UK

THE GRADUATE SCHOOL



1992-1994

University of Kentucky BULLETIN

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1992-94
The Graduate School

University of Kentucky Bulletin

Number 5
Fall I
The University of Kentucky Bulletin (USPS 384-610) is published six times a year, once in the spring, three times in the summer (Summer I, Summer II, Summer III) and twice in the fall (Fall I, Fall II) by the University of Kentucky, Lexington, KY 40506. Second Class postage paid at the Post Office, Lexington, KY 40511. Postmaster: Send address changes to the Graduate School. Att: Mailing Center, University of Kentucky 40506. A cooperative publication of the Graduate School, and the Publications Bureau of Public Relations and UK Photographic Services.

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COMPLIANCE WITH REGULATIONS

The University of Kentucky is committed to a policy of providing educational opportunities to all qualified students regardless of economic or social status, and will not discriminate on the basis of race, color, religion, sex, marital status, beliefs, age, national origin, or handicap.

Compliance with Title IX of the Educational Amendments of 1972, which prohibits sex discrimination, and with Title VI of the Civil Rights Act of 1964 is coordinated by Ms. Nancy Ray, Affirmative Action Office, 303 Administration Building, (606) 257-8927.

Efforts to comply with the laws and regulations applicable to qualified handicapped individuals are also coordinated by the Affirmative Action Office, as required by Section 504 of the Rehabilitation Act of 1973.

Questions concerning compliance with regulations may be directed to UK's Affirmative Action Office, or to the Director of the Office of Civil Rights, U.S. Department of Education, Washington, D.C.

The University is in compliance with the Drug-Free Workplace Act of 1988 and the Drug-Free Schools and Communities Act Amendment of 1989. Questions may be directed to the Vice Chancellor for Student Affairs or the Administrator for Personnel Policy and Procedures.

Calendar

Students should check the *Schedule of Classes* each semester for any calendar changes which may have been approved after publication of this Bulletin.

The approved Calendar for the academic year 1993-94 will be published in the *Schedule of Classes* each semester.

1992 Fall Semester

APPLICATION FOR ADMISSION

February 1—Saturday—Deadline for International applications to be submitted to The Graduate School for the 1992 Fall Semester

February 15—Saturday—Priority deadline for Freshman applicants: Applicants for the 1992 Fall Semester by this date who meet automatic admission criteria will be guaranteed general admission; applicants after this date whether meeting automatic admission or delayed admission criteria will be considered on a space-available basis only.

February 15—Saturday—Deadline for submission of all application materials, College of Medicine, for Fall 1992

April 15—Wednesday—Deadline for applying with college deans for reinstatement after a second academic suspension for the 1992 Fall Semester

May 1—Friday—Deadline for undergraduate International applicants to submit 1992 Fall Semester application

June 1—Monday—Deadline for submission of application and all required documents to the Office of Admissions for undergraduate applicants planning to attend Summer Advising Conferences (including registration for fall classes)

June 15—Monday—Earliest date to submit application for regular and Early Decision Program admission, College of Medicine, for Fall 1993

July 24—Friday—Deadline for applying for admission to a program in The Graduate School for the 1992 Fall Semester. Applications for readmission, post-baccalaureate status, and visiting student status will be accepted after the deadline.

August 1—Saturday—Final deadline for submission of application and all required documents to the Office of Admissions for undergraduate admission for the 1992 Fall Semester. Non-degree students who enroll through the Evening/Weekend Program registration before the beginning of classes for eight (8) hours or less are exempt from this deadline.

August 1—Saturday—Deadline for application for Early Decision Program, College of Medicine, for Fall 1993

August 12—Wednesday—Deadline for applying to The Graduate School for readmission, post-baccalaureate status, and visiting student status for the 1992 Fall Semester in order to register before the beginning of classes and avoid $40 late fee

October 15—Thursday—Deadline for submission of application and all required documents to the Office of Admissions for undergraduate applicants planning to attend November Advising Conference (including registration for spring classes)

October 31—Saturday—Deadline for International applications to be submitted to The Graduate School for 1993 Summer School

November 2—Monday—Deadline for completed AMCAS application, College of Medicine, for Fall 1993

December 1—Tuesday—Deadline for submission of application and receipt of all materials for admission, readmission or transfer to the College of Law for the 1993 Spring Semester

December 7—Monday—Deadline for applying for admission to a program in The Graduate School for the 1993 Spring Semester. Applications for readmission, post-baccalaureate status, and visiting student status will be accepted after the deadline.

December 16—Wednesday—Deadline for applying to The Graduate School for readmission, post-baccalaureate status, and visiting student status for the 1993 Spring Semester in order to register before the beginning of classes and avoid $40 late fee

REGISTRATION

June 15-July 17—Summer Advising Conferences for new freshmen, Community College transfers, advanced standing (transfer) students, auditors, nondegree and readmitted students enrolling for the 1992 Fall Semester

August 20-22—Thursday through Saturday—Registration for E/W and new graduate students

August 24—Monday—Registration for new students who have been cleared for admission but did not advance register

August 26—September 1—Wednesday through Tuesday—Late registration for returning students who did not advance register and new applicants cleared late for admission. A $40 late fee is assessed students who register late.

September 16—Wednesday—Last day to change grading option (pass/fail to letter grade or letter grade to pass/fail; credit to audit or audit to credit) in college dean's office

November 4-18—Wednesday through Wednesday—Advance Registration for the 1993 Spring Semester

November 13—Friday—1993 Spring Semester Advising Conference for new and readmitted undergraduate students

December 11—Friday—Last day to file for repeat option in college dean's office if student is retaking a course in the 1992 Fall Semester

ADD/DROP AND WITHDRAWAL

August 25—Tuesday—First day of add/drop for Advance Registered students

August 25—Tuesday—Last day a student may officially drop a course or cancel registration with the University Registrar for a full refund of fees

September 1—Tuesday—Last day to enter an organized class for the 1992 Fall Semester

September 1—Tuesday—Last day to officially withdraw from the University or reduce course load and receive an 80 percent refund

September 16—Wednesday—Last day to drop a course without it appearing on the student's transcript

October 19—Monday—Last day to withdraw from a course

October 19—Monday—Last day to withdraw from the University or reduce course load and receive any refund. Students can withdraw or reduce course load after this date only for "urgent non-academic reasons."

December 3-4—Thursday and Friday—Spring 1993 Advance Registration Early Add/Drop

December 14-18—Monday through Friday—Final Examination Week Add/Drop

FEE PAYMENT

August 5—Wednesday—Last day Advance Registered students may pay $50 to confirm their 1992 Fall Semester registration

August 25—Tuesday—Last day a student may officially drop a course or cancel registration with the University Registrar for a full refund of fees

September 1—Tuesday—Last day to officially withdraw from the University or reduce course load and receive an 80 percent refund

September 9—Wednesday—Last day for payment of registration fees and/or housing and dining fees in order to avoid cancellation of registration and/or meal card

September 18—Friday—Last day for reinstatement of students cancelled for nonpayment of registration fees and/or housing and dining fees. Requires payment of fees and may require payment of $50 reinstatement fee.

October 19—Monday—Last day to withdraw from the University or reduce course load and receive any refund. Students can withdraw or reduce course load after this date only for "urgent non-academic reasons."

December 9—Wednesday—Last day Advance Registered students may pay $50 to confirm their 1993 Spring Semester registration

DEGREES AND GRADUATION

September 24—Thursday—Last day for filing an application for a December degree in college dean's office

November 5—Thursday—Last day for doctoral candidates for a December degree to submit a Notification of Intent to schedule a final examination in The Graduate School

November 19—Thursday—Last day for candidates for a December degree to schedule a final examination in The Graduate School

December 3—Thursday—Last day for candidates for a December graduate degree to sit for a final examination

December 18—Friday—Last day for candidates for a December degree to submit a thesis/dissertation to The Graduate School

OTHER IMPORTANT DATES—Beginning and End of Semester and Academic Holidays

August 22-24—Saturday through Monday—Fall Orientation for all new undergraduate students

August 24-28—Monday through Friday—Approved time period for students to change academic majors

August 26—Wednesday—Class work begins

September 7—Monday—Labor Day—Academic Holiday

October 19—Monday—Midterm of 1992 Fall Semester

October 20—Tuesday through Wednesday—Approved time period for students to change

November 4—academic majors

November 3—Tuesday—Presidential Election—Academic Holiday

November 26-28—Thursday through Saturday—Thanksgiving Holidays—Academic Holidays

December 11—Friday—End of class work

December 14-18—Monday through Friday—Final Examinations

December 18—Friday—End of 1992 Fall Semester

December 21—Monday—Final deadline for submission of grades to the Registrar's Office by 4 p.m.

1993 Spring Semester

APPLICATION FOR ADMISSION

June 15, 1992—Monday—Deadline for International applications to be submitted to The Graduate School for the 1993 Spring Semester

September 1, 1992—Tuesday—Deadline for undergraduate International applicants to submit 1993 Spring Semester application

September 15, 1992—Tuesday—Deadline for applying with college deans for reinstatement after a second academic suspension for the 1993 Spring Semester

October 15, 1992—Thursday—Deadline for submission of application and all required documents to the Office of Admissions for undergraduate applicants planning to attend November Advising Conference (including registration for spring classes)

December 1, 1992—Tuesday—Final deadline for submission of application and all required documents to the Office of Admissions for undergraduate admission for the 1993 Spring Semester. Nondegree students who enroll through the Evening/Weekend Program registration before the beginning of classes for eight (8) hours or less are exempt from this deadline.

December 7, 1992—Monday—Deadline for applying for admission to a program in The Graduate School for the 1993 Spring Semester. Applications for readmission, post-baccalaureate status, and visiting student status will be accepted after the deadline.

December 16, 1992—Wednesday—Deadline for applying to The Graduate School for readmission, post-baccalaureate status, and visiting student status for the 1993 Spring Semester in order to register before the beginning of classes and avoid $40 late fee

February 1—Monday—Deadline for International applications to be submitted to The Graduate School for the 1993 Fall Semester

February 15—Monday—Deadline for submission of all application materials, College of Medicine, for Fall 1993

March 1—Monday—Last day for submission of application for admission to the College of Law for 1993 Fall Semester

April 1—Thursday—Preferred deadline for submitting application for admission to the College of Dentistry for Fall 1993

April 9—Friday—Deadline for applying for admission to a program in The Graduate School for the 1993 Summer Sessions. Applications for readmission, post-baccalaureate status, and visiting student status will be accepted after the deadline.

April 28—Wednesday—Deadline for applying to The Graduate School for readmission, post-baccalaureate status, and visiting student status for the 1993 Four-Week Intersession in order to register May 10 and avoid $40 late fee

REGISTRATION

January 8 & 9—Friday and Saturday—Registration for E/W and new graduate students

January 11—Monday—Registration for new students who have been cleared for admission but did not advance register

January 13-20—Wednesday through Wednesday—Late registration for returning students who did not advance register and new applicants cleared late for admission. A $40 late fee is assessed students who register late.

February 3—Wednesday—Last day to change grading option (pass/fail to letter grade or letter grade to pass/fail; credit to audit or audit to credit) in college dean's office

March 30- April 13—Tuesday through Tuesday—Advance Registration for the 1993 Fall Semester and both 1993 Summer Sessions

April 9—Friday—1993 Summer Session Advising Conference for new freshmen, new advanced standing (transfer) students, auditors, readmitted and nondegree students, Community College transfer students and Community College applicants cleared for admission

April 30—Friday—Last day to file for repeat option in college dean's office, if student is retaking a course in the 1993 Spring Semester

ADD/DROP AND WITHDRAWAL

January 12—Tuesday—First day of add/drop for Advance Registered students

January 12—Tuesday—Last day a student may officially drop a course or cancel registration with the University Registrar for a full refund of fees

January 20—Wednesday—Last day to enter an organized class for the 1993 Spring Semester

January 20—Wednesday—Last day to officially withdraw from the University or reduce course load and receive an 80 percent refund

February 3—Wednesday—Last day to drop a course without it appearing on the student's transcript

March 8—Monday—Last day to withdraw from a course

March 8—Monday—Last day to withdraw from the University or reduce course load and receive any refund. Students can withdraw or reduce course load after this date only for "urgent non-academic reasons."

