistant Professors, P. Bonner, J. D. Clark, W. S. Cohen, P. Crowley, J. Morgan, J. M. Rawls, G. Uglem.

Emeritus Professors: John Carpenter, James Edney and Herbert Riley.

The Thomas Hunt Morgan School of Biological Sciences provides a program in biology leading to the degree of Master of Arts or Sciences and to the degree of Doctor of Philosophy.

Work on the masters can be either Plan A or Plan B. Plan A is ordinarily required but Plan B is permitted under certain circumstances. Almost all fields of study encompassed by biology are available to the student.

Major work under the Ph.D. program would be arranged to suit the preparation, needs and interests of the individual student. The work could be, for example, in genetics and cytogenetics, ecology and evolution, vertebrate zoology, invertebrate zoology, entomology, developmental biology, histology, parasitology, plant physiology, plant morphogenesis, algology, systematic botany, mycology, cellular biology, radiation biology, ultrastructure, animal physiology, neurobiology, etc.

The Director of Graduate Studies in Biology also serves as Director of the Master of Science and Master of Arts Programs in Biology.

404G	Principles of Genetics	(3)
411G	Models in Mathematical Biology	(3)
451G	Introductory Ecology	(4)
465G	Economic Botany	(3)
476G	General Microbiology	(4)
502	Principles of Physiology Lecture	(4)
503	Experimental Methods	(2)
508	Evolution	(3)
515	General Cell Biology	(3)
516	Plant Cytology	(4)
517	Plant Microtechnique	(3)
522	Independent Work in Zoology	(3)
523	Zoology Seminar	(1)
	Botany Seminar	(1)
525	Special Problems in Botany(1-3)

529	Developmental Biology	(3)
530	Plant Physiology	(3)
531	Laboratory in Plant Physiology	(2)
535	Comparative Neurobiology and Behavior.	(3)
540	General Radiation Biology	(4)
542	Histology	(5)
544	Embryology	(5)
545	Embryology and Morphology of	/91
546	Vertebrates	(3)
310	Morphology of Vertebrates	(2)
547	Embryology and Morphology of	(-/
	Vertebrates	(3)
548	Laboratory Studies of the Embryology	
	and Morphology of Vertebrates	(2)
549	Comparative Endocrinology	(3)
550	Comparative Physiology	(5)
551	Plant Autecology	(4)
552 553	Taxonomy of Vascular Plants	(4)
554	Ichthyology	(4) (4)
555	Vertebrate Zoology	(4)
557	Herpetology	(4)
559	Ornithology	(4)
560	General Entomology	(4)
561	Medical Entomology	(4)
562	External Morphology of Insects	(4)
563	Parasitology	(4)
564	Insect Taxonomy	(4)
565	Limnology	(4)
568	Protozoology	(4)
569 570	Helminthology	(4)
571	Invertebrate Zoology	(4) (4)
573	Mycology	(4)
574	Anatomy of Vascular Plants	(4)
575	Plant Pathology	(3)
576	Industrial Microbiology	(4)
580	Metabolism of Microorganisms	(4)
582	Virology	(3)
585	Pathogenic Bacteriology	(4)
590	Gnotobiotic Methodology	(2)
594	Immunology and Serology	(5)
615	Molecular Biology Advanced Microtechnique	(3)
619	Cytogenetics	(3) (4)
621		1-3)
625	Seminar in Animal Navigation	(2)
630	Experimental Techniques in Plant	
	Physiology	(3)
632	Plant Morphogenesis	(5)
635	Insect Physiology	(4)
639	Research Projects in Biological Modeling.	(3)
640	Biological Effects of Radiation	(3)
645 655	Special Topics in Endocrinology	(2)
660	Vertebrate Natural History	(4) (3)
663	Experimental Parasitology	(4)
665	Insect Ecology and Behavior	(3)
667	Principles of Animal Systematics	(3)
670	Speciation	(3)
672	General Acarology	(4)
673	Experimental Mycology	(4)
678	Statistical Genetics	(3)
690	Bacteriology of Water and Sewage	(4)
694	Bacteriology of Foods	(4)
707 714	Contemporary Topics in Immunology	(3) (4)
714	Microbial Genetics Metabolism of Microorganisms	(4)
718	History of Bacteriology	(2)
720	Microbial Structure and Function	(3)
728	Developmental Genetics	(3)

728 Developmental Genetics. (3)

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732	Mineral Nutrition of Plants (3)
734	
735	Physiology of Growth and Development (3)
	Plant Metabolism
740	Mammalian Radiation Biology (2)
755	Biosystematics (3)
768	Residence Credit for Master's Degree (1-6)
769	Residence Credit for Doctor's
	Degree (0-12)
770	Seminar in Zoology (1)
771	Seminar in Botany(1)
772	Seminar in Microbiology (0-1)
773	Seminar in Plant Physiology (1)
774	Seminar in Genetics(1)
782	Advanced Virology (3)
795	Research in Zoology (1-6)
796	Research in Botany(1-6)
797	Research in Bacteriology (3-6)
798	Research in Bacteriology (3-6)
	768 Residence Credit for the Master's
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	768 Residence Credit for Master's
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	768 Residence Credit for Master's
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Biomedical Engineering

The biomedical engineering program is an option within the Mechanical Engineering Department graduate studies program.

Research programs now underway include the study of physiological responses to environment stress (i.e., acceleration, rotation, etc.), characteristics and modeling of biological tissue and systems, development of instrumentation for biological monitoring, and related problems. Research is conducted in the laboratories of the Medical Center and the College of Engineering. Further information may be obtained by writing to the Director of Graduate Studies, Mechanical Engineering Department.

Business Administration

Graduate Faculty: Professors James H. Donnelly, James L. Gibson, Joseph L. Massie, Jon Shephard. Associate Professors K. R. Balachandran, Philip K. Berger, John J. Bernardo, Andrew Grimes, Joseph Guiltinan, Keith Johnson, Tony McAdams, Martin Soloman, M. Lynn Spruill, (Chairman), Ralph Steuer, Marc J. Wallace (Director of Graduate Studies).

Associate Members: Associate Professor Donald Shannon. Assistant Professors Michael Carpenter, Wesley Jones, Linda Krefting, James Lange, Lawrence Lynch, William Rogers, David E. Upton, Sam White.

Master of Business Administration

The program leading to the Master of

Business Administration degree has two basic objectives: (1) to enable the candidate to acquire an educational foundation contributory to long-range development for socially responsible business administration and (2) to equip the student for professional employment in some functional or other field of business upon completion of the program.

To attain these objectives, the program is designed to provide the student with the appropriate knowledge, understanding, skills and abilities, including:

- An understanding of the processes of business administration and of the methods needed by business administrators when effectively coping with uncertainty.
- A knowledge of the economics of business enterprise and of the dynamic environment and culture in which business firms operate.
- An understanding of quantitative methods of analysis in business decision making, including the use of mathematical, statistical, and accounting approaches.
- A knowledge of organizational relationships and behavior in business enterprises and of ways for promoting effective human relations, including contributions of the behavioral sciences.
- 5. The ability to solve complicated and realistic business problems by utilizing economics, business, and other professional literature and the specialized knowledge of other people, both in and out of the business firm, in order to present these findings effectively in both written and oral reports.
- 6. An understanding of the functional problems involved in operating a business enterprise, such as those pertaining to production, marketing and finance, and a knowledge in depth of the concepts, research findings, and currently useful generalizations within some functional area.

Requirements

- Minimal requirements in order to be considered for admission are a bachelor's degree from an accredited college or university, and the total of a four-year gradepoint average times 200 plus GMAT score must exceed 1000; or total of junior senior grade-point average times 200 plus GMAT score in excees of 1050.
- Since the MBA program is a 30-hour (1 year) program, entrance to the program presumes the following minimal prerequisites: (examples of acceptable courses at the University of Kentucky are given in parentheses):

Principles of Economics (ECO 260 and ECO 261

Principles of Accounting (ACC 201 and ACC 202)

Statistical Method (STA 291 and ECO 391 or STA 670)

Business Finance (BA 345)

Marketing (BA 330)

Management (BA 335)

Introduction to Calculus (MA 123)

Twenty-one of the 30 hours of prerequisite course work may be satisfied by taking BA 600, the M.B.A. module program offered each summer. Contact the M.B.A. program coordinator for details.

BA 636 Research and Report Writing ACC 628 Accounting for Control and Planning BA 637 Administrative Behavior BA 645 Corporate Financial Policy BA 630 Advanced Marketing Management BA 639 Business Policy and Strategy One of the following: BA 652 Production Management BA 650 Management Science I Electives: Six hours of courses giving graduate credit 6	•	Graduate Courses:	Cr	s.
BA 636 Research and Report Writing ACC 628 Accounting for Control and Planning BA 637 Administrative Behavior BA 645 Corporate Financial Policy BA 630 Advanced Marketing Management BA 639 Business Policy and Strategy One of the following: BA 652 Production Management BA 650 Management Science I Electives: Six hours of courses giving graduate credit 6		BA 635 Managerial Economics		3
and Planning				3
BA 637 Administrative Behavior		ACC 628 Accounting for Control		
BA 637 Administrative Behavior		and Planning		3
BA 630 Advanced Marketing Management				
Management		BA 645 Corporate Financial Policy		. 3
BA 639 Business Policy and Strategy 3 One of the following: BA 652 Production Management 3 BA 650 Management Science I 3 Electives: Six hours of courses giving graduate credit 6		BA 630 Advanced Marketing		
One of the following: BA 652 Production Management 3 BA 650 Management Science I 3 Electives: Six hours of courses giving graduate credit 6		Management		3
One of the following: BA 652 Production Management 3 BA 650 Management Science I 3 Electives: Six hours of courses giving graduate credit 6		BA 639 Business Policy and Strategy		3
BA 650 Management Science I				
Electives: Six hours of courses giving graduate credit		BA 652 Production Management		3
graduate credit 6		BA 650 Management Science I		3
Westernandingue grabies in secondos		Electives: Six hours of courses giving		
wearing direction gained as a series a		graduate credit		6
Total 30		Total	3	0

Master of Business Administration with Area Specialization: Six-hour sequences of courses may be approved for those students wishing to specialize beyond the core in the following fields: Marketing, Personnel and Industrial Relations, Finance, Management Science, Managerial Accounting, Managerial Economics, and International Business.

Additional requirements are:

- Residence for at least two semesters at the University of Kentucky as a fulltime student, or its equivalent as a part-time student.
- 2. Minimal average of grade B in all courses attempted for graduate credit after being admitted to Graduate School. Students receiving two grades of C below a B average or failing to bring the grade-point average back up to a B average in one semester will not be permitted to continue the MBA program.
- 3. Successful completion of a comprehensive final examination

Doctor of Business Administration

The basic purpose of the program leading to the Doctor of Business Administration degree is to enable people who are

seeking careers in collegiate business teaching, business research, or business consultation in acquiring a comprehensive, professional education appropriate to their goals.

Objectives:

The Doctor of Business Administration degree is designed for persons who are seeking careers in collegiate teaching, business research, or business consultation. A basic purpose of the program is to develop a broad understanding of business administration, and related behavioral, quantitative and economc disciplines. An appreciation of the administrator's point of view in decision making within an organizational setting, and the development of scientific methods and techniques in research investigations will be emphasized.

Requirements

1. Background Training in Business and Business Related Areas.

The D.B.A. is designed to provide specialization beyond the master's level. The educational background of each candidate will be reviewed by an admissions committee which will identify any deficiencies. In most cases, an M.B.A. from an accredited institution (A.A.C.S.B. accreditation) provides the background.

Applicants with previous graduate credits are evaluated generally according to the following rules, but each case is individually examined. A minimal grade-point average of 3.2 is required on all previous graduate credits. Also, students without GMAT scores must take these exams before admission, with minimal score of 500.

- Core Requirements (21 credit hours):
 Three hours of course work in administrative science
 - BA 735, Administrative Science I
 b. Six hours of course work in research
 BA 762, Research Methodology
 A graduate course in research
 techniques appropriate to major
 interest
 - c. Six hours of course work selected from

ECO 660, Advanced Microeconomic Theory ECO 661, Advanced Macroeconomic Theory

A graduate course directly supporting major research interest

d. Six hours of course work in quantitative analysis

BA 650, Management Science I BA 750, Management Science II

3. Major and Minor Field Requirements:

The major field will consist of at least 12 hours of graduate credit course work. The minor field will consist of at least six hours of graduate credit course work. The currently available fields include:

Accounting

Business Policy

Finance

Human Resources Administration
Management and Organizational Behavior

Management Science

Marketing

In addition, fields from an outside department closely related to the major field, e.g., sociology, statistics, computer science, international economics, my be selected as a minor field. This course work must be approved by the D.B.A. Coordinator of the Department of Business Administration.

- 4. No foreign language is required.
 - Written and oral comprehensive examinations are required in the major and minor fields.
- The dissertation will be based on original research on a significant topic.
 The dissertation will be defended in an oral examination
- 7. Minimal average of grade B for graduate credit and in all courses attempted after being admitted to Graduate School. Students obtaining two grades of C below a B average will be dropped by the department.

445G	Financial Management	(3)
456G		(3)
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537	Contemporary Problems in Industrial	
	Relations	(3)
551	Advanced Business Data Processing and	
		(3)
556	H 🕳 (STREET) : 10 H (STREET)	(3)
584	Financial Markets and Institutions	(3)
585	Principles (1980)	(3)
600	Fundamentals of Business	
	Administration (12)
630	Advanced Marketing Management	(3)
631	Consumer Behavior	(3)
632	Distribution Channel Systems	(3)
633	Quantitative and Statistical Methods in	
	Marketing Decision Making	(3)
635		(3)
636		(3)
637	Administrative Behavior	(3)
638	Comparative International Management .	(3)
639	Business Policy and Strategy	(3)
642		(3)
645		(3)

646	Investment Management (3	()
650	Management Science I (3	()
651	Topics in Optimization	()
652	Production Management(3	()
655	Manpower Administration (3	()
656	International Marketing (3	()
695	Individual Work in Business	
	Administration (1-6	()
730	Seminar in Marketing Theory (3	()
731	Seminar in Consumer Behavior (3	()
732	Seminar in Marketing Management (3	()
735	Administrative Science I (3	()
736	Organizations and External Systems (3	()
737	Organizations and Individual Behavior (3	()
745	Seminar in Financial Theory (3)
746	Seminar in Managerial Finance (3)
747	Decision Models in Finance (3)
750	Management Science II)
751	Seminar in Management Science (3-6	()
761	Seminar in Managerial Economics (3)
762	Research Methodology(3)
763	Research, Design and Analysis (3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's	
	Degree (0-12	()
771	Seminar in Business Administration (3	
772	Organizational Development)
773	Seminar in Management Theory and	
	Policy)
774	Seminar in Human Resource Management (3	
781	Independent Work in Business	
	Administration (1-6	,

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Center for Learning Resources For Allied Health

Through a cooperative program with the College of Education and the Departments of Curriculum and Instruction, Educational Psychology and Counseling, and Higher Education, the Center makes available the Master of Science in Education degree. Also, in these departments and others, the Doctor of Education Degree is available to allied health specialists.

Persons with a baccalaureate degree in an allied health profession, with two years work experience in their discipline and a desire to teach in or administer an allied health education program, and who meet The Graduate School and departmental requirements, are eligible to make application for entry into these graduate programs.

Inquiries should be directed to: Center for Learning Resources for Allied Health, Medical Center Annex 3, University of Kentucky, Lexington, Kentucky 40536.

Chemical Engineering

Graduate Faculty: Professors Robert Grieves (Chairman and Director of Graduate Studies), Richard Kermode, Peter Skelland. Associate Professors William

Conger, Edward Moorhead, Leonard Peters, Thomas Schrodt.

Associate Members: Associate Professor George Crewe. Assistant Professor John Yamanis.

The Department of Chemical Engineering provides programs leading to the M.S. in Chemical Engineering and Ph.D. degrees. For the M.S. in Chemical Engineering, 24 hours of course work plus an acceptable thesis are required (Plan A). In certain exceptional cases, the thesis may be replaced by six additional hours of course work. Unique and highly specialized M.S. programs are available in energy engineering, air quality engineering, and environment pollution control. There is no language requirement for the M.S. in Chemical Engineering. For the Ph.D., a reading knowledge of French, German, or Russian is required.

The doctoral student may specialize in one or more of the following areas:

Atmospheric pollution control
Chemical reactor design
Coal conversion processes
Energy engineering
Environmental engineering
Non-Newtonian fluid mechanics
Process control
Thermodynamics
Transfer processes
Water pollution control

A wide selection of thesis topics is available under the direction of the Chemical Engineering faculty. For further information on financial aid, requirements, and departmental laboratories and facilities, contact the Department Chairman.

505	Analysis of Chemical Engineering
	Problems
515	Air Pollution Control
520	Equilibrium Thermodynamics (3)
530	Transport I
550	Chemical Reactor Design(3)
552	Polymeric Materials(3)
555	Advanced Chemical Engineering Process
	Design I
560	Non-Newtonian Flow and Heat Transfer. (3)
565	Energy Engineering
570	Chemical Separation and Measurement
	for Chemical Engineers
580	Design of Rate and Equilibrium Processes
	for Water Pollution Control (3)

PREREQUISITE FOR GRADUATE WORK: Students desiring to take any of the following courses should have a thorough working knowledge of chemistry, physics and mathematics. For major work, a candidate must hold a bachelor's degree in Chemical Engineering or its equivalent.

15	Advanced Air Pollution Control	(3)
17	Air Sampling and Analysis	(3)

619	Community Health Aspects of Air
	Pollution Control
621	Nonequilibrium Thermodynamics (3)
625	Properties of Gases and Liquids (3)
631	Transport II
633	Diffusional Mass Transfer Operations (3)
635	Staged Mass Transfer Operations (3)
637	Biomedical Mass Transfer(3)
638	Transport Phenomena in Packed and
	Fluidized Beds
642	Advanced Process Control I (3)
643	Advanced Process Control II (3)
650	Advanced Chemical Reactor Design (3)
665	Equilibrium and Rate Processes of
	Coal Conversion(3)
671	Basic Electrode Processes in
	Electrochemical Engineering (3)
680	Biochemical Engineering (3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
771	Seminar
780	Special Problems in Chemical Engineering (3)

Chemical Physics

Directors of Graduate Studies: Audrey L. Companion and Fletcher Gabbard.

The Department of Chemistry and the Department of Physics and Astronomy jointly provide a program in chemical physics leading to the degree of Doctor of Philosophy. Chemical physics is an overlapping area of the fields of chemistry and physics and, because of its relevance to such fields as astrophysics, thermonuclear physics, and biophysics, it currently enjoys a position of considerable esteem at a number of institutions. Experience shows that most exciting progress is made when members of the traditional fields of chemistry and of physics join together to form an operating unit of wide scope without the sacrifice of depth in the specialized areas. Students of either department are encouraged to follow a broader and richer curriculum by crossing departmental boundaries, both in the selection of courses and in the pursuit of independent research. The program encourages exchange of information in the following research components: atomic and molecular theory, atomic and molecular processes, solid state theory and experiments, surface state physics, crystallography, nuclear magnetic resonance, statistical mechanics, biophysics, and mass spectroscopy. Course offerings in chemistry and in physics, including the special offerings in chemical physics (CHE 755 or PHY 755, Topics in Chemical Physics) are listed under the Department of Chemistry and the Department of Physics and Astronomy.

Chemistry

Graduate Faculty: Professors Audrey Companion (Director of Graduate Studies), Paul Corio, William Ehmann, Robert Guthrie, Robert Kiser, Kurt Niedenzu, John Patterson, Donald Sands, Paul Sears, Walter Smith, Jr., William Wagner (Chairman). Associate Professors: Rodney Black, Carolyn Brock, Allan Butterfield, Merle Pattengill, Plucknett, Stanford Smith, Joseph Wilson.

Associate Members: Assistant Professors Thomas Attig, Floyd J. Holler, Douglas Naae, James O'Reilly, Laren Tolbert, Steven Yates

Emeritus Professors: E. V. Brown, E. M. Hammaker and J. R. Meadow

The Department of Chemistry offers the Master of Science and the Doctor of Philosophy degrees. Plan A or Plan B may be used to satisfy the requirements for the M.S. degree. Students may major in areas of chemistry such as analytical, chemical physics, inorganic, organic, physical, and radio-nuclear. All candidates for the Ph.D. degree are required to serve as a teaching assistant for one semester.

A satisfactory reading knowledge of German is required for the M.S. degree. A satisfactory reading knowledge of either French, German or Russian is required for the Ph.D. degree. Foreign language reading requirements may be satisfied by any of the means specified by The Graduate School.

All new graduate students must take proficiency examinations in analytical, inorganic, organic, and physical chemistry. The results of these examinations are used as a guide in establishing the student's program of courses.

4100	Principles of Inorganic Chemistry (3))
4400	Physical Chemistry)
4410	Physical Chemistry Laboratory (2))
4420	Physical Chemistry)
4430	Physical Chemistry Laboratory (3))
4440	Physical Chemistry)
4900	Chemistry for High School	
	Teachers)
510	Advanced Inorganic Chemistry (3))
512	Inorganic Chemistry Laboratory (3))
520	Radiochemistry (3))
521	Radiochemistry Laboratory (1-2))
522	Instrumental Analysis)
532	Spectrometric Identification of Organic	
	Compounds)
533	Qualitative Organic Analysis (2))
538	Principles of Organic Chemistry (3))
547	Advanced Physical Chemistry I (3))
548	Advanced Physical Chemistry II (3))
550	Physiological Chemistry (4))
552	Physiological Chemistry (4))
572	Seminar)
580	Topics in Chemistry (2))
582	Chemical Literature (1))
602	Short Topics in Chemistry (1-3))

910	Chemistry of the I ransition
	Metals
612	Inorganic Chemistry of the
	Non-Metals
616	Nuclear Chemistry(3)
625	Optical Methods of Analysis (3)
626	Advanced Analytical Chemistry (3)
633	Advanced Organic Chemistry (3)
635	Advanced Organic Chemistry (3)
640	Electrochemistry (2)
645	Chemical Thermodynamics (3)
646	Chemical Kinetics (3)
647	Quantum Chemistry (3)
710	Topics in Inorganic Chemistry (2-4)
714	Non-Aqueous Solutions(2)
720	Electrochemistry Methods of
	Analysis
726	Topics in Analytical Chemistry (1-3)
736	Topics in Organic Chemistry (2-4)
743	Molecular Structure (3)
744	Statistical Thermodynamics (3)
746	Topics in Physical Chemistry (2-4)
747	Advanced Quantum Chemistry (3)
755	Topics in Chemical Physics (Subtitle
	Required)(3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
776	Graduate Seminar (1)
780	Individual Work in Chemistry (1-5)
790	Research in Chemistry (1-5)

610 Chemistry of the Transitio

Civil Engineering

Graduate Faculty: Professors S. F. Adams, J. A. Deacon (Chairman), J. A. Dearinger, V. P. Drnevich, H. Gesund, B. O. Hardin, Y. H. Huang, J. W. Hutchinson, D. Kao, R. A. Lauderdale, R. S. Mateer, D. J. Wood, F. D. Wright. Associate Professors E. G Foree (Director of Graduate Studies), J. G. Rose, S. T.

Associate Members: Assistant Professors R. C. Howell,

The Department of Civil Engineering offers the Master of Science in Civil Engineering (Plan A and Plan B available) Master of Civil Engineering (Plan B), and Ph.D. with specialization in the following

Fluid mechanics and applied hydraulics Geotechnical engineering Rock mechanics and mining engineering Structural engineering Surveying and photogrammetry (M.S. only) Transportation engineering Water quality, and water resources and

environmental engineering These programs utilize courses from other departments and such inter-departmental programs are encouraged. Engineering Mechanics, Mechanical Engineering, Chemical Engineering, Agricultural Engineering, Mathematics, Geology, Biology, and Chemistry are some of the departments whose offerings contribute to the programs in Civil Engineering.

In addition to satisfying general Graduate School and College of Engineering admissions requirements, applicants for admission to the M.S.C.E., M.C.E., and Ph.D. degree programs in Civil Engineering must have been awarded a Bachelor of Science degree from an engineering program accredited by the Engineers' Council for Professional Development. This requirement may be waived for M.S.C.E. and Ph.D. applicants who have been awarded bachelors degrees other than engineering or from unaccredited engineering programs (including those offered by foreign institutions) if the applicant has received an acceptable score on the Advanced Engineering Test of the Graduate Record Examination. Students with undergraduate majors not in engineering must also take a certain number of undergraduate remedial courses.

Neither the M.S.C.E. degree nor the Ph.D. degree in Civil Engineering will be conferred unless the candidate has successfully completed, during his undergraduate and/or graduate careers, at least one basic course in at least four of the following seven areas: civil engineering materials, fluid mechanics, geotechnical engineering, surveying, structural or solid mechanics, transportation engineering, and water

quality engineering.

The Department of Civil Engineering has many well equipped laboratories with active research programs in most areas. The research programs provide financial assistance for graduate students. In addition financial assistance is also available through teaching assistantships and a limited number of traineeships, fellowships and scholarships.

Additional information about the graduate program in Civil Engineering can be obtained by writing the Director of Graduate Studies, Department of Civil Engine-

425G	Soil Mechanics	(3)
485G	Design of Timber Structures, Formwork	
F	and Falsework	(3)
487G	Steel Structures	(3)
489G	Design of Structures	(3)
492G	Reinforced Concrete	(3)
515	Advanced Surveying	(3)
523	Photogrammetry	(3)
528	Geotechnical Engineering	(3)
529	Intermediate Fluid Mechanics	(3)
540	Pavement Analysis and Design	(3)
543	Development of Transportation Facilities.	(3)
545	Civil Engineering Materials II	(3)
550	Engineering Hydraulics	(3)
553	Hydrology	(3)

554	Hydraulic Structures (3)
555	Engineering Economy (3)
559	Water Quality Control Facilities Design (3)
568	Water Quality Control Laboratory I (3)
580	Advanced Structural Mechanics (3)
Stude shou chem	REQUISITE FOR GRADUATE WORK: ents desiring to take any of the following courses ld have a thorough working knowledge of histry, physics and mathematics. For major t, a candidate must hold a bachelor's degree in
	Enginering or its equivalent.
599	Topics in Civil Engineering (2-3)
621	Terrain Analysis (3)
623	Finite Element Applications in
	Engineering(3)
624	Experimental Methods in Soil Mechanics . (3)
625	Advanced Soil Mechanics (3)
626	Groundwater and Seepage (3)
628	Advanced Geotechnical Engineering (3)
629	Soil Dynamics
635	Applied Statistical Methods in Water
	Resources
639	Air Transport Engineering (3)
640	Highway Administration, Economics and
	Finance
641	Highway Traffic Characteristics (3)
643	Urban Transportation Planning (3)
644	Operational Effects of Geometrics in
011	Transportation
645	Highway Design, Construction and
040	
646	Multidisciplinary Accident Investigation (3)
040	
	and Reconstruction (3) Traffic Laws, Ordinances and Controls (3)
648	
652	
653	Stormwater Modeling(3)
655	Water-Resources Planning (3)
660	Advanced Water Quality Control
	Facilities Design(3)
662	Fundamentals of Water Quality Control I. (3)
663	Water Quality Control Laboratory II (3)
664	Fundamentals of Water Quality Control II (3)
669	Water Quality in Surface Waters (3)
674	Mechanics of Liquid Flow in Pipes (3)
678	Fluid Dynamics of Multiphase Systems (3)
681	Dynamics of Structures
682	Experimental Structural Analysis (3)
683	Optimum Design in Civil Engineering (3)
686	Advanced Metal Structures
691	Advanced Reinforced Concrete Theory (3)
692	Slab and Folded Plate Structures (3)
693	Shell Structures
694	Advanced Structural Analysis I (3)
695	Advanced Structural Analysis II (3)
768	Residence Credit for Master's Degree (1-6)
769	Residence Credit for Doctor's Degree (0-12)
780	Special Design Problems in Civil
	Engineering (1-6)
790	Special Research Problems in Civil

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Mining Engineering

The program leading to the degree of Master of Science in Mining Engineering is offered through the Department of Civil Engineering. The objectives of this program are to provide an advanced level of applied science for use in the mining industry and to offer specified topics for re-

search specialization. Twenty-four credit hours of course work plus an acceptable thesis (Plan A) or 30 credit hours of course work and reports on several research topics (Plan B) are required to fulfill program requirements.

Enrollment in the M.S. Min.E. degree program is open to qualified applicants with an undergraduate degree in Mining Engineering or other engineering and science fields. Persons with undergraduate degrees in fields other than Mining Engineering are required to make up deficiencies in undergraduate Mining Engineering courses.

Current research areas with applications to coal mining include the following: rock mechanics and ground control, operations research, mine ventilation, methane drainage, coal preparation, and mineral economics. In addition to the graduate courses in Mining Engineering, graduate courses in Civil Engineering and other disciplines may be used to satisfy degree requirements providing they are appropriate to the student's program of study.

Additional information about the graduate program in Mining Engineering can be obtained by writing the Director of Graduate Studies, Department of Civil Engineering.

MIN	451G	Physical Properties of Rock (2)
MIN	551	Rock Mechanics(3)
MIN	562	Mine Design Project (3)
MIN	572	Advanced Coal Preparation (3)
MIN	581	Mine Valuation (3)
MIN	599	Topic in Mine Engineering (2-3)
MIN	634	Advanced Mine Engineering (3)
MIN	636	Advanced Rock Mechanics (3)
MIN	768	Residence Credit for the Master's
	Degre	e
MIN	771	Seminar in Mining Engineering (1)
MIN	780	Special Problems in Mining
	Engin	eering (1-6)

Classical Languages and Literatures

Graduate Faculty: Professors Hubert Martin, Jr. (Chairman), Lawrence Thompson. Associate Professors Jane Phillips and Louis Swift (Director of Graduate Studies).

Associate Member: Assistant Professor Robert Rabel.

The Department offers the M.A. degree under both Plan A and Plan B. While there are no specific course prerequisites for admission, a strong undergraduate concentration in at least one Classical language is recommended. The Department offers a limited number of teaching assistantships.

Each student will normally elect either Latin literature, Greek literature, or a combination of the two as an area of concentration. Individualized course programs, however, are arranged for students who are preparing themselves for secondary school teaching or who have an additional interest in a field other than the Classics. A comprehensive examination is required of all degree candidates; and, except under special circumstances, they are expected to demonstrate either a reading knowledge of a modern foreign language or a substitute skill approved by the Department. Most students complete their M.A. program in an academic year and a summer.

The University maintains an affiliation with the American School of Classical Studies at Athens and the American Academy in Rome, and the meetings of the Kentucky Society of the Archaeological Institute of America are regularly held on the University of Kentucky campus.

LATIN LANGUAGE COURSES

500	Latin Lyric Poetry	(3)
501	Lucretius and Epicureanism	(3)
502	Roman Historical Writers	(3)
503	Cicero	(3)
504	Roman Satire	(3)
505	Virgil and the Roman Epic	(3)
506	Medieval Latin	(3)
507	Roman Drama	(3)
511,	512 Studies in Roman Philology (3	ea.)
603	Studies in Latin Literature of the Republic	(3)
604	Studies in Latin Literature of the Empire.	(3)
	GREEK LANGUAGE COURSES	
552	Greek Epic and Lyric Poetry	(3)
553	Greek Philosophical Literature	(3)

552	Greek Epic and Lyric Poetry (3)
553	Greek Philosophical Literature (3)
556	Greek Dramatic Literature (3)
557	Greek Historical Literature(3)
561,	562 Studies in Greek Philology (3 ea.)
601	Studies in Greek Literature I(3)
602	Studies in Greek Literature II (3)

CLASSICS IN TRANSLATION

	Children III IIIIII	
424G	Greek Literature in Translation	(3)
425G	The Heroic Ideal: Greek and Roman	
]	Epic	(3)
426G	Classical Drama: Tragedy and Comedy	
j	in Greece and Rome	(3)

CLASSICS IN GENERAL

480G	The Classical Tradition in Manuscript	
		(3)
509	Roman Law	(3)
530	The Teaching of Latin	(3)
580	Independent work in Classics	(3)
600	Bibliography of Classical Scholarship	(3)
605	Comparative Greek and Latin Grammar ((3)
768	Residence Credit for the Master's Degree (1-	-6)
790	Research in the Teaching of Classical	
	Languages	(3)

Clinical Nutrition

Graduate Faculty: Professor Paul Thornton (Director of Graduate Studies).

Associate Member: Associate Professor Willena Beagle.

The Master's Degree Program in Clinical Nutrition provides an opportunity for graduate study in the fundamentals of clinical nutrition. Plan B is offered. The curriculum is designed specifically to provide practical experience in nutrition in the treatment of illness and the maintenance of health and to deepen the student's foundation in the sciences fundamental to nutrition. It is intended primarily for those who wish to undertake careers in dietetics and clinical nutrition in university hospitals, large community hospitals, and medical centers; for those who intend to teach in the field of clinical dietetics; and for those who plan careers as members of a research team in clinical nutrition and metabolism.

The program is interdisciplinary in nature. The faculty is drawn from the basic sciences as well as the clinical departments—medicine, pediatrics, community medicine. The University Hospital and its related clinical facilities will be used for clinical instruction.

A minimum of 30 credit hours will be required to complete the degree. No language is required.

I. Required Courses

	Crs	Sem
CNU 601 Clinical Nutrition	4	I
CNU 602 Current Trends in		
Nutrition	1	II
CNU 701 Advanced Clinical		
Nutrition	2	I
CNU 702 Advanced Clinical		
Nutrition	2	II
CNU 780, 781, 782		
Independent Study	l ea.	I,II,S
Total	12	

II. Suggested courses to complete the 30-hours' credit. (In consultation with the program director or adviser the student will select certain of the courses listed.)

BCH	401	Fundamentals of Biochemistry	3	I
CNU	502	Principles of Human Physiology,		
		same as PGY 810	5	11
		or		
CNU	504	Principles of Human Physiology		
		Lectures	4	11
ASC	534	Chemistry of Animal Products	4	
BSC	772	Topical Seminar in Medical		
		Behavioral Science	1-3	II
Elect	ives s	ufficient to complete 30 credits as re	quir	ed
502	Prin	ciples of Human Physiology		(5)

504	Principles of Human Physiology Lectures	(4
601	Clinical Nutrition	(4
602	Current Trends in Nutrition	()
701	Advanced Clinical Nutrition	(2
702	Advanced Clinical Nutrition	(2
780	Independent Study	(1
781	Independent Study	(1
782	Independent Study	(1

Clinical Pastoral Counseling

Students wishing to pursue graduate studies through the Department are referred to the Department of Educational Psychology and Counseling, College of Education. Completion of Masters level work in a counseling program is required of those seeking certification as a Fellow of the American Association of Pastoral Counselors. Students wishing further information are invited to consult the Department Chairman.

501 Perspectives in Religion and Health (3)

Communication

Graduate Faculty: Professors Robert Bostrom, Lewis Donohew, Ronald Farrar, Robert Murphy (Director of Graduate Studies), Joseph Ripley, Ramona Rush (Dean), Bruce Westley. Associate Professors John Baseheart (Chairman), Leonard Tipton, Norman Van Tubergen.

Associate Member: Assistant Professor Phillip Palmgreen.

The faculties of the department of Communication and the School of Journalism offer a program leading to the Master of Arts degree. Emphasis of the program is on the study of communication behavior. It includes study of the cognitive system and other components of an individual's communication system, interpersonal communication in small groups, and communication at the mass or social system level. The program is designed to serve the needs of students whose goals may include teaching and academic research, professional research, or professional work in the mass media. Students with no previous work in a communication area may be required to take from five to 10 hours of undergraduate work without graduate credit.

All students will be required to take nine core hours consisting of Proseminar in Communication (COM 601), Communication Theory (COM 651), and Communication Research Methods (COM 665), plus Statistics 670 or its equivalent as determined by the Director of Graduate Studies. A total of 30 hours of graduate level course credit is required, plus a re-

search submission or thesis. The research submission may follow one of four tracks:

- 1. Academic Research (Pre-Ph.D.) Thesis
- 2. Professional Research—Thesis or research
- 3. Professional management or message preparation Thesis or position paper
- 4. Academic teaching below university level— Thesis or summary and evaluation of research on a given topic

Additionally, it is required that a minimum of 18 hours of the total 30 must be at the 600 level or above.

Students may elect, with approval of their adviser, to work under any one of the four tracks listed above. After completion of the core courses students have 18 elective hours which they may take inside or outside the Department of Communication.

Near the end of their last semester, students will take an oral comprehensive examination covering the area represented by their thesis/research submission and the core area.

Courses in Communication which are available for graduate credit include:

COMMUNICATION

550	Introduction to Communications Research	(3)
551	The Communications Process	(3)
553	Mass Communication and Social Issues	(3)
554	Seminar in Communications	(2)
581	Communication Processes in Small Groups	(3)
582	Persuasion	(3)
601	Proseminar in Communication	(3)
605	Introduction to Information Science	(3)
607	Evaluating and Communicating	
	Information	(3)
608	Mass Communications and Society	(3)
614	Information Storage and Retrieval Systems	(3)
615	Information Systems Design	(3)
650	Signs and Sign Behavior	(3)
651	Communications Theory	(3)
665	Communications Research Methods	(3)
705	Seminar: Information Sciences	(3)
721	Seminar in Intrapersonal Communication	(3)
730	Seminar in Mass Media and Public Policy.	(2)
731	Seminar in Interpersonal Communication	(3)
741	Seminar in Multi-Actional	
	Communication	(3)
768	Residence Credit for the Master's Degree . (1-6)
781	Directed Study in Communication (1	1-6)

Courses in related program areas, such as journalism, speech, or telecommunication, may be drawn upon as appropriate, depending upon the student's emphasis as worked out with the adviser. Courses in the above areas are:

JOURNALISM

501	News Reporting	(3)
503	Copyreading and Editing	(3)
504	Telesystems	(3)

search	505	Telecommunications Program Poli
acks:		Feature Writing
Thesis	509	
esearch		Editorial Writing
cocuren	513 521	Supervision of High School Public Telecommunications Regulations.
ge prep-	527	The Public Affairs Program
	531	
iversity	535	History of Journalism
luation	537	Seminar in Public Opinion
8 10.75		Reporting Public Affairs
	541	Public Relations
mini-	543	Advertising Regulation
t be at	563	Advertising Procedures
1	567	Broadcast Advertising
val of	575	Typography
of the	579	Proseminar in Radio and Televisio
oletion	598	Telecommunications Topical Semi
8 elec-	599	Advanced Writing for the Mass Me
ide or		SPEECH
unica-	500	Speech Analysis and Perception
	583	
r, stu-	584	Teaching of Speech
ve ex-	585	
sented	586	American Public Address since 186
nd the		Oral Interpretation of Drama Direction of Forensic Activities
		Studies in Ancient and Medieval R
h are	688	Studies in Renaissance and Modern
		Rhetoric
	780	
	782	Special Topics in Speech
rch (3)		TELECOMMUNICATION
(3)	500	Telecommunications Audience An
(3)	501	
(2)	504	Telesystems
ups (3)	505	Telecommunications Program Poli
(3)	507	The Public Affairs Program
(3)		Broadcast Advertising
683	511	
(3)	512	Teletectonics
(3)		Telecommunications Topical Semi
ems (3)	333	arriavel sulvebrace bes se
(3)		Community Healt
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(3)	Grad	duate Faculty: Professor Joe Fred Sills
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on (3)		The Master of Science in Pub.
cy. (2)		been discontinued. Persons
on (3)		graduate education in Co
(3)		alth should contact the Depar
(3) e. (1-6)	rect	ely, at the happing a most life and i
. (1-6)	500	Public Health Sanitation
	501	Public Health
such	511	Independent Study in Community

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		100
521	Telecommunications Regulations	(3)
527	The Public Affairs Program	(2)
531	Law of the Press	(3)
535	History of Journalism	(3)
537	Seminar in Public Opinion	(3)
539	Reporting Public Affairs	(3)
541	Public Relations	(3)
543	Advertising Regulation	(3)
561	Newspaper and Magazine Advertising	(3)
563	Advertising Procedures	(3)
567	Broadcast Advertising	(3)
575	Typography	(2)
579	Proseminar in Radio and Television	(2)
598	Telecommunications Topical Seminar	(2)
599	Advanced Writing for the Mass Media	(3)
	SPEECH	
500	Speech Analysis and Perception	(3)
583	Studies in Argumentation	(3)
584	Teaching of Speech	(3)
585	American Public Address to 1865	(3)
586	American Public Address since 1865	(3)
588	Oral Interpretation of Drama	(3)
589	Direction of Forensic Activities	(3)
687	Studies in Ancient and Medieval Rhetoric.	(3)
688	Studies in Renaissance and Modern	
	Rhetoric	(3)
780	Directed Studies	(3)
782	Special Topics in Speech	(3)
	TELECOMMUNICATION	
500	Telecommunications Audience Analysis	(3)
501	Telecommunications Regulations	(3)
504	Telesystems	(3)
505	Telecommunications Program Policies	(2)
507	The Public Affairs Program	(2)
510	Broadcast Advertising	(3)
511	Telecommunications Instructional Systems	(3)
512	Teletectonics	(3)
530	Pro-Seminar in Radio and Television	(2)
599	Telecommunications Topical Seminar	(2)
	usiedge and correctly develope	
	Community Health	

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lic Health interested ommunity rtment di-

500	Public Health Sanitation (3)
501	Public Health
511	Independent Study in Community
	Health (1-3)
515	Communicable Diseases
520	Mental Hygiene(3)
521	Community Health (3)
522	School and Community Health (2)
600	Epidemiology(3)
603	Public Health Records (2)
604	Maternal and Child Health (2)
612	Public Health Administration (3)
613	Public Health Administration (2)
618	Vital Statistics

619	Vital Statistics .											(2)
770	Seminar											(1)

Computer Science

Graduate Faculty: Professors Thaddeus B. Curtz, Forbes D. Lewis (Chairman), A. C. R. Newbery (Director of Graduate Studies), Henry Thacher, Jr. Associate Professors Ronald Alter, Frank Brown, Johnson M. Hart, Michael C. McCord, Garth Olde.

Associate Members: Assistant Professors Anthony Baxter, Chung Wang.

The Department of Computer Science grants the M.S. degree.

In order to be admitted, candidates who meet the University requirements must present the calculus and the knowledge of a higher level programming language such as FORTRAN, COBOL, PL/I or ALGOL. In addition, to enter the program without being required to take additional undergraduate training, the candidate is expected to have completed four of the following at the undergraduate level:

An assembly language programming course. A course in discrete mathematics or data structures.

A course in linear algebra. A course in logic or logical design. A course in numerical analysis. A course in probability or statistics.

Students who enter the program having undergraduate credit for fewer than four of the listed items will be required to take appropriate steps to establish competence in a minimum of four.

The Master's degree is offered under both Plans A and B. However, generally the Department encourages the use of Plan A. Students are required to establish competence in one modern foreign language and to complete at least two-thirds of their course work in approved courses within the Department which must include the CS Problem Seminar.

An oral examination is required of all candidates. Plan B students also have to take a comprehensive written examina-

415G Graph Theory......(3)

416G	Principles of Operations Research I	(3)
420G	Algorithmic Languages and Compilers	(3)
421G	Elementary Numerical Analysis I	(3)
445G	Computing and the Humanities	(3)
502	Use and Management of Mini-Computers.	(3)
505	Data Base Management Systems	(3)
510	Discrete Computer Mathematics I	(3)
515	Study of Computer Arithmetic	(3)
520	Fundamentals of Programming Languages	(3)
525	Analog and Hybrid Computer Techniques	(3)
530	Computational Methods	(3)
532	Finite Precision Arithmetic	(3)

538	Elementary Numerical Analysis II (3)
540	Systems Simulation
541	Advanced Compiler Design I (3)
550	Introduction to Coding Theory (3)
560	Non-Numerical Applications of
	Computers
570	Computers and Programming Systems (3)
575	Formal Language Theory (3)
585	Intermediate Topics in Computer Science. (3)
605	Advanced Information Processing (3)
611	Discrete Computer Mathematics II (3)
612	Independent Work in Computer Science (1-3)
620	
020	Numerical Approximation and
coo	Curve-Fitting(3)
622	Numerical Linear Algebra (3)
630	Numerical Evaluation of Transcendental
	Functions(3)
631	Error Analysis and Certification (3)
641	Advanced Compiler Design II (3)
650	Problem Seminar(3)
660	Artificial Intelligence
670	Natural Language Processing (3)
675	Theory of Computation
680	Seminar in Computer Science (2)
682	Switching Theory (3)
683	Automata Theory (3)
685	Special Topics in Computer Science (3)
687	Special Topics in Software
689	Special Topics in Numerical Computing (3)
690	Advanced Programming Systems I (3)
691	Advanced Programming Systems II (3)
768	Residence Credit for Master's Degree (1-6)

Crop Science

Graduate Faculty: Professors R. C. Buckner, G. B. Collins, (Director of Graduate Studies), D. L. Davis, V. C. Finkner, A. J. Hiatt, M. J. Kasperbauer, P. D. Legg, G. W. Schneider, N. L. Taylor, T. H. Taylor, B. A. Thielges. Associate Professors Jack Buxtom, P. L. Cornelius, D. B. Egli, D. Knavel, C. G. Poneleit, C. Rieck, D. M. Tekrony. Assistant Professor S. B. Car-

Associate Members: Professor J. H. Smiley (Extension). Associate Professors M. J. Bitzer, A. J. Powell (Extension). Assistant Professors R. M. Hayes, D. A. Reicosky, Wayne Vian.

Emeritus Professors: W. G. Duncan, E. N. Fergus, J. F. Freeman, W. C. Templeton, G. T. Webster.

The Crop Science graduate program offers graduate work leading to the Master of Science, Master of Science in Agriculture, and the Doctor of Philosophy degrees with options in plant breeding and genetics, crop ecology and management, turf management, crop physiology, seed technology and weed science. For the M.S. degree, 24 hours of course work plus an acceptable thesis are required (Plan A). In certain exceptional cases, the thesis may be replaced by six additional hours of course work. Work leading to advanced degrees must conform to the general rules and regulations of The Graduate School. A reading knowledge of one foreign language is required for the Ph.D. degree.

Individual programs are developed to include a strong course work component and a meaningful research experience. A strong undergraduate background in the agricultural and biological sciences is required of all degree candidates.

406G	Plant Breeding (3
502	Ecology of Economic Plants
510	Ecology and Utilization of Grassland (4)
515	Turf Management(3)
554	Advanced Crop Science (3)
556	Seed Technology (3)
560	Soil-Plant Relationships (3)
599	Special Problems in Agronomy (1-4)
619	Cytogenetics
630	Experimental Techniques in Plant
	Physiology
658	Advanced Weed Science (3)
666	Advanced Plant Breeding (3)
678	Statistical Gentis
697	Special Topics in Crop Science (1-3)
730	Grassland Research (3)
732	Mineral Nutrition of Plants (3)
734	Physiology of Growth and Development (3)
736	Phylogeny of Cultivated Plants (3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
	Agronomy Seminar (1)
	Research in Agronomy (1-4)

Curriculum and Instruction

Graduate Faculty: Professors Ronald Atwood (Director of Graduate Studies), Harry Barnard, George Denemark, James Moore, Theodore Mueller, Leland Smith. Associate Professors Virginia Atwood, Lowell Eberwein, Phil Nacke, William Peters, (Chairman), Kathy Thornburg.

Associate Members: Associate Professors Frank Colton, Assistant Professors Jacques Benninga, Frank Bickel, Connie Bridge, Ernest Middleton, Andrew Robinson, Truman Stevens, Diana Wearne, Argene Wilson.

The Department of Curriculum and Instruction offers a wide range of graduate programs leading to the Master of Arts in Education, Master of Science in Education (Plan A or Plan B available), Specialist in Education, and Doctor of Education degrees. These programs are designed to prepare specialists for a variety of roles in curriculum and instruction including teaching, supervising, and coordinating subject matter areas at the elementary, junior high, senior high, and junior college level. The specialist and doctoral programs prepare leaders for both public schools and institutions of higher learning. Graduate specialization is available in a wide range of areas.

MASTER OF ARTS IN EDUCATION (ELEMENTARY EDUCATION OPTION)

For a Master of Arts in Education, a minimum of 12 semester hours of graduate work shall be selected from at least three of the following areas of professional education. The courses, which most reflect the program's priorities, are selected with the advisor's approval. The program qualifies teachers for a Standard Certificate if they have completed the four-year undergraduate curriculum.

Area I. Research Methodology EDP 522, EDP 656, and EDP 657. Area II. The Psychology of Learning EDP 548, EDP 610, EDP 611, and EDP 658.

Area III. Foundations in Education EDF 640, EDF 645, EDF 650, EDF 651, EDF 652, EDF 655, EDF 661 and EDF 665.

Area IV. A seminar in Instruction Devoted to the Method and Materials of Teaching. A general or specific course in methods and materials may be taken to meet this require-

Area V. A General Study of Curriculum Development.

EDC 712, and EDC 732.

Area VI. Advanced Study in Human Growth and Development.

EDP 600, EDP 601, and EDP 759

Area VII. Advanced Study in Reading (required unless waived on basis of previous advanced study in reading)

EDC 540, EDC 619, EDC 620, EDC 641, and EDC 642.

Other course requirements, including 12 semester hours outside of education, are met through courses chosen with the adviser's approval.

MASTER OF ARTS IN EDUCATION (SECONDARY EDUCATION OPTION)

For a Master of Arts in Education, a minimum of 12 semester hours of graduate work shall be selected from at least three of the following areas of professional education. The courses, which must reflect the program's priorities, are selected with the adviser's approval. The program qualifies teachers for a Standard Certificate if they have completed the four-year undergraduate curriculum.

Area I. Research and Methodology EDP 522, EDP 656, and EDP 657. Area II. The Psychology of Learning EDP 548, EDP 610, EDP 611, and EDP 658. AREA III. Foundations in Education EDF 640, EDF 645, EDF 650 EDF 651, EDF 652, EDF 655, EDF 661 and EDF 665.

Area IV. A Seminar in Instruction Devoted to Methods and Materials of Teaching A general or specific methods and materials course may be taken to meet this requirement.

Area V. A General Study of Curriculum Development

EDC 714, EDC 717, EDC 732, and EDC 735. Area VI. Advanced Study in Human Growth and Development

EDP 600, EDP 601, and EDP 759.

Area VII. Advanced Study in Reading EDC 540, EDC 643, EDC, 646, EDC 619, and EDC 620.

Other course work, including 12 semester hours outside of education, is chosen with the adviser's approval.

MASTER OF SCIENCE IN EDUCATION (SECONDARY EDUCATION OPTION)

The general requirements for the Master of Science in Education, secondary education option, are the same as those for the Master of Arts in Education. However, the Master of Science in Education may be granted only to those students whose work outside the College of Eduation includes at least 12 semester hours in mathematics and/or science.

MASTER OF SCIENCE IN EDUCATION (CLINICAL AND COLLEGE TEACHING OPTION)

The clinical and college teaching option is a 36-semester hour program designed for individuals who are not seeking certification but wish to develop their instructional knowledge and curricular development skills in order to maximize the acquisition of knowledge and competencies of students outside K-12 school settings. Persons choosing this option are frequently preparing for instructional responsibilities in health-related clinical situations or junior colleges.

Nine of the 18 hours required in education must be taken in the Department of Curriculum and Instruction. At least 12 hours must be taken outside the College of Education. Specific programs are planned with the approval of the Director of Graduate Studies.

MASTER OF ARTS IN EDUCATION (READING)

Requirements for a Master of Arts in Education with reading as a field of con-

centration must meet the specifications for a Master of Arts in Education, Plan B. The requirements must also be in conformity with the general requirements for the Master of Arts in Education (Elementary), or the Master of Arts in Education (Secondary).

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In addition to the previously mentioned requirements, a graduate student in elementary or secondary education who wishes to specialize in the area of reading instruction must meet the Kentucky certification guidelines for endorsement as a "reading specialist." This endorsement will be added to a classroom teaching certificate upon completion of a master's degree program with emphasis in reading which follows a specified preparation. The guidelines for this endorsement are as follows:

1. The prerequisites shall include:

 A teaching certificate based upon the completion of a four-year program of preparation.

 The completion of an approved master's degree program with emphasis in reading following the curriculum guidelines.

c. A minimum of three years of successful classroom teaching; however, one year of equivalent work which includes clinical experience may be substituted for one year of classroom teaching.

The endorsement for reading specialists shall be valid for the same teaching level as the basic teaching certificate held

3. The curriculum shall include a minimum of 30 semester hours preparation according to the following distribution:

a. A minimum of 12 semester hours credit in graduate level reading courses to include EDC 619, EDC 620, EDC 641 or EDC 643 and an additional reading course at the 600 or 700 level.

b. A minimum of six semester hours credit in education courses selected from the alternatives specified under two different areas (I through VI) as listed in the requirements for the Master of Arts in Education, (Elementary), or the Master of Arts in Education, (Secondary).

c. A minimum of 12 semester hours credit outside the College of Education. These courses must be taken from one or more of the following areas: Sociology, Speech and Hearing, Learning Theories, Perception, Communication, Linguistics Literature for Children (for elementary majors), or Literature for Adolescents (for secondary majors), Personality, Mental Hygiene, Tests and Measurements, Child or Developmental Psychology (for elementary majors) or Adolescent or Developmental Psychology (for secondary major)

	chology (for secondary major)
500	Clinical and Laboratory Teaching (4)
501	Clinical and Laboratory Teaching (4) Teaching Internship (3-12)
511	Special Topics in Early Childhood
	Education
513	Teaching English as a Second Language (3)
514	Test Materials and Methods(3)
521	Materials and Methods in Teaching
	Mathematics in Secondary School (3)
522	Materials and Methods in Teaching Social
	Studies in the Secondary School (3)
524	Materials and Methods for Teaching
	Science in the Secondary School (3)
525	Materials and Methods of Teaching English
	in the Secondary School
533	Teaching Reading in the Secondary School (3)
534	Reading and Study Skills in English (3)
538	Advanced Arts and Crafts in the
	Elementary School
539	Elementary Curriculum
540	Problems in Teaching Reading (3)
542	Children's Literature
543	Teaching in the Kindergarten (3)
544	Utilization of Educational Media (3)
545	Preparation of Instructional Materials (3)
546	Introduction to Early Childhood
	Education
549	Sociological Aspects of Mass
	Communication(3)
550	Teaching the Culturally Different (3)
552	Modern Educational Problems (3)
562	Modern Educational Problems (3)
563	Modern Educational Problems
	(General Elementary Curriculum) (3)
564	Modern Educational Problems
	(General Secondary Curriculum) (3)
565	Modern Educational Problems
	(General Curriculum)
572	Modern Educational Problems
	(Vocational Education)
575	Modern Educational Problems
	(Unclassified)(3)
576	Modern Educational Problems
	(Unclassified)(3)
596	Science in the Elementary School (3)
600	Workshop in Reading (1-3)
606	Instructional Television in the Classroom. (3)
607	Basic Instructional Design (1-3)
608	Applications of Instructional Design (3)
619	Diagnosis of Reading Disabilities (3)
620	Reading Remediation (3)
621	Linguistic and Cognitive Foundations
041	
641	of Reading in Early Childhood (3) Research and Theory in Teaching
041	
642	Reading in the Elementary School (3) Research and Theory in Teaching
044	Language Arts in the Elementary
643	School
043	in Secondary Schools (8)

646	Organizing Reading Programs	(3)
650	A Study of Research and Theory in	
	Teaching the Disadvantaged	(3)
661	Affective Curriculum Strategies	(3)
662	Integrating Learning Experiences in	
	Early Childhood Education	(2)
670	Advanced Study in the Teaching of	
	Elementary School Mathematics	(3)
680	Internship in Teacher Education	(6)
712	The Elementary School	(3)
713	Curriculum Trends in Early	
	Childhood Education	(3)
714	The Secondary School	(3)
717	The Junior High School	(3)
724	Organization and Supervision of Student	
	Teaching	(3)
730	Problems of the School Curriculum	(3)
732	Principles of Curriculum Construction	(3)
735	The Core Program in the Secondary	
	Schools	(3)
740	Practicum in Teaching Reading and	
	Related Language Arts	(3)
745	Administration of Educational Media	
	Programs	(3)
746	Motion Pictures in Education	(3)
747	Seminar in Reading	(3)
748	Psychology of Reading	(3)
750	Administration and Supervision of	
	Public School Music	(3)
751	History and Philosophy of Music	
	Education	(3)
757	College and Adult Reading	(3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's	
	Degree (0-	12)
777	Seminar in Curriculum and Instruction	
	(Subtitle Required)(1-3)
780	Independent Work in Elementary	
	Education	(2)
781	Independent Work in Secondary	
	Education	(3)
790	Research Problems in Secondary	
	Education	(3)
791	Research Problems in Elementary	
	Education	(3)

Dentistry

Graduate Faculty: Professors Emmett Costich, Raymond Kopczyk, Harold Laswell, James Little, Stanley Saxe (Director of Graduate Studies). Associate Professors Robert Biggerstaff (Chairman, Department of Orthodontics), Albert T. Brown.

Associate Members: Professors Roland Duell, Thomas Mullaney. Associate Professors Jan Kraal, Thomas Lillich, Jeffrey Okeson, Patrick Sammons, Richard Wynn. Assistant Professors Raymond Bridges, J. F. Camilla Tulloch and Orhan Tuncay.

The program leading to the Master of Science in Dentistry degree is designed to provide the graduate dentist with clinical proficiency in a specialty area, research experience in a basic biological discipline, and exposure to the fundamentals of teaching in the field of dentistry. At the present time, students pursuing specialty training in the area of orthodontics are eligible for the Master of Science in Dentistry.

in Secondary Schools (3)

Only dental graduates of high academic standing will be accepted into this program, which requires two years of clinical training, integrated with additional basic science and research experience. The first year is largely devoted to clinical training, lectures and seminars. The second and later years will be a continuation of clinical training, with a high proportion of time devoted to basic science studies, research, and dental teaching techniques.

The program is interdisciplinary in scope and is taught by systems rather than the classic strict subject approach. The participating faculty is from all the clinical departments of the College of Dentistry, from the Medical Center departments of anatomy, pediatrics, psychiatry and behavioral science, and from the University Hospital.

Specific requirements for the Master of Science in Dentistry degree are: (1) satisfactory completion of the clinical certificate program; (2) 30 hours graduate credit, at least half of which must be basic science (non-clinical) courses; (3) submission of an acceptable thesis based on an individual research project (Plan A) and (4) passage of a comprehensive oral examination and thesis defense. Foreign language credit is not required.

ORT 610	Cranio-Facial Form(3)
ORT 620	Oral-Pharyngeal Function, Part I . (2)
ORT 621	Oral-Pharyngeal Function, Part II. (2)
ORT 660	Orthodontic Seminar-Clinic (2)
ORT 661	Orthodontic Seminar-Clinic (3)
ORT 700	Orthodontic Seminar(1)
ORT 710	Management of Complex Orofacial
	Deformities(1)
ORT 750	Research in Orthodontics (1-5)
ORT 768	Residence Credit for the Master's
	Degree (1-6)
CDS 550	Research Methodology and
	Instrumentation (2)
CDS 611	Child Growth and Development,
	Part I
CDS 612	Child Growth and Development,
	Part II
CDS 631	Principle of Dental Occlusion (2)
CDE 655	Practice Environment and Practice
	Management(1)
ODM 610	Developments in Oral Medicine (2)
OBI 650	Oral Biology for Postdoctoral Dental
	Students
OPT 651	Graduate Oral Pathology(3)
OSG 651	Anatomical Relationships in Surgery (1)
PER 661	Modern Concepts in Periodontics (2)
PDO 631	Dental Care for the Chronically Ill
	and Handicapped Child (2)
END 600	Basic Endodontic Theory (2)
END 610	Clinical Endodontics (2)
END 620	Endodontic Research (2)
END 630	Endodontic Seminar (2)

Diplomacy and International Commerce

Director of the Patterson School: Vincent Davis Emeritus Professor: Amry Vandenbosch.

The Patterson School of Diplomacy and International Commerce offers an interdisciplinary master's degree and serves in an advisory capacity with respect to the Ph.D. programs in international studies within the four departments primarily related to the Patterson School. The primary departments are Business Administration, Economics, History and Political Science.

The M.A. degree program can be tailored with considerable flexibility to meet the career needs of any particular student. Plan A and Plan B are available. This program is especially useful for the student desiring a career in any of the non-academic fields in foreign affairs, such as international banking, international business, international journalism (foreign correspondent), or service with governmental agencies (such as the U.S. Department of State) or international organizations (such as the United Nations) in foreign affairs.

At least half of the 30 minimum hours for the M.A. degree must ordinarily be in one of the four primary departments. Each student is expected, in the absence of special circumstances, to take a methodology course in the major field of concentration (such as Business Administration 636, Economics 660 or 661 or 662, History 606, or Political Science 671, depending in part on past training). Most students can expect to complete the 30 minimum hours for the M.A. degree in one full school year (12 hours in each of two semesters) plus a summer session, or plus the following (third) semester if more than the 30 minimum hours are desired.

To assure the interdisciplinary character of the degree, the M.A. candidate is expected to take 12 to 15 hours distributed in at least two departments outside the major departmental concentration. Courses acceptable to the program include those dealing with interstate and cultural relations, foreign policy, and national and regional development processes. Enough flexibility is allowed so that a student may concentrate the work in a specific geographical area such as Latin America, Asia, Europe, etc., or prepare more broadly in certain topical or functional aspects of international affairs.

The student must pass a written examination covering work in three subfields of study, with these subfields to be defined for any particular student and in consultation with the student by the Patterson School Director of Graduate Studies.

The Patterson School M.A. candidate must meet the basic Graduate School requirement for a reading knowledge of a modern foreign language, except that the candidate may request that the Director of the Patterson School, in consultation with other appropriate faculty members, allow the substitution of another research skill (such as statistics, other methodologies or relevant techniques) in lieu of the language requirement, with adequate competence to be determined by procedures established by the Director.

Students planning to continue their studies beyond the M.A. may apply for admission to one of the appropriate Ph.D. programs at the University of Kentucky (or elsewhere). If at the University of Kentucky, the most likely departmental doctoral programs include those in Political Science, History, International Economics and Economic Development, and International Business and Commerce. These doctoral programs are fully described under the appropriate headings elsewhere in this Bulletin. However, since the doctoral programs have their own varying requirements, it is to be expected that in many cases the Patterson School's interdisciplinary M.A. will require that the student take longer to complete the course work for the Ph.D. than if enrollment had been directly in one of the departmental doctoral programs upon entering Graduate School. The additional work required is likely to be heaviest with respect to business administration, where the first year of graduate study is largely prescribed, and in economics, where certain methodology and service courses need to be completed in the program. In all instances the extra time required will also depend on the nature of a student's undergraduate preparation.

A number of non-service Patterson School Fellowships are available from the income from the bequest of James K. Patterson, the first President of the University.

Application forms for admission and for fellowship assistant should be requested from the Dean of The Graduate School and returned to the Dean of The Graduate School.

exam-It is useful if advance carbon copies or fields of photocopies of all such application materials can be sent directly to the Director of ultation the Patterson School (Patterson Office School Tower, University of Kentucky). The Director of the Patterson School strongly enndidate courages all applicants to take the Gradnool reuate Record Examination (Verbal and ge of a Quantitative, plus the Advanced Examhat the ination in the major undergraduate field) ector of in time for the GRE scores to be submitted on with as part of the application procedures. In . allow addition, each applicant is required to ch skill submit a brief statement (two or three gies or pages, at most) explaining the special ine lanterest in the Patterson School program in

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Residence Credit for the Doctor's
Degree (0-12)
Research Problems in International
Relations
Special Problems in Diplomacy and
International Commerce (3)

terms of career goals. Each applicant is

also requested to have three academic let-

ters of reference to be mailed directly to

the Director of the Patterson School.

Economics

MASTER OF SCIENCE

Graduate Faculty: Professors M. M. Ali (Director of Graduate Studies), Carl Cabe, Virgil Christian, Charles F. Haywood, Charles Hultman, Joseph Krislov, Randolph McGee, David Richardson (Chairman), Rubin Sapasnik, Hirofumi Shibata, Don Soule, William Stober, Robert Stroup. Associate Professors Richard Gift, Merlin Hackbart, Curtis Harvey, John Madden, James Marsden, Brian Motley, David Ross.

Associate Members: Assistant Professors Jeffrey Levin and Gregory Richardson.

Emeritus Professors: Cecil Carpenter, H. W. Hargreaves and James W. Martin.

The M.S. in economics is primarily for students who wish to have a large amount of flexibility in a program of advanced study in economics. This degree program provides minimal preparation for employment as an undergraduate teacher of economics and as a researcher for government, business, and other organizations. The program can be structured to prepare a student for further graduate work in economics, but it is also highly suitable for students with strong interdisciplinary interests. The program can be structured to prepare a student for further graduate work in economics and related fields. Plan B is offered.

Recommended minimal undergraduate preparation: six hours of intermediate the-

ory, six hours of statistics, and six hours of calculus. These can be taken in the program as additional work.

Requirements for the M.S. in economics

- 1. A minimum of 30 hours of graduate credit courses.
 - Fifteen hours must be in courses in the Department of Economics, and 12 of these hours must be in courses reserved exclusively for graduate students.
 - At least 15 hours of the total of 30 must be in courses reserved exclusively for graduate students.
 - The 30 hours must include ECO 660 or ECO 760 and 661, Economics Theory
- Success in a final examination. 2.
- Minimal average of grade B in all courses attempted for graduate credit after being admitted to Graduate School. Students obtaining two grades of C below a B average will be dropped by the Department.

MASTER OF ARTS

Objectives

The Master of Arts (M.A.) in economics is the first stage of the Ph.D. program. The M.A. in economics provides preparation for employment in colleges, and in government, business and other organizations. The program is designed to advanced study in:

- 1. Economic theory.
- 2. Quantitative techniques and research skills, and
 - 3. A specialization within economics.

Recommended minimal undergraduate preparation-six hours of intermediate level economic theory and six hours of differential and integral calculus.

Requirements*

- A minimum of 30 hours of graduate credit courses, including:
- ECO 760 Neoclassical Microeconomic Theory
- ECO 762 General Equilibrium Analysis and Welfare Economics
- ECO 661 Advanced Macroeconomic Theory
- ECO 761 Seminar in Macroeconomic Theory
- STA 421 Basic Statistical Theory I
- ECO 592 Introduction to Quantitative Economics II
- ECO 692 Econometric Methods
- Two courses in an elective area of the Ph.D. Program
- *Subject to Graduate Council approval.
- Successful examination in one modern foreign language.

- 3. Minimal average of Grade B in all courses attempted for graduate credit after being admitted to Graduate School. Students obtaining two grades of C below a B average will be dropped by the Department.
- 4. Success in a final examination.

THE PH.D. DEGREE

The Ph.D. program is designed to enable the graduate to contribute to the advancement of economics. The program is also aimed at producing graduates who are qualified to teach, as well as engage in industrial and governmental research and consulting.

To attain these objectives, the program is designed to provide the student with the appropriate knowledge, understanding, skills and abilities, including:

- An understanding of economic theory.
- Skill in the use of quantitative techniques, specifically mathematics and statistics.
- Specialization in a limited number of areas.
- A knowledge of the broad social and political background of the economic environment.
- Experience in the development of research projects throughout their entire program.
- Research and writing skills that would lead to the publication of original research.
- Competence in communicating economic knowledge to broad and diverse audiences. Recommended minimal undergraduate preparation: six hours of intermediate economic theory, six hours of statistics, and six hours of calculus.

Requirements:

Work for the degree of Doctor of Philosophy in economics must conform to the general requirements of The Graduate School. The requirements for the degree

1. Economic Theory. The student must demonstrate competence in economic theory as demonstrated by passing a departmental written examination in economic theory. This examination will be given twice a year, at the beginning of the fall and spring semesters. Students failing the examination will be given a second attempt; those failing on the second attempt will be dropped from the program.

Minimal preparation for the written examination in economic theory can be achieved by taking the following core courses:

ECO 760 Neoclassical Microeconomic Theory ECO 762 General Equilibrium Analysis and Welfare Economics

ECO 661 Advanced Macroeconomic Theory ECO 761 Seminar in Macroeconomic Theory Performance in these courses may be taken into account in evaluating the written examination in economic theory in that exceptional performance in the course may compensate for marginal performance in the examination

 Statistics/Econometrics. The student must demonstrate competence in the area of statistics and econometrics. This competence may be demonstrated by satisfactory performance in the following courses:
 STA 421 Basic Statistical Theory I

ECO 592 Introduction to Quantitative Economics II

ECO 692 Econometric Methods

or by passing a special examination.

- 3. Elective Areas. All Ph.D. students must choose two fields of study approved by the student's Advisory Committee. These fields include, but are not limited to, the following: economic theory, econometrics, international economics, public finance, monetary economics, labor economics, economic development, urban and regional economics, economic history, and comparative economic systems. What constitutes minimum course preparation in each field shall be determined by the student's Advisory Committee.
- 4. Supporting Work. At least 15 hours of supporting course work must be selected. These courses must be approved by the student's Advisory Committee. This supporting work will provide an opportunity for mastery of the foundations of economics, and will ordinarily include ECO 662—Research Methods and Procedures in Economics and ECO 665—History of Economic Thought I.
- Foreign Language. The candidate must satisfy The Graduate School language requirement for one modern foreign language.
- Grades. Minimal average of Grade B in all
 courses attempted for graduate credit after
 being admitted to Graduate School. Students obtaining two grades of C below a B
 average will automatically be dropped by
 the Department.
- 7. Qualifying Examinations.
 - Written examinations: Written examinations must be taken in the student's field, as part of the requirements for candidacy for the Ph.D. degree. These examinations are given twice a year, at the beginning of the

fall and spring semesters, and are scheduled by the student's Advisory Committee. The written examinations will be prepared and graded by faculty members who are specialists in the fields.