April 26-27—Monday and Tuesday—Summer and Fall 1993 Advance Registration Early Add/Drop

May 3-7—Monday through Friday—Final Examination Week Add/Drop

FEE PAYMENT

January 12—Tuesday—Last day a student may officially drop a course or cancel registration with the University Registrar for a full refund of fees

January 20—Wednesday—Last day to officially withdraw from the University or reduce course load and receive an 80 percent refund

January 27—Wednesday—Last day for payment of registration fees and/or housing and dining fees in order to avoid cancellation of registration and/or meal card

February 5—Friday—Last day for reinstatement of students cancelled for nonpayment of registration fees and/or housing and dining fees. Requires payment of fees and may require payment of $50 reinstatement fee.

March 8—Monday—Last day to withdraw from the University or reduce course load and receive any refund. Students can withdraw or reduce course load after this date only for "urgent non-academic reasons."

DEGREES AND GRADUATION

February 11—Thursday—Last day for filing an application for a May degree in college dean's office

March 25—Thursday—Last day for doctoral candidates for a May degree to submit a Notification of Intent to schedule a final examination in The Graduate School

April 8—Thursday—Last day for candidates for a May degree to schedule a final examination in The Graduate School

April 22—Thursday—Last day for candidates for a May graduate degree to sit for a final examination

April 30—Friday—Last day for doctoral candidates for a May degree who wish to receive a diploma at Commencement to submit dissertation to The Graduate School

May 7—Friday—Last day for candidates for a May degree to submit a thesis/dissertation to The Graduate School

May 8—Saturday—Commencement Day

OTHER IMPORTANT DATES—Beginning and End of Semester and Academic Holidays

January 11-15—Monday through Friday—Approved time period for students to change academic majors

January 13—Wednesday—Class work begins

January 18—Monday—Martin Luther King Birthday—Academic Holiday

March 8—Monday—Midterm of 1993 Spring Semester

March 9-30—Tuesday through Tuesday—Approved time period for students to change academic majors

March 15-20—Monday through Saturday—Spring Vacation—Academic Holidays

April 30—Friday—End of class work

May 3-7—Monday through Friday—Final Examinations

May 7—Friday—End of 1993 Spring Semester

May 10—Monday—Final deadline for submission of grades to the Registrar's Office by 4 p.m.

May 10- August 21—College of Pharmacy 15-Week Summer Term

1993 Four-Week Intersession

APPLICATION FOR ADMISSION

October 31, 1992—Saturday—Deadline for International applications to be submitted to The Graduate School for 1993 Summer School

March 1—Monday—Deadline for submission of application and all required documents to the Office of Admissions for undergraduate applicants planning to attend April Advising Conference (including registration for classes)

April 9—Friday—Deadline for applying for admission to a program in The Graduate School for the 1993 Summer Sessions. Applications for readmission, post-baccalaureate status, and visiting student status will be accepted after the deadline.

April 15—Thursday—Final deadline for submission of application and all required documents to the Office of Admissions for undergraduate admission for the 1993 Four-Week Intersession

April 28—Wednesday—Deadline for applying to The Graduate School for readmission, post-baccalaureate status, and visiting student status for the 1993 Four-Week Intersession in order to register May 10 and avoid $40 late fee

May 26—Wednesday—Deadline for applying to The Graduate School for readmission, post-baccalaureate status, and visiting student status for the 1993 Eight-Week Summer Session in order to register June 9 and avoid $40 late fee

REGISTRATION

April 9—Friday—1993 Summer Session Advising Conference for new freshmen, new advanced standing (transfer) students, auditors, readmitted and nondegree students, Community College transfer students and Community College applicants cleared for admission

May 10—Monday—Registration for new students who have been cleared for admission but did not advance register

May 11-14—Tuesday through Friday—Late registration for returning students who did not advance register and new applicants cleared late for admission. A $40 late fee is assessed students who register late.

May 17—Monday—Last day to change grading option (pass/fail to letter grade or letter grade to pass/fail; credit to audit or audit to credit) in college dean's office

June 8—Tuesday—Last day to file for repeat option in college dean's office, if student is retaking a course in the 1993 Four-Week Intersession

ADD/DROP AND WITHDRAWAL

May 11—Tuesday—Last day a student may officially drop a course or cancel registration with the University Registrar for a full refund of fees

May 14—Friday—Last day to enter an organized class for the 1993 Four-Week Intersession

May 14—Friday—Last day to officially withdraw from the University or reduce course load and receive an 80 percent refund

May 17—Monday—Last day to drop a course without it appearing on the student's transcript

May 24—Monday—Last day to withdraw from a course

May 24—Monday—Last day to withdraw from the University or reduce course load and receive any refund. Students can withdraw or reduce course load after this date only for "urgent non-academic reasons."

FEE PAYMENT

May 11—Tuesday—Last day a student may officially drop a course or cancel registration with the University Registrar for a full refund of fees

May 14—Friday—Last day to officially withdraw from the University or reduce course load and receive an 80 percent refund

May 24—Monday—Last day to withdraw from the University or reduce course load and receive any refund. Students can withdraw or reduce course load after this date only for "urgent non-academic reasons."

May 24—Monday—Last day to pay registration fees and/or housing and dining fees in order to avoid cancellation of registration and/or meal card

June 3—Thursday—Last day for reinstatement of students cancelled for nonpayment of registration fees and/or housing and dining fees. Requires payment of fees and may require payment of $50 reinstatement fee.

OTHER IMPORTANT DATES—Beginning and End of Semester and Academic Holidays

May 10—Monday—Beginning of College of Pharmacy 15-Week Summer Term

May 11—Tuesday—Class work begins

May 24—Monday—Midterm of 1993 Four-Week Intersession

May 31—Monday—Memorial Day—Academic Holiday

June 8—Tuesday—Final Examinations

June 8—Tuesday—End of the 1993 Four-Week Intersession

June 11—Friday—Final deadline for submission of grades to the Registrar's Office by 12 noon

1993 Eight-Week Summer Session

APPLICATION FOR ADMISSION

October 31, 1992—Saturday—Deadline for International applications to be submitted to The Graduate School for 1993 Summer School

February 1—Monday—Deadline for undergraduate International applicants to submit 1993 Eight-Week Summer Session application

March 1—Monday—Deadline for submission of application and all required documents to the Office of Admissions for undergraduate applicants planning to attend April Advising Conference (including registration for classes)

April 9—Friday—Deadline for applying for admission to a program in The Graduate School for the 1993 Summer Sessions. Applications for readmission, post-baccalaureate status, and visiting student status will be accepted after the deadline.

May 15—Saturday—Final deadline for submission of application and all required documents to the Office of Admissions for undergraduate admission for the 1993 Eight-Week Summer Session. Non-degree students who enroll through the Evening/Weekend Program registration before the beginning of classes are exempt from this deadline.

May 26—Wednesday—Deadline for applying to The Graduate School for readmission, post-baccalaureate status, and visiting student status for the 1993 Eight-Week Summer Session in order to register June 9 and avoid $40 late fee

June 15—Tuesday—Deadline for International applications to be submitted to The Graduate School for the 1994 Spring Semester

July 23—Friday—Deadline for applying for admission to a program in The Graduate School for the 1993 Fall Semester. Applications for readmission, post-baccalaureate status, and visiting student status will be accepted after the deadline.

REGISTRATION

April 9—Friday—1993 Summer Session Advising Conference for new freshmen, new advanced standing (transfer) students, auditors, readmitted and nondegree students, Community College transfer students and Community College applicants cleared for admission

June 9—Wednesday—Registration for new students who have been cleared for admission but did not advance register

June 10-14—Thursday through Monday—Late registration for returning students who did not advance register and new applicants cleared late for admission. A $40 late fee is assessed students who register late.

June 21—Monday—Last day to change grading option (pass/fail to letter grade or letter grade to pass/fail; credit to audit or audit to credit) in college dean's office

June 21- July 23—Summer Advising Conferences for new freshmen, Community College transfers, advanced standing (transfer) students, auditors, nondegree and readmitted students enrolling for the 1993 Fall Semester

August 5—Thursday—Last day to file for repeat option in college dean's office is student is retaking a course in the 1993 Eight-Week Summer Session

ADD/DROP AND WITHDRAWAL

June 10—Thursday—Last day a student may officially drop a course or cancel registration with the University Registrar for a full refund of fees

June 14—Monday—Last day to enter an organized class for the 1993 Eight-Week Summer Session

June 14—Monday—Last day to officially withdraw from the University or reduce course load and receive an 80 percent refund

June 21—Monday—Last day to drop a course without it appearing on the student's transcript

July 8—Thursday—Last day to withdraw from a course

July 8—Thursday—Last day to withdraw from the University or reduce course load and receive any refund. Students can withdraw or reduce course load after this date only for "urgent non-academic reasons."

FEE PAYMENT

June 10—Thursday—Last day a student may officially drop a course or cancel registration with the University Registrar for a full refund of fees

June 14—Monday—Last day to officially withdraw from the University or reduce course load and receive an 80 percent refund

June 23—Wednesday—Last day to pay registration fees and/or housing and dining fees in order to avoid cancellation of registration and/or meal card

July 2—Friday—Last day for reinstatement of students cancelled for nonpayment of registration fees and/or housing and dining fees. Requires payment of fees and may require payment of $50 reinstatement fee.

July 8—Thursday—Last day to withdraw from the University or reduce course load and receive any refund. Students can withdraw or reduce course load after this date only for "urgent non-academic reasons."

August 4—Wednesday—Last day Advance Registered students may pay $50 to confirm their 1993 Fall Semester registration

DEGREES AND GRADUATION

June 25—Friday—Last day for filing an application for an August degree in college dean's office

June 30—Wednesday—Last day for doctoral candidates for an August degree to submit a Notification of Intent to schedule a final examination in The Graduate School

July 14—Wednesday—Last day for candidates for an August degree to schedule a final examination in The Graduate School

July 28—Wednesday—Last day for candidates for an August graduate degree to sit for a final examination

August 5—Thursday—Last day for candidates for an August degree to submit a thesis/dissertation to The Graduate School

OTHER IMPORTANT DATES—Beginning and End of Semester and Academic Holidays

June 10—Thursday—Class work begins

July 5—Monday—Independence Day—Academic Holiday

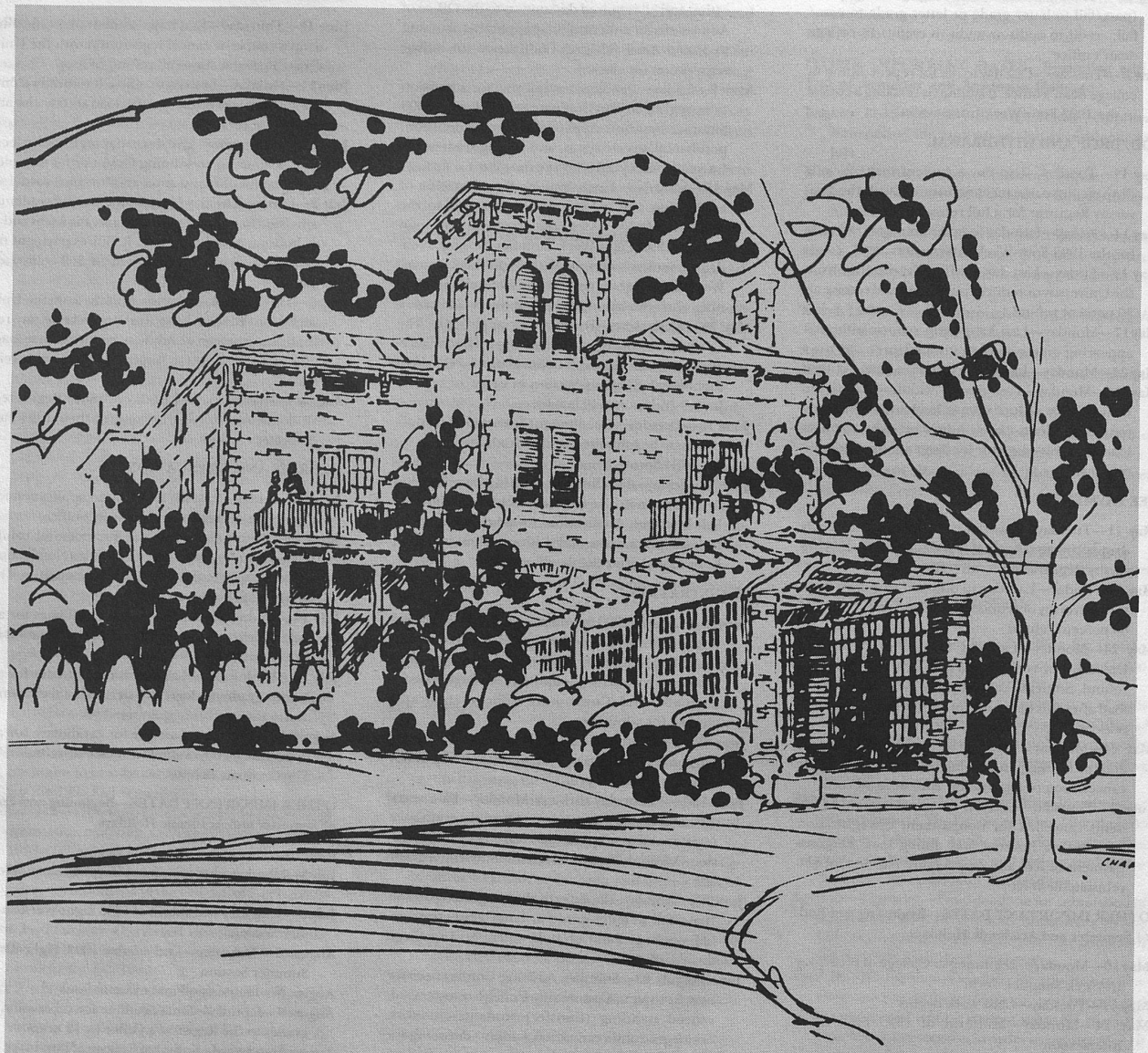
July 8—Thursday—Midterm of 1993 Eight-Week Summer Session

August 5—Thursday—End of the 1993 Eight-Week Summer Session

August 5—Thursday—Final examinations

August 9—Monday—Final deadline for submission of grades to the Registrar's Office by 12 noon

August 21—Saturday—End of College of Pharmacy 15-Week Summer Term



Charles T. Wethington, Jr., Ph.D.
President of the University

Linda J. Magid, Ph.D.
Vice President for Research and Graduate Studies

Daniel R. Reedy, Ph.D.
Dean of The Graduate School

Constance L. Wood, Ph.D.
Associate Dean

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.

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.

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: Southern Regional Education Board, 130 Sixth Street N.W., Atlanta, Georgia.

Organization of The Graduate School

The Graduate Faculty consists of the Dean of The Graduate School, Associate and/or Assistant Deans of The Graduate School, and Full and Associate Graduate Faculty Members. 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 its 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 chairs concerned, or in the case of persons not attached to a college faculty, by the appropriate chancellors 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.
3. 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.
4. Demonstrated participation in the graduate teaching and research program.

Appointment to full Graduate Faculty membership is made by the Vice President for Research and Graduate Studies on nomination by the Dean of The Graduate School after consultation with the Graduate Council when appropriate.

Full members of the Graduate Faculty are particularly responsible for:

1. Guidance of graduate student research and study to its completion. The finished work should meet or exceed accepted standards for publication, dissemination or performance within the particular discipline and
2. Participation in the formulation of graduate curricula and policy.

The Graduate Dean has the responsibility to appoint and monitor the progress of Associate Members of the Graduate Faculty. Associate members are authorized to teach graduate courses, direct master's theses, serve on and co-chair doctoral committees. Associate membership may continue for six years. At the end of the six-year term as an Associate Member, the members are promoted to full membership or terminated. A terminated Associate Member may at any later time be considered and promoted to Full Membership, but may not be reappointed to Associate Membership. Associate Membership for additional terms may be permitted by the Dean of the Graduate School in appropriate master's level programs. Membership in the Graduate Faculty is restricted to persons who satisfy the membership criteria and are able to assume the responsibilities in a particular program as set forth above. There is no category for at-large graduate faculty membership.

On recommendation of the Director of Graduate Studies and with the approval of the Graduate Dean, persons who normally do not hold academic appointment in the University, but who have demonstrated an interest in collaborative participation in its graduate programs, may be appointed as Auxiliary Graduate Faculty Members. They should hold the terminal academic degree in the field and possess a record of research or creative experience which would warrant their inclusion on advisory committees to assist graduate students in conducting research. Rights and privileges of Auxiliary Graduate Faculty Members are equivalent to those of Associate Graduate Faculty members.

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 regarding 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. The Dean is responsible for determining and certifying to the Registrar candidates who have fulfilled requirements for advanced degrees.

The President, Vice President for Research and Graduate Studies, and the Dean of The Graduate School shall be *ex officio* members of all committees of The Graduate School. The Chancellor for the Lexington Campus and the Chancellor for the Medical Center are *ex officio* members of all committees of The Graduate School which affect their respective sectors.

The Graduate Council

The Graduate Council is composed of 18 members and the Dean of The Graduate School, who serves as chair. There are 16 faculty representatives and two student representatives. Associate deans serve in a non-voting, *ex officio* capacity.

The composition of the Graduate Council is as follows: two members from the College of Agriculture, three members from the College of Arts and Sciences, one member from the College of Business and Economics, two members from the College of Education, one member from the College of Engineering, one member from the Colleges of Communications and Fine Arts, two members from the Colleges of Medicine and Pharmacy, one member from the Colleges of Allied Health Professions, Dentistry and Nursing, one member from the Colleges of Library Science, Home Economics, and Social Work, two members appointed by the Dean of The Graduate School, and two student members selected by the Graduate Council.

Members representing a college or a combination of colleges are elected by the Graduate Faculty in the respective colleges.

The term of office of the elected members is three years and that of the graduate students is one year. Members may not succeed themselves until three years have elapsed following 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. Evaluates department requests relating to proposed graduate programs.
2. Reviews existing programs and curricula.
3. 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

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 a single area to offer a

GRADUATE COUNCIL	
Dr. Leonard Baird Educational Policy Studies	1995
Dr. Stanley Brunn Geography	1993
Dr. Clifford Cremers Mechanical Engineering	1994
Dr. Fred Danner Educational & Counseling Psychology	1993
Dr. Donald Diedrich Pharmacology	1993
Dr. James F. Drummond Oral Pathology	1993
Dr. Don A. Howard Philosophy	1994
Dr. Arthur F. Jones Art	1994
Dr. Phillip S. McKnight German	1995
Dr. George E. Mitchell Animal Sciences	1995
Dr. Daniel A. Potter Entomology	1994
Dr. Thomas Roszman Microbiology	1993
Dr. Michael Tearney School of Accountancy	1994
Dr. M. O'Neal Weeks Family Studies	1995
APPOINTED MEMBERS	
Dr. Linda Chen Nutritional Sciences	1993
Dr. Susan M. Rimmer Geological Sciences	1993

graduate program; and in exceptional cases a department may be divided into two or more areas to offer programs in the respective areas.) Directors of Graduate Studies are the local representatives of each graduate program; they provide for the program's administration; and they act as the official liaison with The Graduate School. Directors of Graduate Studies are responsible to the Graduate Faculty of their program and to the Dean of The Graduate School for the recruitment, admission, advising, and examining of students in their program. Consequently, they have an important effect on the quality of graduate programs at the University of Kentucky. In addition to Directors of Graduate Studies for specific programs, some colleges have designated individual faculty members as Associate Dean for Graduate Studies to serve as the local extension of The Graduate School at the college level.

Directors of Graduate Studies are appointed by the Dean of The Graduate School after consultation with the respective Graduate Faculty and administration in a program. The DGS is normally a tenured faculty member, holding the rank of Associate Professor or above, and is a full member of the Graduate Faculty.

The Director of Graduate Studies of a graduate program reports directly to the Dean of The Graduate School or to the Dean's designee on all matters relating to graduate education in the program. The DGS is responsible to the Dean of The Graduate School for the administration of the specific graduate program, including maintenance of records, administration of graduate program funds, admission of graduate students, the University Scholars' Program, fellowships, program requirement changes and new programs, advising and registration, appointment of advisory and examination committees, and other degree requirements related to the graduate program. Additionally, the DGS serves as the focal point for dissemination of information from The Graduate School and for the gathering of information.

Directors of Graduate Studies serve as program advisers to each student until the student has a thesis or dissertation director. The DGS then recommends that the thesis or dissertation director be appointed the student's adviser or committee chair. In areas where theses are not required, the DGS is the adviser of all students not writing theses. All student schedules should be endorsed by the student's adviser. If it is desirable, a DGS may recommend that additional advisers in the program be appointed. A DGS who is to be absent from the University for as long as a semester must inform the Dean so that a substitute may be appointed.

A more detailed description of the role and responsibilities of the Director of Graduate Studies is available in The Graduate School office.

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 a recommendation concerning it to the Graduate Faculty.

Graduate degree programs to be delivered at extended-campus locations (either on-site or via technology) shall be reviewed and approved by the Graduate Council prior to their submission for appropriate review at higher levels. Extended-campus graduate degree programs shall be reviewed periodically and their effectiveness assessed during regular institutional unit reviews, or, when circumstances warrant, by a special review process initiated by the Dean of the Graduate School.

ADMISSIONS

Residency Requirements

According to law, the University of Kentucky and all other state-supported institutions of higher education assess tuition fees on the basis of Kentucky or non-Kentucky residence. The policy for determining residence is established by the Commonwealth of Kentucky Council on Higher Education. (See Council on Higher Education Residency Classification Policy on page 113 of this Bulletin.)

Students who are unsure of their residence status should check with the Registrar's Office before applying for admission.

Graduate Record Examination

All applicants for admission to degree programs in The Graduate School must submit scores on the verbal, quantitative and analytical portions of the Graduate Record Examination. This rule may be waived for one semester 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 before the end of the first semester of graduate study. (See section on Provisional Admission.) The advanced portion of the GRE may be required by individual departments or programs if they so desire. (Students who do not plan to work toward a graduate degree, i.e., Visiting Students, Rank 1, Fifth-year, and Post-baccalaureate students are exempt from this requirement.)

The College of Business and Economics substitutes the Graduate Management Admissions Test (GMAT) for the Graduate Record Examination for M.B.A., Ph.D, and Accounting students. Also, applicants in Public Administration and Health Administration may substitute the GMAT.

Students who have earned an academic doctorate are exempt from the GRE/GMAT requirement.

Admission

The University of Kentucky is committed to a policy of providing educational opportunities to all qualified students regardless of economic or social status, and will not discriminate on the basis of race, color, religion, sex, marital status, beliefs, age, national origin or handicap.

Applicants for admission to The University of Kentucky Graduate School must pay an application fee. The fee is $20 for domestic applicants and $25 for international applicants. A check or money order made payable to THE UNIVERSITY OF KENTUCKY should accompany the completed application. NO CASH OR STAMPS, PLEASE.

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 official scores on the verbal, quantitative and analytical portions of the Graduate Record Examination. (See Provisional Admission.) The College of Business and Economics substitutes the Graduate Management Admission Test for M.B.A., Ph.D. and Accounting applicants. Also, applicants for Public Administration and Health Administration may substitute the GMAT.

New students applying for admission must have two official transcripts sent *by each institution* of higher learning previously attended. All transcripts must be sent to The Graduate School office.

To be official, records must bear the Registrar's signature and/or official seal of the issuing institution. A summary of credits transferred and recorded on the transcript issued by the institution granting the degree will not suffice.

Application forms can be obtained by writing:

The Graduate School
Room 351, Patterson Office Tower
University of Kentucky
Lexington, Kentucky 40506-0027

Applications must be submitted no later than one month before the beginning of the term the applicant intends to begin graduate work. (See Calendar).

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 and departmental approval.

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.

Additional Procedures for International Applicants

All non-U.S. citizens, except permanent residents of the U.S., should request an Application Form for International 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 or attested as "true copies" by a notary public). 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 indigenous system.

Applications will not be considered without official scores on the verbal, quantitative and analytical portions of the Graduate Record Examination (GRE). Business and Accounting applicants must substitute the Graduate Management Admissions Test (GMAT) Also, applicants for Public Administration may substitute the GMAT. If the Graduate Record Examination or the Graduate Management Admissions Test have not been taken, write to the Educational Testing Service, Box 6000, Princeton, NJ 08541, 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 The Graduate School office. Test scores presented (GRE, GMAT and TOEFL) must be sent directly to the University of Kentucky Graduate School from ETS. Photocopies are not acceptable.

International applicants for admission to The University of Kentucky Graduate School for the fall, 1989 and subsequent semesters must pay a $25.00 application fee. A check or money order in United States funds made payable to THE UNIVERSITY OF KENTUCKY should accompany the completed application. Applications will be processed upon receipt of the fee. NO CASH OR STAMPS, PLEASE.

English Proficiency Requirement: The University of Kentucky requires a minimum 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. The TOEFL Bulletin 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 Education (IIE), African-American Institute (AAI), America-Mideast Educational and Training Services, Inc. (AMIDEAST), and American Kor-Asian Foundation.

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 6154, Princeton, New Jersey 08541-6154.