- b. Oral Examination: After passing the written qualifying examinations, the student will be given an oral examination by the Advisory Committee. This oral examination will be concerned with the student's competence in the fields.
- 8. Dissertation Proposal. In the semester after the candidate passes the qualifying examinations—ECO 797 must be taken for 3 credit hours. This course will be directed by the chairman of the Advisory Committee and will consist of independent study and reading in one of the candidate's fields. As part of the requirements for this course, the student will write a dissertation proposal and present it at a faculty seminar.
- 9. Internship. The Department will require of all candidates an internship. This internship will usually consist of teaching (8-6 semester hours), though upon approval of the Director of Graduate Studies, the student may select some other activity appropriate to his professional expectations.
- The Ph.D. Dissertation. The dissertation will be based on original research on a significant topic. The dissertation will be defended in an oral examination.

461G Market Structure and Anti-Trust Policy (3)

4630	Analysis of Business Conditions	(3)
4640		
4650	Comparative Economic Systems	
1670		(0)
	and Western Europe: An Economist	
	View	(3)
169C	History of Economic Thought	(3)
1710	International Economics	(3)
173G		(3)
177G		(3)
179G		(3)
181G		(3)
183G	Regional Economics	
85G	Monetary Economics	(3)
87G	Intermediate Macroeconomic Theory	(3)
88G		(3)
91G	Survey Sampling Design	(3)
93G		(3)
	Economic Growth and Development	(3)
94G		(3)
	Distribution	(3)
90	Introduction to Quantitative Economics I.	(3)
92	Introduction to Quantitative Economics II	(3)
95	Social Accounting	200,047.5
96	Time Coulty A. 1.	(3)

Advanced Microeconomic Theory (3)

Advanced Macroeconomic Theory (3)

Economics of Regulated Industries (3)

History of Economic Thought I. (3)

666 History of Economic Thought II (3)

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668	Tamerican Economic Change in
	Historical Perspective (3
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679	Seminar in Public Finance I (3)
682	
683	Economics of Growth and Development
	in Regions and Urban Areas (3)
686	Monetary Economics: Theory
687	Monetary Economics: Policy (3)
688	Optimization and Economic Theory (8)
692	Econometric Methods (3)
697	Theories of Comparative Economic
	Systems(3)
760	Neoclassical Microeconomic Theory (3)
761	Seminar in Macroeconomic Theory (3)
762	General Equilibrium Analysis and Welfare
	Economics
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
771	International Economics Seminar II (3)
773	Seminar in Economic Development II (3)
776	Economics of Trade Unionism and Labor
	Law (3)
779	Seminar in Public Finance II (3)
783	Seminar in Regional Economics (3)
786	Seminar in Monetary Theory and Policy (3)
788	Mathematical Economics(3)
791	Problems in Econometrics (3)
792	Econometrics I
793	Econometrics II
795	Seminar in Comparative Economic Systems (3)
796	Seminar (1-6)
797	Research Problems in Economics (1-6)
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667 Seminar in Historical Studies in Economic

Educational Psychology and Counseling

Graduate Faculty: Professors James Barclay, Henry Cole (Chairman), Gordon Liddle, Earl Rankin, Timothy Smith, Judith Worell. Associate Professors Dwight Auvenshine, William Bramble, William Emenee, Robert Harman (Adjunct), Edward Kifer, Emanuel Mason, William Stilwell (Director of Graduate Studies).

Associate Members: Associate Professor Raymond Wilkie. Assistant Professors Fred Danner. Steven DeMers, Logan Green, Pamela Remer, Rory Remer.

The Department of Educational Psychology and Counseling offers programs leading to the following degrees: Master of Arts in Education, Master of Science in Education (Plans A and B available), the Specialist in Education (Ed.S.), the Doctor of Education (Ed.D.), and the Doctor of Philosophy (Ph.D.). Students must apply to both The Graduate School and to the Department. Doctoral applications must be completed by 1 February for summer/fall beginning. All other degree ap-

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Within the degree programs there are a number of specializations possible (e.g., counseling psychology, educational psychology and school psychology). Specializations are designed to provide students with both a background in behavioral and humanistic components of human learning and behavior, and competencies to practice the skills designated for these programs. Admission to candidacy in any of these programs not only includes demonstrated skills in the academic area, but a judgment by the faculty of the area program that the candidate possesses the personal and social characteristics requisite for providing the skills associated with the program and the advanced degree.

MASTER OF ARTS IN EDUCATION DEGREE (GUIDANCE AND COUNSELING)

Two options are open to candidates interested in this degree program. They are: concentration in elementary guidance and counseling, and concentration in secondary guidance and counseling. The programs in elementary and secondary guidance and counseling are designed to prepare individuals with a teaching certificate for guidance and counseling functions in public schools.

Ordinarily, applicants for these programs will have a regular teaching certificate at the elementary or secondary level, and one year of teaching experience. Applicants lacking these qualifications who wish to obtain the degree and be certified for school work must complete the teacher education program, earn appropriate certification, and complete one year of teaching at the appropriate school level. The curriculum for these programs matches the State guidelines in the areas of elementary and secondary counseling. These programs provide learning experiences in each of the required competency areas. The program prerequisites include psychological tests and abnormal psychology. The programs vary from 36 to 39 graduate hours.

MASTER OF ARTS IN EDUCATION DEGREE (SCHOOL PSYCHOLOGICAL DIAGNOSTICIAN)

This program is designed to prepare individuals to function at the first level of

school psychology services. It meets the guidelines for the State Certificate as a School Psychometrist. The program consists of a varying amount of graduate and undergraduate work. It is variable because applicants can enter the program with two backgrounds: (1) a bachelor's degree in a teaching field and certification for that field, or (2) a bachelor's degree in psychology. In either case, the work of the school diagnostician requires a depth of background in psychology. Students with a background in psychology can expect to complete the graduate program in about 45 graduate hours of work. Students lacking a background in psychology should be prepared to complete additional course work. Completion of the program also requires a period of internship in school psychology work.

MASTER OF ARTS IN EDUCATION DEGREE (REHABILITATION COUNSELING)

This curriculum was designed in accordance with guidelines provided by the national professional associations in rehabilitation counseling. Successful completion of the program fulfills the Kentucky certification requirements in rehabilitation counseling. It does not meet certification requirements for school counseling.

Kequire	ed courses
EDP 521	Introduction to Vocational
	Rehabilitation
EDP 641	Psychological Measuring Instruments
	to compare or state of the second the
EDP 653	Appraisal Procedures in Guidance
	Practice)
EDP 652	Counseling Theories
EDP 656	Methodology of Educational Research
EDP 657	Educational Statistics
EDP 661	Counseling Techniques
EDP 664	Psycho-social Aspects of Disability

EDP 665 Practicum in Counseling Psychology Psychology of Career Counseling EDP 708 Internship in Education Psychology and Counseling

PSY 535 Psychological Testing

EDP 522 Educational Tests and Measurements

EDP 659 Advanced Educational Measurement SW 512 Medical Knowledge for Social Professions

Electives

These include nine hours outside education to be approved by adviser, generally to make up an area of personality, social, and abnormal psychology. If students already have an adequate background in those courses, they may choose from related courses such as sociology, social work, or anthropology.

MASTER OF SCIENCE IN EDUCATION DEGREE

The Master of Science in Education degree is offered by the Department for individuals who are not seeking a State certificate in counseling, psychometry or rehabilitation counseling, but wish to complete a professional sequence of courses leading to specific skills in educational psychology and/or counseling. Individuals who are interested in specializing in educational psychology, human development, measurement, research in education or non-public school counseling may obtain this degree. The program prerequisities include psychological tests and abnormal psychology. The program is flexible and tailored to individual needs. It is planned in consultation with an adviser. It consists of 30 hours of graduate work plus a thesis, or 36 hours of graduate work without a thesis. There is also a 60-hour program including the Master of Science in Education degree program plus a full-time one-semester internship and additional course work. This program leads to permission to sit for the State Certification Examination in Counseling Psychology.

DOCTOR OF EDUCATION DEGREE

The Doctor of Education degree is offered in the field of educational psychology and counseling. Programs in this department follow the general guidelines of the College of Education program as specified earlier. (See Graduate School section of Bulletin)

DOCTOR OF PHILOSOPHY DEGREE

The Ph.D. program is offered in the specialty areas of Counseling Psychology, Educational, Psychology and School Psychology under one Departmental program. A full time supervised one-year internship is required for all areas.

There are various concentrations possible within the Ph.D. program. Representative of these are: (1) learning, cognition, and curriculum design; (2) human development and social processes; (3) counseling psychology; (4) measurement, evaluation and research design; and (5) school psychology.

For further information on these progams or degrees contact the Director of Graduate Studies in the Department of Educational Psychology and Counseling. (See Graduate School section of Bulletin.)

518	Mental Hygiene(3)
519	
520	
521	
	(Counseling and Guidance)
522	
548	
600	
601	Human Social Development (3)
603	Human Cognitive Development (3)
605	Introduction to Counseling (3)
610	Theories of Learning in Education (3)
611	Human Cognitive Learning (3)
640	Practice in Testing: Intelligence Tests (4)
641	Psychological Measuring Instruments (3)
649	Group Counseling (3)
650	Diagnosis and Counseling in Counseling
	Psychology(3)
652	Theories of Counseling (3)
653	Appraisal Procedures in Guidance
crc	Practice
656	Methodology of Educational Research (3)
657 658	Educational Statistics
659	Problems in Educational Psychology (1-3)
660	Advanced Educational Measurement (3)
000	Research Design and Analysis in
661	Education
664	Techniques of Counseling
665	Psycho-Social Aspects of Disability (3)
666	Practicum in Counseling Psychology (3-6) Psychology of Career Counseling (3)
675	
677	Advanced Studies in Community Mental
•	Health(3)
680	Child Guidance and Parent Counseling (3)
683	Topics in Counseling Psychology (1-3)
690	Advanced Studies in Psychological
	Assessment(3-6)
701	Behavior Modification in Education (3)
702	Career Development: Research, Theories
	and Practices (2-3)
707	Multivariate Analysis in Educational
	Research
708	Internship in Educational Psychology
	and Counseling (3-9)
747	Seminar in Reading(3)
748	Psychology of Reading
759	Identifying and Providing for Individual
	Student Needs
762	Organization and Administration of
	Guidance Services (3)
763	Research and Evaluation in Guidance (3)
765	Independent Work in Counseling
	Psychology
768	Residence Credit for the Master's
	Degree
769	Residence Credit for the Doctor's
1981	Degree (0-12)
777	Seminar in Counseling Psychology (1-3)
778	Seminar in Educational Psychology (3)
782	Independent Work in Educational
	Psychology

Electrical Engineering

Graduate Faculty: Professors Eugene Bradley (Director of Graduate Studies), Earl Steele (Chairman), Prasad Kadaba, Syed Nasar. Associate Professors Frank M. Brown, Raymond Distler, Clayton R. Paul, and Hsi-Han Yeh.

Associate Members: Associate Professor Lee Todd and Assistant Professor L. Wilson Pearson.

The Department of Electrical Engineering offers programs leading to Master of Science in Electrical Engineering and Ph.D. degrees. Areas of current research interest include: energy conversion; modern control theory; digital engineering; circuit theory; switching theory; automatic control; solid-state electronics; quantum electronics, communications systems and electromagnetics. Both Plan A and B are offered.

The laboratories are well-equipped for research in the above areas under the direction of the electrical engineering faculty. For further information on financial aid and other details, write to the Department Chairman.

ment Ghairman.	
402G Electronic Instrumentation an	d
Measurements	(3)
403G Advanced Electrical Engineeri	ng
Laboratory I	(2)
415G Electromechanics I	
416G Electrical Engineering Labora	tory III (2)
420G Electrical Engineering Analysi	is I (3)
461G Electronic Circuits I	(3)
462G Electrical Engineering Labora	tory II (2)
467G Electric and Magnetic Fields	
468G Fields and Waves	
471G Linear Feedback Control System	ms (3)
480G Logical Design	(3)
503 Advanced Electrical Engineering	
Laboratory II	
511 Introduction to Communication	
512 Digital Communication Systems	
517 Advanced Electromechanics	
520 Engineering Analysis II	
522 Antenna Design	
523 Microwave Circuit Design	(3)
537 Electric Power Systems I	
538 Electric Power Systems II	
560 Semiconductor Device Design	
561 Solid State Engineering	
562 Electronic Circuits II	(3)
563 Communication Circuits Design	(3)
564 Electronic Circuits III	
567 Introduction to Lasers and Maser	
571 Nonlinear and Sampled-Data Cor	
Systems	
581 Advanced Logical Design	
582 Digital Systems Laboratory	
584 Computer Aided Design	(3)
PREREQUISITE FOR GRADUATE	WORK: Stu-
dents desiring to take any of the follo	

PREREQUISITE FOR GRADUATE WORK: Students desiring to take any of the following courses should have a thorough working knowledge of chemistry, physics and mathematics. For major work, a candidate must hold a bachelor's degree in Electrical Engineering or its equivalent.

595		1-3
599		2-3
601	Electromagnetic Energy Conversion I	(3
602	Electromagnetic Energy Conversion II	(3
606		(3
607		(3
611	Linear System Analysis I	(3
612	Linear System Analysis II	(3
613	Optimal Control Theory	(3
614	Sampled-Data Control Systems	(3
616		(3
622	Advanced Electrodynamics	(3)
623	Field Theory of Guided Waves	(3)
625	Numerical Methods in Radiation and	10.
	Scattering	(3)
629		(3)
631		(3)
632		(3)
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663	Microwave Properties of Materials	(3)
665	Integrated Circuits	(3)
666		(3)
670	Quantum Electronics	(3)
672		(3)
681	Digital Processors ((3)
682	Switching Theory ((3)
683		3)
711		3)
712	Network Synthesis II (3)
768	Residence Credit for the Master's Degree (1-	6)
769	Residence Credit for the Doctor's	
	Degree (0-1	2)
771		0)
783	Special Problems in Electrical	
	Engineering (1-	3)

Engineering Mechanics

Graduate Faculty: Professors Millard F. Beatty (Director of Graduate Studies), Oscar W. Dillon, Jr., Donald C. Leigh (Chairman), Frank J. Rizzo, T. Richard Robe, Theodore R. Tauchert. Associate Professors Louis M. Brock, Nelson Hsu, Stanley E. Jones, David J. Shippy.

The Department of Engineering Mechanics provides programs for study and research leading to the Master of Science in Engineering Mechanics and the Doctor of Philosophy. The master's degree requires 24 credit hours of course work and a thesis (Plan A), or in some circumstances with departmental approval, 30 hours of course work without a thesis (Plan B). In addition to the general information on the Ph.D. degree at the front of this Bulletin, note that the Department requires a reading knowledge of one foreign language.

Most engineering disciplines exist to serve society directly. Such disciplines are recognized by and often named for the

products associated with them, e.g., aircraft structures, metals, ceramics, etc. Engineering Mechanics, on the other hand, exists to serve all of these disciplines by concerning itself with the fundamental laws, mathematical apparatus, and basic experimental methods common to all those phases of engineering which are based on mechanics. Students enter the graduate program in Engineering Mechanics from all branches of engineering and also from mathematics and physics.

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Fields of concentration for study are (1) continuum mechanics, (2) materials sciences, (3) dynamics analysis, (4) computational stress analysis, (5) mechanical design analysis, (6) mechanical behavior of solids and fluids, (7) Experimental methods, and (8) applied mathematics. Typical areas in which research has been carried out in the Department include infinitesimal and finite elasticity, viscoelasticity, plasticity, non-newtonian fluids, rigid and flexible body dynamics, particle dynamics, wave propagation, stability analysis, and biomechanics. Investigations in these areas have included theoretical, experimental and numerical methods.

For further information contact the Director of Graduate Studies.

503	Introduction to Continuum Mechanics (3)
505	Viscoelasticity
506	Mechanics of Composite Materials (3)
513	Mechanical Vibrations
531	Advanced Strength of Materials (3)
532	Experimental Stress Analysis (3)
533	Aircraft and Missile Structural Analysis (3)
544	Introduction to Nondestructive Testing (3)
585	Fourier Series and Boundary Value
	Problems
603	Mechanics of Plastic Solids I (3)
604	Mechanics of Plastic Solids II (3)
605	Foundations of Inelasticity (3)
607	Advanced Inelasticity
613	Nonlinear Oscillations (3)
614	Mechanics of Space Vehicles (3)
631	Elastic Stability of Mechanical Systems (3)
632	Foundations of Elastic Stability (3)
645	Advanced Dynamics I (3)
646	Advanced Dynamics II(3)
651	Mechanics of Elastic Solids I (3)
652	Mechanics of Elastic Solids II (3)
653	Methods of Applied Differential Equations (3)
661	Nonlinear Continuum Mechanics I (3)
662	Nonlinear Continuum Mechanics II (3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
780	Special Problems in Engineering
	Mechanics

English

Graduate Faculty: Professors Joseph Bryant (Chairman), John L. Clubbe, Guy Davenport, Robert Evans, William Jansen, Stephen Manning, Jerome Meckier, Ringe. Associate Professors Thomas Blues, William Campbell, Lee Elioseff, Joseph Gardner, William Gordon, John L. Greenway, James Baker Hall, Joan Hartwig, Robert Hemenway (Director of Graduate Studies), Kevin Kiernan, Charles Rowell, Larry Swingle, and Arthur Wrobel.

Associate Member: Associate Professor Joan Blythe. Emeritus Professors: George Brady, Arthur Cooke, John Cutler, Hill Shine, Thomas Stroup and William Ward.

The Department of English offers programs leading to the M.A. and to the Ph.D. degrees. The master's degree may be obtained either by Plan A or Plan B, as defined in this bulletin. With the consent of the Dean of The Graduate School and the Director of Graduate Studies in English, students may undertake a program leading to the master's degree provided that they have

(1) completed the equivalent of a University of Kentucky undergraduate major in English and.

(2) fulfilled the admission requirements of the Graduate School. Applicants who fail to meet the first qualification may be admitted with the understanding that their program must include some advanced undergraduate work in English in addition to the courses normally required for the M.A. A reading knowledge of one foreign language is required for the master's degree.

Students will be evaluated on their merits before they are officially admitted to the doctoral program by the English graduate faculty. Students who received their master's degree from the University of Kentucky will be judged on their course grades, on the recommendations of their instructors, and their Graduate Record Examination scores. Students who have received their master's degree elsewhere will be evaluated on their course grades after the equivalent of one semester's full time graduate work at the University of Kentucky, instructor's recommendations, and GRE scores.

There is no specific requirement in a minor area, but such work may be required by a student's Advisory Committee if it appears to be essential to the major research or concentration interest. Ph.D. candidates normally offer German and French for their language requirement, but substitutions may be authorized according to the procedure described in this Bulletin.

A detailed statement of departmental requirements for both the M.A. and Ph.D. is available on request.

414G Introduction to Modern English
Linguistics(3)
421G Chaucer (3)
422G English Renaissance: 1500-1600 (3)
423G English Renaissance: 1600-1660 (3)
425G Shakespeare Survey
426G Shakespeare Studies I (3)
427G Shakespeare Studies II (3)
428G Milton(3)
430G The Restoration and Early 18th
Century: 1660-1730
440G The 18th Century English Novel (3) 441G The 19th Century English Novel (3)
471C 4
451G American Literature, 1800-1860 (3)
453G American Literature Since 1900 (3) 454G American Novel Before 1900 (3)
455G Modern American Novel
473G General Introduction to Folklore (3)
474G American Folklore
477G Regional, Occupational, and Folklore
of the United States (3)
478G Appalachian Folklore (3)
490G English Drama I
491G English Drama II (3)
501 Workshop in Imaginative Writing (3)
509 Composition for Teachers (3)
510 American English
512 Modern English Grammar (3)
513 Teaching English as a Second Language (3)
514 Test Materials and Methods(3)
515 Phonological Analysis (3)
516 Grammatical Analysis (3)
518 History of the English Language (3)
519 Introduction to Old English (3)
520 Beowulf
521 Middle English Literature (3)
541 Contemporary British Novel (3)
542 Twentieth Century British Literature (3)
550 American Literature Before 1800 (3)
560 Comparative Literature I (3)
561 Comparative Literature II (3)
562 Comparative Literature III (3)
563 Comparative Literature IV (3)
566 Modern Drama (3)
568 History of Literary Criticism I (3)
569 History of Literary Criticism II (3)
570 Selected Topics for Advanced Studies
in Literature
572 Studies in English for Teachers
579 Oral Narration in Folk Cultures (3)
Pro-seminars: The purpose of the pro-seminar
courses (600 level) is to impart through lectures and
discussion both the facts of literary history and the
techniques of literary analysis. They are, therefore,
designed to go beyond the mere information level to
techniques of contemporary literary criticism and

techniques of contemporary literary criticism and scholarship.

201	Aestnetics of Film	(3)
600	Bibliography and Methods of Research	(3)
620	Studies in Middle English Literature	(3)

621	Studies in Chaucer	(3)
622	Studies in English Literature: 1500-1600	(3)
623	Studies in English Literature: 1600-1660	(3)
625	Studies in Renaissance Drama Exclusive	
	of Shakespeare	(3)
626	Studies in Shakespeare	(3)
628	Studies in Milton	(3)
630	Studies in English Literature: 1660-1720	(3)
631	Studies in English Literature: 1700-1720 Studies in English Literature: 1720-1780	
635	Studies in Literature: 1780-1815	(3)
636	Studies in Literature: 1780-1815	(3)
638	Studies in English Literature: 1830-1860	(3)
639		(3)
640	Studies in English Literature: 1860-1900	(3)
642	Studies in the 19th Century British Novel.	(3)
643	Studies in Modern British Literature	(3)
043	Studies in Modern British and American	
CFI	Poetry	(3)
651	Studies in American Literature	
	Before 1860	(3)
652	Studies in American Literature: 1860-1900	(3)
653 656	Studies in American Literature Since 1900	(3)
660	Black American Literature	(3)
Name of the last	Modern Critical Theory	(3)
673 682	Studies in Folklore	(3)
683	Studies in Fiction	(3)
684	Studies in Drama	(3)
720	Studies in Poetry	(3)
722	Seminar in Medieval Literature	(3)
723	Seminar in 16th Century Literature	(3)
726	Seminar in 17th Century Literature	(3)
730	Seminar in Shakespeare	(3)
735	Seminar in 18th Century Literature	(3)
735	Seminar in Romantic Literature	(3)
738	Seminar in Victorian Literature	(3)
740	Seminar in 20th Century British	
750	Literature	(3)
751	Seminar in Colonial Literature	(3)
751	Seminar in American Literature:	
752	1800-1860 Seminar in American Literature:	(3)
152		
-	1860-1900	(3)
753	Seminar in American Literature	
768		(3)
768		-6)
769	Residence Credit for the Doctor's	
771	Degree(0-	
771		(3)
774		(3)
780	Directed Studies (1	-3)

Entomology

Graduate Faculty: Professors Wyman Dorough, Fred Knapp, Bobby Pass (Chairman and Director of Graduate Studies), Juan Rodriguez, Richard Thurston. Associate Professors Douglas Dahlman, Paul Freytag, and Gerald Nordin.

Associate Members: Associate Extension Professors C. M. Christensen and Wesley Gregory. Assistant Professor Kenneth Yeargan.

Emeritus Professor: Lee H. Townsend.

The Department of Entomology offers graduate work leading to the Master of Science, Master of Science in Agriculture, and the Doctor of Philosophy degrees. Individual graduate programs are planned by the student in consultation with his adviser and the Director of Graduate Studies. Study and research are available in various

areas of entomology including applied entomology, behavior, biological control, host plant resistance, insect biology and ecology, insect nutrition, pathology, immature insects, medical and veterinary entomology, physiology, taxonomy, toxicology, and acarology. Plan A is offered for the Master's degree. A reading knowledge of one modern foreign language is required for the Ph.D. degree.

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530	Insect Pest Management (3)
561	Medical Entomology (4)
562	External Morphology of Insects (4)
563	Parasitology(4)
564	Insect Taxonomy (4)
606	Insecticide Chemistry and Toxicology (3)
626	Insect Pathology (3)
635	Insect Physiology (4)
650	Advanced Applied Entomology (3)
660	Immature Insects (4)
665	Insect Ecology and Behavior (3)
667	Principles of Animal Systematics (3)
670	Experimental Methods in Entomology (2)
672	General Acarology (4)
680	Biological Control of Insects (3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
770	Entomological Seminar (1)
780	Special Problems in Entomology
	and Acarology (2-3)
790	Research in Entomology and Acarology . (1-6)

Family Studies: Human Development and Resource Management

Graduate Faculty: Associate Professors Lisa Barclay (Director of Graduate Studies), John Crosby (Chairman), David Payne, Kathy Thornburg, M. O'Neal Weeke

Associate Members: Assistant Professors Jacques Benninga, Rose Davis, Peggy Kimsey, Maryann Paynter, George Wise.

The Department of Family Studies: Human Development and Resource Management offers the Master of Science in Home Economics degree. Within the M.S. in Home Economics degree are five major areas of concentration or options. These options are: Early Childhood Education, Consumer Economics, Theory and Research (Plan A, Thesis only), Family and Developmental Services (Plan B, Non-thesis only), and Family Life Education. Plan A requires a minimum of 30 class-hour credits plus six hours thesis. Plan B requires a minimum of 36 class-hour credits. The various options are designed to enable the student to prepare for various careers. The Theory and Research option is recommended as a pre-doctoral option, while the Services is intended for those who expect

the M.S. in Home Economics degree to be a terminal degree. Electives within each option are available in the social and physical sciences, and in other supporting disciplines.

462	
507	Assessment of Young Children (2)
540	Intensive Study of the Child and
	The Family
541	Supervised Teaching in the Early
	Childhood Laboratory: I (3)
542	Supervised Teaching in the Early
	Childhood Laboratory: II (3)
551	Woman in Contemporary Society (3)
552	Organization and Administration of Early
	Childhood Education Programs (3)
553	The Child in His Family (3)
554	Working with Parents (3)
555	Fostering Cognitive Development in
	Children
557	Infant Development
561	The Consumer with Limited Resources (3)
562	Family Management for Multi-Roles (3)
563	Family Consumers and the Law (3)
573	Family Life Education (3)
586	Field Instruction in Management and
	Family Economics
595	Special Problems in Child Development
	and Family Relationships (1-3)
596	Special Problems in Management and
	Family Economics (1-3)
599	Field Experiences
602	Consumer Economics(3)
604	Culturally Different Children and
	Families
605	Practicum in Directing Early Childhood
	Programs
606	Child Advocacy (1)
652	Readings in Family Relations (3)
653	Family Theory and Dynamics (3)
655	Theory and Dynamics of Human
040	Development
658	Adolescent Development (3)
662	Social and Economic Decisioning in the
cco	Family
668	Allocation of Family Resources (3)
768 773	Residence Credit for the Masters Degree. (1-6)
113	Seminar in Management and Family
775	Economics
115	Seminar in Human Development and Family
785	Relations
700	Special Problems in Child Development
786	and Family Living (1-3)
700	Special Problems in Management and Family Economics (1-3)
790	Family Economics (1-3) Familial and Developmental Research
, 30	
	Methods(3)

Forestry

Graduate Faculty: Professors Boyd Richards and Bart Thielges (Chairman). Associate Professors Stanley Carpenter, George Coltharp (Director of Graduate Studies), Ruen Chiu Tang.

Associate Members: Assistant Professors Donald Graves, Calvin Liu, Robert Wittwer.

Joint Appointments: Associate Professors Gerald Nordin and Louis Shain. The Department offers graduate work leading to the Master of Science in Agriculture (Forestry Option). Degrees are awarded under Plan A only, which requires a minimum of 24 semester hours of graduate course work plus an acceptable thesis. The prospective student must have an undergraduate degree in forestry or be prepared to take a core of forestry courses in addition to a full masters program.

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The study and research program may be directed in any one of the following areas: wood science, forest soils, forest hydrology and water quality, forest ecology, forest physiology, forest wildlife, forest biometrics, forest economics, and surface mine

Students interested in pursuing further graduate studies in the forestry area may enter one of several interdepartmental programs such as Plant Physiology, Crop Science, and Soil Science.

Additional information concerning the graduate program in forestry may be obtained by contacting the Director of Graduate Studies.

511	Forest Regeneration(3)
512	Forest Tree Physiology
526	Adhesive Bonding of Wood (3)
562	Forest Soils
599	Independent Work in Forestry (1-3)
601	Research Methods in Forestry (3)
611	Forest Genetics(3)
612	Forest Ecosystem Analysis (4)
628	Mechanics of Wood and Fiber Composites. (3)
629	Advanced Wood Physics
768	Residence Credit for Master's Degree (1-6)
781	Special Problems in Forestry (1-3)
791	Research in Forestry (1-3)

French Language and Literature

Graduate Faculty: Professors Jean Charron, Phillip Duncan (Chairman, Director of Graduate Studies), Raymond La Charite, Virginia La Charite, Theodore Mueller, and Rupert Pickens.

Associate Members: Assistant Professors Mary Lynne Flowers, John Rea.

Emeritus Professor: Clark L. Keating

The Department of French Language and Literature offers graduate programs leading to the M.A. and Ph.D. degrees in French language and literature.

Requirements for the M.A. degree in French: The department offers the M.A. degree according to Plan B only. Candidate must select four of the following as areas of specialization for the M.A. degree: medieval, 16th, 17th, 18th, 19th, 20th century French literature, and lan-

guage/civilization. In the areas of literature, the candidate must pass a written, comprehensive examination. In the language civilization area (if chosen), the candidate must complete three of the following courses with a grade of B or better: FR 507, 517, 550, 607 and either 516 or 603. Candidates must also demonstrate a reading knowledge of another foreign language. The M.A. examination will be given every March and July. Application for the examination should be made to the Director of Graduate Studies no later than 14 days prior to the date of examination.

Requirements for the Ph.D. degree in French: Applicants for the Ph.D. degree are required to complete at least 10 graduate courses in French beyond the M.A. In addition to their program of study in the department, candidates must demonstrate a reading knowledge of two other Romance languages (Latin included) or of one other Romance language and German or Russian.

Candidates for the Ph.D. degree are required to pass written examinations, followed by an oral examination, to be held after the written examinations have been read and graded. Candidates will be examined on their choice of three of the following areas: medieval, 16th, 17th, 18th, 19th and 20th century literature.

The candidate's dissertation, to be submitted in accordance with the regulations of The Graduate School, must be written in one of the three areas chosen for the qualifying examination.

The Ph.D. written examinations are given at the convenience of the student and faculty during the academic year but are not scheduled during the summer period (May 1 to September 1). Application for the examination should be made to the Director of Graduate Studies no later than 10 days prior to the date of examination.

For further information concerning the M.A. and Ph.D. programs in French, consult the Director of Graduate Studies.

All courses listed below are offered on a rotating basis and not less frequently than every eighth semester.

417G	Linguistic Survey of French	(3)
421G	Topics in French Literature in	
	Translation I	(3)
422G	Topics in French Literature in	
	Translation II	(3)
423G	French Literature in Translation:	
	20th Century	(3)
435G	A Survey of French Literature of the	
	Middle Ages	(3)

436G	A Survey of French Literature of the	
437G	Renaissance	(3)
1370		(3)
438G	A Survey of French Literature of the	(3)
439G	18th Century	(3)
		(3)
440G	에 19 1 글을 보는 것이 하는 것이 하는 것이 없는 것이 없었다. 하는 것이 없는 것이 없는 것이 없는 것이 없는 것이 없는 것이 없는 것이다. 한국회에 하는 것이다.	(3)
460G		
	435G, 437G, 439G, 462G will normally be in the fall; FR 436G, 438G, 440G, 461G in t	
spring		
461G		(3)
462G 507	8 May 18 M 18 M 18 M (2008) A 18 M 18	(3) (3)
516	Introduction to Old French	(3)
517	Introduction to the Phonological Structure of French	(3)
550	Contemporary French Culture	(3)
553	The Teaching of Modern Foreign Languages	(3)
603		(3)
607		(3) (3)
610 611		(3)
612	Medieval Narrative I: The Early	(0)
613		(3) (3)
616	The Didactic Tradition	(3)
619 621		(3) (3)
622	French Renaissance Literature II	(3)
623 624	Rabelais and the Conteurs	(3) (3)
630	Corneille and the Pre-Classical Drama	(3)
631	Racine and the Tragic Theater	(3)
632 633	Moliere and the Comic Theater Seventeenth-Century French Prose	(3)
635	History of Ideas in the 17th Century	(3)
636 640	Seventeenth Century Poetry Eighteenth Century Prose Literature I	(3) (3)
641	Eighteenth Century Prose Literature II	(3)
643	The 18th Century French Novel	(3)
651	French Romanticism I: Prose	(3)
652	French Romanticism II: Poetry and Theater	(3)
653	Baudelaire, Rimbaud, Mallarme	(3)
654 656	Realism	(3)
661	Naturalism Contemporary Prose I	(3)
662	Contemporary Prose II	(3)
666 672	Contemporary French Theatre Contemporary Poetry	(3) (3)
714	Seminar in the History of the French	/01
715	Language Seminar in Medieval French Studies	(3) (3)
716	Seminar in French Literature of the	
717	Renaissance	(3)
	Literature	(3)
718	Seminar in 18th Century French Literature	(3)
719	Seminar in 19th Century French	
700	Literature Seminar in 20th Century French	(3)
720	Literature	(3)
768	Residence Credit for Master's Degree (1	-6)
769	Residence Credit for Doctor's Degree (0-	(3)

Geography

Graduate Faculty: Professor P. P. Karan. Associate Professors W. A. Bladen, Thomas Leinbach (Director of Graduate Studies), Karl Raitz (Chairman), Gary Shannon, Richard Ulack, W. A. Withington.

Emeritus Professors: Thomas P. Field and Joseph Sohwendeman, Jr.

The Department of Geography offers both M.A. (Plan A and Plan B) and Ph.D. programs. The professional training in doctoral and masters programs provides research-oriented and applied analytical skills relevant to present and anticipated future needs for geographers. The research training and skills of individual graduate students are developed in research seminars and course work in several major focuses:

Cultural Geography—Problem-oriented studies in population growth and change, social and behavioral influences on locational character, urban and rural settlement patterns and processes, distribution and interaction of ethnic groups.

Urban Geography—Three facets of urban analysis are emphasized: basic principles and theories of urban geography; social geography of the city; and comparative understanding of world cities.

Economic Geography—Emphasis is on the spatial analysis of transportation systems and their impact, as well as the empirical and theoretical study of industrial location and development.

Political Geography — Topical analysis centers upon factors affecting the viability of political units, political aspects of development, and the role of increasing economic interdependence in international affairs.

Regional Development—Analysis of developmental change within a variety of spatial and topical viewpoints. Spatial development emphasizes type areas at the local, regional, and worldwide scales; while developmental topics include urban, cultural, population, economic and political processes.

Environmental Analysis and Planning— Spatial analysis of environmental issues such as air and water pollution, energy resources, site planning, socio-economic impacts of land use decisions, and a variety of planning issues and problems.