Financial Resources Requirement. Graduate applicants must certify that they have at least $11,017 available for each 12-month period of study. It is estimated that this amount will cover the cost of tuition fees, books and supplies, room and meals, health insurance (explained below) and incidentals, for a single person.

The students must have on hand at the beginning of each registration period funds sufficient to pay for tuition, fees, room and board and health insurance. These costs are to be paid at the beginning of each term.

Note: Fees subject to change without notice.

Health History Form. All international students must obtain, from the Student Health Service, a tuberculin screening test and reading and complete a health history form before registration will be allowed. This may be done any time between the hours of 8:00 a.m. and 3:30 p.m. as soon as possible following arrival on the University campus. The Health Service will provide written documentation that this requirement has been fulfilled. (See also section on Health Service in this bulletin under General Information.)

Application Deadline for International Students

Applications for admission should reach the Admissions Office at least six months before the opening of the term the applicant intends to begin graduate work; 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. No application will be considered until all supporting documents have been presented.

Support Services for the International Student

The International Students and Scholars Services (ISSS) division of the Office of International Affairs is the focal point for international student services. It orients students to a new educational system and to American culture, and provides a continuing source of information, counsel, and friendship through their stay. The Office is charged with the responsibility of interpreting immigration regulations which affect international students and scholars. It also sponsors cross-cultural programs on campus and in the community designed to encourage communication and understanding between Americans and internationals. Among the programs offered are the Cosmopolitan Club, Culture Sharing Partners, the International Hospitality Program, English as a Second Language and International Wives Group for spouses. The Office of International Affairs is located in Bradley Hall.

Health Services. The University has an excellent health care clinic for out-patient care that is of special importance to foreign students. (See section on Health Service.)

UK international students must have hospitalization insurance that is payable in the United States. They are also responsible for any amount which insurance does not pay on these types of charges. Because of the extremely high cost of medical care, it is imperative that a student have insurance for him or herself, spouse, and children.

Program in English for Foreign Students. The English Department sponsors the Center for English as a Second Language. The Center offers eight-week terms of study; students may join in June, August, October, January, or March. Students receive 160 hours of intensive English instruction in an eight-week period. No college credit is given for the course of study, but students are given certificates of completion for the Center's program. Sometimes students are admitted to The Graduate School contingent upon successful completion of the Center. The Center is authorized under federal law to enroll non-immigrant alien students. The fee is $1,000* for instruction; room, board, and textbooks are not included in the fee. For further information write the Center for English as a Second Language, 1235 Patterson Office Tower, UK, 40506.

*Subject to change without notice.

Sponsored International Graduate Students

International Graduate Students financed and monitored by sponsoring agencies can be provided with special placement, advising, and management services. Literature describing these services is available from the Office of International Affairs. The sponsoring agency is assessed a fee of $300 per semester per student for these special services.

SPECIAL ADMISSIONS CATEGORIES

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. A maximum of nine semester hours or twenty-five percent of the semester hours required for the degree concerned (exclusive of residence or thesis credit), whichever is greater, may be transferred from post-baccalaureate status to any degree program leading to an advanced degree at this institution provided a grade of A or B has been earned. All transfers of credit hours to a graduate program must be approved by the 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. A written notice should be presented to The Graduate School requesting consideration for admission to a program and stating the semester for which enrollment in the program is planned. Calendar deadlines in the front of this Bulletin should be observed.

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.

Provisional Admission

Students wishing to pursue an advanced 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 (not to exceed one semester);
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.

Students 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. (See section on Graduating Seniors as Part-Time Graduate Students.)

Provisional status is permitted for a maximum of one full-time semester or up to 12 hours after which the student's record will be reviewed. Within 30 days into the following semester, and on recommendation of the Director of Graduate Studies, the student will be changed from provisional to regular program status, or dropped from the graduate program entirely.

Graduating Seniors as Part-Time Graduate Students

Seniors 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, the appropriate Director of Graduate Studies, and the Dean of The Graduate School. The total load of such students 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 students are allowed to register for part-time graduate work. Students applying for admission to The Graduate School under these conditions must fill out a petition form listing the course or courses to be taken to complete the undergraduate requirements. Petition forms are available in The Graduate School office.

University Scholars Program (Combined Master's/Bachelor's Degree Program)

There are among students at the University of Kentucky some particularly gifted and highly motivated students whose well-defined academic and career plans include graduate or professional study.

The University Scholars Program offers these students the opportunity and the challenge of integrating their undergraduate and graduate or professional courses of study in a single continuous program culminating in both a baccalaureate and a master's degree.

The following participate in the University Scholars Program:

- Agricultural Economics
- Agricultural Engineering
- Anthropology
- Chemical Engineering
- Civil Engineering
- Classics
- Communication
- Electrical Engineering
- Family Studies
- Forestry
- French
- Geography
- History
- Materials Science and Engineering
- Mechanical Engineering
- Music
- Nursing
- Physics
- Social Work
- Sociology
- Spanish

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, applicants should consult with the Director of Graduate Studies of the graduate area of interest.

Guidelines for students wishing to pursue the combined M.D./Ph.D. degrees may be obtained in the office of the Associate Dean for Academic Administration, The Graduate School.

University of Kentucky/Lexington Theological Seminary Double Competency Program

The Lexington Theological Seminary and the University of Kentucky have established a double competency program to educate qualified students whose career interests are social work and the ministry. Interested students should contact their major adviser.

University of Kentucky/Asbury Theological Seminary Double Competency Program

Asbury Theological Seminary and the University of Kentucky have established a double competency program for students whose interests are social work and the ministry. Interested students should contact their major adviser.

JD/MPA Dual Degree Program

The University of Kentucky offers a two-year, 45-hour professional Master of Public Administration degree through The Graduate School. The College of Law offers a three-year, 90-hour Juris Doctorate. The MPA program has been professionally reviewed and recognized bythe National Association of Schools of Public Affairs and Administration. The College of Law is accredited by the American Bar Association and is a member of the Association of American Law Schools. The JD/MPA dual degree is the only one of its type offered in the Commonwealth. It permits students to gain both degrees in a total time period of one year less than if the degrees were earned independently. For information contact the Program in Public Administration or the College of Law.

JD/MBA Dual Degree Program

The College of Business and Economics and the College of Law offer the opportunity to obtain the Master of Business Administration (MBA) and Juris Doctor (JD) degrees in a dual degree program. Because both schools recognize that some aspects of business and law are compatible and interrelated, students can usually obtain both degrees in four or four and one-half years

instead of the five required if the degrees were pursued separately. As a result, students gain marketable skills and specialized employment opportunities in less time than might otherwise be required. Students interested in the MBA/JD program must apply to both the College of Law and the Graduate School.

Visiting Students

Students who are enrolled in a graduate program at another institution and plan to attend the University of Kentucky as Visiting Students need not submit transcripts. Students must, however, request a Visiting Student form from The Graduate School 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.

Readmission

Former University of Kentucky graduate students in good standing are eligible for tentative readmission. Regular readmission is contingent on the approval of the student's program. 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. (No application fee is assessed for students seeking readmission.)

GENERAL REGULATIONS

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 approval of their proposed schedule from their advisor(s).

Changes in the Graduate School Requirements

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

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

In the event that students interrupt their work on a graduate degree (i.e., 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 students have 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 and hold academic rank.

Faculty members pursuing degrees above the master's degree at the University of Kentucky may not hold more than a half-time work assignment either during the two full-time, consecutive resident semesters preceding the qualifying examination or during the two semesters of full-time dissertation study immediately following the qualifying examination.

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 student's major program should be consulted concerning course requirements, any deficiencies, the planning of a program, and special regulations. Programs may have degree requirements 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.

Confidentiality of Student Records

In accordance with the Family Education Rights and Privacy Act of 1974, University of Kentucky students have the right to review, inspect, and challenge the accuracy of information kept in a cumulative file by the institution unless the student waives this right in writing. Records cannot be released in other than emergency situations without the written consent of the student, except in the following situations:

A. to other school officials, including faculty within the educational institution or local educational agency who have legitimate educational interests;
B. to officials of other schools or school systems in which the student intends to enroll, upon condition that the student be notified of the transfer, receive a copy of the record if desired, and have an opportunity for a hearing to challenge the content of the record;
C. to authorized representatives of 1) the Comptroller General of the United States, 2) the Secretary, 3) an administrative head of an education agency or 4) state educational authorities;
D. in connection with a student's application for,

and receipt of, financial aid;

E. where the information is classified as "directory information." The following categories of information have been designated by the University as directory information: name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous educational institution attended by the student. If you do not wish such information released without your consent you should notify the Registrar's Office prior to the first day of classes.

Questions concerning this law and the University's policy concerning release of academic information may be directed to the Registrar's Office, 257-4623.

Graduate Courses

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 student's graduate adviser or committee. Courses numbered 400G to 499G carry graduate credit for non-majors only.

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 requirements. Courses numbered at the 600 or 700 level should be taught 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.

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 9 credit hours or equivalent. Under no circumstances may it exceed 15 credit hours or equivalent. During the summer term, the maximum load for the eight-week 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 (See Residence Requirements Section) 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 full-time equivalent as the result of failing or dropping one or more courses are reclassified as part-time students for that semester or term.

Master's candidates working on their theses may register for up to the equivalent of 12 course credits by signing for course 768 in the appropriate department and indicating the desired credit equivalent in parentheses on the registration card. Plan A Master's degree candidates who are in residence and receiving financial support from the University and/or utilizing University resources while working on the thesis must be enrolled in The Graduate School. Candidates not enrolled in course work to meet degree requirements must be enrolled in 768 for at least one credit hour each semester.

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.

Grades-Grade Average

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	0 grade points per credit
I-Incomplete	See explanation following
S-Satisfactory	See explanation following

D grades are not awarded to graduate students. Graduate courses (400G-799) may not be taken Pass/Fail.

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 student's 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. All S grades must be removed (Exception: Residence Credit 748, 749, 768 and 769).

An over-all average of B on all graduate work in the program must be attained before an advanced degree may be awarded. Graduate level courses (400G-799) are computed in the graduate grade-point average, with the exception of 400G courses in the program. (See section on Repeat Option.)

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.

Repeat Option

A student may repeat a graduate course and count only the second grade as part of the graduate grade point average. This action will be initiated by petition of the Director of Graduate Studies to the Graduate Dean, and may be done only once in a particular degree program or in post-baccalaureate status. Repeat Option requests must reach the Dean of The Graduate School **no later than the last day of scheduled classes in the semester in which the repeat option is exercised.**

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.

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 full-time semester or the equivalent (9 hours) 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 apply for readmission to The Graduate School after two semesters or one semester and the eight-week summer term. Readmitted students will have one full-time semester or the equivalent (9 hours) to remove the scholastic probation by attaining a 3.0 average.

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

Students placed on scholastic probation are not eligible for fellowships nor for tuition scholarships.

Termination

The Dean of The Graduate School may terminate enrollment in a particular program for the following reasons:

1. Scholastic probation for three enrolled semesters.
2. Having failed twice the final examination for the master's degree or the qualifying examination.
3. In cases where the student's Advisory Committee recommends termination after the qualifying examination has been passed, the Graduate Faculty in that program will meet to vote on the recommendation. When the Graduate Faculty of that program concurs and the student dissents, the student will have an opportunity to meet with the Graduate Faculty of the program, after which a second vote will be taken and a final recommendation will be made to the Dean of The Graduate School.

Each program sets specific requirements and standards of performance, evaluative procedures and criteria, and procedures for terminations. The student should be informed of these criteria at the time of enrollment by the Director of Graduate Studies of the program.

Special Examinations in the Student's Program

A special examination for graduate credit requires the approval of the Dean of The Graduate School. Request for approval is initiated by letter from the Director of Graduate Studies in the student's program.

Following approval, students must complete the Special Examination form (available in the Registrar's Office), have it approved and signed by the Director of Graduate Studies and the Graduate Dean. Students must be enrolled in The Graduate School during the semester they wish to sit for a special examination.

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.

Off-Campus and 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 may not be taken simultaneously. Two full-term courses and a short course may not by taken simultaneously.

Instructional standards for off-campus and short courses should be the same as those established for on-campus and regular courses. A comprehensive final examination will normally be required to assess the student's capability for scholarly thinking in the subject matter area. Practicum or laboratory courses should require other experiences of comparable rigor.

UK Students as Visitors

University of Kentucky graduate students who attend another graduate school as a Visiting Student must have the permission of their University of Kentucky advisers **before** the courses are taken in order to transfer credits earned. (See Transfer of Credits Section.)

Visiting Student status may be granted **only** to a student who is in good standing in a program.

Time Limit for Degrees

Master's/Specialist 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.

Doctoral Degree. All degree requirements for the doctorate must be completed within five years following the semester or summer session in which the candidate successfully completes the qualifying examination. In the event that all degree requirements are not met during the five-year period, degree candidates who provide evidence of the likelihood of completing the degree during an extension of time may be granted such an extension by the Graduate Council. Requests will be considered only upon written recommendation of the appropriate Director of Graduate Studies after the candidate has again successfully completed the qualifying examination process as currently administered by the program. (Note: Failure to pass the re-examination indicates the termination of degree candidacy. A second re-examination is not permitted.) An extension for no more than five years may be granted. After a total of ten years from the first successful qualifying examination, students will no longer be considered degree candidates and no further extensions will be considered.

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 summer session or the first semester may participate in the next commencement exercises.

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 section on copyright). Authorization forms to pay dissertation fees are issued in Room 351, Patterson Office Tower. Diplomas will not be released from the Registrar's Office until the fees have been paid.

To be eligible for a degree, **students must file an application in The Graduate School within 30 days after the beginning of the semester (15 days in the Summer Session) in which they expect to complete their work.**

Diplomas

Diplomas for graduate students are ordered after certification of the degree has been completed. If a letter of certification is needed, The Graduate School will provide one on request.

Accounts Payable to the University

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.

ADVANCED DEGREES

GENERAL REQUIREMENTS FOR ALL MASTER'S DEGREES
(See also General Regulations)

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

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 normally 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 the fourth semester of a foreign language with a grade of B or better as an undergraduate at an accredited college or university.
4. Completing, with a grade of B or better, Special Examinations 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 Office. Examinations to test out of Russian must be arranged through the Department of Russian.
5. Transferring a language taken to satisfy the requirements for a master's degree at another university.

Note: With the approval of their program to use their native language, international students who are non-native speakers of English, may satisfy the foreign language requirement by presenting a TOEFL score of 550 or above.

Candidates for degrees must be proficient in English.

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 *or twenty-five percent of the semester hours required for the degree concerned (exclusive of residence or thesis credit), whichever is greater,* of regular graduate course credits, completed at an accredited university and 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, or (2) 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 *or twenty-five percent of the semester hours required for the degree concerned (exclusive of residence or thesis credit), whichever is greater.* In no case will independent work, research, thesis or dissertation credit completed as part of degree requirements for one program be considered to satisfy requirements of a subsequent master's program.

Independent Study Programs (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 course requirements (excluding thesis, practicum, or internship credit) 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.

DEGREES CONFERRED

Doctor of Philosophy

- Agricultural Economics
- Agricultural Engineering
- Anatomy
- Animal Sciences
- Anthropology
- Biochemistry
- Biology
- Biomedical Engineering
- Business Administration
- Chemical Engineering
- Chemistry
- Civil Engineering
- Communication
- Computer Science
- Crop Science
- Economics
- Educational and Counseling Psychology
- Educational Policy Studies and Evaluation
- Electrical Engineering
- Engineering Mechanics
- English
- Entomology
- Geography
- Geology
- History
- Mathematics
- Mechanical Engineering
- Materials Science and Engineering
- Microbiology
- Mining Engineering
- Music
- Nursing
- Nutritional Sciences
- Pharmaceutical Sciences
- Pharmacology
- Philosophy
- Physics and Astronomy
- Physiology and Biophysics
- Plant Pathology
- Plant Physiology
- Political Science
- Psychology
- Public Administration
- Sociology
- Soil Science
- Spanish
- Statistics
- Toxicology
- Veterinary Science

Master of Arts

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

Master of Science

- Anatomy
- Agricultural Economics
- Animal Sciences
- Biochemistry
- Biology
- Chemistry
- Computer Science
- Crop Science
- Economics
- Entomology
- Geology
- Mathematics
- Microbiology
- Nutrition and Food Science
- Pharmacology
- Pharmaceutical Sciences
- Physics
- Physiology and Biophysics
- Health, Physical Education, Recreation
- Plant Pathology
- Plant Physiology
- Psychology
- Soil Science
- Statistics
- Toxicology
- Veterinary Science

Master of Science in Agriculture

- Agricultural Economics
- Animal Sciences
- Crop Science
- Entomology
- Forestry
- Horticulture
- Plant Pathology
- Sociology
- Soil Science

Other Degrees

- Doctor of Education
- Doctor of Musical Arts
- Master of Arts in Education
- Master of Arts in Interior Design
- Master of Science in Merchandising, Apparel and Textiles
- Master of Business Administration
- Master of Civil Engineering
- Master of Fine Arts
- Master of Health Administration
- Master of Mining Engineering
- Master of Music
- Master of Public Administration
- Master of Rehabilitation Counseling
- Master of Science in Accounting
- Master of Science in Agricultural Engineering
- Master of Science in Biomedical Engineering
- Master of Science in Chemical Engineering
- Master of Science in Civil Engineering
- Master of Science in Clinical Nutrition
- Master of Science in Communication Disorders
- Master of Science in Dentistry
- Master of Science in Education
- Master of Science in Electrical Engineering
- Master of Science in Engineering Mechanics
- Master of Science in Family Studies
- Master of Science in Forestry
- Master of Science in Health Physics
- Master of Science in Library Science
- Master of Science in Materials Science and Engineering
- Master of Science in Mechanical Engineering
- Master of Science in Mining Engineering
- Master of Science in Nursing
- Master of Science in Operations Research
- Master of Science in Physical Therapy
- Master of Science in Public Health
- Master of Science in Radiological Medical Physics
- Master of Social Work
- Specialist in Education

Concurrent Degree Programs

Concurrent enrollment for degree purposes in more than one graduate program is permitted only with the approval of the student's Graduate Adviser(s), Directors of Graduate Studies in the programs, and the Dean of The Graduate School. No more than nine hours of coursework may be common to concurrent degree programs.

Subsequent to the receipt of a doctoral degree, a student is not eligible to receive a master's degree based on the work which led to the doctorate.

Final Examination

Final examination (oral and/or written) is given to 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. At least one member must be a full member of the Graduate Faculty and one other must hold at least an associate appointment. The recommendation for a final examination must be filed with The Graduate School at least two weeks prior to the date of the examination. (Students writing theses should see the section on Thesis/Non-Thesis Option.)

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.

Thesis/Non-Thesis Options

The Graduate Faculty authorizes all graduate programs to satisfy the master's requirements by either of two options, thesis (Plan A) or non-thesis, (Plan B). Candidates for the Master of Arts or Master of Science must have a major area (defined usually as an academic department) and must take at least two-thirds of the course work in this area; the other one-third may be taken in this area or in related graduate areas. 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.

The Thesis option (Plan A) requires a thesis to 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 Theses 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. Any modification in the thesis which the final examination committee specifies must be made before the degree is conferred.

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 must 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 master's and doctor's 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. Bibliographical 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 acknowledgments.
>
> 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.

The non-thesis option (Plan B) requires that six or more graduate credit hours of course work be submitted in lieu of a thesis. A student may follow this option 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.

GENERAL REQUIREMENTS FOR ALL DOCTORAL DEGREES

Degree of Doctor of Philosophy

The Ph.D. degree is intended to represent the demonstration 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 Faculty.

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, signs schedule cards and performs other advisory functions until the Advisory Committee is appointed, normally not later than upon completion of 18 credit hours of graduate work. The Advisory Committee must be appointed at least one year prior to the Qualifying Examinations. The Major Professor and Advisory Committee are appointed by the Graduate Dean after consultation with the appropriate Director of Graduate Studies. 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 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 throughout 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 in 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 class work 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. (See section on Academic Load.)

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.

The following residence requirements must be completed.

1. Students 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 students must be enrolled as full-time

students, 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.

Note: If students hold an awarded master's degree from the University of Kentucky in the same discipline and completed two consecutive full-time semesters while pursuing the degree, those semesters may be used in lieu of the above.

2. Students must complete a second year of residency in one or a combination of the following:
   a. Transfer residence credit from an awarded master's degree from another accredited institution.
   b. Complete a minimum of eighteen hours of work (in which a grade has been assigned) beyond the two full-time consecutive semesters.
   c. Apply hours completed while pursuing a University of Kentucky master's degree. (Note: Students fulfilling No. 1 by use of a University of Kentucky master's degree may not fulfill No. 2 in this manner.)

3. Candidates (students who have satisfactorily completed their Qualifying Examinations) 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.

Note: 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.

4. Candidates who have fulfilled the above requirements, but who have not yet defended the dissertation, are required to enroll for 769 or 749 (0 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.

It should be understood that the above represents the **minimum requirements** of The Graduate School. Some programs have additional requirements.

Exceptions to this normal pattern may be made with the approval of the Dean of The Graduate School upon the written recommendations of the student's Advisory Committee and the Director of Graduate Studies, which clearly demonstrates that the principle of residence is preserved.

*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 full-time semester. This does not apply to the two full-time consecutive residence semesters preceding the Qualifying Examinations or the two residence semesters following the Qualifying Examinations.

Foreign Language Requirements

Some doctoral programs require a reading knowledge of one or more modern foreign languages for the doctorate. (Consult the listing in the Graduate Bulletin under Degree Requirements.) The language(s) normally 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.

Any language requirement(s) must be satisfied before the applicant may sit for the Qualifying Examination. (See Foreign Language Requirements under General Requirements for all Master's Degrees.)

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 individual 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 given usually 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 the 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 represents the culmination of a major research project. The dissertation must be a well-reasoned, original contribution to knowledge in the field of study and should provide evidence of high scholarly achievement. 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 suggestions 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.

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 Dissertations* from The Graduate School Office.

Each graduating doctoral student will pay dissertation fees. Payment will be made at the University Billings and Collections Office. Authorization forms to pay dissertation fees are issued in Room 331, Patterson Office Tower.

Copyright

Dissertations may be copyrighted by the student by (1) signing the Copyright Authorization on the Microfilm Agreement Form which is completed after the dissertation format check in The Graduate School, (2) paying the copyright fee of $20 (this copyright fee is in addition to the $52 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 classes of the semester in which the student expects to graduate.

The Dissertation Approval Form, along with an acceptable 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. If 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.

Doctor of Musical Arts

(See program section.)

Doctor of Education

(See program section)

Doctoral Programs With Other Universities

Joint doctoral programs in education are offered 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 appropriate Director of Graduate Studies in the College of 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 cooperative programs in musicology, in pharmacology and in civil engineering between the University of Kentucky and the University of Louisville and a cooperative program in biology between the University of Kentucky and Eastern Kentucky University. Inquiries should be directed to the appropriate Director of Graduate Studies, University of Kentucky.

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 (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.

Specific requirements depend upon the type of certificate desired. Information about specific certification requirements can be obtained from the appropriate Director of Graduate Studies.

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 Director of Graduate Studies in the respective department, determines prerequisite 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 appropriate 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 Plans 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.

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

The plan which leads to the degree of Master of Arts in Education for persons holding a provisional certificate is outlined below:

1. 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.

5. 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 and Reading Specialists who take six to nine hours outside Education.
6. Specific requirements depend upon the type of certificate desired. Information about specific certification requirements can be obtained from the appropriate Director of Graduate Studies.

The College of Education offers an option for secondary teachers from selected majors to meet requirements for initial teacher certification. This option may require additional courses. See the appropriate Director of Graduate Studies for more information regarding this option.

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 field.

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

1. 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.
2. A minimum of 12 semester hours of graduate work in the College of Education is required.
3. A minimum of six hours outside the College of Education is required, but individual programs may require additional work outside the College.
4. Specific requirements depend upon the type of certificate desired. Information about specific certification requirements can be obtained from the appropriate Director of Graduate Studies.

The College of Education offers an option for secondary teachers from selected majors to meet requirements for initial teacher certification. This option may require additional courses. See the appropriate Director of Graduate Studies for more information regarding this option.