The faculty includes members who have a major regional research interest, including extensive field experience, in the following areas: Southeast and South Asia, including adjacent Himalayan or highland Asia; and North America, including the Southeast and Appalachia.

Applicants for the Ph.D. in geography must conform to the general requirements of The Graduate School as set forth in the first part of this Bulletin. Although there is no specific course work required in the Ph.D., the program consists of (1) core courses (Geo 700, 702, 707) in the theory and methodology of geography (Geo 710 will be offered periodically as students numbers and performance necessitates); (2) seminars, independent study and directed research in one of the research focuses noted above or in cognate disciplines; (3) successful examination in one modern foreign language; and (4) a dissertation based on original research. A program designed to meet the professional academic goals of each doctoral candidate is outlined in consultation with the Director of Graduate Studies and the candidate's Advisory Committee.

Applicants for the M.A. degree in geography follow a broadly based program which consists of (1) recommended courses (Geo 601, 700, and 707); (2) elective courses in geography and cognate disciplines according to the student's academic goals and career objectives; and (3) the completion of a Master's Thesis. At the discretion of the faculty, a non-thesis degree (Plan B requiring six additional credits) may be permitted. Students in Plan B must submit three research papers as part of the course work. The M.A. student may not take more than six hours of course work below the 600 level. Except for methodological seminars, students are not required to take specific courses. The program is tailored to meet each student's particular needs and requirements, and many interdisciplinary topics may be chosen for study.

All graduate students are expected to demonstrate competence in basic research skills and tools, in critical analysis, scientific writing, and accurate verbalization as part of the degree requirement. During initial phases of graduate work, a strong emphasis is placed upon acquiring competence in the fields of bibliographic techniques, cartographic analysis, and the application of field and quantitative techniques to geographic problems.

Introduction to Planning	
Urban and Regional Planning	(3)
Land Use Planning	(3)
Planning Research Methods and Writing	(3)
Introduction to Analytic Techniques	
in Geography	(3)
Field Studies in Geography	(3)
	Urban and Regional Planning

505	Cartography(3)
520	
	Canada(3)
522	
524	
526	
528	Geography of Asia
530	Geography of South Asia (3)
532	Geography of Southeast Asia (3)
534	Geography of Australia and the
	Pacific Islands
536	Geography of Africa
540	Principles of Urban Geography(3)
541	Geographic Perspectives on Contemporary
1800	Urban Problems(3)
542	
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565	
601	Topics in Geography
605	Field Methods in Geography (3)
625	Computer Cartography
630	Regional Analysis (3)
	Regional Study of Special Areas (3)
640	Transportation Analysis (3)
643	Urban Transportation Planning (3)
652	Soil Classification and Geography (3)
655	Special Study of Systematic Geography (3)
695	Social Ecology (3)
700	Quantitative Methods in Geography (3)
702	Concepts in Geography (3)
707	Seminar in Development of Geographic
	Thought (3)
710	Research Methods and Methodology in
200	Geography
715	Seminar in Systematic Geography (3)
720	Seminar in the Geography of the United
	States and Canada
725	Applied Geography in Developmental
	Analysis
730	Seminar in Regional Geography (3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
771	Advanced Seminar in Geography (3)
772	Special Research Problems in Geography . (3)
	Residence Chada in the State of the State of

Geology

Graduate Faculty: Professors W. H. Blackburn (Director of Graduate Studies), W. H. Dennen (Chairman), W. C. MacQuown, N. Rast, J. Thrailkill. Associate Professor B. R. Moore.

Associate Members: Associate Professor I. S. Fisher Assistant Professors F. R. Ettensohn, R. L. Street.

Emeritus Professors: William Brown, Arthur Mc-Farlan and Vincent Nelson.

The Department of Geology offers graduate work leading to the M. S. and to the Ph.D degrees. The credentials of each applicant are considered individually and applicants from other scientific disciplines are encouraged to apply. Applicants with non-geology backgrounds will be required to attain geologic proficiency through course work. All applicants should have demonstrated competence at the under-

graduate level and a founding in the basic sciences equivalent to that of B.S. Graduates of this Department. Deficiencies in geology, allied sciences and mathematics must be removed by such course work as the departmental committee on Graduate Studies may specify. Each candidate is expected to have or to obtain practice in geologic field work, and must submit an acceptable thesis or disseration which demonstrates ability to conduct sound research. For the Ph.D., the candidate must demonstrate acceptable reading ability in one foreign language common to the scientific literature.

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The principal fields of study offered are geochemistry, hydrogeology, paleoecology, sedimentology, geophysics, stratigraphy, structural geology and tectonics.

Resources for the conduct of advanced studies include reference collections, an outstanding library, sample preparation and field equipment, portable diamonddrilling apparatus and field vehicles. The geochemical laboratories include equipment for x-ray fluorescence and diffraction, atomic absorption, colorometric and gamma-ray spectrophotometry, dc arc and laser emission spectrography. Research apparatus for remote sensing, petrographic microscopy, cathodolum-inescence, and specialized equipment for sedimentologic and paleontologic studies are available within the department. Geophysical facilities include instrumentation for gravity, magnetic and seismic studies. A permanent, six-component, high-quality seismic observatory is presently being installed.

Additional extra-departmental facilities for computing, neutron activation, electron microscopy, rock mechanics and clay mineralogy are readily available.

420G	Structural Geology	(3)
450G	Stratigraphy and Sedimentation	(3)
501	Stratigraphic Paleontology	(3)
510	Ore Deposits	(3)
511	Petroleum Geology	(3)
530	Low Temperature Geochemistry	(3)
531	Igneous and Metamorphic Geochemistry .	(3)
540	Advanced General Geology	(3)
552	Sedimentary Petrology	(3)
560	Optical Mineralogy	(3)
561	Structural Mineralogy	(3)
571	Electrical, Gravity, and Magnetic Geophysi	cal
	Exploration	(3)
572	Seismology and Seismic Exploration	(3)
602	Paleoecology	(3)
603	Micropaleontology	(3)
612	Mineral Deposits	(3)
620	Tectonics	(3)
624	Mesoscopic Structures	(3)
652	Paleozoic Stratigraphy	(3)

653	Mesozoic and Cenozoic Stratigraphy (3)
654	Carbonate Petrology (3)
655	Hydrogeology (3)
660	Petrography(3)
662	X-Ray Mineralogy(3)
665	Igneous and Metamorphic Petrology (3)
670	Selected Topics in Geophysics (3)
671	Earthquake Seismology (3)
681	Mineralogical and Chemical Analysis of
	Soils
703	Paleoecology Seminar
720	Graduate Tectonics Seminar (3)
732	Chemical Sedimentology (3)
733	Petrologic Geochemistry (3)
741	Clay Mineralogy (3)
760	Petrology Seminar (2)
768	Residence Credit for Master's Degree (1-6)
769	Residence Credit for Doctor's Degree (0-12)
782	Individual Work in Geology (1-3)

Germanic Languages and Literatures

Graduate Faculty: Professors Bernd Kratz (Chairman and Director of Graduate Studies), J. Wesley Thomas. Associate Professor Theodore Fiedle

Associate Members: Assistant Professor Jay F. Bodine, Karl J. Fink and Lilian Hoverland. Emeritus Professors: Paul Stapf and Paul Whitaker.

The main purpose of graduate work in the Department's field is to provide students with a thorough understanding of German culture, its language and literature and its relationship to Western Civilization as a whole. Graduate instruction is designed to acquaint the students with the aims and methods of scholarship, to develop an intelligent appreciation of literature, and to make them effective teachers or to provide the cultural enrichment to enhance the quality of their work in other

The Department offers graduate programs leading to the M.A. (Plan A or B) and Ph.D. degrees in German. Also available are supplementary courses in Scandinavian. Competence in another foreign language, normally French, in addition to German is required for graduate degrees.

Admission requirements include an acceptable undergraduate major in German and a satisfactory score on the Graduate Record Examination. Applicants lacking more comprehensive knowledge of German language and literature may be admitted with the understanding that their program must include some advanced undergraduate work in addition to those courses normally required for the M.A. Before being admitted into the doctoral program, each student will be evaluated by the German graduate faculty on the

basis of course grades, including those of at least one semester in the Department, if the M.A. degree was obtained elsewhere, instructor's recommendations, and GRE scores.

Individual programs of study are planned with consideration of the student's competencies and interests. Thus, the department endeavors to be flexible and in teacher preparation, for example, to accommodate particular emphases appropriate for prospective instruction in secondary schools or two or four-year colleges.

Areas of specialization of the graduate faculty of the Department afford flexible coverage in breadth and depth, with particular strength in medieval studies, literature from the age of Goethe to the present, literary theory and intellectual history. The Department serves as the publishing center for the international journal, Colloquia Germanica. Graduate students are encouraged to participate in the editorial work. The University has substantial holdings in all areas of German language, linguistics and literature and in supporting fields. Special collections include German drama on microcard and folklore on microfilm, a selection of Danish literature to 1900, and German books printed before 1600 on 35mm microfilm.

	GERMAN
506	Tutorial in Minor Germanic Language (3)
516	History of German Literature (3)
520	Germanic Proseminar (3)
522	German Impressionism (3)
532	The German Lyric(3)
534,	535 Life and Works of Goethe (3 ea.)
536	Introduction to the History of the
	German Language(3)
537	Introduction to Middle High German (3)
538	Advanced German Conversation and
	Composition(3)
539	Structure of the German Language (3)
540	Germany Since 1871
553	The Teaching of German (3)
621	Introduction to German Bibliographical
	Studies
622	Theories of Literature in German (3)
624	German Literature of the 16th and 17th
	Centuries
625	German Literature of the 18th Century (3)
626	The Age of Goethe (1770-1830) (3)
627	German Drama of the 19th Century (3)
628	The German Novelle(3)
630,	631 Twentieth Century German
	Literature (3 ea.)
635	Gothic
636	Old High German
640	Studies in Germanic Language and
	Literature
642	Medieval German Literature (3)
643	Longer Epic Verse of the German
	Medieval Period (3)

768	Residence Credit for the Master's Degree . (1-6)
769	Residence Credit for the Doctor's Degree (0-12)
778	Seminar: Main Currents of Romance and
	German Literature (3)
781	Special Studies in German (3)
790	Germanic Seminar(3)
	SCANDINAVIAN
	(Offered as required)
500	Swedish (3)
501	Swedish Literature from Belman to the
	Present(3)
504	Danish
505	Danish Literature from Holberg to the
	Present
510	Medieval Scandinavian Literature in
	Translation
511	Scandinavian Literature in Translation:
	Holberg to Lagerkvist
610	Old Icelandic
611	Old Icelandic

Health, Physical Education and Recreation

Graduate Faculty: Professors Leon Garrett (Chairman), Joseph Gruber, Pentti Teraslinna. Associate Professors Jay Kearney (Director of Graduate Studies), Don Kirkendall.

Associate Members: Associate Professor Dennis Vinton. Assistant Professors Stan Labanowich, Ralph Mann, Andrew Weiner.

Emeritus Professors: Earnest Jokl and Don Cash Seaton.

The Department of Health, Physical Education and Recreation offers graduate work leading to the Master of Science degree with an area of concentration in one of the following: recreation, therapeutic recreation, recreation administration, generalist physical education, sport psychology, exercise physiology or adopted physical education.

The Master's program in health, physical education and recreation is designed to provide a quality graduate program for the following two types of students: (1) active, motivated individuals who desire advanced study to enhance their professional adequacy, and (2) discipline oriented students completing a Master's as an intermediate step toward doctoral work. The objective of the program is to prepare the student to: (1) effectively locate, analyze, and utilize significant elements of the professional literature and research materials. (2) permit an in-depth study of a specialized content area within the field, and (3) acquire a knowledge of sound research procedures.

The program needed to accomplish this objective involves a combination of departmental course offerings, supporting elec-

tives, and a required core of statistics and research methods. Inasmuch as the fields of health, physical education, and recreation draw their principles from a variety of disciplines it is appropriate that certain electives be chosen from the supportive areas of the biological and physical sciences and the behavioral and social sciences. Master's candidates with the approval of the Department may select either a thesis (Plan A) or a non-thesis option (Plan B).

Applicants are expected to have a minimum of 21-hours in their respective fields. More specifically, the prerequisites for graduate study in physical education are:

Professional Orientation of History and	
Principles of Physical Education	2
Individual Sports, Dual Sports, Team Sports,	
Aquatics, Gymnastics, and Dance	10
Prevention and Treatment of Athletic Injuries	2
Anatomy and Physiology	4
Tests and Measurements in Physical Education	2
Kinesiology	2
Physiology of Exercise	2
P	

For therapeutic recreation, recreation and administration, or park management, the prerequisites are:

Interpretations of Leisure and Recreation	2
Recreation Program Planning and Leadership	2
Administration and Organization of Recreation .	2
Introduction to Therapeutic Recreation	
or	

Principles of Outdoor Recreation	2
Supervised Field Study in Recreation	3
Laboratory Courses in the Areas of:	
Sport, Music, Art, Theater, Camping or Dance.	3

Students who have a strong background in related biological or behavioral science fields may be considered for admission providing they agree to satisfy prerequisites established in each field. Applicants lacking these prerequisites will be expected to satisfy them via directed readings, competency examinations, or prescribed course work. This is in addition to the normal 30-hour master's program.

General Requirements

Regardless of whether the student concentrates in the physical education areas, therapeutic recreation, or recreation administration, all candidates are required to complete the following.

PLAN A (Thesis Option)

101 4 March (2011) 10 Print St. (2014) 7		9-1
	or	
STA 670	Basic Statistical Analysis	
HPR 644	Research Techniques Applied to	

Health, Physical Education and Recreation 3

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30-31

PLAN B (Non-Thesis Option)

EDP 657	Educational Statistics	3-4
	TAKEL COME OF THE AMERICAN	
STA 670	Basic Statistical Analysis	3-4
HPR 644	Research Techniques Applied	
to He	ealth, Physical Education	
and l	Recreation	3
	Independent Research Project	3
Supportin	ng Electives	6
HPR Are	ea of Concentration	15
	Total	30-31

For additional information, write to the Director of Graduate Studies, Department of Health, Physical Education and Recreation.

540	Organization and Administration of	
	Physical Education	(3)
546	Physical Education Workshop	(2)
547	Psychology of Sport and Physical Activity.	(3)
560	Motor Development in Infants and	
	Young Children	(3)
579	Adapted Physical Education	
592	Choreography	(2)
593	Dance Production	

041	Exercise and Coronary Heart Disease (3)
622	Physical Fitness and Related Concepts (3)
644	Research Techniques Applied to Health,
	Physical Education and Recreation (3)
645	Measurement Theory in Health, Physical
	Education and Recreation (3)
646	Integrated Development (3)
647	Motor Learning(5)
650	Curriculum and Program Develoment (3)
651	Facilities, Construction, and Equipment (2)
690	Organization and Administration of the
	Dance in Education (3)
695	Independent Study in Physical Education. (3)
720	Sports Medicine
741	Current Studies and Trends in Health
	and Physical Education (3)
768	Residence Credit for the Master's Degree (1-6)
770	Seminar in Physical Education (3)
782	Independent Research(8)

RECREATION

570 Landscape Design of Park and

	Recreation Areas	(3
571	Introduction to Therapeutic Recreation	(3
573	Administration and Organization of	
	Recreation	(3
575	Interpretations of Leisure and Recreation.	(3
577	Practicum in Recreation	19

	610 Implementation of Recreation Services
6	For the Ill or Disabled (3)
12	611 Therapeutic Applications of Recreation (3)
ers y come i	676 Current Issues in Recreation (3)
6	685 Admnistrative Practices in Recreation (3)
30-31	696 Independent Study in Recreation (3)
	780 Seminar in Recreation(3)
	HEALTH AND SAFETY
	507 Driver and Traffic Safety Education (3)
	509 Workshop in Health and Safety (2)
	530 Administration of Health and Safety
3-4	Education
	607 Advanced Topics in Safety Education (3)
3-4	609 Seminar in Health and Safety Education . (3)
500	
3	
3	
6	Health Radiation
15	
30-31	Sciences
	Graduate Faculty:* Professor Yosh Maruyama. Asso-
the	ciate Professors John Calkins, Joseph Sayeg (Chairman
	and Director of Graduate Studies). Associate Profes-
nent	sor: Assistant Professor Ralph Christensen.
rea-	*Joint appointment through the department of Radiation Med-
	icine, College of Medicine.
	Two programs in the Bioradiation Sci-
(8)	ences are available leading to the degrees
. (3)	of Master of Science in Radiological
. (2)	
. (3)	Health and Master of Science in Medical
. (3)	Radiation Dosimetry.
. (3)	Graduates of accredited colleges with an
. (2)	appropriate baccalaureate degree (e.g.,
(3)	Biological Sciences, Physics, Public
	Health, Mathematics, Chemistry, etc.)
	may become candidates for one of these
. (3)	degrees. Physics 260 or its equivalent is a
. (3)	prerequisite for both programs, and Com-
. (3)	puter Science 220 or its equivalent is also a
	prerequisite for the program in Medical
. (3)	Padiation Dosimetry
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program in Medical Radiation Dosimetry. Both programs are an interdisciplinary type. As such, Plan B is utilized for the graduate work, incorporating specific courses in several departments. There is no language requirement. A core of courses is common to both programs. Additional and special course work is prescribed for each program as degree requirements.

	CORE PROGRAM	
BIO/RM 540	General Radiation Biology	(4)
BIO/RM 640	Biological Effects of Radiation.	(3)
PHY/RM 472	Interaction of Radiation with	
Matter .		(3)
PHY 535 Ex	perimental Physics, Atomic and	
Nuclear		(2)
PHY/RM 545	Radiation Hazards and	
Protectio	n	(2)
HRS 710 Sen	ninar in Bioradiation Science	(1)
STA 670 Bas	ic Statistical Analysis	(4)
		19

Master of Science in Medical **Radiation Dosimetry**

ADDITIONAL PROGRAM

ANA 5	11 Introduction to Anatomy (5)
PGY 50	2 Principles Physiology Lectures (4)
HRS 7	15 Advanced Problems in Radiation
D	osimetry (2-6)
Area El	ectives
	Total 31 (minimum)

A practicum in Medical Radiation Dosimetry will continue following completion of formal course work. This applied work will be under the staff of the Department of Radiation Medicine.

Master of Science in Radiological Health Specialty

ADDITIONAL PROGRAM

CH 600	Epidemiology	3)
CH 612	Public Health Administration (3)
HRS 720	Advanced Problems in Radiological	
Hea	alth (2-	4)
Area Elec	ctives	7)

A practicum in Radiological Health will be required which will consist of approximately 12 weeks of training at (1) a hospital, (2) a government regulatory agency, and (3) a national laboratory. This will be offered during the summer months after the course work has been completed.

Total 32 (minimum)

690	Research in Radiological Health	(1-3)
695	Research in Radiation Dosimetry	(1-3)
710	Seminar in Bioradiation Sciences	. (1)
715	Advanced Problems in Radiation	
	Dosimetry	(2-6)
720	Advanced Problems in Radiological	
	Health	(2-4)

Higher Education

Graduate Faculty: Professors Charles F. Elton (Chairman and Director of Graduate Studies). Associate Professor Edgar L. Sagan.

Associate Members: Professor Leslie L. Martin, Assistant Professor Jon Hesseldenz (Adjunct).

Emeritus Professor: Collins Burnett.

Higher education as a specialized field of study at the University of Kentucky embodies educational content and process relating to students, faculty, and administration in the two-year and four-year college environments. Students receive an indepth introduction to such aspects of higher education as recruitment, selection and admission; historical backgrounds; faculty role and preparation; organization and administration; the teaching-learning phenomenon in the college setting; student personnel; the junior and community college; curriculum development, implementation and evaluation for undergraduate,

graduate and professional programs; and institutional research.

The Department welcomes qualified students regardless of their undergraduate major and recognizes that course experiences from many disciplines may make a very important contribution to the student's understanding of higher education.

The purposes of the Department follow:

- Provide the student with a critical analysis of the area of higher education, including the development of an attitude of intellectual curiosity about college and university operations.
- Provide a major concentration for those who plan to teach and do research in departments of higher education in institutions offering such graduate programs.
- Provide a support area for those majoring in disciplines other than education, moving shortly or ultimately into college administration
- Prepare students with backgrounds in allied health who are planning to move into teaching and/or administrative positions in two-year and fouryear educational institutions and health care facilities.
- Provide professional preparation for the following careers:
 - General administration president, provost, chancellor, director, academic dean, research administrator, director of institutional planning.
 - Student personnel administration-Admissions officer, registrar, coordinator of student services and activities, dean of students, dean of men, dean of women, director of housing.
 - Development officer-director of public relations, alumni relations, or fund raising.
- Provide research for evaluation in such aspects of higher education as student characteristics, faculty behavior, administrative roles, institutional organization, curriculum design, the teaching-learning process, decision making, and finance and budgeting.

A student who meets the minimal admission requirements of The Graduate School and the College of Education will be considered for admission to the Depart-

The Department offers the following four degrees:

1. Master of Science in Education

Major emphasis is on higher education with course work in the following categories:

Higher Education	15
Research Design and Statistics	3
Electives in Education (outside major)	6
Electives outside Education	6

Specialist in Education
 A minimum of 30 credits at the 600 and 700 levels in Education. At least 24 credits must be taken at the University of Kentucky.

Joint Doctor of Philosophy
 Studies in Higher Education is a joint program between the Department of Higher Education and Social and Philosophical

Required core courses 24
One or more courses in each of four areas:
Foundations, Social Science, Institutional
Studies, Inquiry Skills (minimum) 12
Emphasis in Inquiry Skills 12-15

4. Doctor of Education

Each student's doctoral program is planned in consultation with his Advisory Committee. Program content for the doc-

toral student in education is selected from the following categories:

Higher Education	24
Research Design and Statistics	9
Electives in Education (outside major)	
with a minimum of six hours	
in each of two departments	18
Electives outside Education (all in	
one department)	94

The Department participates in the joint doctoral program with other regional universities. These programs permit qualified applicants to complete approximately one year of graduate study beyond the Master's degree at the regional institution. The remainder of the academic program must be completed at the University of Kentucky. The work of each student is directed by a joint faculty committee from the two institutions.

Inquiries should be directed to: Director of Graduate Studies, Department of Higher Education, 111 Dickey Hall, University of Kentucky, Lexington, KY 40506.

708	Internship in College Administration (4)
718	Trends in Higher Education (3)
719	College Teaching and Learning (3)
722	College Student Personnel (3)
733	Organization and Administration of Higher
	Education
734	The Community and Junior College (3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
798	Seminar in Higher Education (3)
799	Research Problems in Higher Education (8)

History

Graduate Faculty: Professors Raymond Betts, Carl Cone (Director of Graduate Studies), Mary Wilma Hargreaves, Humbert Nelli, Charles Roland, Robert Seager, Gerald Silberstein, Robert Warth. Associate Professors Lance Banning, William Chambliss, Steven Channing, Randolph Daniel, Bruce Eastwood, George Herring, Robert Ireland, Donald Nugent, Robert Olson, Robert Randall, John Scarborough, Joe Thompson (Chairman).

Associate Members: Professor Harry Caudell.
Assistant Professors Eric Christianson, Nancy Dye and
George Wright.

Emeritus Professors: Thomas Clark, Clement Eaton, Holman Hamilton and James Hopkins.

The Master's Program

Students should submit evidence of strong undergraduate preparation in history, preferably an undergraduate major with a minimum grade-point average of 2.8 on a 4.0 scale. Applicants for admission must submit Graduate Record Examination scores and three letters of recommendation from professors familiar with their work. Background in at least one modern foreign language is required for admission. Students will not receive the M.A. degree in history unless they demonstrate reading knowledge of a modern foreign language approved by the Department of History and by The Graduate School. Both Plan A and Plan B are of-

The Ph.D. Program in History

Those who seek the doctorate in history should follow carefully the general directions governing the subjects of residence, courses, and foreign language requisites set forth in the first part of the Bulletin. The applicant does not become a candidate until knowledge of one modern foreign language approved by the Advisory Committee has been demonstrated, either a knowledge of a second foreign language or, upon approval, competence in another skill, such as statistics or computer science or oral history, has been demonstrated, and until the Qualifying Examination has been passed and has been approved by The Graduate School. Choice of an alternative to one of the two modern foreign languages is not a matter of the student's right. The decision belongs to the Advisory Committee to whom the student must demonstrate the appropriateness of the alternative for dissertation research.

The student's work for the doctorate in history is directed by an Advisory Committee composed of representatives of the areas and fields under four preparation requirements. The committee's chairman directs the dissertation and students should consult this person at their earliest convenience.

Requisites for the Ph.D. candidacy in history will be met as follows:

General Preparation: For the purpose of obtaining a sound factual and interpretative understanding to supplement work in the major field, the student will pursue guided reading, research, and course work in one of the following areas:

Ancient History (Greek and Roman)
Early Middle Ages (c. 400-c. 1000)
Late Middle Ages (c. 1000-c. 1500)
Early Modern Europe (1450-1770)
Modern Europe (since 1770)
United States History
Britain and the Empire (1485 to present)
Russia and East Europe
The Far East
Latin America

As an alternative method of satisfying the area requirement, the student may opt an area entitled Western Civilization. This area will require 21 graduate hours of course work at the 500-699 level excluding History 606 but including six hours of Ancient History, six hours of Medieval History, and six hours of European History since 1500 (the last specification possibly including Russian and East European History). None of these hours may be in the student's intensive field.

Intensive Preparation: The student will pursue guided reading, research and course work to obtain professional preparation in depth in two of the following fields, neither of which will duplicate the area chosen for General Preparation:

Greece
Rome
Early Middle Ages (400-1000)
Late Middle Ages (1000-1500)
Renaissance and Reformation (to 1648)
Modern Europe (1600-1770)
Modern Europe (1870 to present)
United States to 1865
United States since 1865
Britain and the Empire, 1485-1815
Britain and the Empire, 1815 to present
Russia and East Europe, 1890 to present
Hispanic America since 1810

Specialty Preparation: The student will be prepared in a third field. Requirements for this field may be satisfied in one of the following ways: ration reirman dits should t conven-

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- 1. Achieving competence in some discipline other than history, but in one closely related to the major field of his-
- 2. Achieving mastery in a special field chosen from within the student's program of Intensive Preparation. Examples of such a field might be United States Intellectual History or the History of Germany. The special field will normally require course work or directed reading in one or more outside disciplines. The choice of the special field will be initiated by the student and the major professor. Final acceptance will rest with the student's Advisory

Students' success in their General Preparation will be evaluated by a written examination. Their success in the Intensive and Specialty Preparations is evaluated by both written and oral examinations.

I. EUROPEAN HISTORY

500	Pre-Classical and Classical Greece	(3)
501	Fourth Century Greece and the	
	Hellenistic World	(3)
502	A History of the Roman Republic	(3)
503	A History of the Roman Empire	(3)
504	Greek and Roman Medicine	(3)
509	Roman Law	(3)
510	Medieval Civilization I	(3)
511	Medieval Civilization II	(3)
512	Medieval Institutions to the Mid-10th	
	Century	(3)
513	Medieval Institutions Since the Mid-10th	
	Century	(3)
514	History of Spain to 1700	(3)
515	History of Spain from 1700 to the Present .	(3)
516	Science and Western Culture I	(3)
517	Science and Western Culture II	(3)
518	Representations of Nature	(3)
519	The Era of the Renaissance	(3)
520	The Era of the Reformation	(3)
521	Europe in the Age of Absolutism	(3)
522	The French and European Revolutions,	
	1760-1815	(3)
523	Europe, 1814-1870	(3)
524	Euopean Diplomacy, 1870-1918	(3)
525	European Diplomacy Since 1918	(3)
528	Cultural and Intellectual History of	
	Europe from the Renaissance to the French	
	Revolution	(3)
529	The Social and Cultural History of	
	Europe in the 19th Century	(3)
530	The Social History of Europe in the	
	20th Century	(3)
533	Modern European Imperialism	(3)
534	Russia in the 20th Century I	(3)
535	Russia in the 20th Century II	(3)
536	Intellectual and Cultural History of	
	Russia and East Europe to 1890	(3)
537	Intellectual and Cultural History of	
	Russia and East Europe from 1890 to the	
	Present	(3)
538	The East European World from 1770-1920	(3)

539	The East European World from 1920 to	
	the Present	(3)
540	History of Modern France to 1815	(3)
541	History of Modern France Since 1815	(3)
542	German History 1815-1914	(3)
543	German History Since 1914	(3)
544	A History of Italy 1789-1890	(3)
545	A History of Italy, 1890 to the Present	(3)
546	The Byzantine Empire	(3)
547	The Ottoman Empire	(3)
548	History of the Middle East: 1916-1952	(3)
549	History of the Middle East: 1952 to Present.	(3)

THE BRITISH EMPIRE

550	English Constitutional History to 1603	(3)
551	English Constitutional History Since 1603	(3)
552	British Social History During the Tudor-	
	Stuart Perod	(3)
554	British History 1815-1901	(3)
555	British History Since 1901	(3)
556	The British Empire to 1860	(3)
557	The British Empire and Commonwealth	(3)
558	History of Canada	. (3)

	III. AMERICAN HISTORY	
560	Colonial America to 1748	(3)
561	The American Revolution, 1763-1789	(3)
562	The New Republic, 1789-1820	(3)
563	Expansion and Conflict, 1820-1860	(3)
564	Emergence of Modern America, 1877 to	\-\-'
	1912	(3)
565	Recent History of the United States.	17
	1912 to 1939	(3)
566	Recent History of the United States	
	Since 1939	(3)
567	Civil War and Reconstruction 1860-1877 .	(3)
568	Cultural and Intellectual History of	
	the United States to 1865	(3)
569	Cultural and Intellectual History of	
	the United States Since 1865	(3)
570	Economic History of the United States	
	to 1865	(3)
571	Economic History of the United States	
	Since 1865	(3)
572	American Constitutional History to 1865 .	(3)
573	American Constitutional History Since	
	1865	(3)
574	The Diplomacy and Foreign Policy of the	
	United States to 1919	(3)
575	The Diplomacy and Foreign Policy of the	
	United States Since 1919	(3)
576	The American Frontier	(3)
577	The American Frontier	(3)
578	History of the Old South	(3)
579	History of the New South	(3)
580	U.S. Urban History to 1865	(3)
581	U.S. Urban History Since 1865	(3)
582	Immigration and American History, 1815	
	to the Present	(3)
583	Science in American Society	(3)
584	The Rise of Scientific Medicine in the	
	United States	(3)
585	Spain and Portugal in America	(3)
586	Modern Mexico	(3)
587	Modern Venezuela, Columbia, and Latin	
75634		(3)
588		(3)
589	American Social History Since 1865	(3)

IV. THE FAR EAST

590	Japanese History to 1800	(3)
591	Japanese History Since 1800	(3)
592	Diplomatic History of East Asia Since 1787	(3)
593	East Asian History Since World War II	(3)
595	Studies in History	(3)

THE GRADUATE GROUP

Seminars

These seminars are designed to acquaint students with the problems, sources and secondary literature in the designated fields in order to prepare them for the graduate written and oral examinations.

606 Historical Criticism
611, 612 Readings in Ancient History (3 ea.
613 Readings in Early Medieval History (3
614 Readings in High and Late Medieval
History(3
615 Readings in History of Science and Medicine
(Through the Renaissance)
616 Readings in History of Science and
Medicine (Since the Renaissance) (3
621, 622 Readings in European History,
1500-1815
623 Readings in European Cultural History
Since 1815
624 Readings in European Political
and Diplomatic History Since 1815 (3
625, 626 Readings in British and British
Empire History (3 ea.
631, 632 Readings in United States History to
1865
633, 634 Readings in United States History
Since 1865
635 Readings in Modern Russian History I (3
636 Readings in Modern Russian History II (3)
637, 638 Readings in Latin American
History (3 ea.)
639 Readings in East Asian History (3)
640 Readings in East Asian History
695 Independent Work
COURSES IN THE 700 CROUP

COURSES IN THE 700 GROUP

These seminars are designed to introduce students to the methods, resources and auxiliary disciplines necessary to research in the designated fields in order to prepare them for the writing of theses and dissertations.

700	Special Problems in History	(3)
705	Seminar in Ancient History	(3)
706	Seminar in Medieval History	(3)
710	Seminar in American History, 1607-1783 .	(3)
711	Seminar in American History, 1783-1865 .	(3)
712	Seminar in American History, 1865 to the	
	Present	(3)
715	Seminar in Latin American History	(3)
720	Seminar in Modern European History,	
	1500-1714	(3)
721	Seminar in Modern European History,	
	1714-1870	(3)
722	Seminar in Modern European History,	
	1870 to the Present	(3)
730	Seminar in Modern British History	(3)

768	Residence Credit for the Master's Degree	(1-6)
769	Residence Credit for the Doctor's	
	Degree	(0-12)

Home Economics

Degree of Master of Science in Home Economics

Graduate Faculty: Professor Marjorie Stewart (Dean), Extension Professor Doris Tichenor (Assistant Extension Director for Home Economics and Director for Comunity Development).

The Graduate School rules and regulations for the master's degree apply to the Master of Science in Home Economics. Plan A requires 24 hours plus a thesis except in the Department of FAM which requires 30 hours plus a thesis. Plan B requires 36 hours. No language is required. Because prerequisites vary within each area, the prospective student is advised to contact the appropriate Director of Graduate Studies, College of Home Economics, University of Kentucky.

For more information about specific departments see that section of the Bulletin which gives a detailed description. The departments are: Family Studies; Human Development and Resource Management; Human Environment; Design and Textiles; and Nutrition and Food Science. For information about Home Economics Education see Vocational Education.

575	Community Analysis	(3)

Horticulture and Landscape Architecture

Graduate Faculty: Professors Dean Knavel, Raymond Lockard (Director of Graduate Studies), Hubert Mohr, William Schneider, A.S. Williams (Chairman), Associate Professors Jack Buxton, Thomas R. Kemp, Aly Lasheen, Leonard Stolz

Associate Members: Associate Professor Carl Chaplin. Assistant Professor Dale Maronek.

The Department offers graduate work leading to the Master of Science in Agriculture degree. Degrees are awarded primarily under Plan A, but they can be awarded under Plan B with prior approval. The study and research program may relate to Pomology, Vegetable Crops, Floriculture, or Ornamental Horticulture. Research problems are normally related to the discipline of genetics and physiology.

Students interested in working in horticulture toward a Doctor of Philosophy degree may enter the interdepartmental Plant Physiology or Crop Science programs.

502	Pomology: Deciduous Fruits II	(3)
510	Outdoor Vegetable Production	(3)
512	Greenhouse Vegetable Crops	(2)
EIE	Tunf Management	101

524	Floriculture
570	Landscape Design of Park and Recreation
	Areas
582	Special Problems in Horticulture (1-4)
590	Vegetable Crop Breeding (3)
601	Physiological Mechanisms in Horticultural
	Plants(3)
625	Advanced Plant Propagation(3)
732	Mineral Nutrition of Plants (3)
734	Physiology of Growth and Development (3)
736	Phylogeny of Cultivated Plants (3)
768	Residence Credit for Master's Degree (1-6)
770	Seminar
790	Research in Horticulture (1-4)

Human Environment: Design and Textiles

Graduate Faculty: Professor Richard Rankin (Chairman and Director of Graduate Studies).

Associate Members: Assistant Professors Kathy Lafferty and Terry Rothgeb.

DESIGN

401G	History of Interiors I: A Survey Through	
	the 18th Century	(3)
402G	History of Interiors II: A Survey of 19th	
	and 20th Centuries	(3)
507	Interior Design Studio V: Total	
	Design/Total Function	(3)
508	Interior Design Studio VI: Research/Ex-	
	perimentation/Creativity	(3)
528	Res/Pres I: Introductory Concepts of	
	Restoration and Preservation	(3)
536	En Pro II: Environmental Product Design	(3)
548	Pro/Prac II: Professional Practice	
	and Field Experience	(3)
593	Special Problems in Shelter and	
1	Interior Design (1	-3)
768	Residence Credit for the Master's Degree (1	-6)
772	Seminar in Interior Design	(2)
783	Special Problems in Interior Design (1	-3)
	TEXTILES	

430G	Tailoring (3)
520	Textiles II
522	History of Textiles(3)
526	Decorative Textiles (2)
533	History of Costume
537	Socio-Psychological and Economic
	Aspects of Apparel (3)
540	Textiles and Design Study Tour (1-3)
590	Merchandising III: Internship (5)
592	Special Problems in Clothing and
	Costume Design (1-3)
597	Special Problems in Textiles (1-3)
660	Experimental Apparel Construction (3)
768	Residence Credit for the Master's Degree (1-6)
772	Seminar in Textiles and Clothing (2)
782	Special Problems in Clothing and
	Costume Design
787	Special Problems in Textiles (1-3)

Library Science

Graduate Faculty: Professors Lawrence A. Allen, Robert E. Cazden, Timothy Sineath (Dean and Director of Graduate Studies). Associate Professors Lois Chan, Michael H. Harris, Thomas Waldhart. Associate Members: Assistant Professors Rosemary DuMont, Joann Rogers and Wayne Wiegard.

Since January 16, 1974 the College of Library Science does not admit students during the spring semester. Students are only admitted during the summer term and fall semester.

The College of Library Science offers three degrees, M.A., Plan A; M.A., Plan B; and MSLS. The degree requirements for these degrees are as follows:

I. M.A., Plan A Requirements

A. Course Requirements

- 36 total credit hours, 30 of which must be graduate credit hours
- 2. 9 hours—Required Introductory Courses (LS 500, 501, 502)
- 21 hours elective
- 6 hours thesis credit
- 3. 15 hours must be on the 600-700 level
- B. Thesis
- C. Modern Foreign Language—reading proficiency in French, German, Russian, or Spanish (one required). Another language may be substituted by petition. This requirement may be satisfied by one of four methods:
 - 1. by examination at beginning of each semester.
 - by successful completion of special, non-credit, one semester course in a foreign language.
 - 3. by having completed the undergraduate language requirement at the University of Kentucky with a B average.
 - by satisfying the language requirement for another graduate degree.
- D. Oral examination in defense of thesis.

II. M.A., Plan B Requirements

A. Course Requirements

- 1. 36 credit hours, 30 of which must be graduate credit hours
- 2. 9 hours—Required Introductory
 (LS 500, 501, 502)
 - 6 hours—advanced bibliography
 or

technical processing courses

- 6 hours—cognate courses on 500 level or above
- 15 hours-elective
- 3. 15 hours must be on the 600-700 level
- B. No thesis required
- C. Modern Foreign Language—as in M.A., Plan A
- D. Final Examination

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III. M.S.L.S. Requirements
A. Course Requirements
1. 36 total credit hours, 30 of which must be graduate credit hours

2. 9 hours—Required Introductory
Courses
27 hours—elective
3. 15 hours must be on the 600-700

level

B. No thesis required

C. No modern foreign language competency required

D. Final Examination

The minimum College standards for admission to graduate work in Library Science include a bachelor's degree from an accredited institution, an undergraduate GPA of 2.75 and a combined score of 900 on the verbal and quantitative aptitude tests of the Graduate Record Examination. A separate application to the College of Library Science is also required. For additional information, bulletin, and appropriate forms, contact Assistant Dean, College of Library Science.

500	Library Administration (3)
501	Introduction to Cataloging and	
	Classification)
502	Reference and Information Services (3)
503	Selection and Acquisition of Library	
	Materials)
504	Social Foundations of Librarianship (3)
509	Administration of School Media Centers (3)
510	Children's Literature and Related	
	Materials (3)
513	Literature and Related Materials for Early	
	Adolescence)
514	Literature and Related Materials for Young	
	People	500
516	School Media Practicum (3-9)
525	Professional Field Experience (3)
586	Utilization of Educational Media (3)
600	Administrative Behavior in Library	
	Management)
601	Advanced Cataloging and Classification (3)
602	Bibliography of Social Sciences (3)
603	Bibliography of the Humanities (3)
604	Bibliography of Science)
605	Introduction to Information Sciences (3)
606	Automation and the Library)
608	Methods of Research in Librarianship (3)
609	Public Libraries)
610	Academic Libraries)
611	Scientific and Technical Libraries (3	
613	Library Systems Analysis)
614	Information Storage and Retrieval Systems (3)
617	History of Books and Printing to 1800 (3	
618	Reading Interests of Adults)
619	Collection Development in Academic	
	Libraries (3)
620	Rare Books Bibliography (3	
621	Special Collections	
623	Subject Bibliography	30
624	Library of Congress Classification (3)
625	History of Books and Printing—1800 to	
	the Present)

626	Government Publication	(3)
627	History of Libraries	(3)
628	Library Buildings	(3)
630	Creative Library Programs for Children	(3)
635	Current Problems in School Libraries	(3)
637	Advanced Literature for Children	(3)
640	Medical Librarianship	(3)
641	Law Librarianship	(3)
686	Cataloging Non-Print Materials	(3)
687	Multi-Media Materials	(3)
690	Special Topics in Librarianship	(3)
695	Independent Study in Library Science	(3)
768	Residence Credit for the Master's Degree (1-6)

Mathematics

Graduate Faculty: Professors J.D. Buckholtz, Thomas Chapman, Donald Coleman, Edgar Enochs, L. C. Evans, Michael Freeman, Brauch Fugate, Thomas Hayden, Henry Howard, Frank Keogh, Kenneth Kubota, Don Leigh, John Mack, Raymond Rishel, Wimberly Royster, Ted Suffridge, Clasine van Winter, James H. Wells, Roger Wets (Chairman). Associate Professors David Adams, James Beidleman, James Brennan, Richard Carey, Raymond Cox, Paul Eakin, Carl Eberhart, Graeme Fairweather, Steven C. Ferry, Ron Gariepy, Wayne Goodwyn Director of Graduate Studies), Lawrence Harris, David Johnson, John Lewis, Anders Lindquist, Avinash Sathaye and James Simpton.

Associate Members: Assistant Professors Julio Diaz, Robert Molzon, Danny Sorensen, and Da-Lun Wang. Emeritus Professor: S. M. Shah.

The Department of Mathematics grants the M.A., M.S. and Ph.D. degrees. There are no specific course prerequisites for admission; however, two semesters of advanced calculus, and at least one semester each of algebra and topology are suggested.

The Master of Arts degree, designed for prospective junior college and secondary school teachers, is based on a 30 credit-hour program, requires a reading knowledge of one foreign language and is offered under either Plan A or B.

The Master of Science degree, designed for those planning on a mathematical career in business or industry, is based on a 36 credit-hour program which requires course work in several areas of modern mathematical applications. It is offered under Plan B only; no foreign language is required.

The doctorate is a research degree granted on the basis of broad mathematical knowledge and exhibited creative ability. Course work leading to the doctorate is available in the fields of algebra, analysis (classical and modern), applied mathematics, with specialization in optimization and numerical analysis, differential equations, and topology. A comprehensive examination is required of each student.

This examination normally is given after two years of graduate study. At least two semesters of supervised teaching experience is required of all Ph.D. students.

In order to be admitted to candidacy for the degree, a student must pass proficiency examinations in two foreign languages chosen from French, German or Russian, complete studies in a minor field (either inside or outside the Department) and successfully complete the comprehensive examinations. Subsequent work becomes highly specialized through seminars, independent study, and finally, work on a dissertation which penetrates in depth some field of particular interest. The Department will further require of all candidates an internship. This internship will usually consist of teaching (three to six semester hours), though upon approval of the Director of Graduate Studies, the student may select some other activity appropriate to his professional expectations. Areas in which members of the faculty have active research projects include algebraic, general and infinite-dimensional topology, group theory, ring theory, algebraic geometry, number theory, one and several complex variables, national approximation, operator theory, differential equations, numerical analysis and optimization and control theory.

410G	Mathematics for Economists	(3)
411G	Models in Mathematical Biology	(3)
413G	Topics in Mathematics	(3)
415G	Graph Theory	(3)
416G	Principles of Operations Research I	(3)
417G	Principles of Operations Research II	(3)
421G	Elementary Numerical Analysis I	(3)
423G	Introductory Probability	(3)
432G	Methods of Applied Mathematics I	(3)
433G	Methods of Applied Mathematics II	(3)
441G	Geometry I	(3)
442G	Geometry II	(3)
462G	Matrix Analysis	(3)
471G	Advanced Calculus I	(3)
472G	Advanced Calculus II	(3)
481G	Differential Equations I	(3)
483G	Differential Equations II	(3)
485G	Fourier Series and Boundary Value	
	Problems	(3)
501	Seminar in Selected Topics	(3)
502	Seminar in Selected Topics	(3)
503	Combinatorics	(3)
-504	Fundamentals of Applied Mathematics	(3)
505	Linear Algebra	(3)
515	Mathematical Programming and	
	Extensions	(3)
521	Numerical Analysis of Ordinary	
	Differential Equations	(3)
522	Theory of Matrices	(3)
523	Probability Models	(3)
525	Numerical Methods for Differential	
	Equations	(3)

532	Ordinary Differential Equations	(3)
533	Partial Differential Equations	(3)
535 536	Vector and Tensor Analysis	(3)
330	Functions	(3)
538	Elementary Numerical Analysis II	(3)
551	Topology I	(3)
561	Modern Algebra I	(3)
565 566	Linear Algebra	(3)
570	Multivariate Calculus	(3)
571	Analysis I	(3)
573	Applied Complex Analysis	(3)
585	Boundary Value Problems of Mathematical	(0)
601	사람님들의 생물이 되었으면 하면 하면 하면 하면 하면 하는데 하는데 하는데 하는데 하는데 하는데 하는데 하는데 되었다.	(3) (3)
602	4 (2 <u>11)</u> 4 (21) 1 (21) 1 (21) 1 (21) 1 (21) 1 (21) 1 (21) 1 (21) 1 (21) 1 (21) 1 (21) 1 (21) 1 (21) 1 (21) 1 (21)	(3)
603		(3)
604	마일부터 하게 하는 사람들은 가장 하나 하나 들어 있다면 하는데 사람들이 되었다. 그는 사람들이 되었다면 하는데	(3)
611	H : (1) [1] [1] [1] [1] [1] [1] [1] [1] [1] [1]	-9)
615	Convex Analysis and Optimization Numerical Techniques for Nonlinear	(3)
010		(3)
617	Markovian Decision Problems	(3)
618		(3)
619		(3)
021	Numerical Analysis of Partial Differential Equations	(3)
622		(3)
630	Mathematical Foundations of Stochastic	
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631	Mathematical Foundations of Stochastic	/e\
632		(3) (3)
633		(3)
635	Theory of Tensors	(3)
637	가게 되었는데 그 사람들이 하는데 되었다. 하는데	(3)
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642		(3)
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651		(3)
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655	2014년 2월 7일 1일 1일 1일 1일 2일 1일	(3)
661	그리고 있다고 있는 경험과 원교 10일에는 휴란 10일에는 휴란 10일에 대한 10일 경기를 하는 것이 없는 그리고 있다.	(3)
667	Group Theory	(3)
670 671		(3)
672		(3) (3)
673	보이 아름이 살아보니 아내가 있다면 하는데	(3)
678	Calculus of Variations	(3)
679	Mathematical Theory of Linear Control	(9)
681		(3) (3)
682	경우를 잃었다면 하는 것이 없었다면 하는 것이 되었다면 하는 것이 없는 것이 없는 것이 없는 것이 없다면 없었다면 없었다.	(3)
683	Convergence and Summability	(3)
685	Fourier Analysis	(3)
687		(3)
715		(3) (3)
732	Selected Topics in Differential and	,
	Integral Equations	(3)
751	Selected Topics in Topology	(3)
752 753	보이는 하는데 이 이 아이는 전쟁으로 하고 있을 때문에 되었지만 없었다고 있었다. 그 아이는 이를 살아보니 않게 되었다고 있다.	(3)
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755		(3)
756	Selected Topics in Topological Algebra	(3)
757		(3)
761 762		(3) (3)
	, or armago	(0)

763	The Theory of Fields (3)
764	Selected Topics in Algebra(3)
765	Selected Topics in Algebra(3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree(0-12)
771	Selected Topics in the Theory of Complex
	Variables
772	Selected Topics in the Theory of Complex
	Variables
773	Selected Topics in Analysis (3)
774	Selected Topics in Analysis (3)
777	Mathematical Seminar (3)
778	Mathematical Seminar (3)

Mechanical Engineering

Graduate Faculty: Professors Richard Birkeback, Merle Carter, Clifford Cremers (Chairman and Director of Graduate Studies), Roger Eichhorn, James Funk, James Lafferty, John Lienhard. Associate Professors Ottfried Hahn, Charles Knapp, Shiva Singh.

Associate Members: Professor Orville Stewart. Assistant Professors Robert Altenkirch, Pramode Bhagat, Thomas Eaton, Robert Peck, and Andrew Seybert.

The Department of Mechanical Engineering provides programs for study and research leading to the Master of Science in Mechanical Engineering, the Master of Science in Nuclear Engineering, and the Doctor of Philosophy.

Areas of concentration for research and study are (1) thermal sciences comprising heat transfer, thermodynamics and fluid mechanics, (2) design, (3) biomedical engineering, (4) nuclear engineering, (5) air pollution, (6) systems and controls and (7) coal science, (8) power systems, (9) combustion, and (10) acoustics.

Graduate study normally requires a bachelor's degree in engineering, not necessarily in mechanical engineering. An undergraduate degree in chemistry, physics or mathematics combined with a strong interest in engineering topics is suitable preparation when certain required undergraduate courses are also taken.

The master's degree can be completed in one academic year plus a summer, but students holding assistantships usually find it necessary to spend about one and one-half years to complete all of the requirements. A non-thesis option (Plan B) for the master's degree is available for students with acceptable previous research or design experience.

The Ph.D. degree has no formal course requirement. Generally students take a number of courses to prepare for the qualifying examinations and usually need to spend two years to complete a suitable dissertation. Most students find more than

one year of course work beyond the master's degree necessary preparation for the qualifying examination. The language requirements for the Ph.D. may be satisfied by either German or Russian.

The Department has seven research laboratories. These are the Boiling and Phase Change Lab, Coal Research Lab, Digital System Lab, High Temperature and Thermal Radiation Lab, Combustion Lab, Nuclear Engineering Lab, and the Wenner-Gren Research Lab for bio-medical engineering. The Department laboratories are well-equipped with instrumentation, computers, and facilities for study in the areas of air pollution, biomedical engineering, coal research, combustion, fluid mechanics, heat transfer, and nuclear engineering.

475G	Introduction to Nuclear Engineering	(3)
480G	Thermal Environmental Engineering	(3)
514	Nuclear Reactor Analysis I	(3)
515	Fuel Management and Economics of	
	Nuclear Reactors	(3)
517	Instrumentation for Research	(3)
529	Intermediate Fluid Mechanics	(3)
530	Gas Dynamics	(3)
540	Analysis and Simulation of Dynamic	
	Systems	(3)
563	Basic Combustion Phenomena	(3)
564	Propulsion System Design	(3)
565	Energy Engineering	(3)
566	Direct Energy Conversion Processes	(3)
567	Air Pollution Engineering and Economics	(3)
583	Biotechnology	(3)
590	Elements of Aero-Space Technology	(3)

Prerequisite for graduate work: Students desiring to take any of the following courses should have a thorough working knowledge of chemistry, physics and mathematics.

610 Engineering Acoustics (3)

611	Nuclear Reactor Analysis II	(3)
620	Advanced Engineering Thermodynamics I	(3)
621	Advanced Engineering Thermodynamics	
	ш	(3)
625	Advanced Heat Conduction	(3)
626	Advanced Heat Convection	(3)
627	Radiation Heat Transfer	(3)
630	Fluid Dynamics I	(3)
631	Fluid Dynamics II	(3)
632	Compressible Fluid Flow	(3)
634	Turbulent Flows	(3)
640	Advanced Analysis and Simulation of	
	Dynamic Systems	(3)
642	Advanced Kinematics of Machinery I	(3)
643	Advanced Kinematics of Machinery II	(3)
645	Systems Concepts and Analysis	(3)
647	System Optimization I	(3)
651	System Optimization II	(3)
664	Experimental Methods in Nuclear	
	Engineering	(3)
665	Nuclear Reactor Dynamics	(3)
666	Radiation Damage and Shielding	(3)
667	Nuclear Reactor Design	(4)
685	Biofluid Mechanics	(3)
768	Residence Credit for the Master's Degree (1-6)

h		
the mas-	769	Residence Credit for the Doctor's
for the		Degree (0-12)
uage re-	772	Bio-Mechanics Seminar(1)
satisfied	780	Special Problems in Mechanical
Juliozioa		Engineering(3)
THE REPORT OF THE PARTY OF THE	781	Special Problems in Bioengineering (3)
rch lab-	782	Advanced Topics in Heat Transfer (3)
nd Phase	783	Topics in Advanced Systems Theory (3)
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Medical Microbiology and Immunology

Chairman: Samuel Kaplan

The Department of Medical Microbiology and Immunology provides an interdisciplinary approach to the study of basic cellular processes encompassing prokaryotes and eukaryotes, including man. The Department is multidisciplinary in its research and teaching. Research areas include microbial physiology, immunology, cell and molecular biology, genetics and gene regulation. The program of study is determined by the individual background and career goals of the student and, when appropriate, may include participation in the education of medical students. Graduate students are supervised through the graduate program in microbiology as well as through graduate programs in biochemistry, biology and physiology and bio-

Inquiries regarding graduate level training in Medical Microbiology and Immunology as well as the availability of financial support should be directed to the Chairman of the Department of Medical Microbiology and Immunology.

512	Cellular Physiology	(3)
515	General Cell Biology	(3)
615	Molecular Biology	(3)
707	Contemporary Topics in Immunology	(3)
710	Special Topics in Cell Biology	(2)

Metallurgical **Engineering and Materials Science**

Graduate Faculty: Professors H. Conrad (Chairman), R. DeAngelis (Director of Graduate Studies), P. Gillis, P. Reucroft, G. Sargent. Associate Professor J. Morris.

Associate Member: Assistant Professor A. Fine Emeritus Professor: R. E. Swift.

The Department offers programs of study leading to the Master of Science in Metallurgical Engineering, or in Materials Science, and the Doctor of Philosophy. The graduate program in the Department has as its aim the development of skills and techniques which are conducive to independent thought, learning and investigation. Degree programs can be selected by the student from a wide variety of topics in the following and other areas: Physical Metallurgy; Mechanical, Chemical and Electronic Properties; Metal Deformation Processing; Electron, X-ray and Field Ion Microscopy; Ultrahigh Vacuums and High Pressures; Metals, Ceramics and Polymers. Extensive and modern laboratory facilities located in Anderson Hall are available for experimental investigations in these areas.

Preparation for study in this Department normally consists of a bachelor's degree in metallurgical engineering. However, an undergraduate degree in chemistry, physics, mathematics or another engineering discipline provides excellent preparation if coupled with a strong interest in the behavior of materials.

The Master's degree may be obtained by satisfying the usual college requirements. Plan A is preferred. However, students may elect during their first semester of enrollment to substitute six credits of graduate level course work (Plan B) for the thesis. For further information consult the Director of Graduate Studies. There is no language requirement for this degree.

The degree of Doctor of Philosophy is conferred upon candidates who, after completing not fewer than three years of graduate work devoted to study in the broad field of Metallurgical Engineering or Materials Science, present a satisfactory thesis, pass a comprehensive examination on their subject and chosen field and show sufficient promise of scholarly attainment. It is intended to represent the attainment of independent and comprehensive scholarship in the field. Reading knowledge of one modern foreign language and demonstrated competence in a minor area from the fields of engineering, mathematics, physical or biological sciences is required for the Ph.D. degree.

The Department of Metallurgical Engineering and Materials Science does not require the candidate to complete a specified number of academic courses. However, a special program is usually recommended by the student's Advisory Committee to fulfill specific needs. Admission to the doctoral program requires the passing of a comprehensive preliminary examination. the nature of which is set by the student's Thesis Advisory Committee.

505	Viscoelasticity .																			(3)	
506	Mechanics of Co	om	D	O	i	te	1	A	a	te	er	i	a	ls		9	2	A	1	(3)	

531	Powder Metallurgy	(3)
532	Composite Materials	(3)
534	Physical Structure of Polymers	(3)
535	Mechanical Metallurgy	(3)
536	Ceramic Engineering	(3)
538	Deformation Processing	(3)
539	Nuclear Metallurgy	(3)
541	Advanced Extractive Metallurgy	(3)
544	Introduction to Non-Destructive Testing .	(3)
550	Corrosion	(3)
551	Advanced Chemical Metallurgy	(3)
552	Polymeric Materials	(3)
553	Thermodynamics of Polymer Systems	(3)
566	Crystallography and X-ray Metallography	(4)
599	Topics in Metallurgical Engineering	
	and Materials Science (2-3)

PREREQUISITE FOR GRADUATE WORK: Students desiring to take any of following courses should have a thorough working knowledge of chemistry, physics and mathematics. Degrees offered are a Master of Science in Metallurgical Engineering and a Doctor of Philosophy in Physical Metal-

632	Advanced Materials Science (3)
633	Special Purpose Alloy Steels (3)
635	Advanced Mechanical Metallurgy (3)
636	Dislocation Theory
637	Materials Engineering
641	Advanced Production Metallurgy (3)
650	Advanced Materials Thermodynamics (3)
659	Advanced Phase Diagrams(3)
661	Advanced Physical Metallurgy I (3)
662	Advanced Physical Metallurgy II (3)
663	Theoretical Structural Metallurgy (3)
666	Diffraction Methods in Metallurgy (4)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
771	Seminar
781	Special Problems, Literature and
	Laboratory
782	Special Problems, Literature and
	Laboratory

Microbiology

Graduate Faculty: Professors M.I.H. Aleem, E.W. Chick, S.F. Conti (Director of Graduate Studies), D. Goldenberg, J.C. Humphries, H.E. Swim and R.F. Wiseman. Associate Professors Albert Brown, N.L. Goodman, D.O. Harris and Sheldon Steiner.

Associate Members: Professor Raymond Otero (Adjunct). Associate Professors D.S. Bauman, T.C. Gray, T. Lillich and T.L. Roszman. Assistant Professors B.H. Brownstein, R. Bridges, Robert Calmes, J.D. Clark, M. Crandall, A.D. Hitchins, J.A. Lesnaw Donald Pett, F. J. Primus, D.B. Shah, C.D. Smith and

Emeritus Professors: O. F. Edwards, James Humphries, Isaac Ruchman and Morris Scherago.

The graduate program in Microbiology offers the Master of Science and Ph.D. degree in the various fields of morphology and physiology of microorganisms, immunology and medical and public health microbiology. Areas of research specialization include Microbial Biochemistry and Bioenergetics, Virology, Ecology, Microbial Genetics, Taxonomy, Gnotobiotics

(germ-free animal research), Microbial Ultrastructure and Medical Mycology.

Plan B is permitted. All graduate students including those under Plan B are required to engage in graduate-level research.

(See courses in Biology)

School of Music

Graduate Faculty: Professors Joe Buttram (Chairman), Hubert Henderson, Donald Ivey, Rey M. Longyear, Wesley K. Morgan (Director of Graduate Studies), Nathaniel Patch, Lucien Stark, Kenneth Wright. Associate Professor Joseph Baber.

Associate Members: Assistant Professors Lance Brunner, Richard Domek, William Prizer, Thomas Tunks, and Cecilia Wang.

Adjunct Professors: Carl-Werner Guempel (UL), Gerhard Herz (UL), Robert Weaver (UL).

Emeritus Professors: R. Bernard Fitzgerald, Gordon Kinney and Kenneth Wright

The School of Music offers the Master of Arts (M.A.) in musicology or theory; Master of Music (M.M.) in performance, theory, composition, or music education; Doctor of Musical Arts (D.M.A.) in theory, music education, or performance; and the Doctor of Philosophy (Ph.D.) in musicology. The applicant for the master's degree is expected to have earned an appropriate undergraduate degree at the University of Kentucky or an equivalent degree from a comparable institution.

Entrance Requirements

Entrance/Placement examinations in theory, music history and literature, and the proposed field of specialization are required of all applicants before admission to graduate programs in music. Graduates of, or students currently enrolled at the University of Kentucky are not exempt from this requirement. Those seeking a degree in performance must audition as well. Entrance examinations and auditions are held three times each year for those wishing to enroll the following fall semester: the last Saturday of January, and the second Saturday of March and July. For those wishing to enroll in the spring semester, examinations and auditions will be held the second Saturday in November. The Director of Graduate Studies must be notified at least four weeks in advance of the date chosen by the applicant.

Note: Persons not applying for financial assistance may choose any of the above dates. Persons applying for Non-Service Fellowships must take the examinations (and the audition if applicable) on the last Saturday of January. Those applying for teaching assistant-

ships may choose the last Saturday of January or the second Saturday of March. Those wishing to begin studies during a summer session must take the examinations no later than the second Saturday of March.

In cases of extreme hardship, arrangements may be made with the Director of Graduate Studies to take entrance examinations in abstentia and to send audition tapes. (Does not apply to D.M.A. candidates.)

GENERAL REQUIREMENTS FOR MASTER'S DEGREE

Foreign Language Requirements. The Master of Arts degree requires a reading knowledge of one foreign language, preferably French or German. Voice majors must have completed one year of study in each of two modern foreign languages.

Thesis Requirements. The Master of Arts degree requires a thesis (Plan A: see general requirements). A public recital acceptable to the faculty is required in lieu of a thesis for the Master of Music degree in Performance. A composition of major proportions, acceptable to the compositiontheory faculty and publicly performed, must be submitted in lieu of a thesis by candidates for the Master of Music degree in Composition. A thesis is optional (Plan A or Plan B) in the Master of Music in Music Education or Theory. Twenty-four hours are required with a thesis or 30 hours without a thesis.

A final comprehensive examination is required for each program.

MASTER OF ARTS (MUSIC)

Prerequisites: A suitable background in music literature and music theory, and a reading knowledge of one foreign language, normally French or German.

MUSICOLOGY EMPHASIS

Music History and Literature	9-12
Theory (including MUS 671)	. 5-8
Research Methods (MUS 618)	
Directed Electives	. 2-8
Thesis	0
Total	24
THEODY EMBILACIE	

THEORY EMPHASIS

Theory (including MUS 671 and	
MUS 672)	9-12
Music History and Literature	6-8
Research Methods MUS 618)	
Directed Electives	
Thesis	
Total	24

MASTER OF MUSIC (THEORY)

Prerequisites: Ten hours of upper division theory, including form and analysis and counterpoint, or the equivalent.

Theory (including MUS	578 or 671
and 672)	10

Research Methods (MUS	618).	I,										3
Music History and Litera												
Pedagogy of Theory (674,	675)											1
Directed Electives												
Thesis (if desired)												
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The student may either prepare a thesis or take six additional hours of Theory, Composition, or Music History and Literature courses for a total of 30 hours of course work.

MASTER OF MUSIC (COMPOSITION)

Prerequisites: Submission of three original compositions.

Advanced Composition (MUS 673)								4
Music History and Literature								
Theory (including MUS 578 and/or								
671)								8
Directed Electives								6
Thesis Composition								0
	7	r	ot	al	l	50750	10000	24

The thesis composition must be publicly performed. The student is responsible for the preparation of legible score and parts.

MASTER OF MUSIC (PERFORMANCE)

Prerequisites: Acceptance by the appropriate faculty of applied music.

Applied Music (includin	g recita	1)		9
Music History and Litera				
Theory (including MUS				
Directed Electives				
Recital				
			Total	90

This degree program is offered in the following areas: piano, voice, organ, violin, viola, cello, flute, oboe, clarinet, trumpet, french horn, trombone, and tuba.

Wind and string majors must participate in at least one University-sponsored performing organization for two semesters. A minimum of three full semesters, excluding summer sessions, is necessary for an M.M. in Performance.

MASTER OF MUSIC (MUSIC EDUCATION) Plan I*

History and Philosophy of Music	
Education (MUS 751)	3
Supervision and Administration of	
School Music (MUS 750)	3
Music Education Electives	6
Applied Music (500 Level)	6
Major Instrument	2-2
Minor Instrument	1-1
Research Methods (MUS 617)	3
Music History and Theory (includin	g
MUS 578 or 671)	6
Electives in Music or Education	3
	Total 30

Plan II*

TY! 1 DL !! 1 () ()	
History and Philosophy of Music	
Education (MIIS 751)	

3	
6	Supervision and Administration of
1-7	School Music (MUS 750)
0	Music Education Electives
24-30	Applied Music (500 Level) 3 Research methods (MUS 617) 3
hesis or	Theory (including MUS 578 or 671) 4
omposi-	Music History and Literature
urses for	Electives
	Total 30
TION)	Plan III*
original	History and Philosophy of Music
	Education (MUS 751)
4	School Music (MUS 750) 3
6	Music Education Electives
	Applied Music (500 Level) 3
8	Research Methods (MUS 617)
6	MUS 578 or 671) 6
al 24	Electives 3
	Thesis
cly per-	Total 24
ie prep-	*Students planning to earn the doctorate in Music Education should elect Plan II or III.
NCE)	
	Each full-time resident graduate student in
opriate	music education must participate in a Univer- sity-sponsored performing organization for two
	semesters.
9	The second secon
6	DOCTOR OF
11	MUSICAL ARTS DEGREE
0	The D.M.A. program offers opportun-
1 30	ities for fullest professional development as
follow-	a specialist or teacher in the following
viola,	fields: Music Education, Theory, and Ap-
french	plied Music.
	The applicant for this program should
te in at ing or-	have had at least two years teaching ex-
um of	perience. One foreign language, normally
essions,	French or German, is required. The stu-
	dent must also demonstrate a working knowledge of music terms in French, Ger-
	man, and Italian by a special examination
	given prior to the qualifying examination.
	One lecture-recital and two formal reci-
	tals are required for the D.M.A. degree
	with applied music as a major. The pro-
3	gram content of these recitals will be estab-
3	lished in cooperation with the student's
6	special committee no later than by the end
6	of the third semester of work leading to-
1-1	ward this degree. One recital must precede
3	the qualifying examinations.
	The minimum core requirements for the
6	DMA L. J. L.

D.M.A. beyond the bachelor's degree are

Music History and Literature 12

D.M.A. in Music Education (MUS 617, 618) . . 3

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Research Methods:

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School of Music is subject to the approval of the student's committee and the chairman of the department concerned.

The dissertation for the D.M.A. degree will be concerned with matters dealing with theory of theoretical subjects, and/or a pedagogical or historical orientation toward the area of the student's interest. The dissertation must be the result of original research and must add to, or modify what has been previously known on the subject. (See the dissertation requirements for the Doctor of Philosophy degree.)

DOCTOR OF PHILOSOPHY DEGREE

The Doctor of Philosophy is offered in historical musicology. This is a humanistic discipline drawing upon various research methods necessary to the discovery, correlation, appraisal, and exposition of music and musical criteria from any given stylistic era or eras. The musicologists must be skilled not only in research methods and techniques, but in the teaching and performance of music as well.

Prerequisites for admission. Every applicant must submit evidence of strong undergraduate preparation in music, including performance and music theory as well as in music history, and should have at the time of entrance a reading knowledge of at least one foreign language, preferably German. The applicant must also provide at least two letters of recommendation from members of the music faculty where the undergraduate or Master's level work was undertaken. The applicants must provide evidence of competence in research and writing. Those holding or earning a baccalaureate degree should present at least one term paper or the equivalent. Applicants with Master's degrees must submit the M.A. thesis. If the applicant has not completed a Master's degree including a thesis, a research paper of acceptable scope and quality plus a major research project undertaken as part of work done at the University of Kentucky must be submitted. During the first year of residence as a doctoral student, the student must demonstrate acceptable keyboard proficiency and ability in solo or ensemble performance.

Language requirements. The basic foreign language requirements for the Ph.D. in musicology are German and either

French or Italian. The basic requirements must be completed no later than the end of the first year of doctoral study. The student is also responsible for mastery of other languages (e.g., Latin, Spanish, Russian) if they are necessary for preparing the dissertation.

Course requirements. Research Methods (MUS 618) Renaissance Notation (MUS 701) Six hours of graduate level advanced analysis (MUS 671-72)

A minimum of three seminars or special courses (MUS 702 or 718)

An outside minor in a field related to musicology outside the School of Music. Normally this involves three courses. At the discretion of the student's special committee, the outside minor may be interdisciplinary. Active participation (performing, editing, or both) in Collegium Musicum for a minimum of two semesters is strongly recommended.

Admission to doctoral candidacy. The qualifying examination must be taken no later than one semester after the completion of course work.

A student is not a doctoral candidate in musicology until a reading knowledge of two modern foriegn languages has been demonstrated and the qualifying examination has been passed.

JOINT Ph.D. IN MUSICOLOGY UNIVERSITY OF KENTUCKY-UNIVERSITY OF LOUISVILLE

A joint Ph.D. in musicology is available from the University of Kentucky and University of Louisville. Students must be accepted by both universities and gain admission to both programs. Official transcipts and GRE scores may be submitted to the sending institution.

The advisory committee will be composed of graduate faculty members from both institutions. At least three courses should be taken from the receiving institution. If the student is enrolled full-time in one institution, courses from the other will be available without charge. Residence for the Ph.D. may be satisfied at the University of Louisville, University of Kentucky or a combination of both.

Students interested in this program should contact Associate Dean Randall Holden, The Graduate School, University of Louisville or Associate Dean Ronda Connaway, The Graduate School, University of Kentucky for further information. The general regulations for doctoral students at the University of Kentucky will ap-

MUSIC PERFORMANCE COURSES

All music performance courses may be repeated three times for credit.

All music performance courses carry from one to four credits during the fall and spring semesters. (Applied music offerings during the summer are limited.)