Doctor of Education

The requirements for the Ed.D. correspond to those of the Ph.D. with the following differences:

1. In addition to other credentials, admission requirements include:
   a. a master's degree, or,
   b. thirty (30) graduate credit hours in preparation of or applicable to an appropriate master's degree.
2. Some program areas require successful teaching, clinical, or administrative experience for admission.
3. The program requires completion of a major body of course work of at least 42 graduate credits beyond the minimum hours required for admission.
4. Course work for the Ed.D. will be planned by the Advisory Committee to complement and extend previous graduate work. Therefore, the student's total doctoral and predoctoral graduate work will reflect competencies in the following areas:
   a. **Area of Concentration**: A significant concentration of course work designed to develop an in-depth knowledge in a specific area of Education.
   b. **Support Areas**: Course work to support the Area of Concentration shall include the following two components:
      (1) Disciplinary support work from outside the Area of Concentration. Some or all of this work will be done outside the College of Education.
      (2) Course work relevant to the development of competencies in the foundational studies in Education. Such course work to be taken in departments of the College of Education other than the Area of Concentration.
   c. **Research Methodology**: At least nine (9) credits of recent (within the 'time limit for degrees' policy of The Graduate School) course work selected to develop competencies in conceptualizing research, designing experiments, selecting appropriate methodology, processing and analyzing data, interpreting results, and arriving at conclusions.
5. Although some students' programs may require competency in a foreign language as a research tool, there is no general language requirement.
6. The core membership of the Advisory Committee for each Ed.D. student consists of members distributed as follows:
   a. The major professor and two other members from the Area of Concentration.
   b. Two members from areas other than the Area of Concentration; at least one of these from outside Education.
   c. Three members must be full members of the Graduate Faculty.
7. In joint programs with the regional universities, three Advisory Committee members must be from the University of Kentucky and must be full members of the Graduate Faculty.

Joint Doctoral Programs in Education

Joint doctoral programs in education are offered between the University of Kentucky and the following 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 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. (see Number 7 above).

Students are encouraged to apply for the Joint Doctoral Program early in their master's degree program to facilitate transition into the doctoral program.

Persons interested in a Joint Doctoral Program should confer with the Dean of The Graduate School at the cooperating university, or the appropriate Director of Graduate Studies in Education at the University.

Doctor of Philosophy (Education)

The Doctor of Philosophy degree in the field of Education is offered in Educational and Counseling Psychology and in Educational Policy Studies and Evaluation. (See requirements for the Ph.D.)

Specialists in Education

The Specialist in Education degree is offered in Instruction and Administration, Educational Psychology and Counseling, Educational Policy Studies and Evaluation, Special Education, and Vocational Education. It 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) 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 an application with the Director of Graduate Studies in the appropriate department and must be recommended by the major program and the department.

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 project (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 Director of Graduate Studies and the Graduate Dean, the student may transfer a maximum of nine credit hours of 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.

ACADEMIC RESOURCES

University of Kentucky Libraries

The University of Kentucky Library, one of the nation's top research libraries, contains over 2.2 million volumes, 4 million microform units, and 19,500 linear feet of manuscripts. The collection also includes 202,000 maps, 15,000 music records, and 500,000 pictures, tapes and miscellaneous items. The Library currently subscribes to over 27,000 periodicals including foreign, domestic, and Kentucky newspapers and government documents.

Strong emphasis is placed on the development of a high-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, mathematical sciences, art, education, medicine, and music.

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 inter-library loan. The Library is a member of the Center for Research Libraries, a rich repository of scholarly research materials. 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, in the Reference Department and at the individual branch libraries.

During fall and spring semesters 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. Some branches within the Library System may have shorter schedules.

Research at the University of Kentucky

The University of Kentucky is the major graduate and research institution of the Commonwealth and the major land-grant university in the state. As such, it offers substantial programs in both basic and applied research. These research efforts are the life blood of graduate education programs which prepare new researchers who will continue to expand the boundaries of human knowledge and to seek answers to pressing problems of our complex society. Applied research programs in areas such as agricultural sciences, mining and minerals, engineering sciences, medicine, arts and sciences, business and economics, mathematical sciences and physics, and tobacco and health serve the Commonwealth and the nation by addressing critical issues influencing the quality of life and economic well-being of our citizenry.

University faculty and research staff have expertise in many and varied areas especially in the basic biological, physical, medical and social sciences, in engineering and in the creative arts and the humanities. These individuals conduct research which ranges from the investigation of philosophical and ethical dilemmas raised by advances in science and technology to the practical application of basic knowledge in agriculture, energy, rehabilitation, and information retrieval as well as in the economic development of the Appalachian region.

A significant aspect of research conducted at the University is the concern for its practical application for the betterment of society. Many of the techniques developed and ideas conceived in the laboratory and in advanced study evolve into technological developments of major significance.

Most research programs at the University are supported through federal, state and private sources. Application for such support and the fiscal administration of the monies received are overseen by the Office of Sponsored Projects Administration (OSPA), which operates out of The Graduate School. Programmatic organization and administration of research is provided by the various research institutes and multi-disciplinary centers and, in the case of individual faculty projects, by the regular departmental, school, and college structures.

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, welcomes visiting scholars as guests of the University, and grants the privilege of auditing seminars and research courses and of conducting research in laboratories and libraries. Normally there will be no charge except for laboratory expenses. Negotiations for such arrangements should be made in advance through the office of the Graduate Dean.

Postdoctoral Fellowships

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

Research and Teaching Assistantships

Most departments have support for teaching and research assistants. The stipends vary with the departments. Information concerning assistantships may be obtained from the various departments.

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.

Multidisciplinary Centers, Research Institutes and Programs, Research Support Units, and Inter-University Affiliations

Graduate Program in Rehabilitation Counseling

The Graduate Program in Rehabilitation Counseling is an interdisciplinary program within The College of Education which offers a Master of Rehabilitation Counseling degree. Program graduates are employed as counselors and administrators in public and private rehabilitation settings. Rehabilitation counselors assist clients with adjustment to disability, personal adjustment, vocational functioning, and independent living. Students are expected to become involved in business and industry as part of their practicum experience. In addition to offering academic courses, the program sponsors workshops each year that are geared to the needs of professionals and the handicapped community. Research currently underway includes methods to assess client functioning and the application of technology and robotics to enhance client independent living and employability.

James W. Martin School of Public Administration

The Martin School offers three multidisciplinary degree programs—the Master of Public Administration, the Master of Health Administration and the Ph.D. in Public Administration—and engages in research and public service activities through the Institute of Government. The disciplines represented by the School's faculty are management, finance, economics, political science, and health administration. The research and public service components of the Martin School offer the School's faculty, staff, and graduate students the opportunity to engage in interdisciplinary research on public policy issues.

Graduate Center for Biomedical Engineering

The Center for Biomedical Engineering provides facilities and personnel for the support of graduate education and research concerned with the applications of engineering principles and practices to the solutions of problems in medicine and biology. The Center offers degrees in biomedical engineering at the master's and doctoral levels. The interdisciplinary research programs include the areas of signal and image processing, controls, biofluid dynamics, pulmonary mechanics, musculoskeletal mechanics, biomaterials and tissue response to stimulation. These research areas find application to problems in rehabilitation and sports medicine, industrial and highway safety, artificial organ design, tissue regeneration, wound healing and biomedical instrumentation as well as to improvements in the diagnosis and treatment of disease.

Appalachian Center

The Appalachian Center coordinates and supports research, instruction, extended service, and archival activities relating to the Appalachian region. It administers interdisciplinary research programs such as the library's Appalachian Collection. It provides assistance and a focal point for graduate students from a range of disciplines who are interested in the study of the Appalachian region.

Students interested in graduate study with an emphasis in the Appalachian region may contact the Director of the Center.

Graduate Center for Toxicology

The Graduate Center for Toxicology (GCT) educates scientists at the M.S., Ph.D. and postdoctoral level to deal with toxic substances and their effects on humans and the environment. The GCT has a core faculty based in the Funkhouser Building and an interdisciplinary faculty of about fifty jointly-appointed faculty members, all of whom are active in teaching and research in toxicology, drawn from the major departments and colleges on campus. The GCT has over 100 graduates among whom are the 1988 Burroughs Welcome Scholar in Toxicology and numerous faculty members, government and corporate toxicologists.

In the area of teaching, the GCT has some forty-five predoctoral and five postdoctoral fellows, along with about nine summer students per year. The GCT is

committed to cultural diversity and has an active minority program with several minority predoctoral students registered. Student support comes from Graduate School Fellowships, minority fellowships, special fellowships, research assistantships, teaching assistantships and NIEHS pre- and postdoctoral fellowships for Research Training in Environmental Toxicology.

Areas of research strength include environmental toxicology, immunotoxicology, molecular mechanisms of toxicology, molecular biology and toxicology, along with a developing program in risk assessment. Students in the GCT are organized through the Toxicology Student Forum, which is represented on all GCT committees and functions as the students' voice and representative during their time at the University of Kentucky.

For further information on the Graduate Center for Toxicology, contact the Director at (606) 257-3760 or fax 606-258-1059.

Sanders-Brown Center on Aging

The Sanders-Brown Center on Aging is a multidisciplinary center for gerontological teaching, research, and service, dedicated to improving the quality of life for older adults. The Center is responsible for coordinating and integrating research, education and service programs in aging throughout the University of Kentucky. It administers interdisciplinary research programs, coordinates the offering of gerontology courses, and assists in the training of graduate students. Over 150 faculty and staff from many areas and disciplines of the University are involved in programs of the Center.

Students interested in graduate study with an emphasis in gerontology may work toward the Graduate Certificate in Gerontology awarded by the Sanders-Brown Center on Aging. The certificate requires 15 graduate credit hours in an approved, multidisciplinary curriculum in gerontology and completion of graduate degree requirements in a major academic discipline. For further information on the Graduate Certificate in Gerontology contact the Certificate Director, Sanders-Brown Center on Aging.

Tobacco and Health Research Institute

The University of Kentucky Tobacco and Health Research Institute is the administrative, research, and support center for a tobacco and health program funded by a state tax. An extensive smoking and health research effort has been organized under a program-project concept which encourages a multidisciplinary approach. The five targeted areas include cardiovascular, pulmonary, neurobehavioral, passive smoking, and plant modification. The Institute provides a number of support services for investigators involved in the program.

Kentucky Water Resources Research Institute

The Kentucky Water Resources Research Institute is supported by the State of Kentucky and the U.S. Department of the Interior. Working in close cooperation with state, regional and federal water resources organizations, the Institute defines current and emerging water resources research needs for Kentucky. The Institute solicits proposals from Kentucky college and university faculty in order to obtain research proposals that will be directed toward resolving these water resource problems. In addition, the Institute develops teams of researchers to develop projects and education efforts to address state issues. Two groups presently being established are a Groundwater Center and a Center for Environmental Behavior Research and Education.

The Institute regularly conducts conferences and short courses as part of its technology transfer efforts.

Institute for Mining and Minerals Research

As a multidisciplnary institute, IMMR coordinates, stimulates and supports research, education and service in mining and minerals related areas including land reclamation, coal geoscience, mining and mineral preparation, and mineral characterization. The program also assists in social, political, economic, and legal research. The Consortium for Fossil Fuel Liquefaction Science (CFFLS), a division of the institute, identifies and evaluates new methods of coal liquefaction, develops high technology methods of characterizing coal for liquefaction potential, and assesses the potential of liquefaction concepts as future technology options. The Behavioral Research Aspects of Safety and Health (BRASH) working group is a nationally recognized, interdisciplinary group of University faculty conducting research on the primary prevention of workplace injury and illness. The Office for Informational Services and Technical Liaison (OISTL) offers short courses, conferences and workshops as part of the IMMR's continuing education and technology transfer effort.

The Patterson School of Diplomacy And International Commerce

The Patterson School of Diplomacy and International Commerce offers an interdisciplinary master's degree which can be tailored to meet the career needs of individual students. The program is especially useful for students desiring careers in any of the non-academic fields in foreign affairs such as international banking, commerce and journalism, or service with governmental agencies or international organizations in foreign affairs. To assure the interdisciplinary character of the degree, students may concentrate their work in a specific geographical area or focus on certain aspects of international affairs.

In addition, the Patterson School serves in an advisory capacity to Ph.D. programs in departments offering internationally oriented doctoral degrees in various colleges on campus.

Lucille Parker Markey Cancer Center

The Markey Cancer Center is a multidisciplinary center for research, patient care, education and community outreach.

Research activities are broadly represented through four program areas: tumor immunology, molecular genetics, membrane studies and developmental therapeutics. The Center supports core research facilities for flow cytometry, macromolecular structure, electron microscopy, nuclear magnetic resonance spectroscopy, hybridoma production, and transgenic mouse construction. These activities, together with a wide range of individual investigator initiated projects, are supported by a combination of funding sources, including research grants from the National Cancer Institute, the American Cancer Society, and other extramural funding agencies. The Center also has available additional resources in all areas relevant to cancer problems.