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Tru	ımpet 512, 612
Fre	nch Horn 513, 613
Tro	ombone
	itone
	pa
	ophone 517, 617
	cussion 518, 618
Hai	P
His	torical Instruments 522, 622
500	Music of the Middle Ages
501	Music of the Renaissance (3)
502	Music of the Baroque Era (3)
503	Music of the Classic Period (3)
504	Music of the 19th Century (3)
505	Music of the 20th Century (3)
506	History of American Music (3)
507	Venetian Music of the Renaissance (3)
508	Venetian Music of the Baroque (3)
520	Vocal Solo Literature (3)
521	Organ Literature(3)
522	Piano Literature to 1830 (3)
523	Piano Literature since 1830 (3)
524	String Literature
530	Collegium Musicum (1-3)
561	Current Practices in Elementary and
	Secondary School Music (2)
565	Vocal Pedagogy (2)
566	Piano Pedagogy
568 570	General Music in the Secondary School (2)
571	Orchestration
572	Orchestration(2)
573	Counterpoint
574	Counterpoint (2)
575	Composition
578	Composition
601	
617	
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620	Research Methods
621	
622	() 보통 () () () () () () () () () (
623	Symphonic Literature
624	Opera Literature
625	Chamber Music Literature
650	Choral Literature
660	Music Education Workshop (1-4) Advanced Music Education Methods and
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671	Materials (Subtitle Required) (2) Advanced Musical Analysis (3)
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672	Advanced Musical Analysis (3)
673	Advanced Composition (2)
674	Pedagogy of Theory(2)
675	Pedagogy of Theory(2)
677	Contemporary Music Idioms (3)
700	Medieval Notation(3)
701	Renaissance Notation (3)
702	Seminar in Musicology (3)
703	Studies in Music History (2)
718	Doctoral Seminar(3)
719	Independent Work in Musicology (1-3)
750	Administration and Supervision of Public
	School Music
751	History and Philosophy of Music
	Education
762	Music in Higher Education (3)
766	Seminar in Music Education (3)
767	Independent Work in Music Education . (1-3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
770	Psychology of Music
799	Independent Work in Music Theory (1-3)

Nursing

Graduate Faculty: Professors Loretta Denman, Juanita Fleming (Assistant Dean, Director of Graduate Studies), Jean Hayter, Marion McKenna (Dean). Associate Professor Elizabeth Bear.

Associate Members: Professor Virginia Lane. Associate Professors Claudine Gartner, Melva Jo Hendrix, Beth Hicks, Dorothy Luther.

Master of Science in Nursing requires a minimum of 34 credit hours for both Plan A or Plan B. Independent work in nursing for credit may be arranged through individual student-teacher determination in some instances. Basic requirements include a minimum of 10 hours in advanced clinical nursing, a systematic inquiry in nursing course, the first course in Clinical Teaching in Nursing, and Concepts and Theories in Nursing Course. In addition, each student will be expected to pass a final examination and to complete a clinical nursing project, a clinical nursing study or a thesis.

The objective of the nursing program is to prepare students for clinical, administrative and/or academic leadership positions in nursing. The clinical component is the major focus of the graduate curriculum and constitutes the core of knowledge for nursing at the master's level. The functional component differs depending on the career goal of the individual, and may consist of preparation for teaching, administration, scientific investigation or the clinical nurse specialist role. Currently the clinical concentrations offered include adult nursing, community mental health nursing, family nurse practitioner, nurse midwifery and parent-child nursing.

All students are required to take a minimum of 20 credits in nursing courses including core courses. Increasing opportunity will be given students to study the application of core content to a particular field of interest, and to further define the nursing content unique to that field. Faculty have diverse clinical backgrounds which will enable this type of exploration to take place. Nursing will be studied in all its settings: school, community and all types of health agencies. Involvement of the student in the educational program will be facilitated by encouraging and guiding students in pursuit of areas in which they have special interest. Elective coures in nursing are available.

The general University requirements for admission to The Graduate School will apply. Applicants to the Master's program of the College of Nursing will be expected to take the aptitude portion of the Graduate Record Examination prior to acceptance in the program.

The minimal combined score of 800 on the verbal and quantitative portions of the GRE is acceptable. The minimal gradepoint average is 2.5 on a 4.0 grading scale. Graduation from a National League for Nursing accredited baccalaureate degree program and current nurse licensure are required. Graduate students selecting the nurse/mid-wifery concentration are required to have two years of relevant experience in nursing prior to admission. Students electing the family nurse practitioner major must have at least one year of clinical practice in a relevant area immediately prior to admission. Enrollment is limited; therefore, all students will be selected on the basis of over-all qualification. Eligibility for admission to The Graduate School does not insure admission to the nursing program. Personal interviews must be arranged by the applicant.

For further information contact the Director of Graduate Studies.

543	Gerontologic Nursing (3)
554	Identification and Management of
	Common Health Problems (3)
558	Family Assessment, Health Teaching, and
	Clinical Counseling (2)
560	Nursing Management of Exceptional
	Children
610	Concepts and Theories in Nursing (3)
612	Systematic Inquiry in Nursing (3)
614	Practicum in Clinical Nursing I (2-4)
615	Practicum in Clinical Nursing II (2-4)
616	Practicum in Clinical Nursing III (2-4)
620	Problems in Clinical Nursing (2-6)
622	Nursing Administration (3)

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623	Practicum in Clinical Teaching or Super-
	vision in Nursing (1-4)
624	Clinical Teaching and Supervision in
	Nursing I
625	Clinical Teaching and Supervision in
	Nursing II
626	Clinical Teaching and Supervision in
	Nursing III
630	Clinical Nursing II (6)
650	Physical and Health Assessment (4-6)
660	Basic Nurse-Midwifery I (6)
662	Family Nurse Clinical Practicum I (4-6)
670	Basic Nurse-Midwifery II (6-9)
672	Family Nurse Clinical Practicum II (4)
682	Family Nurse Internship (6)
768	Residence Credit for Master's Degree (1-6)
770	Seminar in Clinical Nursing I (2)
771	Seminar in Clinical Nursing II (2)
772	Seminar in Primary/Ambulatory Care (2)
781	Independent Study in Nursing (1-3)

Nutrition and Food Science

Graduate Faculty: Professors Abby Marlatt (Director of Graduate Studies), Donald Oberleas, Leonard Packett. Associate Professor Linda H. Chen, Ching Chou and Jose Concon.

Associate Members: Associate Professors Sherrell B. Foree; (Extension) Fudeko T. Maruyama. Assistant Professors Ralph Lane and David Newberg.

Graduate majors in Nutrition, Food Science and Dietetics lead to the degree of Master of Science in Home Economics. For more information see Home Economics.

503 Community Nutrition (3)

505	Experimental Foods(3)
507	Workshop in Applied Nutrition (2)
508	Seminar in Nutrition (1)
512	Normal and Therapeutic Nutrition (5)
514	Food Preservation
516	Food For Children
517	Food for Special Occasions(3)
540	The School Lunch
542	Institution Equipment (3)
546	Institution Organization and Management (3)
548	Institution Administration (3)
560	Food and the Consumer
590	Field Work in Nutrition (1)
591	Special Problems in Foods and Nutrition (1-3)
594	Special Problems in Institution
	Management(1-3)
603	Advanced Community Nutrition (3)
610	Human Nutrition I (4)
660	Nutritional Implications of Toxicants
	in Foods
768	Residence Credit for the Master's Degree (1-6)
771	Seminar in Nutrition (2)
781	Special Problems in Foods and Nutrition (1-3)
784	Special Problems in Institution
	Management

Pathology

Graduate Faculty: Professors David Goldenberg and Jesse Sisken.

While there is as yet no graduate program in pathology the Department offers

two courses which are open to qualified graduate students. The permission of the department chairman is required prior to enrollment.

621	Pat	hologic Mechanisms (4)
622	Syst	emic Pathology(7)
		Special Topics Course (1-3)

Pharmaceutical Sciences

Graduate Faculty: Professors Patrick DeLuca, Louis Diamond, George Digenis, Harry Kostenbauder (Director of Graduate Studies), Charles Lesshafft, Harry Smith, Robert Straus, Joseph Swintosky (Dean). Associate Professors Louis Diamond, Lawrence Hurley, Anwar Hussain, Milton Kornet, William Lubawy, Iames Munson.

Associate Members: Associate Professors Joyce Garrett. Assistant Professors David Bourne and Randall Smith.

The College of Pharmacy offers M.S. and Ph.D. programs in Pharmaceutical Sciences, with concentration in areas of pharmaceutics and pharmaceutical chemistry such as physical pharmacy, pharmaceutical technology, biopharmaceutics and pharmacokinetics, pharmaceutical analysis, radiopharmacy, medicinal chemistry and natural products chemistry, mechanisms of drug action and drug metabolism.

The M.S. degree is offered under a modification of Plan A which permits students to take approximately one-half of their courses in work areas outside the major area. Plan B may be employed only in exceptional cases.

The language requirement for both the M.S. and Ph.D. degrees is a reading knowledge of one foreign language chosen from French, German, or Russian.

Subject to some substitution at the recommendation of the candidate's committee, courses considered basic to the Ph.D. program are CHE 440, 532, 533, 538, 548, 633, STA 670. Superimposed upon this base it is expected that the student will take graduate level courses within the major area of interest from the courses listed in Pharmacy.

For regular admission to graduate study in Pharmaceutical Sciences a student should have a sound background in pharmacy, chemistry and biology, with a mastery of mathematics through calculus. Applicants lacking basic requirements in these areas will be required to make up such deficiencies by taking undergraduate courses for non-graduate credit.

450G Pharmacology and Toxicology (4)

510	Modern Methods in Pharmaceutical
	Analysis
530	Practice of Radiopharmacy (3)
540	Industrial Pharmaceutical Technology (4)
545	Sterile Parenterals and Devices (2-3)
612	Quantitative Pharmacodynamics.
	Pharmacokinetics (2)
620	Natural Products Chemistry (3)
622	Advanced Biopharmaceutics (2)
624	Biotoxicology
630	Pharmaceutical Rate Processes (3)
631	Equilibrium Phenomena in
	Pharmaceutical Systems (3)
632	Pharmaceutical Disperse Systems (3)
640	Advanced Pharmaceutical Chemistry I (3)
642	Advanced Pharmaceutical Chemistry II (3)
760	Topics in Pharmaceutical Sciences (2-4)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
776	Seminar in Pharmaceutical Sciences I (1)
778	Seminar in Pharmaceutical Sciences II (1)
780	Special Problems in Pharmaceutical
	Sciences (1-6)
790	Research in Pharmaceutical Sciences (1-12)
778 780	Seminar in Pharmaceutical Sciences II (Special Problems in Pharmaceutical Sciences (1-

Pharmacology

Graduate Faculty: Professors T.Z. Csaky, Donald F. Diedrich, K.C. Huang*, William R. Martin (Chairman), Douglas Reese, T.G. Scharff*, W. J. Waddell*, John Wyatt. Associate Professors James W. Flesher (Director of Graduate Studies), Charles Gorodetzky (Adjunct), Donald Jasinski (Adjunct), Ralph E. Miller.

Associate Members: Assistant Professors Jerome Dominic, John Dougherty.

Emeritus Professors: H. Gordon and A. Wikler

* Joint appointment with University of Louisville

The Department of Pharmacology offers M.S. and Ph.D. degrees in Pharmacology.

Pharmacology is the study of drugs. Pharmacologists in modern society find careers as teachers, as scientists engaged in research of problems related to developing new drugs, evaluating drugs for their efficacy and toxicity, as well as studying mechanisms of action.

Graduates from accredited colleges with bachelor degrees in the biological sciences, in chemistry, physics or pharmacy or with professional degrees in medicine, dentistry, veterinary medicine or pharmacy are eligible for candidacy for graduate degrees in pharmacology. It is advisable that the candidates have good basic training in mathematics, physics, chemistry and biological sciences. A major part of the Ph.D. program involves independent research under the direction of a member of the graduate faculty. Training can be obtained in neuropharmacology, psychopharmacology, drug metabolism, carcinogenesis, receptor mechanisms, toxicology,

neuroendocrinology, cardiovascular pharmacology and problems related to drug abuse.

There is also a combined M.D./M.S. (in pharmacology) program available.

Only one modern foreign language is required for the Ph.D. degree in Pharmacology.

Inquiries concerning the details of the program as well as possible financial support for graduate students should be addressed to the Chairman of the Department of Pharmacology.

There is available a joint program in Pharmacology between the University of Kentucky and the University of Louisville. Inquiries relative to this program should be directed to the Department of Pharmacology.

521	General Pharmaco- and Toxicodynamics .	(2)
522	Systems Pharmacology	(3)
541	Biological Assay	(4)
558	Neuropharmacology	(2)
560	Whole-body Autoradiography	(2)
590	Gnotobiotic Methodology	(2)
601	Principles of Medical Pharmacology	17
	Lecture	(5)
612	Quantitative Pharmacodynamics.	(0)
	Pharmacokinetics	(2)
616	Advanced Pharmacology	(4)
621	Advanced Pharmacodynamics	(4)
622	Pharmacology of Organs and Systems	(2)
632	Principles of Pharmacology, Laboratory .	(2)
634	Pharmacology of Cardiovascular Drug	'-'
	Therapy	(3)
641	Bioassay with Human Subjects	(2)
645	Physiology and Pharmacology of Biological	
	Membranes and Transport	(1)
650	Host-Contaminant Relationships	(2)
658	Advanced Neuropharmacology	(4)
660	Pharmacology of Steroids	(4)
663	Physical and Chemical Disposition of	
	Drugs	(2)
664	Advanced Molecular Pharmacology	(2)
666	12	(3)
670		(2)
671		(2)
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768	Residence Credit for Master's Degree (1	-6)
769	Residence Credit for Doctor's Degree (0-	
770	0	(1)

Philosophy

Graduate Faculty: Professors Michael Bayles, Dallas High. Associate Professors Daniel Breazeale, Ronald Bruzina (Chairman), James Manns, Thomas Olshewsky, Alan Perreiah and Henry Schankula.

Emeritus Professor: Jesse de Boer.

The Department of Philosophy offers courses of study leading to a Master of Arts degree under both Plan A and Plan B. The Department admits students who wish

to terminate their philosophical study at the M.A. level as well as those who view it as preparatory to pursuit of the Ph.D. (At present the Department does not offer this degree.) The Department does not require an undergraduate major in philosophy as a prerequisite to the graduate program; indeed, it is interested in students with a broad background in other disciplines. However, remedy for deficient background in history of philosophy and logic must be undertaken upon entrance to the program.

A reading knowledge of one foreign language is required for the master's degree.

4180	G Existentialism
518	Representations of Nature (3)
520	Intermediate Formal Logic (3)
	GROUP A
F04	The state of the s
504	Topics in the History of Ancient and
509	Medieval Philosophy (3)
509	Topics in the History of Modern
513	Philosophy(3)
514	Nineteenth Century Philosophy (3)
515	American Philosophy
516	Contemporary Analytic Philosophy (3)
310	Phenomenology(3)
	GROUP B
530	Ethical Theory (3)
535	Social and Political Philosophy (3)
537	Philosophy of Law(3)
545	Philosophy of Religion (3)
592	Aesthetics(3)
	GROUP C
550	Metaphysics (3)
555	Epistemology (3)
560	Philosophy of Science
562	Philosophy of the Social Sciences (3)
565	Philosophy of Language (3)
570	Philosophy of History (3)
575	Philosophy of Mind(3)
	GRADUATE SEMINARS
625	Advanced Logic (3)
680	Special Topics in Philosophy(3)
700	Seminar in Ancient Philosophy(3)
705	Seminar in Medieval Philosophy (3)
710	Seminar in Modern Philosophy (3)
715	Seminar in Recent Philosophy(3)
768	Residence Credit for the Master's Degree (1-6)
700	Description Ditto

Physics and Astronomy

790 Research in Philosophy (3)

Graduate Faculty: Professors Lewis Cochran, Wendell DeMarcus, Fletcher Gabbard (Chairman and Director of Graduate Studies), Richard Hanau, George Hurst (Adjunct), Bernard Kern, Wasley Krogdahl, Guy Lehman, Alan MacKeller, Marcus McEllistram, Clastine Van Winter, Jesse Weil. Associate Professors Jerry Brandenberger, John Christopher, Marcel Coz, Robert Knight, M.G. Payne (Adjunct), Rudolph Schrils, Robert Stokes, J.P. Straley.

Associate Members: Assistant Professors F.O. Clark, Peter Eklund, Keith MacAdam, and George Pepper. Emeritus Professor: Francis Yost.

The Department of Physics and Astronomy offers courses and research options leading to the Ph.D. degree in the special areas of astronomy and astrophysics, atomic and molecular physics, nuclear physics, and solid-state and condensed matter physics, and leading to the M.S. degree in these areas and also in the special area of optics. Excellent laboratory facilities and library materials are available. A major experimental facility is the six-million volt Van de Graaff accelerator. More detailed descriptions of each of these options will be sent on request.

Plan A or Plan B may be used to satisfy the requirements for the M.S. degree

The M.S. program emphasizes applied physics and students are encouraged to take courses in related areas such as engineering and biology when such courses fill a need in their academic objectives.

Candidates for the M.S. degree must demonstrate that they have the equivalent of four semesters of college level work in one modern foreign language.

The Ph.D. degree is a research degree granted on the basis of broad knowledge of physics and in-depth study in a specific area leading to a thesis reflecting original work by the doctoral candidate. A comprehensive examination is given to all students and a passing score on this examination admits a student to candidacy for the Ph.D. degree.

To be admitted to candidacy for the Ph.D. degree, students must demonstrate a reading knowledge in one foreign language and present evidence that they have passed the equivalent of four college semesters of work in a second foreign language. Students without previous work in foreign language must pass a proficiency examination in two foreign languages or demonstrate fluency in one language. French, German, or Russian are acceptable languages; others may be used by special permission.

Candidates for Doctoral degrees may perform their thesis research work at the Lexington Campus of the University of Kentucky or arrangements may be made to do this work at other institutions or laboratories such as the Oak Ridge National Laboratory, the National Astronomical Radio Observatory or other places by special arrangement. A wide range of facil-

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ities is available in the fields of astronomy and astrophysics, atomic and molecular physics, nuclear physics, and solid state and condensed matter physics. Theoretical work is being pursued in all of these areas.

PHYSICS

401G Special Topics in Physics and

401	
	Astronomy for Elementary and
	High School Teachers (2-4)
402	G Electronic Instrumentation and
	Measurements
404	G Mechanics(3)
416	
417	
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504	Advanced Mechanics (3)
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510	Spectroscopy
512	Experimental Physics: Electricity and
	Magnetism (2)
514	Electronics(3)
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524	Heat and Thermodynamics (3)
	Solid State Physics (3)
525	
530	Experimental Physics: Spectroscopy (2)
535	Experimental Physics: Atomic and
	Nuclear (2)
538	Experimental Physics: Light (2)
545	Radiation Hazards and Protection (2)
546	General Medical Radiological Physics (2)
547	Medical Radiation Imaging—I, Physical
341	
	Aspects of Diagnostic Radiology (2)
548	The Physics of Radiation Therapy (2)
549	The Physics and Instrumentation of
	Nuclear Medicine
554	Fundamental Atomic Physics (3)
555	Fundamental Nuclear Physics (3)
567	Introduction to Lasers and Masers (3)
600	Selected Topics in Advanced Physics (2-3)
604	Classical Mechanics (3)
611	
613	
	Electromagnetic Theory II (3)
624	Theory of the Solid State (3)
625	Theory of the Solid State (3)
629	Nuclear Physics I
630	Nuclear Physics II (3)
631	Atomic Structure
632	Statistical Mechanics
639	Theoretical Astrophysics (3)
640	5
650	Theoretical Astrophysics
	Theory of Relativity
652	Theory of Elementary Particles (3)
682	Electric Phenomena in Gases (3)
706	Methods of Mathematical Physics (3)
714	Quantum Mechanics I (3)
715	Quantum Mechanics II (3)
716	Advanced Quantum Mechanics
755	Topics in Chemical Physics (Subtitle
18	Required)(3)
768	
769	Residence Credit for the Master's Degree (1-6)
709	Residence Credit for the Doctor's
	Degree (0-12)
770	Colloquium
781	Independent Work in Physics (3)
790	Research in Physics (3)
791	Research in Physics

ASTRONOMY

491G	Galactic Astronomy I	(3)
492G	Galactic Astronomy II	(3)
495G	Elementary Astrophysics I	(3)
496G	Elementary Astrophysics II	(3)
	Cosmology I	
	Cosmology II	

Physiology and Biophysics

Graduate Faculty: Professors Louis Boygrsky, Eugene Crawford, Joseph Engelberg, Donald Frazier (Director of Graduate Studies), Ward Griffen, Henry Hirsch, Jesse Sisken, Mirosolava B. Winer, Fred Zechman (Chairman). Associate Professors Bertram Peretz, David Randall, Daniel Richardson, Gerald I. Roth, P.A. Thornton, David R. Wekstein, James Zolman. Assistant Professor Cobern Ott.

Emeritus Professor: James W. Archdeacon.

The graduate program, which offers both the M.S. and Ph.D. degrees is designed to educate and train students to be competent research scientists and teachers of physiology and biophysics. The specific objectives are to provide students with: (1) an environment which promotes independent development and habits of lifelong scholarship, (2) a broad base of knowledge of the principles of molecular, cellular and organ-system physiology and biophysics, (3) the capacity to carry out independent research in an area of physiology or biophysics and, (4) experience and training in the teaching of physiology and biophysics.

To fulfill these objectives the program combines formal course work, independent reading, interaction with scholars at the tutorial level, and independent research including a dissertation.

Admission to the graduate program is competitive and is based upon academic background, professional recommendations, performance on the Graduate Record Examination, experience, and when possible, personal interviews. In general, one year of biology and physics, two years of chemistry, and mathematics through calculus are required. A course in statistics is strongly recommended.

In conjunction with the Colleges of Medicine and Dentistry the Department will consider for admission those qualified students who wish to pursue a combined professional and graduate program. In addition, special programs may be developed in biophysics and biomedical engineering.

Inquiries should be addressed to the Director of Graduate Studies.

502	Principles of Physiology Lecture (4)
503	Experimental Methods(2)
504	Independent Work in Physiology (2-4)
507	Introduction to Endocrinology (3)
511	Medical Physiology (7)
512	Cellular Physiology (3)
520	Theoretical Biophysics(3)
522	Mathematical Biophysics(3)
549	Comparative Endocrinology (3)
602	Physiological Instrumentation I (3)
603	Physiological Instrumentation II (3)
604	Advanced Cardiovascular Physiology (3)
606	Advanced Neurophysiology (3)
627	Proseminar in Physiological Psychology (2)
630	Advanced Topics in Physiology and
	Biophysics (1-3)
660	Systems Physiology(3)
767	Seminar in Physiological Psychology (3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
771	Proseminar in Cell Physiology and
	Biophysics (2)
772	Proseminar in Mammalian Physiology (2)
774	Graduate Seminar in Physiology (1)
791	Research in Physiology (1-15)

Plant Pathology

Graduate Faculty: Professors R.A. Chapman, J.W. Hendrix, Joseph Kuc, T.P. Pirone (Chairman and Director of Graduate Studies), John G. Shaw, M.R. Siegel, G.W. Stokes, H. Wheeler. Associate Professors Said Ghabrial, Louis Shain, S.J. Sheen.

Associate Member: Associate Professor John R. Hartman.

Emeritus Professor: Stephen Diachun.

The department offers work leading to the M.S., M.S. in Agriculture, and Ph.D. degrees. For the Ph.D. degree individual programs of study must conform with the requirements established by The Graduate School; proficiency in one foreign language is required; a minor is not required.

503	Plant Biochemistry (3)
543	Diseases of Plants
545	Epidemiology and Control of Plant
	Diseases
558	Nematode Diseases of Plants (3)
575	Plant Pathology (3)
640	Identification of Plant Diseases (3)
652	Plant Pathogenic Fungi
656	Virus Diseases of Plants
660	Physiology of Plant Diseases (3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
770	Plant Pathology Seminar(1)
784	Special Problems in Plant Pathology (1-3)
794	Research in Plant Pathology (1-4)

Plant Physiology

Director of Graduate Program: James Leggett.

Graduate Faculty: Professors L.P. Bush, G. Cheniae, D.L. Davis, A.J. Hiatt, M.J. Kasperbauer, J. Kuc, J.E. Leggett, R.G. Lockhard, R. H. Lowe (Adjunct), H.E. Wheeler. Associate Professors T.R. Kemp, Gerald Rosenthal. Assistant Professor S. B. Carpenter.

Associate Member: Assistant Professor Paul Lin.

Emeritus Professor: William Duncan.

The University-wide, interdepartmental graduate program in Plant Physiology offers a plan of study leading to the Master of Science and Doctor of Philosophy degree. The aim of this program is to aid students in developing a high degree of excellence in plant physiology. Students in plant physiology will acquire academic backgrounds embracing basic areas of biology, chemistry, physics, and mathematics. These courses provide the foundation for delving into various areas of plant physiology.

Faculty members of the program are plant physiologists from the Thomas Hunt Morgan School of Biological Science in the College of Arts and Sciences and the Departments of Agronomy, Forestry Horticulture, and Plant Pathology in the College of Agriculture. Areas of research pursued by the faculty members include plant growth and development, senescence, physiology of crop yield, metabolism and synthesis of alkaloids and steroids, photosynthesis, mineral nutrition, membrane ultra-structure, dwarfing mechanisms, the mechanism of action and metabolic fate of herbicides

Course offerings in plant physiology are co-listed under the Thomas Hunt Morgan School of Biological Science and Departments of Agronomy, Horticulture, and Plant Pathology. Plant Physiology utilizes courses in the Departments of Biochemistry, Chemistry, Mathematics, and Statistics as supporting courses to suit the needs and interests of the individual student.

A program leading to the Doctor of Philosophy degree must conform to the general rules and regulations of The Graduate School. Reading proficiency in one foreign language is required, usually German, Russian, or French. A formal minor is not required. Contact the Director, N122N, Agricultural Science Center-North for additional information.

501	(BOT) Plant Physiology (5	3-5)
630	(AGR, BIO) Experimental Techniques in	
	Plant Physiology	(3)
660	(PPA) Physiology of Plant Disease	(3)
701	(BOT) Plant Metabolism	(3)
732	(AGR, BOT, HOR) Mineral Nutrition of	
	Plants	(3)
734	(AGR, BOT, HOR) Physiology of Growth	
	and Development	

769	(BIO) Residence Credit for the Doctor's		
	Degree	(0-12)	
771	(BIO) Seminar in Plant Physiology	(1)	

Political Science

Graduate Faculty: Professors Bradley Canon, Vincent Davis, Dean Jaros, Malcolm Jewell, William Lyons (Director of Graduate Studies), Sidney Ulmer, Kenneth Vanlandingham. Associate Professors Michael L. Baer (Chairman), Kenneth Coleman, Maurice East, George Gadbois, Herbert Reid, Phillip Roeder, John Wanat and Ernest Yanarella

Associate Members: Assistant Professors Richard Elling, Donald Gross, Thomas Likens, Karen Mingst, Daniel Nelson.

Emeritus Professor: Amry Vandenbosch.

Candidates for admission to the graduate program in political science must provide the information required by The Graduate School and must also submit at least two letters of recommendation from persons familiar with the applicant's academic performance. Students who do not have political science undergraduate majors are welcome in this program.

The Political Science Department offers both the M.A. and Ph.D. degrees. The M.A. degree may be earned under either of two plans: Plan A requires at least 24 hours of course work and a thesis; Plan B requires at least 30 semesters hours of course work and examination in three fields of political science, or in two fields of political science and one outside field. Under either plan, the student must take at least two-thirds of the required semester hours in political science, and at least half of the political science work must be in courses open only to graduate students. A candidate for Plan B master's degree must pass a foreign language requirement or an analytical skills requirement.

The Practical Politics Option is offered under Plan B. This option features skills necessary to participate in electoral politics or in the governmental process.

The Ph.D. program is divided into a general phase and a specialized phase. Entering students spend their first year in the general phase, which includes proseminars in methodology and in at least four major fields of political science. (Students who have previously taken graduate work may be exempt from some of these proseminars.) At the end of the first year of graduate work, the student is evaluated by a departmental committee which determines whether the general phase has been satisfactorily completed.

During the specialized phase of the graduate program, the students' work is based on a program prepared with the special committee. The students take advanced work in at least three substantive fields in political science and at least nine semester hours of course work in another discipline. The qualifying examination in political science consists of a written and oral examination in each of the three substantive fields specified in the student's program. The examination is given by the Advisory Committee. Following this examination the students write a prospectus for the dissertation and are examined orally on this by the Advisory Committee. The students then write a dissertation and defend it in a final oral examination.

Candidates for the Ph.D. in political science are required either to demonstrate a reading knowledge of two modern foreign languages or to meet that requirement in one modern foreign language and to demonstrate proficiency in an allied field contributing to research competence in political science. Research competence may be demonstrated by successfully completing at least six hours of course work in one or more allied fields, including statistics, computer sciences, and research methods in another discipline.

Additional details concerning departmental requirements may be secured from the Director of Graduate Studies.

411G	Comparative Government-Parliamentary
	Democracies I
412G	Comparative Government-Parliamentary
	Democracies II(3)
417G	Survey of Sub-Saharan Politics (3)
419G	The Governments and Politics of Eastern
	Asia
420G	Governments and Politics of South Asia . (3)
421G	Governments and Politics of Southeast
	Asia
428G	Latin American Government and
	Politics(3)
429G	Government and Politics of the Soviet
	Union (3)
430G	The Conduct of American Foreign
	Relations
431G	National Security Policy(3)
436G	International Organization (3)
437G	Dynamics of International Law (3)
441G	Early Political Theory
442G	Modern Political Theory (3)
450G	Rural Local Government (3)
452G	Municipal Government (3)
461G	Civil Liberties(3)
463G	The American Judicial Process (3)
465G	Constitutional Politics (3)
470G	American Political Parties (3)
473G	Public Opinion (3)
476G	Legislative Process (3)
487G	Introduction to Public Administration (3)

489	9G The Analysis of Public Policy (3)
51.	5 Comparative Political Parties (3)
533	Comparative Foreign Policies (3)
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555	
	American Federal System (3)
557	Kentucky Government and Politics (3)
571	1 (3)
572	
580	Techniques (3) The Budgetary Process (3)
584	The American Presidency and the Federal
	Executive(3)
588	Public Personnel Administration (3)
610	Comparative Politics: Theory and Method (3)
611	
612	8 (3)
613 614	State Legislatures(3) Political Parties and Elections in America. (3)
630	Proseminar in Non-Institutional Political
	Behavior
654	Proseminar in Judicial Process (3)
671	Strategies of Inquiry in Political Science (3)
672	Introduction to Techniques of Political
	Research
674	Proseminar in Theories of International
680	Politics(3) Proseminar in Political Institutions and
	Processes(3)
690	Contemporary Political Thought:
	Theoretical Foundations of Political
	Concepts and Issues in the
	20th Century
711	Current Research in Political Science (3)
737	Transnational Organizations and
	Processes
751 752	Seminar in Metropolitics
757	Problems in State and Local Government . (3) Seminar in Comparative Democratic
	Political Systems
758	Seminar in Soviet Politics, Government,
	and Foreign Policy (3)
759	Seminar in African Political Systems (3)
761	The Constitution and Civil Rights (3)
762	Seminar in Judicial Policy Making (3)
763	Seminar in Administrative Politics (3)
764 768	Research in Judicial Behavior (3)
769	Residence Credit for the Master's Degree (1-6) Residence Credit for the Doctor's
.03	Degree (0-12)
770	Seminar in Contemporary Political
	Theory(3)
772	Advanced Problems in Research Methods . (3)
773	Asian Political Theory (3)
775 776	Seminar in Public Policy(3)
777	Seminar in Political Development (3) Research Problems in International
Hqls	Relations
778	Seminar in Comparative Foreign Policies . (3)
779	
780	Voting Behavior (3) Legislative Behavior (3)
784	Seminar in Political Socialization (3)
785	Psychological Bases of Political Behavior . (3)
790	Special Problems in Public Administration (3)
791	The Organization as a Political System (3)
795	Special Problems in Political Science (1-3)

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Psychology

Graduate Faculty: Professors Robert Baker, Richard Bednar, Juris Berzins (Director of Graduate Studies), James Calvin, Ronald Dillehay (Chairman), Jesse Harris, Leonard Worell. Associate Professors Edward Engel. Donald McCoy, Michael Nietzel, Arthur J. Noneman, John Sensenig, James Spivey, and Thomas R. Zenzall

Associate Members: Assistant Professors Susan Belmore, Robert Bray, Patrick Cavanagh, Stuart Fisher, Raymond Martorano, Suzanne Martorano, T. Benjamin Yandell.

Joint Appointments: Professor John Haley. Associate Professors William Drew, Russell Jones, James Zolman. Emeritus Professors: Betsy Worth Estes, Edward Newbury, Frank Patti and Martin White.

The major goal of the doctoral program in psychology is to prepare the student for a career in teaching and research in the fields of clinical, learning and physiological, perception and cognition, or social psychology. A master's degree in general psychology is also available.

The program in clinical psychology provides academic courses, practica, and internships which permit students to combine their teaching and research activities with a clinical career in the mental health field. Current areas of research interest include psychotherapy, behavior therapy, psychopathology, group dynamics, community intervention, and experimental personality. Clinical experience is available at such facilities as the University of Kentucky Medical Center, the U.S. Veterans Administration Hospital, and various nearby state institutions. The clinical program is fully accredited by the American Psychological Association.

The learning-physiological program provides a combination of formal course work and individualized training designed to produce research oriented psychologists who are capable of continuing productive scholarship and teaching in their chosen areas of interest. Emphasis is placed on theoretical treatments and empirical studies of fundamental learning processes and on the neurophysiological bases of behavioral change. Current research within the program includes operant, classical, and instrumental conditioning in several species, motivation, memory, animal intelligence, psychopharmacology, developmental psychobiology, and recovery from brain damage.

The program in Cognitive Studies attempts to prepare students for a career in teaching and research with a concentration in the fields of perception and cognition especially from a developmental point of view. The program has a strong theoretical emphasis within the framework of cognitive-developmental theory. Training combines formal proseminar and seminar learning experience with supervised research and teaching experience. A wide range of facilities and research opportunities exists within the department and adjunct facilities.

The program in social psychology is designed to provide intensive experience in research with members of the social psychology faculty, with the aim of developing in the student a strong theoretical and research competence with complex social phenomena. Traditions of both experimental laboratory research and naturalistic study are utilized; emphases include theoretical and applied significance of research. With broad limits set by the program, any given student's course of study is designed to fit that student's particular needs and interests. Course work in related behavioral sciences (for example, sociology, anthropology) is encouraged.

During the first year of the doctoral program, all students gain experience in the major content areas of psychology and in psychological statistics. Thereafter, the student and the adviser construct a program of study consistent with the academic interests and professional goals of the student. A reading knowledge of one modern foreign language is required for Ph.D. candidates.

The M.A. or M.S. degree is awarded under Plan A only.

The minimum departmental standards for admission to graduate work in psychology include an undergraduate department over-all average of B or better, a satisfactory score on the verbal and quantitative aptitude of the Graduate Record Examination and three letters of recommendation. For additional information concerning the program in psychology and such matters as financial support, contact the Chairman, Department of Psychology.

423G	Processes of Psychological Development.	(3)
444G	Social Psychology	(3)
500	Senior Seminar in Psychology	(3)
	Introduction to Industrial Psychology	(3)
503	Psychology of Industrial Personnel	
	Procedure	(3)
523	Research Methods in Developmental	
	Psychology	(4)
525	Human Senses and Perception	(3)
526	Human Senses and Perception Laboratory	(1)
527	Cognitive Processes	(3)

529		(3)
532	Personality	(3)
533		(3)
535 539		(3)
545	Small Group Behavior	(3)
547		(4)
548	Applied Social Psychology	(3)
550		(3)
551	Psychology of Learning Laboratory	(1)
552 553		(3)
556		(1) (3)
557	Physiological Psychology Laboratory	(1)
558	Biology of Motivation	(3)
601	Theories of Learning	(3)
602	Theories of Personality	(3)
603	Psychometries	(3)
611	Psychometrics	(3)
616	Research Design in Clinical Psychology	(3)
617	Experimental Approaches to Personality.	(3)
618	Experimental Approaches to	
	Psychopathology	(3)
620	Proseminar in Systematic Psychology	(2)
621 622	Proseminar in Learning	(2)
623	Proseminar in Personality Proseminar in Sensation and Perception	(2)
624	Proseminar in Social Psychology	(2) (2)
625	Proseminar in Developmental Psychology.	(2)
627	Proseminar in Physiological Psychology	(2)
628	Proseminar in Human Learning and	
629	Thinking	(2)
630	Introduction to Clinical Psychology Clinical Methodology I	(1)
631	Practicum in Clinical Methodology I	(2) (2)
632	Clinical Methodology II	(2)
633	Practicum in Clinical Methodology II	(2)
634	Practicum in Clinical Psychology III	(3)
635	Practicum in Clinical Psychology IV	(3)
637	Systems of Psychotherapy Practicum in Psychotherapy and Behavior	(3)
	Change	-3)
638	Clinical Child Psychology	(3)
640	Practice in Testing: Intelligence Tests	(4)
641	Psychological Measuring Instruments	(3)
647 650	Disorders of Language	(3)
050	Diagnosis and Counseling in Counseling Psychology	/91
663		(3) (3)
700		(3)
701	Seminar in Clinical Child Psychology	(3)
702	Seminar in Community Mental Health	(3)
703 704		(3)
704		(3)
103	Research in Psychotherapy and Behavior Change	(3)
710	6	(3)
713		(3)
761	Interpersonal Processes in Critical	
		(3)
767 768		(3)
769	Residence Credit for the Master's Degree (1- Residence Credit for the Doctor's	-6)
	Degree(0-1	2)
770	Seminar in Psychology I	(0)
771	Seminar in Psychology II	(0)
772	Seminar in Learning	(3)
774	Seminar in Verbal Behavior	3)
775 776		3)
777		3)
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778	Seminar in Developmental Psychology	(3)
779	Seminar in Social Psychology	(3)
780	Problems in Psychology	
781	Research Participation	(1)
790	Research in Psychology	
MD	500 Special Topics Course (

Public Administration

Director of Graduate Studies: Merlin M. Hackbart

Assistant Director: Phillip W. Roeder

The MPA program of study reflects the conviction that administrative processes in the public and private sectors are related but different. In this program, the fields of economics, finance, political science, and management are coupled with the administrative skills of decision making, behavioral science, and accounting control. Political, legal, and policy environments are added to complete the administrative core.

The first year of study is devoted to a core which emphasizes 24 hours in the administrative areas of analysis, the environment of public administration, and planning and policy of public administration.

During the second year, the student has the flexibility to define an area of specialization. Specialization in 15 hours of course work and six hours of internship is offered in five areas: higher education, human services, urban and regional development, governmental administration, and health administration.

Requirements

- The Graduate Management Admission Test or the Graduate Record Examination must be taken prior to admission.
- 2. Completion of a minimum of 45 semester hours of graduate work.

a.	Administrative	Core (24	semester
	hours)		
	PA 621		(4 hours)
	PA 622		(4 hours)
	PA 623		(4 hours)
	PA 626		(3 hours)
	PA 627		(3 hours)
	PA 628		(3 hours)
	DA 690		(0 L)

b. Area of Concentration (21 semester hours)

Selection of one of the following: Governmental Administration:

PS 553, PS 578, PS 580, PS 582, PS 584, PS 751, PS 752, PS 790 Health Administration:

Course work will include such topics as overview, planning and

evaluation of health systems, plus the behavioral and social factors affecting health care delivery, CM 601, CM 611, CM 621, CM 622, CM 631. Higher Education Administration: EDH 718, EDH 719, EDH 733,

EDH 718, EDH 719, EDH 738, EDH 734, EDH 798 Human Services Administration:

HSA 602, HSA 604, HSA 606, HSA 607. Urban and Regional Development

Administration: ECO 483, ECO 682, ECO 683, GEO 540, GEO 541, PS 553, PS 751, SOC 615, SOC 620

Concentration (9 hours)
Related Electives (6 hours)
Practicum, internship, or Performance on Job (6 hours)

621 Analysis of Oganizations: Decision Science Methods.....(4) 622 Analysis of Organizations: Financial Control Methods Analysis of Organizations: Behavioral Science Methods.....(3) Administration of Public Organizations . . (3) 626 627 The Fiscal Setting of Public Organizations (3) Legal and Political Environment of Public Organizations..... Public Policy Formulation and Application of Behavioral Science Methods Internship in Public Administration. (6) 711 Special Topics in Public Administration (1-3)

HUMAN SERVICES ADMINISTRATION

Administration (1-3)

Independent Study in Public

601	Overview of the Health Care
	Delivery System (3)
602	Human Service Delivery Systems (3)
604	Management Skills(3)
606	Independent Study(3)
607	Task Groups in an Organizational Context (2)
611	Behavioral and Social Aspects
	of Health Care Administration (2)
621	Health Care Economics and Financing (3)
622	Health Program Planning and Evaluation (2)
631	Health Policy Development(2)
775	Special Topics in Health Administration (2-3)
785	Independent Work in Health
	Administration (1-3)

Radiation Medicine

Graduate Faculty: Professor Yosh Maruyama. Associate Professors John Calkins, Joseph Sayeg (Director of Graduate Studies). Assistant Professor Ralph Christensen.

Graduate educational programs in Radiation Medicine are closely allied with those in the Department of Health Radiation Sciences, College of Allied Health Professions. Course work deals with a study of the physical properties and characteris-

tics of radiation, the effects of ionizing raems, plus diation upon matter and living organisms, factors and safety and protection considerations of ivery, CM radiation. Courses jointly listed with the M 622, College of Physics and Astronomy deal with the Medical Physics in Diagnostic Ratration: diation Physics, Therapeutic Radiation H 733, Physics and the Physics and Instrumentation of Nuclear Medicine. Courses jointly ation: listed with Biological Sciences deal with 606, the biological effects of ionizing radiation. velopment

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cation in a Medical and Hospital setting. Graduate programs are detailed under Health Radiation Sciences, College of Allied Health Programs elsewhere in this Bulletin. Inquiries should be addressed to the Director of Graduate Studies.

Research and clinical training in a health-

medical setting provides the student an op-

portunity for exposure to radiation appli-

472G	Interaction of Radiation with Matter (3
540	General Radiation Biology (4
545	Radiation Hazards and Protection (2
546	General Medical Radiological Physics (2
547	Medical Radiation Imaging I: Physical
	Aspects of Diagnostic Radiology (2
548	The Physics of Radiation Therapy (2)
549	The Physics and Instrumentation of Nuclear
	Medicine
640	Biological Effects of Radiation (3)
660	Practicum in Radiation Medicine (1-12)
740	Mammalian Radiation Biology (2)
MD !	

Slavic and **Oriental Languages** and Literatures

Graduate Faculty: Professor Leon Zolondek. Associate Professors Paul Forand (Chairman), Roger B.

At present no graduate majors are offered in Slavic and Oriental Languages

OTHER DEPARTMENTAL OFFERINGS

444G	The Writings of the Muslim Mystics	(3)
450G	Dostoevsky (in English)	(3)
455G	Spanish Islam	(3)
457G	Modern Arabic Literature in Translation .	(3)
458G	Modern Hebrew Literature	(3)
460G	Tolstoy (in English)	(3)

Social and **Philosophical Studies** in Education

Graduate Faculty: Professors David Denton (Director of Graduate Studies), Richard Warren (Chairman). Associate Professors Clint Collins, Willis Griffin.

Associate Members: Associate Professors Alan De-

Young, Richard LaBrecque. Assistant Professor John Thelin

Emeritus Professor: Ellis Hartford

The faculty of the Department of Social and Philosophical Studies in Education is engaged in the systematic analysis and interpretation of education using appropriate knowledge and methodologies of the humanities and social sciences. Their efforts are directed to (1) developing teachers and researchers with special competencies in social and philosophical studies, (2) assisting in the preparation of educational personnel, (3) contributing research based on special interests, and (4) changing and improving education through active participation in redirection and reform. The Department seeks to develop competencies which assist the student in approaching education more rationally, critically, responsibly, and enthusiastically.

Graduate students may expect to develop special competencies through college course offerings, independent studies, and other experiences. In addition, students will be expected to pursue appropriate studies in other University colleges and departments to broaden their disciplinary perspectives and/or to gain greater depth and scholarship. The Department represents a link between the humanities and social sciences and the preparation of professional educator. It seeks the broadest perspective on education as an important area of human endeavor.

The Department of Social and Philosophical Studies offers programs leading to the following degrees: Master of Science in Education, Master of Arts in Education (Plans A and B available), Specialist in Education (Ed.S.), and Doctor of Education (Ed.D.). The Department participates in a joint doctoral program (Ph.D.) in Studies in Higher Education with the Department of Higher Education. The Department also participates in a joint doctoral program with regional universities. A minimum of 31 hours is required for the Master of Science of Education degree, six of which may be thesis credit and six of which must be taken outside the College of Education. The primary difference between this degree and the Master of Arts in Education degree is that the latter requires a minimum of 12 hours outside the College of Education.

532	Race and Ethnic Relations	(3)
533	Introduction to the Philosophic Study of	
	Education	101

601	Proseminar	(1)
610	Futuristics and Education	(3)
640	Philosophy of Education	(3)
645	Social Issues in Education	(3)
646	Analysis of Thinking	(3)
650	History of Western Education	(3)
651	History of Education in the United States .	(3)
652	History of Educational Thought	(3)
653	History of Higher Education	(3)
654	Multi-Cultural and International	
	Education	(3)
655	Comparative Education	(3)
656	International Development Education	(3)
661	Sociology of Education	(3)
662	Analysis of Educational Change	(3)
663	Field Studies in Educational Institutions	(3)
665	Education and Culture	(3)
724	Epistemological Problems in Education	(3)
725	Analysis of Value Questions in Education .	(3)
750	Problems in Sociology of Education	(3)
768	Residence Credit for the Master's Degree (1	-6)
769	Residence Credit for the Doctor's	
	Degree(0-	12)
773	Seminar in Foundations of Education (1	-3)
778	Seminar in History of Education in	
	Kentucky	(3)
785	Independent Study in Social and	
	Philosophical Problems in Education	(3)

Social Professions

Graduate Faculty: Professors James Brown, C.M. Coughenour, Thomas Ford, Eugene Gallagher, William Kenkel, John O'Donnell, Jon Shepard, John Stephenson, Robert Straus, Willis Sutton (Chairman). Harwin Voss, George Wilber. Associate Professors James Christenson, Richard Clayton, Thomas Garrity, Jon Hendricks, Philip Moody, Gerald Slatin (Director of Graduate Studies)

Associate Members: Associate Professors Walter Abbott, Paul Warner. Assistant Professors Dwight Bill-Michael Brooks, Lawrence DeYoung, Lori Garkovich, James Hougland, William

Emeritus Professors: Howard Beers, A. Lee Coleman, James W. Gladden, Grant Youmans

The College of Social Professions publishes a bulletin explaining the total program. Please write College of Social Professions, Patterson Office Tower, University of Kentucky.

The College of Social Professions offers a graduate curriculum of four semesters duration, leading to the Master of Social Work degree in accordance with Plan B. The MSW degree program is designed to prepare students for careers in the social professions. The College also offers a series of courses in its undergraduate social work program which may be taken for graduate credit by graduate students in other majors.

Students must meet the general requirements of The Graduate School, as listed elsewhere in this Bulletin, as well as other

specific requirements of the College of Social Professions for the Master of Social Work degree as indicated below.

1. Earn 54 hours of credit with a gradeaverage of B or above. Forty of these
credits must be in the required social
work courses. Four credits will be
chosen from additional courses offered within the graduate social work
curriculum of the College of Social
Professions. The remaining 10 credits
may be elected from relevant courses
offered throughout the University or
by the College of Social Professions.

Graduates with a B.A. in Social Work may petition to substitute other courses for specific courses required for the MSW degree if in their opinion there is likely to be unnecessary duplication in content. Such students will be required to establish their knowledge competence in the subject area for which they are petitioning to take substitute courses. In addition, Bachelor degree graduates from other majors may, by special examination, be excused from taking specified required courses in the MSW curriculum by reason of equivalent content they may have had in their undergraduate degree courses and to substitute other related courses. These special arrangements do not change the credit hours required for the M.S.W. degree

- The MSW degree requires 54 credit hours, at least 28 of which must be taken at the University of Kentucky. Advanced standing of up to one year or 26 credit hours may be granted for work completed at a school accredited by the Council on Social Work Education
- 3. Advance to degree candidacy by the end of the first year of graduate study. In order to be a degree candidate the student must be admitted to candidacy for the master's degree by The Graduate School and have completed the College of Social Professions advancement-to-candidacy review.
- Successfully complete the final comprehensive examination. This examination consists of an intensive review with students of the total two year education program to determine their potential capacity for professional practice.

The M.S.W. degree program has been accredited by the Council on Social Work Education through June 1980.

Full-time students are admitted to the M.S.W. degree program primarily in the fall semester. Applications to the College of Social Professions should be filed not later than June 15, prior to entrance in the fall. A limited number of applicants for full-time study are admitted in the spring semester for which applications should be filed by October 31. An application for admission to The Graduate School must be filed before a student can be considered for the M.S.W. program.

401G	
2010	Implementation (3)
411G	
420G	Social Environment
500	
	Public Welfare Administration (3)
505	Child Welfare Services (2-3)
510	Mental Health Knowledge for the Social
	Professions (2-3)
512	Medical Knowledge for the Social
	Professions(3)
523	Social Perspectives on Racism and Ethnic
	Prejudices in America (2-3)
541	Administration and Supervision in the Social
	Professions(3)
551	Public Assistance Programs (3)
	The Role of Social Work in Criminal
	Justice
571	Social Work and the Law(3)
	Topical Seminar in Social Work (2-4)
	Social Work Practice
	Social Work Practice with Adults (2)
603	Social Work Practice with Children and
	Youth (2)
604	Social Work Practice with the Aging (2)
605	Social Work Practice in Health Services (2)
606	Seminar in Criminal Justice Processes (2)
	Social Work Practice with Families (2)
608	Social Work Practice for Social Reform (2)
609	Clinical Social Work Practice (2)
613	Urban Ecology and Aging (2)
	Human Growth and the Social
	Environment
621	Perspectives on Deviance for Social
	Workers
622	Group Theory for Social Workers (2)
624	Perspectives on Human Sexuality for
	the Social Professions(2)
	Comparative Social Welfare Policies
	and Programs (2-3)
630	Social Welfare Policies and Services (4)
	Social Work and the History of Social
	Reform (2)
633	Social Welfare and the Political
	Processes
640	Graduate Educational Practicum I (5-10)
642	Psychological Aspects of Human Aging (2)
	Research Practicum(2)
652	Public Policy and Aging (2)
662	Income Security and Aging (2)
680	Special Problems in Social Work Practice (2-4)
600	Personal in Social Work Practice (2-4)

706	Selected Issues in Criminal Justice (2)
708	Seminar in Correctional Change
	Technology (2)
711	Advanced Leadership Roles in Social Work (3)
712	Principles and Methods of Field Instruction
	in Social Work I (2)
713	Principles and Methods of Field Instruction
	in Social Work II (2)
720	Organizational and Administrative Theory
	for Social Workers (2-4)
721	Organization and Management Methods for
	the Social Professions (2-3)
730	Public Social Policy and the Delivery of
	Social Services (2)
731	Social Work and Community Planning . (2-3)
732	Social Planning and Development (2-3)
740	Graduate Educational Practicum II (8)
745	Advanced Specialized Educational
	Practicum (2-4)
750	Seminar on Evaluative Research for the
	Social Professions(2)
770	Seminar on Social Issues and Social
	Work Practice (2)
780	Independent Work (2-6)
790	Methods in Social Work Research (2-6)

Sociology

Graduate Faculty: Professors James Brown, C.M. Coughenour, Thomas Ford, Eugene Gallagher, William Kenkel, John O'Donnell, Jon Shepard, John Stephenson, Robert Straus, Willis Sutton (Chairman), Harwin Voss, George Wilber. Associate Professors James Christenson, Richard Clayton, Thomas Garrity, Jon Hendricks, Philip Moody, Gerald Slatin (Director of Graduate Studies).

Associate Members: Associate Professors Walter Abbott, Paul Warner. Assistant Professors Dwight Billings, Michael Brooks, Lawrence Busch, Alan DeYoung, Lori Garkovich, James Hougland, William

Emeritus Professors: Howard Beers, A. Lee Coleman, James W. Gladden, Grant Youmans.

Graduates from accredited colleges who meet the requirements of the Graduate Program in Sociology and The Graduate School may work toward the following advanced degrees with major work in sociology: Master of Arts, Master of Science in Agriculture, and Doctor of Philosophy. Both Plan A and Plan B are offered for the Master's degree, and an applied community development option is now available within Plan B. Only one modern foreign language is required for the Ph.D. degree in sociology.

Graduate students pursuing the Ph.D. degree are expected to choose either two specialty areas within sociology or one specialty area in sociology and a minor area outside the Department. Areas of specialization in sociology currently stressed are: community, demography-ecology, deviance, family, medical sociology, rural, social change and development, social ger-

690 Research in Social Work (2)

701 Advanced Practice Theory (2)

ontology and Appalachian Studies. While core seminars in these specialties are offered, individual program flexibility is maintained so that a student's own interests may develop.

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To aid in financing graduate education a considerable number of assistantships are available to qualified students. Outstanding students may compete for fellowships.

Sociologists at the University of Kentucky carry on a substantial variety of research projects, consultative activities, extension education programs and community services. Specialized experience and training is available to graduate students through affiliations with nearby institu-

Research opportunities within the prisons and other correctional institutions of the state may be arranged. Experience is available in rural sociological research at the Agricultural Experiment Station. Opportunity for applied sociology experience in the Cooperative Extension Service is also

The Department participates in the University's Center for Developmental Change, which is devoted to interdisciplinary research and training in planned change. The Department of Behavioral Science, College of Medicine, includes sociologists on its staff and conducts research and other activities of a sociological nature. Sociology graduate students with appropriate interests and training are eligible for assistantships and other appointments in these several units.

Department standards for admission to graduate work in sociology are similar to those of The Graduate School, including satisfactory scores on the verbal and quantitative tests of the Graduate Record Examination. For additional information on departmental requirements and opportunities for financial assistance, write to the Director of Graduate Studies in Sociology.

444G	Social Psychology	(3)
493G	Social and Cultural Determinants of	
	Economic Growth and Development	(3)
501	Population Analysis	(3)
502	Methods of Demographic Analysis	(3)
503	Social Classes	(3)
510	Socialization in the Family	(3)
	Diffusion of Technology in Modern	
	Society	(3)
517	Rural Sociology	(3)
519	Sociology of Urban Life	(3)
521	Industrial Sociology	(3)
	Sociology of Complex Organizations	(3)
	Religion and Culture	(3)

520	
52	Society and Health(8
529	Political Sociology
531	Sociological Analysis of American Society. (3
532	
533	Social Anthropology
534	
	Interpretation
538	Juvenile Delinquency
540	
542	
545	
546	Social Factors in Mental Health
547	Dimensions of Aging
548	Applied Social Psychology (3)
549	
	Communication(3)
551	Concepts and Theories in Sociology (3)
561	Comparative Sociology (3)
565	Special Problems in Sociology (1-3)
571	Contemporary Sociology
581	Techniques of Social Investigation (3)
615	Analysis of Community Research (3)
618	Theories of Social Change (3)
620	Sociology of Community Development (3)
625	Sociology of Religion
632	Seminar in Race and Ethnic Relations (3)
636	Theory and Research in Deviant Behavior (3)
651	Systematic Sociology(3)
653	Family Theory and Dynamics (3)
661	Sociology of Education (3)
670	Seminar on Role Theory (3)
671	Seminar in Contemporary Sociology (0)
681	Research Design and Analysis (3)
685	Integration of Theory and Research (3)
690 695	Community Action Analysis (3)
702	Social Ecology
720	Seminar in Social Demography
727	Seminar in Community Theories (3)
731	Seminar on Socio-Cultural Change (3) Seminar in Comparative Social
731	Organization (a)
738	Organization
751	
766	Seminar in Sociological Theory
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
772	Topical Seminar in Sociology (3)
773	Topical Seminar
775	Seminar in the Family (3)
776	Seminar in Dependency Behavior (3)
777	Seminar in Mental Illness Concepts,
	Research and Policy(3)
779	Seminar in Social Psychology(3)
780	Special Problems in Sociology (1-6)
790	Research in Rural Sociology (1-3)
792	Research in Sociology (1-6)
797	Community Development Practicum (1-9)
	March Server Contract
	Soil Science

Soil Science

Graduate Faculty: Professors H.H. Bailey, R. I. Barnhisel, A.J. Hiatt, H.F. Massey, D.E. Peaslee, R.E. Phillips (Director of Graduate Studies), J.L. Ragland. J.L. Sims, G.W. Thomas. Associate Professors R.L. Blevins, George Coltharp, Charles Rieck.

Associate Memeber: Assistant Professor Robert Wittwer.

Emeritus Professor: W. G. Survant.

The Soil Science graduate program offers graduate work leading to the Master of Science, Master of Science in Agriculture, and the Doctor of Philosophy degrees with options in soil chemistry, soil fertility, soil genesis, morphology and classification, soil mineralogy, soil microbiology and soil physics. For the M.S. degree, 24 hours of course work plus an acceptable thesis are required (Plan A). In certain exceptional cases, the thesis may be replaced by six additional hours of course work. Work leading to advanced degrees must conform to the general rules and regulations of The Graduate School. A reading knowledge of one foreign language is required for the Ph.D. degree.

Preparation for graduate work in Soil Science should include some course work in mathematics, chemistry, physics and biological sciences. Students with deficiencies in any of these areas will be expected to make up any deficiency early in the course of their graduate study

cou	ise of their graduate study.
4680	3011 0 50 and Management (3)
4700	
4730	and mapping (3)
501	Reclamation of Disturbed Land (3)
560	Soil-Plant Relationship (3)
562	Forest Soils
566	Soil Biology
575	Soil Biology
581	Chemical Analysis of Soils and Plants (4)
599	Special Problems in Agronomy (1-4)
652	Soil Classification and Geography (3)
660	Advanced Soil Biology(2)
671	Soil Chemistry
675	Advanced Soil Physics (3)
681	Mineralogical and Chemical Analysis of
	Soils
690	Topics in Soil Chemistry (1-4)
691	Topics in Soil Mineralogy (1-4)
712	Advanced Soil Fertility(3)
721	Soil Genesis
741	Clay Mineralogy
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
770	Agronomy Seminar
799	Research in Agronomy (1-4)

Spanish and Italian Languages and Literatures

Graduate Faculty: Professors Brian Dendle, Joseph Jones (Director of Graduate Studies), Margaret Jones John Keller, John Lihani, William McCrary, Daniel Reedy (Chairman), Gerardo Saenz. Associate Professors Michael Impey and Edward Stanton. Emeritus Professor: Alberta Wilson Server.

The Department of Spanish and Italian offers the Master of Arts and the Doctor of Philosophy degrees. Graduate Record Examination scores are required for admission.

MASTER OF ARTS DEGREE

Prerequisites: Attainment in Spanish equivalent to that required for the undergraduate major in Spanish at the University of Kentucky.

Requirements: Standard Graduate School requirements; reading knowledge of a second foreign language; successful completion of 30 hours of course work (Plan B), or successful completion of 24 hours of course work and an acceptable thesis (Plan A). The M.A. written examination is designed to test the candidate's knowledge of the following areas: 1) Hispanic civilization and literary history, 2) the M.A. reading list, and 3) the candidate's composite course work. SPI 502 (Survey of the Spanish Language) is recommended but not required. For individuals who contemplate further work leading to the doctorate, SPI 651 (Bibliography and Methods of Research) is recommended but not required.

DOCTOR OF PHILOSOPHY DEGREE

Recommendations and Requirements: Standard Graduate School requirements; SPI 502 (Survey of the Spanish Language), SPI 601 (Old Spanish I), SPI 602 (Old Spanish II); SPI 651 (Bibliography and Methods of Research) are recommended but not required; a reading knowledge of two languages other than Spanish and English is required; successful completion of written and oral examinations is required for qualification for candidacy for the doctorate (see remarks below); presentation of acceptable dissertation. All candidates for the doctorate are asked to declare an area of special competence, either generic or periodic. It is assumed that the candidates record will reflect more course work in this area.

Doctoral candidates may choose to organize their special studies either by traditional area-divisions or by genre.

Organization by area: (1) Hispanic linguistics; (2) Medieval Spanish literature and civilization; (3) Renaissance and Golden Age Spanish literature and civilization; (4) Modern Spanish literature and civilization; and (5) Spanish American literature and civilization.

Generic specialization: (1) Hispanic drama; (2) Hispanic prose fiction; (3) Hispanic poetry; (4) Hispanic non-fiction

prose and civilization; and (5) Hispanic linguistics.

The term Hispanic includes both Peninsular and Spanish American studies.

The qualifying examinations consist of three written eight-hour examinations (two on all aspects of Hispanic Language, Literature, and Culture, and one on the area of special competence and related material) and a two-hour oral examination.

SPANISH

407G Literature of Social Protest in

407		
	Spanish America	(3)
4200	G Twentieth Century Spanish American	
	Literature in Translation	(3)
4210	G Masterpieces of the Spanish Baroque The	ater
	in Translation	(3)
4220		(3)
4230		
	Literature in Translation	(3)
501	Spanish Phonetics, Pronunciation and	(3)
301	Phonemics	(0)
502	Survey of the Spanish Language	(3)
503		(3)
504	Structure of the Spanish Language	(3)
504	Advanced Spanish Grammar and	
-0-	Composition	(3)
505	Advanced Spanish Grammar and	
	Composition	(3)
506	Introduction to Comparative Spanish,	
	Portuguese, and Italian Linguistics	(3)
511	Spanish Cultural and Intellectual	
	Background to 1500	(3)
521	Intellectual and Cultural Background of	
	the 16th and 17th Centuries	(3)
522	Survey of the Comedia I	(3)
523	Survey of the Comedia II	(3)
531	Studies in Modern Spanish Civilization	(3)
532	The Generation of 1898	(3)
541	Spanish American Short Story	(3)
551	Tutorial Seminar for Majors in Spanish	(1)
552	The Teaching of Modern Foreign	(1)
	Languages	(3)
601	Old Spanish: Phonology and Paleography	(3)
602	Old Spanish: Morphology and Syntax	(3)
611	Medieval Spanish Literature I	(3)
612	Medieval Spanish Literature II	
613	Spanish Epic and Long Narrative Poetry .	(3)
614	The Spanish and Spanish American Ballad	(3)
615		(3)
013	Spanish Poetry of the 13th, 14th, and	
	15th Centuries	(3)
616	Early Brief Narrative—13th, 14th,	
	15th Centuries	(3)
617	Spanish Medieval and Renaissance Drama	(3)
621	The Spanish Novel to Cervantes	(3)
622		(3)
623		(3)
624	The Spanish Novel from Cervantes to	
	Romanticism	(3)
625	Mystic and Ascetic Writers of the 16th	
	and 17th Centuries	(3)
626	Lope de Vega	(3)
627	The Theatre of Tirso de Molina	(3)
628		(3)
629	Spanish Poetry of the 16th and 17th	
		(3)
631		(3)
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632	Spanish Drama from the Generation of	
-10	1898 to the Present	. (3)
633	The Spanish Novel of the 19th Century	. (3)
634	Prose Fiction from the Generation of	
	1898 to the Present	. (3)
635	The Spanish Essay from the 18th Century	
reoli	to the Present	
636	Spanish Poetry from the 18th Century three	\$100 miles
	the Generation of 1898	
637	Spanish Poetry from the Generation of 192	
W.C.	to the Present	
641	Spanish American Drama	
642	Spanish American Poetry: Colonial Period	
0.40	to Independence	(3)
643	Spanish American Poetry: 1800-1910	
644	Spanish American Poetry: 1910 to Present.	
645	Spanish American Novel: 1800-1910	
646	Spanish American Novel: 1910-1940	(3)
647	Spanish American Novel: 1940 to Present .	(3)
648	Literary Currents in Contemporary Spanis	
0.40	American Fiction	(3)
649	Spanish American Essay	(3)
651 768	Bibliography and Methods of Research	(3)
769	Residence Credit for the Master's Degree Residence Credit for the Doctor's	(1-6)
709		
770		1-12)
771	Seminar in Spanish Studies Seminar in Spanish Linguistics	
772	Seminar in Medieval Spanish Literature	
773	Seminar in in Golden Age Non-Dramatic	(3)
0848	Literature	(3)
774	Seminar in Golden Age Theatre	(3)
775	Seminar in Modern Spanish Literature	(3)
776	Seminar in Spanish American Literature .	(3)
782	Special Studies in Spanish	(3)
	ITALIAN	
543	Survey of Italian Literature I	(3)
544	Survey of Italian Literature II	(3)
561	Old Italian	(3)
563	Dante I	(3)
564	Dante II	(3)
565	Petrarch and Boccaccio	(3)
566	Literature of the Italian Renaissance	(3)
571	Modern Italian Novel	(3)
572	Modern Italian Drama	(3)
573	Modern Italian Poetry	(3)
591	Dante in Translation	(3)
592	Italian Renaissance Masterpieces in	T A
	Translation	(3)
593	Modern Italian Literature in Translation	(3)
	RUMANIAN	
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461G	Rumanian I	(3)
462G	Rumanian II	(3)

Special Education

Graduate Faculty: Professors Edward Blackhurst (Director of Graduate Studies). Associate Professors Patricia Cegelka, Richard Culatta, M.C. Martinson, Catherine Morsink (Chairman), C.M. Nelson, James

Associate Members: Associate Professor Donald Cross. Assistant Professors William Berdine, Barbara Culatta, James Dworkin, David Gast, Susan Keeshman.

Students may enroll for either degree or certification graduate programs in special education. Programs not leading to a degree are designed primarily for those who are seeking Kentucky Provisional, Rank II or Rank I Teacher Certification at the graduate level in the following certification areas:

- 1. Learning and Behavior Disorders
- 2. Speech Pathology

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- 3. Trainable Mentally Handicapped
- 4. Retarded/Multiple Handicapped
- 5. Supervision of Special Education

Previously certified special education teachers may pursue the standard teaching certificate by selecting an area of emphasis in one of the following:

Early Childhood Education for the Handicapped

Retarded/Multiple Handicapped Career Education for the Handicapped

Speech Pathology Special Education Resource Teaching

(Mildly Handicapped) Severe Learning and Behavior Disorders

Trainable Mentally Handicapped

The Degree programs that are offered lead to the Master of Arts in Education or Master of Science in Education (Plan A and B available), Specialist in Education and Doctor of Education Degrees. Within the framework of College and University requirements, all graduate degrees are individually planned. This flexibility makes it possible to structure an appropriate program for each student, based upon previous background and career aspirations. Following are brief descriptions of the various graduate degree programs.

To be admitted to candidacy for a Master's degree, the following criteria must be met:

- Grade-point average of 3.0 on at least 12 semester hours of course work, six of which must be at the 600 level or above, excluding practicum.
- Recommendation by at least one member of the Graduate Faculty.
- 3. A completed program plan.
- No incomplete grades.
- Successful performance on an objective test covering basic concepts in special education or a grade of B on a Graduate level survey of special education course.

Minimum requirements for the Master of Arts in Education Degree are either (1) the completion of 30 semester hours of course work under Plan B or (2) 24 hours of course work and a thesis under Plan A as outlined at the beginning of the Education Section of this Bulletin. These minimum course credit requirements are distributed as follows:

Special Education	19
Electives in Education	6
Course work outside the College of	
Education	12

Minimum hours for the Master of Science in Education Degree are distributed as follows:*

Department of Special Education and support areas in College 24 Course work outside College of Education . . . 6 Total 30

*The Master of Science in Education option in Severely Re tarded/Multiply Handicapped requires a minimum of 54 cred

At least 15 semester hours mut be earned in courses at the 600-700 level (excluding practica) and a comprehensive final examination is required.) All students are also required to take one course in either statistics, methodology of educational research, or single subject research design. With the exception of speech pathology students, either a research paper or thesis is required of all Master's degree students.

Students entering without a teaching certificate must meet deficiencies, including certification requirements, as outlined by their adviser, in addition to completing the degree requirements listed above. Depending on their educational background, students may obtain Rank II Certification concurrently with their Master's Degree. Students preparing for positions not requiring certification may petition for waiver of certification requirements upon application for admission to the program.

Candidates for the Master of Arts in Education or Master of Science in Education degree with concentration in speech pathology and audiology are expected to meet the academic and clinical requirements established by the American Speech and Hearing Association for the Certificate of Clinical Competence. Briefly, these requirements include: (1) a total of 60 semester hours of study, of which, at least 30 must be courses acceptable toward a graduate degree; and (2) 300 clock hours of supervised, direct clinical experience with individuals presenting a variety of communication disorders, of which at least 150 hours must be obtained at the graduate level. Master of Arts in Education or Master of Science in Education candidates in speech pathology and audiology must complete a minimum of 12 semester hours from the 600-700 level courses in speech pathology and audiology listed under special education. Successful completion of a comprehensive examination in speech pathology and audiology is also required.

General requirements for the Specialist in Education (Ed.S.) degree have been described in a previous section of this Bulletin. Ed.S. programs are individually planned for in-depth study in an area of special education. Students who hold a Kentucky Rank II Certification are awarded Rank I Certification upon completion of this degree.

The Doctor of Education (Ed.D.) program is designed to prepare leadership personnel for the field of special education. Although various programs of study can be planned, primary emphasis is placed upon training persons for positions in higher education and administration of special education programs. The requirements for this program are described in the Doctor of Education Section.

Two major types of financial assistance are available, on a competitive basis, to graduate students in special education.

- 1. Students may apply for graduate assistantships at all levels of graduate study. These are awarded from funds granted to the Department by the U.S. Office of Education, Bureau of Education for the Handicapped.
- 2. WHAS Crusade for Children traineeships for full-time study during summer school are available only to Kentucky teachers who are in the process of obtaining Provisional or Standard Certification in an area of special education.