Center of Membrane Sciences

The Center of Membrane Sciences affords a unique approach to promote multidisciplinary research and education in both natural biological membranes and artificial synthetic membranes. UK faculty from the Departments of Chemistry, Chemical Engineering, Biochemistry, Pharmacy, Pharmacology, Medical Microbiology and Immunology, Physiology and Biophysics, Nutrition and Food Sciences, Ophthalmology, Animal Sciences, Materials Science and Psychology are active in the programs of the Center. This collaboration between experts in biological membranes with experts in synthetic membranes constitutes the major strength of the Center and it puts the University and the Commonwealth at the forefront of this vital area of science and technology. No other such Center of Membrane Sciences exist in the United States. The science of membranes encompasses broad areas: (a) the structure and chemistry of biological membranes and their constituents, transport processes, and information transfer (transmembrane signaling) in living systems; (b) the synthesis, structure, and chemistry of synthetic membranes; separation of solutes ranging in size from smaller molecules and ions to large proteins by reverse osmosis and ultrafiltration with biotechnology and pharmaceutical applications; separation of gaseous mixtures by synthetic membranes; (c) separation of organic and biomolecules by synthetic membranes containing chemical and biofunctional groups. Opportunities are available for graduate students in each of the above-listed disciplines as well as in agriculture, allied health, medicine, dentistry, and other areas.

Center for Computational Sciences

The Graduate Center in Computational Sciences is a center for research and education with primary emphasis on developing and using computer models to analyze chemical, physical, and biological systems. Faculty from Mathematics, Computer Science, Statistics, Engineering, Chemistry, Physics, Biology, and other departments use a multidisciplinary team approach to study such systems, utilizing the full range of computational resources—micro, mini, mainframe, and supercomputers. This includes algorithm development and evaluation for vector and parallel, as well as for scalar machines. Courses in applied mathematics, numerical analysis, and computer modeling are available for students interested in this approach to analyzing and understanding these systems.

Maxwell H. Gluck Equine Research Center

The Gluck Equine Research Center is part of the Department of Veterinary Science. Research in the Center is supported, in part, by an endowment established by the University of Kentucky Equine Research Foundation. The Center provides state-of-the-art facilities and equipment for the study of a wide variety of diseases of the horse. Research in the areas of infectious diseases, reproductive physiology, parasitology, pharmacology, immunogenetics, growth and development, lameness, pathology, blood typing, and forensic pharmacology are conducted within the 69,505 square foot building located in front of Commonwealth Stadium.

The Gluck Center offers postgraduate and postdoctoral training in a variety of disciplines. The Center is well-positioned in one of the most concentrated horse breeding areas in the world. Both basic biomedical and problem-oriented research are included in the Center's program.

Center for Business and Economic Research

The Center for Business and Economic Research provides a focal point for research in the College of Business and Economics. It provides information and staff support for research projects, assists faculty in efforts to secure external funding for research, and coordinates multidisciplinary team approaches to research. The Center also monitors and analyzes the economy of Kentucky and provides professional staff support for the Governor's Financial Policy Council.

Center for Pharmaceutical Science and Technology

The Center for Pharmaceutical Science and Technology (CPST) offers an institutional framework for multidisciplinary research in the pharmaceutical sciences principally through collaboration with the industry. By providing a focus for efforts already underway at the University, the Center assists established and emerging pharmaceutical, chemical and biotechnology firms engaged in the development, production and marketing of drug products for human and animal health care. The Center's mission is to enrich academic programs, promote technology transfer, conduct specialized educational and training programs relating to pharmaceutical technologies and enhance economic development in the Commonwealth.

Kentucky Transportation Center

The Kentucky Transportation Center serves as the focal point in the state for interdisciplinary research in transportation. In addition to its Transportation Research Program, the Center operates a Technology Transfer Program and provides technical assistance and training to road and street departments throughout the Commonwealth. The Center works closely with various governmental agencies and conducts research supported by a variety of sources, including private industry.

Center for Developmental Change

The Center for Developmental Change is concerned with the promotion, initiation, and coordination of multidisciplinary research on various aspects of social change. Its staff is available to aid University researchers in formulating projects, organizing multidisciplinary teams, developing research designs, preparing research proposals, locating financial support, conducting research operations, and writing up the research results in the form of reports or other publications. The Center is particularly interested in developing projects that explore issues relating to labor force development, poverty, the environment, rural society and economy, and population and health, both in the United States and abroad.

Interdisciplinary Human Development Institute

The Interdisciplinary Human Development Institute (IHDI) is a research, training, service and technical assistance program working at local, state, regional, national and international levels to improve services to persons with disabilities and their families. These activities are developed in cooperation with a broad range of both University of Kentucky units and public or private organizations and agencies. These cooperative relationships include education, social services, medicine, allied health, rehabilitation and other related disciplines. Its activities include life span involvements with programs ranging from prevention of disabilities to aging and gerontology. It is a member of the American Association of University Affiliated Programs (AAUAP).

Kentucky Geological Survey

The Kentucky Geological Survey is the official geologic research organization for the Commonwealth of Kentucky. KGS performs basic and applied research related to Kentucky's geology and mineral resources, including coal, oil, gas, industrial and metallic minerals, and water resources. Research results are available to the public through published and open-file maps and reports, distributed by the Survey. Cooperative projects with the U.S. Geological Survey have made Kentucky the best mapped state in the nation; a continuing revision program is designed to maintain up-to-date maps for the entire State.

Public service and education are vital parts of KGS activities. Thousands of requests for information about Kentucky's geology and water and mineral resources are received annually from industry, government agencies, academicians, students, and private citizens. The Survey provides technical advice to a large number of State, Federal, local, and regional agencies. Members of the staff are involved in working with special committees and public-service groups, as well as teaching short courses, advising students, and giving talks to civic and school groups. The Survey is the official repository for oil and gas well records, drill cutting and core samples, and ground-water data for all wells drilled in Kentucky. This information is available for use by industry, other researchers, and the public.

Technology Applications Center

The Technology Applications Center is a public service technology transfer program. The purpose of the program is to enhance economic development and service delivery in Kentucky by providing problem-solving information and assistance to local and state government agencies, businesses, academic institutions and not-for-profit organizations. Through its capability to access more than 1,500 databases and in its role as the principal local gateway to more than 500 Federal research and development laboratories, TAC retrieves information for practical solutions to user's technical and economic questions. TAC's resources provide the most comprehensive and diversified information source for applied problem-solving available within the Commonwealth.

Center for Robotics and Manufacturing Systems

The Center for Robotics and Manufacturing Systems is dedicated to the advancement of manufacturing through education, research, and technology transfer. The Center supports active programs in the areas of manufacturing processes, engineered materials and processes, automation systems, and integrated manufacturing systems.

State-of-the-art laboratories are utilized by faculty, staff and students to develop processes for new materials, modeling and simulation, and automation and systems integration. Major areas of research include aspects of metal cutting such as control of machining chatter, methods and theory of chip formation and control, finite element modeling of the machining process, and metrology. The monitoring and control of machine systems also is an important area. Current research also encompasses activities on methodologies for modeling, sensing, and control. Intelligent systems, communication networks particularly adapted to manufacturing systems, and improved distributed computer architectures are being studied. In addition, non-traditional processes such as abrasive waterjet, stereolithography, electrodischarge compaction of powdered metal, and injection molding are addressed.

Technology transfer activities help manufacturing companies keep pace with the increasing globalization of

the world. Specialized areas of assistance offered by the CRMS engineering and technical staff include computer-aided technologies, electronic assembly, and rapid prototyping. Technology advancements are disseminated to manufacturers by presentations, seminars, workshops, demonstrations and exhibitions, as well as through one-on-one industrial extension activities.

Program for Cultural Resource Assessment

The Program for Cultural Resource Assessment is the primary programmatic research unit within the Kentucky Anthropological Research Facility. The Program fosters, develops and administers archaeological research and public service activities. It provides formal field and laboratory training opportunities for students and others interested in the investigation, assessment and evaluation of prehistoric and historic cultural, archaeological and architectural resources. The Program carries out a wide variety of research projects funded through both governmental and private agencies.

Survey Research Center

The Survey Research Center designs, coordinates, and conducts survey research activities for the University and public agencies and assists faculty and students with survey research projects. The Center's services range from research design and questionnaire development through data analysis and report writing.

The Center conducts national, statewide, and local telephone and mail surveys, and face-to-face interviews. It conducts the Kentucky Survey, which probes the opinions and attitudes of Kentuckians, and the Kentucky Health Survey, which addresses a wide range of health issues. Data from these surveys and other Center projects are available for faculty and graduate student research.

Computing Center

The Computing Center offers University-wide computing services and support for all UK faculty, students, and staff. Present facilities include: an IBM 3090-600J with six attached vectors which provides supercomputer services to support large scale, numeric intensive computational needs, as well as general purpose academic and administrative computing services; a PRIME 6350 super minicomputer which is used for general purpose instructional and academic computing needs; and an extensive array of microcomputers and terminal clusters which are located in various buildings. A wide array of application software is available to support specialized instructional and research interests. General and specialized computing consulting services are also available through the Center. In addition periodic short courses and workshops are offered which focus on specific applications. More information is available through brochures which outline specific facilities and services and through a published newsletter. Contact the Consulting Room in the Computing Center for more assistance and to obtain information for establishing an account to use the facilities. Most facilities and services are available at no charge to University of Kentucky faculty, staff and students.

Statistics Consulting Laboratories

The Department of Statistics operates two consulting laboratories: the Statistics Consulting Laboratory for the main campus and the Biostatistics Consulting Unit for the Medical Center campus. These laboratories provide advice to faculty and graduate students on proper study designs for projects involving quantitative data as well as on appropriate strategies for analyzing the data emanating from such projects. Laboratory services cover the entire range of applied statistical methodology including biostatistics, epidemiology and survey sampling. Statistical programming support for projects is also available on a fee for services rendered basis. The staff occasionally offers short courses on specialized topics.

Materials Characterization Facility

The Materials Characterization Facility provides a variety of modern analytical techniques to faculty, staff and students who are engaged in materials science and engineering research. Facilities that are currently available include instrumentation for structural analysis, surface analysis, and electron, ion, atomic and molecular spectroscopic analysis. Arrangements can also be made through the Facility for materials analysis by Extended X-Ray Absorption Fine Structure (EXAFS) and other specialized x-ray techniques that require synchrotron radiation. Specific techniques include electron microscopy, both SEM and TEM/STEM, x-ray diffraction, x-ray photoelectron spectroscopy, Auger electron analysis, secondary ion mass spectroscopy, ion scattering spectroscopy, Mossbauer spectroscopy, laser Raman and infrared spectroscopy, and microwave absorption spectroscopy.

Flow Analysis and Cell Sorting Facility

The Flow Analysis and Cell Sorting lab was established to provide the University research community with a state of the art facility for analysis and sorting of single cell populations for research and as an aid to clinical diagnosis. The Facility currently houses a Becton-Dickinson, dual (dye) laser FACStar Plus Cell Sorter, a single laser FACStar Cell Sorter, and FASCcan analyzer with both a Consort 30 computer system and a Micro VAX II computer system with software programs for immunofluorescence cluster analysis, cell-cycle analysis and kinetics programs. The Facility has a technical director and support staff. The Facility is currently used for: 1) Analysis of single cell suspensions based on the parameters of cell volume, light scatter and fluorescence; 2) Analysis of cellular DNA content and cell cycle analysis; 3) Analysis of cell surface (antigen) changes using single, two or three color immunofluorescence; 4) Detection of small populations of cells using monoclonal

antibodies and immunofluorescence; 5) High resolution analysis of chromosomes; 6) Analysis of Ca^{++} flux in single cells over time; and 7) Fluorescence activated cell sorting (cell separation) on the basis of fluorescence intensity or light scatter.

The Nuclear Magnetic Resonance Spectroscopy Center

The NMR Spectroscopy Center operates 500 MHz, 400 MHz, 300 MHz, and 200 MHz spectrometers located in the Chemistry Department, the College of Pharmacy, and the Combs Research Building of the Markey Cancer Center. The Center also provides networked off-line spectral processing services on SUN and microVAX computers at various locations. This equipment can perform any high resolution NMR experiment required by investigators in any segment of the University. The Center staff collaborates in the design, performance and interpretation of experiments, provides practical operator training as well as theoretical course work, maintains the instruments and, when required, performs experiments for individual investigators. The Center maintains close collaborative ties with the MRISC.

The Magnetic Resonance Imaging and Spectroscopy Center

The MRISC, located in the College of Medicine, is an interdisciplinary center of excellence promoting both basic and applied research and superior patient care with magnetic resonance imaging and spectroscopy. The Center operates a 300 MHz widebore multinuclear NMR spectrometer, a 4.7T 33 cm horizontal bore multinuclear imager/*in vivo* spectrometer, and three 1.5T human (whole body) systems with one of these systems dedicated to imaging and spectroscopy research. The Center also has electronics and mechanical shops, animal holding and preparation facilities and computer equipment necessary for the performance of its mission. The Center faculty carry on basic research in the application of both imaging and *in vivo* spectroscopy. Collaborative research is also actively pursued with investigators in many units of the University in designing, conducting, and interpreting a variety of experiments addressing fundamental biomedical questions.