Assistantships and traineeships are awarded on the basis of (1) commitment to the field, as evidenced by previous work experience, references, and/or volunteer service; (2) prior academic record; and (3) financial need. Applications for financial assistance may be obtained from the Departmental Director of Graduate Studies.

500	Speech Analysis and Perception	(3)
502	Development and Evaluation of	
	Instructional Materials in	
	Special Education	(3)
505	Education of the Trainable Mentally	
	Retarded	(3)
510	Early Childhood Education of the	
	Handicapped	(2)
511	Speech and Language Development	(3)
512	Language Disorders I	(3)
513	Protecting the Human Rights of the	
	Handicapped	(2)
514	Special Education Learning Environments	(2)
515	Career Education in Special Education	(2)
516	Principles of Behavior Management	
	with Exceptional Children	(2)

517	Prosthetics for Handicapped Children (2)
518 520	Working with Parents of the Handicapped (2) Survey of Severe Developmental
	Disabilities(3)
524	Programs for the Adolescent Mentally Retarded
525	Retarded
526	Neurologically Handicapped (3) Education of the Educable Mentally
540	Retarded(3)
527	Characteristics of the Orthopedically and
528	Neurologically Handicapped (3) Educational Assessment of the Mildly
	Handicapped
529	Educational Programming for the Mildly Handicapped
530	Characteristics of the Mentally Retarded (3)
541	Characteristics of the Trainable Mentally
547	Handicapped (2) Direct Observation and Assessment
	Procedures (2)
548	Curriculum and Materials for the Trainable Mentally Handicapped Classroom (2)
549	Practicum in the Trainable Mentally
558	Handicapped Classroom
996	Problems in Special Education: (Variable Topic)(1-9)
570	Characteristics of Emotionally Disturbed
585	Children (3) Sociolinguistics (3)
586	Clinical Interviewing(3)
587	Audiometry
588 589	Disorders of Articulation
591	Aural Rehabilitation
592	Problems and Needs of the Hearing Impaired
600	Survey of Special Education (3)
601	Behavioral Management of Exceptional
602	Children
	Education
610	Educational Evaluation of Exceptional Children
611	Educational Remediation of Learning
612	Disabilities of Exceptional Children (3) Advanced Practicum in Special
	Education
616	Vocational Programming for Handicapped Youth and Adults(3)
620	Instructional Programming in Early
621	Childhood Special Education (3) Issues in Early Childhood Education of
	the Handicapped
622	Models of Early Childhood Intervention for the Handicapped (3)
623	Practicum in Early Childhood Education of
630	the Handicapped (3-9) Educational Models in Severe
	Developmental Disabilities (3)
631	Instructional Programming with Severely Developmentally Disabled (3)
632	Advanced Practicum in Severe
633	Developmental Disabilities (1-12) Research Practices in the Education of the
	Severely Developmentally Disabled (3)
647 655	Language Disorders II
	Hearing
656	Clinical Laboratory in Diagnostic Procedures for Speech and Language (1)

657	Clinical Laboratory in Speech and
	Language (1-4)
658	Clinical Laboratory in Audiology (1)
659	Clinical Externship in Speech Pathology. (12)
670	Disorders of Phonation (3)
671	Education of Emotionally Disturbed
	Children
672	Theories of Educating Emotionally Disturbed
	Children
673	Neurogenic Disorders of Speech and
	Language
674	Disorders of Fluency (3)
702	Seminar in Speech Pathology(3)
710	Seminar in Mild Learning and Behavioral
	Disorders (2)
711	Seminar in Severe Developmental
	Disabilities (2)
712	Seminar in Special Education Professional
	Services
720	Seminar in Special Education Teacher
	Preparation
721	Practicum in Special Education Personnel
	Preparation (1-9)
730	Seminar in Special Education
	Administration (2)
731	Practicum in Special Education
	Administration (1-9)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
779	Seminar in Special Education (Variable
	Topic) (3)
789	Independent Study in Special Education (1-6)
799	Research Techniques in Special Education (3)
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Statistics

Graduate Faculty: Professors Richard Anderson (Chairman and Director of Graduate Studies), Vasant Bhapkar, Zakkula Govindarajula, Harlley McKean. Associate Professors David Allen, Peter Purdue.

Associate Members: Assistant Professors James W. Evans, Robert Latta, Lynn Weidman, Constance Wood.

Joint Appointments: William Bramble, Paul Cornelius and Harry Hall.

The Department of Statistics offers programs of study leading to the degrees of Master of Science (Plan A or B available), and Doctor of Philosophy. The M.S. degree is professionally oriented for the student who plans a career in government, business or industry. The Ph.D. program offers a broad training in both theory and methodology while affording flexibility to orient the program to suit the student's interests. The statistics Ph.D. is well suited for responsible positions in both the academic and commercial realms. In addition to formal course work and research training the advanced student has opportunities to gain valuable practical experience by participating in consulting activities on campus under faculty supervision.

Course work is available in areas associated with statistics such as computer sci-

ence, biological modelling, econometrics, control theory, operations research and quantitative genetics.

A student intending to pursue graduate work in statistics should have one course each in advanced calculus (equivalent of Mathematics 432 or 471) and matrix algebra (equivalent of mathematics 462) for the first year's graduate courses. If possible, mathematical deficiencies should be corrected during the summer prior to entering The Graduate School.

Students with an undergraduate major in any of the mathematical, physical, biological, social or applied sciences are encouraged to apply.

The University of Kentucky is represented on the Committee on Statistics of the Southern Regional Education Board.

MASTER'S PROGRAM

The Department offers the degree of Master of Science with (Plan A) or without (Plan B) a thesis. The core curriculum expected of all master's students is comprised of the following courses:

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Programs of study for Plan B require a total of at least 35 semester hours, which should include the equivalent of the five courses in the core curriculum and at least 18 additional credit hours. Of these 18 credit hours, at least 9 should be from the following list of statistics courses:

523, 612, 616, 621, 624, 626 641, 642, 643, 644, 661, 665

Programs of study for Plan A (with thesis) require a total of at least 29 semester hours, which should include the core curriculum and at least two courses from the previous list. Candidates should also satisfy the requirement that at least 18 hours for Plan B and 15 hours of non-thesis courses for Plan A must be at 600 level or higher. The free elective courses can be selected from a variety of courses both within and outside the Statistics Department. Before the end of the second semester, the M.S. candidate must present a proposed plan of study for approval by the Director of Graduate Studies. There are no formal minor requirements.

All master's candidates are required to take a Department written examination on

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the core curriculum. These exams are normally administered in August.

DOCTORAL PROGRAM

The Ph.D. program requires 59 credit hours of course work. In addition to the equivalent of the five courses in the core of the M.S. program, each student takes STA 624, a one-semester measure theory course, and STA 701, 702 and 703. Beyond this core, the student takes at least 27 credit hours at the 600-700 level of which at most nine may be special topics courses (691/695) and at least 18 of which must be in Statistics. Before the end of the fourth semester, the candidate with the approval of the special committee presents a plan of study to the Department's graduate faculty. A reading knowledge of one foreign language is required of all Ph.D. candidates.

A student must pass the Master's departmental written examination at a Ph.D. level of competence to be eligible for the doctoral qualifying examination. The qualifying examination consists of a written examination taken by all Ph.D. students and an oral examination administered by the student's advisory committee. Within six months after passing the qualifying examination, the student presents a prospectus of the dissertation to the advisory committee for approval before pursuing the contemplated research to fruition.

Areas of current research interest include: Categorical data; non parametric inference and goodness of fit; large sample theory; design and analysis for linear and non linear models including predictor selection, variance components, computational algorithms, response surfaces, Bayesian regression, fitting splines and change-over designs; paired comparisons; incomplete data, especially censoring and truncation; life testing; ranking and selection; reliability; queueing theory; stochastic biological models, and sequential analysis.

417G	Principles of Operations Research II	(3)
421G	Basic Statistical Theory I	(3)
422G	Basic Statistical Theory II	(3)
423G	Introductory Probability	(3)
482G	Discrete Methods and Models in Applied	
	Mathematics	(3)
503	Introduction to Statistical Methods	(3)
515	Mathematical Programming and	
	Extensions	(3)
523	Probability Models	(3)
524	Probability	(3)
525	Introductory Statistical Inference	(3)
531	Theory of Statistical Inference I	(4)

601	Theory of Statistical Inference II (3)
603	Introduction to Linear Models and
	Experimental Design
612	Sequential Analysis
616	Design and Analysis of Sample Surveys (3)
621	Nonparametric Inference (3)
624	Applied Stochastic Processes (3)
626	Time Series Analysis
630	Bayesian Inference (3)
635	Survivability and Life Testing (3)
641	Design and Analysis for Variance
	Component Models (3)
642	Response Surface Techniques (3)
643	Advanced Experimental Design (3)
644	Advanced Linear and Nonlinear Models (3)
661	Multivariate Analysis I (3)
665	Analysis of Categorical Data (3)
670	Basic Statistical Analysis (4)
671	Regression and Correlation (2)
672	Design and Analysis of Experiments (2)
673	Distribution-Free Statistical Inference
	and Analysis of Categorical Data (2)
675	Survey Sampling (2)
677	Applied Multivariate Methods (3)
678	Statistical Genetics(3)
681	Statistical Techniques for Engineers and
	Physical Scientists
690	Seminar in Statistics(1)
691	Special Topics in the Planning and Analysis
TOP	of Experiments
695	Special Topics in Statistical Theory (3)
701	Advanced Statistical Inference I (3)
702	Advanced Statistical Inference II (3)
703	Advanced Probability (3)
704	Advanced Probability: Stochastic Processes (3)
722	Topics in Nonparametric Inference (3)
762	Multivariate Analysis II (3)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)

Theatre Arts

Graduate Faculty: Professors James W. Rodgers (Chairman and Director of Graduate Studies), and J. Robert Wills

Associate Member: Assistant Professor John B. Lynaugh.

Theatre lives at the moment of contact between actor and audience. This Department expects its graduate students to approach that moment from several points: historical, critical, practical, theoretical and experimental. Within this framework, each candidate for a Master of Arts degree must complete a minimum of 30 semester hours. A maximum of six of these may be taken in allied subjects. Graduate students are encouraged to concentrate in one of the following areas: acting, directing, design, production.

It is assumed that a student who seeks a Master's degree in the Department of Theatre Arts will have had courses approximating those required for an A.B. degree

with a major in theatre arts. If not, the student must remove the deficiency by taking (without graduate credit) courses in addition to those normally specified for the Master's degree.

The Department offers the Master's degree according to Plan B only at the present time.

516	Playwriting	(3)
518	Theatre Study Tour	(3)
530	Theatre Directing II	(3)
574	Scenography II	(3)
580	History of the Theatre I	(3)
581	History of the Theatre II	(3)
588	Contemporary Theatre	(3)
589	History of Theatre in the United States	(3)
596	Summer Repertory Theatre (1-6)
625	Advanced Styles of Acting	(3)
660	Studies in Technical Theatre: Production	(3)
661	Studies in Technical Theatre: Lighting	(3)
730	Directing	(3)
770	Seminar in Theatre	(3)
780	Independent Study in Theatre	(3)
		BARRY.

Toxicology

Graduate Faculty: Professors Charles T. Ambrose, T.Z. Csaky, Wyman Dorough (Director of Graduate Studies), Malcolm Siegel, William J. Waddell, Ralph F. Wiseman. Associate Professors Louis Diamond, James W. Flesher, Gerald Rosenthal, Thomas Tobin.

The Graduate Program in Toxicology is administered by a separate academic department, the Graduate Center for Toxicology, headed by a director and staffed by teaching faculty with primary appointments in various departments of the Medical Center, the College of Agriculture and the College of Arts and Sciences. Both the M.S. (Plan A) and Ph.D. degrees are offered

Toxicology is a science concerned with the harmful interactions of chemical agents with living systems. The Graduate Program in Toxicology is designed to train individuals to utilize the biological, physical, and mathematical sciences in the study of the causes, mechanisms, and evaluation of poisoning as well as the sources, identification and quantitation of poisons.

Graduates of accredited colleges with a baccalaureate degree in the biological sciences, chemistry, or physics or professional degrees in medicine, dentistry, pharmacy, or veterinary medicine may apply for graduate study in the toxicology program. It is advisable that candidates have a good background in chemistry, physics, biological sciences, and mathematics. Students with other advanced degrees may be considered for admission. The number of

transferable credits and courses will be considered however on the merits of each individual case.

A minimal core curriculum is compulsory. The rest of the curriculum will be tailored to meet individual needs. Only one modern foreign language is required for the Ph.D. degree in Toxicology.

The Toxicology Graduate Program is included in the Academic Common Market of the Southern Regional Education Board.

521	General Pharmaco- and Toxicodynamics . (2
606	Insecticide Chemistry and Toxicology (3
640	Detoxification Mechanisms (3
650	Cellular and Histotoxicology (2
672	Behavioral Pharmacology and Toxicology (2)
680	Toxicology (5)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
770	Proseminar in Toxicology (1)
780	Special Problems in Toxicology (2)
790	Research in Toxicology (1-5)

Veterinary Science

Graduate Faculty: Professors John Bryans (Chairman), R.W. Darlington (Director of Graduate Studies), J.H. Drudge, E.T. Lyons, W.H. McCollum, T. W. Swerczek and Thomas Tobin. Associate Professor R.G. Lov.

Associate Members: Associate Professor J. W. Blake. Assistant Professors Robert Douglass and Judith Pachcianz.

The Department of Veterinary Science offers a program of study and research leading to the Master of Science (Plan A only) and Doctor of Philosophy degrees. Possible areas of concentration are comparative pathology, parasitology, reproductive physiology, pahrmacology and toxociology, immunology and virology. The program is designed for individuals with the Doctor of Veterinary Medicine degree who desire research training in one of the above areas and for qualified graduates of accredited undergraduate institutions. Individuals electing pathology as their area of concentration must be graduate veterinarians. Individual programs of study must conform with the general rules and regulations of The Graduate School.

A limited number of research assistantships and fellowships are available.

650	Cellular and Histotoxicology(2)
768	Residence Credit for the Master's Degree (1-6)
769	Residence Credit for the Doctor's
	Degree (0-12)
770	Veterinary Science Seminar(1)
781	Correlative Pathology(1-3)

782	Nutritional Pathology	(3
783	Infectious Diseases of Domestic Animals	(3
784	Advanced Veterinary Immunology	(2
785	Advanced Veterinary Parasitology	(3
786	Advanced Veterinary Pathology	(3
787	Advanced Veterinary Pathology	(3
791	Techniques in Veterinary Microbiology (1	-9
792	Techniques in General Veterinary	
	Pathology	-9
793	Techniques in Veterinary Parasitology . (1-	-9)
794	Research in Nutritional Pathology (1-	-9)

Vocational Education

Graduate Faculty: Professors Harold R. Binkley (Chairman), Herbert Bruce, Charles Byers, Carl Lamar. Associate Professors Clayton Omvig (Director of Graduate Studies), David McMurtry, Elaine Uthe.

Associate Members: Professors Bernard Fagan, Leonard McDowell. Associate Professor Rodney Tulloch.Assistant Professors Carolyn Litchfield, Kawanna Simpson.

Emeritus Professor: Vernon Musselman.

The Department of Vocational Education offers programs leading to the Master of Arts in Education in the fields of business education and distributive education and the Master of Science in Education in the other areas (Plan A and Plan B available), the Specialist in Education (Ed.S.) degree, and the Doctor of Education (Ed.D.) degree. These advanced degree programs are designed to prepare candidates for leadership positions in vocational education—administration, curriculum, teacher education, research, and vocational guidance.

In addition, the Department offers programs leading to: (1) the professional certification of administrators, coordinators, and supervisors in vocational education and (2) certification of master's equivalent for Rank II classification (for Kentucky salary purposes) for teaching.

For further information, write the Department of Vocational Education.

MASTER'S DEGREE PROGRAMS IN VOCATIONAL EDUCATION

For a master's degree in vocational education (agricultural education, business education, distributive education, home economics education, industrial education, or vocational education) a minimum of 30 semester hours must be taken with a minimum of 12 hours of graduate work in professional education. At least 12 semester hours shall be taken from three of six areas—I through VI. This program qualifies the teacher for a Standard Certificate if he has completed a four-year undergraduate curriculum.

ALL PROGRAM SERVICE AREAS

Area II: Research
EDP 522, EDP 656, and EDP 557.
Area III: Advanced Study in Human
Development
SOC 521, SOC 542, EDP 600,
EDP 739, EDP 759.
Area IV: Psychology of Learning
PSY 540, EDP 548, and EDP 658.
Area VI: Foundations in Education
EDF 640, EDF 645, EDF 651.

AGRICULTURAL EDUCATION

EDF 655, and EDF 661 (SOC 661).

Area I: Curriculum Development EDV 672, EDV 678, and EDC 732. Area V: A Seminar in Instruction Devoted to Method in Teaching EDV 670, EDV 671, EDV 675, EDV 679, EDV 680, EDV 681, EDV 682, EDV 695, EDV 779, and EDV 789.

BUSINESS EDUCATION

Area I: Curriculum Development EDV 615, EDV 626, EDV 678, EDC 714, and EDC 732. Area V: A Seminar in Instruction Devoted to Method of Teaching EDV 511, EDV 512, EDV 615, EDV 618, EDV 695, EDV 779, and EDV 789.

DISTRIBUTIVE EDUCATION

Area I: Curriculum Development EDV 517, EDV 678, and EDC 732. Area V: A Seminar in Instruction Devoted to Method of Teaching EDV 516, EDV 526, EDV 610, EDV 670, EDV 671, EDV 695, EDV 779, and EDV 789

HOME ECONOMICS EDUCATION

Area I: Curriculum Development EDV 678, EDV 685, and EDC 732. Area V: A Seminar in Instruction Devoted to Method of Teaching EDV 670, EDV 684, EDV 686, EDV 687, EDV 695, EDV 779, and EDV 789.

INDUSTRIAL EDUCATION

Area I: Curriculum Development EDV 678 and EDC 732. Area V: A Seminar in Instruction Devoted to Method of Teaching EDV 516, EDV 518, EDV 529, EDV 537, EDV 670, EDV 693, EDV 695, EDV 779, and EDV 789.

E AREAS	VOCATIONAL EDUCATION	EDP 656 Methodology in Educational	EDO	C 542 Teaching in the Kindergarten (3)
	Area I: Curriculum Development	Research		544 Utilization of Educational Media (3)
557.	EDV 517, EDV 672, EDV 678.	EDP 660 Research Design and Analysis		
uman		in Education		Secondary School (3)
uman	EDV 685, and EDC 732.	Vocational Cuidanas Industrial Burnhal	588	Adult Education in Home Economics (3)
	Area V: A Seminar in Instruction Devoted	Vocational Guidance, Industrial Psychology, Human Relations	590	Problems in Home Economics Education . (3)
,	to Method of Teaching		610	Simulated Occupational Experience Program
	EDV 516, EDV 518, EDV 528,	EDP 764 Using Occupation and Educational		in Distributive Education (2-4)
ng	EDV 615, EDV 670, EDV 693,	Information in Counseling 3	683	Current Problems in Home Economics
658.		EDV 523 Vocational Guidance 2-3 EDV 702 Career Development, Research		Education
tion	EDV 695, EDV 779, and EDV 789.		684	Current Trends in Home Economics
ition		Theories and Practice 2-3 PSY 540 Introduction to Industrial		Education
001	THE Ed.S. AND	Psychology 3	685	Home Economics Curriculum
661).	DOCTORAL (Ed.D.) DEGREE	PSY 541 Psychology of Industrial Personnel	coc	Construction
III SROIII IS	PROGRAMS IN	Procedure 3	687	Evaluation in Home Economics Education (3)
ATION		PSY 545 Small Group Behavior 3	087	Home Economics Supervision (3)
Manager and the control of the contr	VOCATIONAL EDUCATION	SOC 521 Industrial Sociology 3		VOCATIONAL EDUCATION
nt iolanina	For information, write the appropriate	SOC 542 Human Relations in Administration 3		
732.	director of graduate studies in the Depart-	Total 99	516	Problems of the Coordinator in Vocational
on Devoted		Total 99	****	Education (2-3)
	ment of Vocational Education. See Grad-			Vocational Guidance (2-3)
	uate School section of Bulletin.	AGRICULTURAL EDUCATION	535	Principles and Philosophy of Vocational
· vanguage ·	CERTIFICATION OF		600	Education (2-3)
es lestals	CERTIFICATION OF	580 Materials and Methods for Teaching		Internship in Vocational Education (6)
obuis A	ADMINISTRATORS, SUPERVISORS	Vocational Agriculture	0.41	Appraisal of Current Literature in
	AND COORDINATORS OF	581 Adult-Farmer Schools and Young-	670	Vocational Education
	VOCATIONAL EDUCATION	Farmer Courses in Agriculture (3)		Method in Teaching Vocational Education (3) Youth Organizations in Vocational
ON		583 Experience Programs in Vocational		Education (3)
is in the later of	For certification as an administrator,	Agriculture	678	Selecting Teaching Materials (3)
garytukup	coordinator, or supervisor of Vocational	Agriculture(3)	693	Supervision in Vocational Education (3)
imaxa mar	Education the student must complete a	673 Program Development in Vocational		The Administration of Vocational
	minimum of 15 semester hours of graduate	Agriculture (3)		Education
on Devoted	level courses above and beyond the course	675 Modern Problems in Agriculture	695	Special Problems in Vocational Education (3)
		Education		Career Development: Research, Theories and
da nida Vi	requirements for the 10-year teaching cer-	679 Adult Education in Agriculture (3)		Practices (2-3)
are until	tificate. Courses are to be selected from	680 Directing Occupational Experience in	768	Residence Credit for the Master's Degree (1-6)
prospectua	those listed below, including at least one	Agriculture	769	Residence Credit for the Doctor's
	course in each of the four curriculum	681 Teaching Farm Shop		Degree (0-12)
TION	areas.	682 Education in Agriculture for Young		Seminar in Vocational Education (1-3)
	2002 X X XX	Adults (3)	789	Independent Work in Vocational
nt	CURRICULUM AREAS AND COURSES		700	Education
732.	Sem.	BUSINESS EDUCATION	799	Research in Vocational Education (1-3)
n Devoted	Hrs.	511 Teaching Secretarial Subjects (3)		DISTRIBUTIVE EDUCATION
de recorge de	Organization and Administration of	512 Teaching Bookkeeping and Accounting (3)	X	
soul non	Vocational Education	513 Teaching Typewriting and Clerical		Problems in Distributive Education (2-3)
lection 's	EDV 535 Principles and Philosophy of	Practice	517	Determining Teaching Content in
e lanon	Vocational Education 2	514 Teaching General Business Subjects in the	100	Distributive Education (2-3)
	EDV 694 Administration of Vocational	Secondary Schools (3)	526	Organization and Operation of Adult
CATION	Education 3	615 Problems in Business Education (3)	598	Programs in Distributive Education (3) Technique of Teaching Distributive
	EDV 779 Seminar in Vocational Education 1-3	618 The Social Business Subjects in High	346	Education (2-3)
it constitution of the second	X X IX IIX XXX X GSA	School		Education
732.	Administration and Supervision of	623 Administration and Supervision of Business		
n Devoted	Education Personnel	Education		INDUSTRIAL EDUCATION
Sobald his	EDA 633 Administration and Supervision	626 Classification and Possible Use of Community Resources in Business Education (3)	*10	
	of Instructional Programs 3	640 Advanced Methods in the Secretarial		Methods in Industrial Education (2)
RS COURSEY	EDA 634 Administration of Educational	Subjects		Modern Industrial Analysis(2)
	Personnel (Required in this Area) 3	The state of the s		Supervised Work Experience in Business or
	EDV 608 Internship in Vocational Education 3 EDV 693 Supervision in Vocational	BUSINESS AND OFFICE EDUCATION		Industry(3) Evaluation in Industrial and Distributive
ION	Education 3	(BOE is the abbreviation for these courses.)		Education
Service Services	Program Planning, Research, and Evaluation	519 Records Management (3)		and Evening Classes (2)
t	in Vocational Education	556 Business Reports and Communications (3)		Surveys in Industrial Education (2)
ordet sta	EDV 529 Evaluation on Industrial and	WOME ECONOMICS PRODUCTION		Special Problems in Industrial
n Devoted	Distributive Education 2	HOME ECONOMICS EDUCATION		Education (1-3)
AND THE REST OF TH	EDV 695 Special Problems in Vocational	EDC 540 Problems in Teaching Reading (3)		Supervision of Student Teaching in Industrial
SES Probe	Education	EDC 542 Children's Literature (3)		Education

789.

Course Listings by Semester

This listing is not intended to reflect all graduate courses offered during any semester but to serve only as a guide for scheduling selected courses.

The following symbols are used -F: fall semester; S: spring semester; SS: summer session.

Course	: F	S	SS	Cours	e F	S	SS	Course	F	S	SS	Course	F	S	SS	Cours	e F	S	SS	Course	F	S	SS
A	DMII	NISTR	A-		AN	IIMAL		765	X			642	X			669	X			1.540		hij	
	TI	ON			SCI	ENCES		766	X			643	^	x		674	x			683	V	X	
SI	JPER	VISIO	N	404		X		767	X	X	X	650	X	^		678	X			685	X	X	
601		X	X	406	X	X		772		X	han an	665	x			681	^	~		690		X	
602	X		X	408	X	^		776		X		671	^	x		683	~	^		768	X	X	X
603		x	^	410	X			777		X		680		^	X	686	X			CR	OP	SCIE	NCE
604	X			412		X		778	X			000			^	691	^		notes	404	X		
608	X	X		420	X	^		779		X			CI	VIL		692	X	X	^	406	X		
628	X	X		430	APRILLS.	X		790	X	X	X	EN	GIN	EERIN	G	693	^	X		408	X		
629	X		X	442		X						425	X	X		694	X	^		412	X		
633	X		X	462	X				CH	EMIST	RY	435		X		695	^	X		502	X		
634		x	X	470	X	X		401	X			487	X	X		073				510		X	
635		X	X	530	X			501	X			489		X			MIN	NING		554		X	
639		X	X	532	Francis	X		502		X		492	X	X		El	NGIN	EERI	NG	556		X	
549	X	dia.		534		X		503		X		515	X	Linians Linians		451	X			560		X	
769	X	X	X	536	X	Smil		517			X	523		X		551	X			599	X	X	X
771	X	X	X	538	1000	X		618	X			528		X		562		X		620		X	
772	X	X	X	562	X	o Estado		619		X		529		X		572		X		630	X	o ma	
785	X	X	X	564	^	X		640	X	X		531	X			581		X		658		X	
792	X			580	X	^		769	X	X	X	532		X			C111			666	X	nam	
				600	X							533	X	1/12/97/1		me		IICAL		678		X	
		LTUR		630	X				HEA	AICAL		540	X				AUIN	ITIOI	N	697	X	X	×
EC	ONO	OMIC	S	660	^	X		EN	GIN	EERIN	G	543		X		502		X		730		X	
41G		X		662		x		412	X			545	X			601	X			732	X		
45G		X		664		x		422		X		550	X	X		602		X		734		X	
01		X		680	X	^		430	X			553	****	X		701	X			736		X	
02		X		681	^		x	431	X			554		X		702		X		768	X	X	X
603	X			683				432		X		555	X	X		780	X			769	X	X	X
522	X			684		x	X	455	X			559		X		781		X		770	X	X	X
531	X			685	x	^		456		X		568	X			782		X	X	799	X	X	X
32	X			686	x			462	X			580	X				OMI	PUTE	Red 148	Luc solgis		388	Yas
33	X			687	^	x		505	X			621	X				SCIE	NCE		CL	IRRI	CULU	IAA
34	X			688		x		515	X			623		X		415	X			เจยสารณ์เก		ND	wos
35		X		768	X	x	X	520	X			624	X	ericani i		416	X			IN:		ICTIO	NC
45	X			769	X	x	x	530		X		625	X			420	X			411	X	Х	CYSL3
80	X	X	X	771	X	x	^	550	X			626		X		421	X	X	X	500	x	X	
90	X		X	780	X	x	х	552		X		628		X		472	X	X	^	501	^	X	~
06	X			781	X	X	x	555		X		629	X			502	X	X		511	x	x	X
20	X			782	X	x	X	560		X		635		X		505		X		521	x		^
21		X(E)		790	x	x	x	565		X		639		X		510		X		522	×	X	EDA
24	X			791	X	x	x	570	X	X		640	X			520	X	X		524	x	X	
26	X			792	X	x	x	580		X		641	X			538	X	X		525	x	X	
40		X(O)						615		X		643		X		540	X	X		533	X	^	~
45 >	(E)					IORA	L	617		X		644		X		541		x		534	^	X	X
46		X(O)			SCIE	NCE		619	X			645	X	ortone fi		562		x		538		^	X
50 X	(0)			527		X		621		X		646			X	570	X	X		540	x		^
50		X		529		X		625		X		648			X	575	x	x		544	X	V	U
51 X	(0)			546		X		631	X			652		X		605	x	^				X	X
58	X	X	X	670	X			633	X			655		X		612	x	X	x	545	X	X	X
59	X	X	X	738	X			635		X			X	^		650	X	X	^	549	_	X	
		V	X	761	X			637			x						^				X	X	X
70	X	X	^	,01	"							663	X			670		X		564	X	X	

Cour	se I		S	SS	Cour	rse I	7 s	SS	Cours	e F	s	SS	Course	F	s	SS	Cours	e F	s	SS	Coun	se]	, ,	SS
607	×				661	X			420		×		603		×		500							. 55
608			X		662	2	X		425	X			612	X	^			X	~	~	641			
619	X		X	X	665	5 X			430	X			620	^	X		501	X	X	X	647			
620	X		X	X	666		X		440	X			624	X	^		502	X			650			
641	X				667	×			445	X			652	X			503	X			663			
642			X		668		X		450		X		653	^	~		505	X	X		700			
643			X		670)	X		455		X		654		X		507	X	.,		701			
646				X	671	X			460	X			655		X		509		X		702			
670			X	X	673				511	X			660				511	X	X		703			
712	X		X	X	676				512	^	X				X		512	X			704		X	
714	X		X	X	679				562	X	^		662		X		518	X			705		>	255
724	X		X	X	683				599	X	_		665	X	.,		521	X	X	X	710		×	1946
730	X		X	X	686				601	x	X		670		X		523	X	X		713	×	X	
745			X		687	^	×						671	X	X		525	X	X		761	×	X	
747	X		40		688	~			612	X			681	X	X		526	X			767	×		
748	^		X		692				G	EOC	GRAPI	HY	703	X			527	X			768	×	X	X
757			^	_			X		407		X		720	X			529		X		769	X	X	X
	~		,	X	697	X			500	X	X		732		X		530		X		770	X	X	
768	X		X	X	760	X			501			X	741	X			532	X	X	X	771	X		
769	X		X	X	761		X		505		X	1	760	X			533	X	X	X	772		X	
777	X		X	X	762		X		520	~			768	X	X	X	535	X	X		774	X		
780	X		X	X	771		X			X	X		769	X	X	X	539	X	X	X	775	X		
781	X		X	X	773		X		522		X		782	X	X	X	543	X	X	X	776	X		
790	X		<	X	776		X		524	X							544	X	X	X	777	X		
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768	X)			795		X		544	X			512		X		552		X		799	X	X	X
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461	X	MINES.			530		X		707	X			790	X	X	X	579	X			623	X	X	
462		×			561		X		715	X	X						601	X			626	X	X	
463	X				562	X			730	X	X		PH		PLOG	Υ	602	X			627	X	X	
464		×			563	X			768	X	X			AN			603		X		628	X	X	
465	X	X			564		X		769	X	X		BIG	OPH	YSIC	S	610	X			629	X	X	
466		X			606		X		771	X	X		502	X			611		X		795	X	X	X
467	X	X			626		X		772	X	X		504	X	X	X	616	X	^		796	X	X	X
468		X			635		x		//2	^	^		511		X		617	^	X		sc	CIA	L AI	UP.
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472	X	X			660		X		420		X			X			620	X			F00		2123	
473	X	X			665		X		423			X	627		X		621	X			532	X		
474		X			667	X			424			X	660		X		622		X		533		X	
477	X	X			670	X			450	X				X			623		X		601	X		
478		X			672	X			461	^	x			X	X	x	624	X			610	X		
479	X	x			680	X			471					x	x		625	X			640	X	X	X
480	^				768	X	X	X		~	X				^	X	627		X		645	X	X	X
		X			769	X	X	X		X	~		771		~		628		X		646		X	
481	~	X			770	X	X		510		X				X	.,	629	X			650		X	
483	X	X			780	X	X	X		X			791	*	X	X	630	X			652	X	X	X
484		X			790		X	X		X				PLA	TI			X			653	X		
485	X	X							531		X				LOG	1	632		X		654	X		
486	X	X					STRY		540		X		769				633		X		655		X	
487	X	X		X	400	X			552	X								X			656		X	
488	X	X		X	402	X			560	X			771					X				x	^	x
494	X	X			405		X		561	X			PSYC	CHO	LOG	Y						X		^
590	X			X	410		X		571		X		400		X			X	~			^	v	
592		X			412		X			X			423		^			X	X		663	~	X	
660	X	X			415	X			602		X		444		v	~		X	X		665			
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725		X		571	X	X		662	X			493	x			632		x		707	v	V	100
768	X	X	X	601	X	X		711		X		501	X			651	x	^		797	X	X	X
769	X	X	X	602	X			712	X			502		X		653	^	X		468	OIL S	CIEN	ICE
773		X		603		X		713		X		510		X		661	x	X				X	
785	X	X	X	604		X		720		X		517	X			670	X	^		470		X	
				605		X		721		X		519		X		681	^	X		473 562	X		
	soc			606		X		730	X			521	X			685	X	^		566	^		
PR	OFE	SIO	NS	607		X		731	X			522			X	702	x			581		X	
444	X	X	X	608		X		732		X		525	X			720	^	X			X		0.00
145	X	X	X	609		X		740	X			527		x		727		x		599 768	X	X	X
147	X	X		613		X		745		X		529		X		731		x		769	X	X	X
500	X			620	X	X		750	X			531	X	X		738	X	^				X	X
501	X	X		621	X	X		770	X	X		532	X			751	^	X		770	X	X	0.
505	X	X		622	X			780	X	X	X	533	X			766	x	^		799	X	X	X
510		X		624	X	X		790	X	X		534		X		768	x	X	x			OLOC	3Y
511	X	X		625		X						538	X	X		769	x	X	x		X		
12		X		630	X	X		SC	CIO	LOG	1 200	540	X	· ·		772	x	x	390	640		X	
16	X	X		632		X		409	X	X		549	^	x		773	^	X		650		X	
20	X	X	X	633		X		413		X		551	X	X		777		X		680	X		
23	X	X		640		X	X	436		X		565	X	X	x	779	x			768	X	X	X
27	X	X	X	642	X			437	X	X		581	X	^		780	x	X	x	769	X	X	X
41		X		650		X	X	441		X		615	X			790	x	X	x	770	X	X	
51		X		652	X			444	X	X	X	620	X			792	x	x	x	780	X	X	X
																154		^	^	790	X	X	X

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