Biomedical Image Processing Distributed Shared-Use Facility

This Shared-Use Facility offers a multidisciplinary talent base of users of common systems for research and education in biomedical image processing. The Facility is distributed over six sites on campus: Department of Anatomy and Neurobiology, Division of Cardiology, Center for Biomedical Engineering, Department of Medical Microbiology and Immunology, Sanders-Brown Center on Aging and the Magnetic Resonance and Spectroscopy Center. The Center for Biomedical Engineering serves as the primary Development, Education and Training (DET) site for the Facility. Facility capabilities include: real-time acquisition and analysis of video image sequences (including those from fluorescent microscopy); a large menu of black/white and color image processing software for filtering, densitometry, cell counting, particle size analysis, morphometry, etc.; three-dimensional reconstruction from two-dimensional serial sections of anatomical structures, computer-aided design of custom implants and mapping of biochemical information on anatomical images; and three-dimensional motion analysis, involving the tracking of identifiable targets on humans and machines and in flow systems to determine spatial relationships, velocities and accelerations of segments, components and/or particles. Arrangements can be made through the DET site concerning the availability of Facility resources.

University of Kentucky Center for Electron Microscopy (UKCEM)

The center for electron microscopy is a non-geographic organization of several laboratories that provide for research, training and service in analytical microscopy and imaging with electron optics. The instrumentation for this center is housed at a variety of locations conducive to support cutting edge biomedical and materials research in a wide variety of fields and disciplines. The most current and sophisticated instrumentation for high resolution conventional transmission electron microscopy (CTEM), scanning electron microscopy (SEM) and scanning transmission (STEM) electron microscopy are available. In addition, instrumentation for electron spectrographic imaging (ESI) and X-ray microanalysis is also available. Some instruments are equipped with high brightness field emission (FE) sources that allow for ultrahigh resolution SEM and low kilovolt (KV) examination of coated and uncoated samples. Ancillary equipment for sample preparation is the most currently available. This instrumentation represents an opportunity for introductory and advanced training in ultrastructure research.

The Macromolecular Structure Analysis Facility (MSAF)

MSAF is a central facility, housed in the D. E. Combs Laboratory Research Building of the Cancer Center, which provides state-of-the-art DNA and protein synthesis and sequencing services to biological researchers at the University of Kentucky. The services available on a fee-for-use basis include: 1) High sensitivity amino acid analysis on a Beckman Model 6300 Amino Acid Analyzer; 2) Protein sequence analysis at picomole sensitivity with two fully automated Applied Biosystems Pulsed-liquid Phase Sequencers; 3) Automated, non-radioactive DNA sequence analysis with an Applied Biosystems DNA Sequencer; 4) Oligonucleotide (up to 100 nucleotides) synthesis with an Applied Biosystems DNA Synthesizer; and 5) Peptide Synthesis with a Biosearch Peptide Synthesizer. Access is available to protein and DNA sequence data banks as well as for structure prediction programs through computers serving the facility.

Trained technicians and staff are available to provide these services and to advise researchers in methods for preparing materials for use and analysis.

Southeastern Universities Research Association

The Southeastern Universities Research Association (SURA) is a consortium of forty universities in the Southeast formed for the purpose of managing large cooperative projects in science and engineering. The University of Kentucky is a founding member of SURA.

One of SURA's major projects is the construction and management of a Continuous Electron Beam Accelerator Facility (CEBAF) for the Department of Energy for research in nuclear science (scheduled for research operation in 1994). It will be available for use by faculty and graduate students of all participating institutions. Another major project of SURA is SURANET, the first regional supercomputer network in the country and the first component regional network of NSFnet, a national scientific network established by the National Science Foundation. Faculty and graduate students at the University of Kentucky have full access to all SURANET services and capabilities.

Other SURA projects include the development of joint efforts in materials science, environmental research and global climate change, free electron lasers and synchrotron light source. SURA offers a graduate fellowship program for CEBAF-related research.

Consortium for Fossil Fuel Liquefaction Science

The Consortium for Fossil Fuel Liquefaction Science (CFFLS) is a research consortium with participating scientists from five universities—the University of Kentucky, the University of Pittsburgh, West Virginia University, the University of Utah and Auburn University. Organized in 1984, the Consortium is managed by the University of Kentucky's Institute for Mining and Minerals Research. Approximately 100 people participate in the Consortium research program, the principal goal of which is to develop new and improved methods of converting coal to liquid transportation fuels. Combining the expertise and facilities of five universities enables CFFLS scientists to avoid duplication, utilize each other's capabilities, and ultimately obtain a greater return for their research dollar. Because of the importance of coal to the economies of the five states represented by the Consortium, the Consortium provides dollar-for-dollar matching funds to federal funding obtained through the U.S. Department of Energy.

Research Program at Oak Ridge Associated Universities

The University of Kentucky is a sponsoring institution of Oak Ridge Associated Universities (ORAU), a not-for-profit consortium of 62 colleges and universities and a management and operating contractor for the U.S. Department of Energy (DOE) with principal offices located in Oak Ridge, Tennessee. Founded in 1946, ORAU identifies and helps solve problems in science, engineering, technology, medicine, and human resources, and assists its member universities to focus their collective strengths in science and technology research on issues of national significance.

ORAU manages the Oak Ridge Institute for Science and Education (ORISE) for DOE. ORISE is responsible for national and international programs in science and engineering education, training and management systems, energy and environment systems, and medical sciences. ORISE's competitive programs bring students at all levels, precollege through postgraduate, and university faculty members into federal and private laboratories.

ORAU's office for University, Industry, and Government Alliances (UIGA) seeks out opportunies for collaborative alliances among its member universities, private industry, and federal laboratories. Current alliances include the Southern Association for High Energy Physics (SAHEP) and the Center for Bio-Electromagnetic Interaction Research (CBEIR). Other UIGA activities include the sponsorship of conferences and workshops, the Visiting Scholars program, and the Junior Faculty Enhancement Awards.

Contact Dr. Lee J. Magid, Vice President for Research and Graduate Studies, for more information about ORAU programs.

Graduate Program in Nutritional Sciences

The Ph.D. program in Nutritional Sciences provides opportunity for advanced multidisciplinary study in Nutritional Sciences. Educational opportunities exist in agricultural, biological, clinical, community, medical, social and basic nutritional sciences. The graduate faculty consists of more than twenty faculty members representing various academic units of the University including Animal Sciences, Anthropology, Behavioral Science, Clinical Sciences, Medicine, Neurology, Nutrition and Food Science, Oral Health Science, Psychiatry, and Toxicology. Faculty have basic research laboratory facilities for conducting cell culture, human and animal studies using state of the art equipment. These include trace mineral, vitamin, lipid, amino acid, enzyme, hormone, stable and radioactive isotope, microcirculatory, and energy assessment analyses. Clinical facilities for training and research include the University of Kentucky Hospital, the Veteran's Administration Hospital, Sanders-Brown Center on Aging, University of Kentucky Medical Center Outpatient Clinics, and the Markey Cancer Center. Opportunities for community-based research exist locally, throughout the state, and in international settings.

GENERAL INFORMATION

Residency

According to law, the University of Kentucky and all other state-supported institutions of higher education assess tuition fees on the basis of Kentucky or non-Kentucky residence. The policy for determining residence is established by the Commonwealth of Kentucky Council on Higher Education. Students who are unsure of their residence status should check with the Registrar's Office before applying for admission.

Tuition and Fees, 1992-93

Tuition Schedule

Semesters: Fall and Spring		
Full-Time Student	Resident	Non-resident
Graduate School	$ 920	$2,760
Part-Time Student		
Graduate School	$ 103	$ 307
(per hour fee)		
Summer School Terms:		
Full-Time Student	Resident	Non-resident
(Eight-Week Session only)		
Graduate	$ 515	$1,595
Part-Time Student and		
Four-Week Session		
(per hour fee)		
Graduate	$ 103	$ 307

Four-Week Session:
Four credit hours is the maximum course load and fees will be assessed separately per hour.
Eight-Week Session:
Full-time fees are attained at five hours for The Graduate School.

Mandatory Registration Fee

Semester (Full-time)	Annual Charges	Eight-Week Summer (Full-time)	Part-time and Four-Week Fee Per Credit Hour
$159.00	$318.00	$36.00	$6.00

FEES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Fellowships and Assistantships

There are approximately 130 non-service fellowships available in all areas of graduate work. Over 1,000 teaching or research assistantships are available from departments and other units of the University. Nine Presidential Fellowships with a stipend of $10,000 are awarded annually on a competitive basis to graduate students with outstanding credentials. Approximately one hundred additional Academic Year Fellowships are awarded annually. During 1992-93 the stipend for a full fellowship is $9,000. Other special opportunities are available in specific programs, for example: Public Administration, Medical Sciences, Chemistry, Patterson School of Diplomacy and International Commerce, among others. Assistantship stipends vary from $6,500 to $12,000. Out-of-state tuition is remitted for full fellowship or assistantship holders and proportionate amounts are remitted for smaller awards.

Fellowship and assistantship decisions are generally made by the department or program in which students enroll. Assistantships are awarded directly by the department. While fellowships are formally awarded by The Graduate School, the award is usually based upon the specific recommendation of a department.

Almost all fellowships and the majority of assistantships are awarded for the academic year. There are virtually no fellowships and only a small number of assistantships available which begin in the spring semester. Most departments make financial aid decisions for the next academic year in the period between February and April. Students interested in fellowships or assistantships must return their application by that time. Later applicants will have a reduced chance of obtaining financial aid. All fellowships are awarded by early May. Most assistantships are also filled by that time, although students should check with the particular department of interest for exact information.

There is a common application for financial assistance. Applicants interested in either fellowships or assistantships but not both may indicate their preference on the form.

After a department makes its financial aid decisions, it will be in contact with the student. (If students are interested in a fellowship **only,** notification will come from The Graduate School.) Any questions about the status of applications should be addressed to the Director of Graduate Studies, department of interest.

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 of The Graduate School.

Health Service

The convenience of an on-campus health care facility, a low-cost prepaid plan for outpatient services, and an excellent student group hospitalization plan which includes a broad major medical component—all are designed to make UK's total health plan attractive and economical for graduate and professional students, both full-time and part-time.

All full-time students pay a health fee in fall and spring semesters which entitles them to medical and mental health care at the Student Health Service. Students who attend either of the summer sessions may pay the Health Fee for the session they attend only or they may pay for the whole summer. Part-time students may prepay the health fee or may use the Health Service on a fee-for-service basis. If they elect to pay fee-for-service it is always more expensive.

The Student Health Service is located in the Medical Plaza across Rose Street from the Medical Center. Entrance is just below the overhead walkway. Look for the Wildcat blue door on the first floor. The Health Service clinic hours are from 8 a.m. to 4:30 p.m. Monday through Friday, and Saturday morning, 9 to 11 a.m. Students can be seen in a minimum of time on a walk-in basis. The clinic is staffed with physicians, nurses, psychiatrists, and other health professionals who are specialists in the health problems of young adults. There are no Saturday hours during breaks and during the summer sessions. On Saturday students should enter the Medical Plaza through the Rose Street entrance.

Part-time students who wish to pay the health fee may do so by writing a check made out to the University of Kentucky and enclosing it with their tuition payment (by mail or at the Student Billings office) or they may pay the Health Service cashier before the deadline for paying all fees. Check with the Graduate School Office or the International Student Office if there are questions about eligibility or about paying the health fee.

The non-student spouse of an eligible student may use the Health Service but is not eligible to pay the health fee. The minimum charge for a non-student is $35 per visit.

Services covered by the health fee include: unlimited visits to physicians and nurses for an illness or first-aid care, laboratory services, certain x-ray services, some medications, allergy shots and immunizations, unlimited visits to the professionals in the Mental Health Service, some after-hours emergency services and more.

Health Insurance

Students who receive services provided through campus facilities that are traditionally covered by insurance plans (hospitalization, accidents/injuries, surgical procedures) will be furnished with an itemized statement suitable to forward to the student's insurance carrier. UK foreign students must have hospitalization insurance that is payable in the United States, and are responsible for any amount which insurance does not pay on these types of charges. It is imperative that students have insurance for themselves, and for their spouse and children if they are married, because of the extremely high cost of medical care. The University, including University Hospital, assumes no responsibility for a student's medical expenses.

As a service to students who need insurance of their own, the University has made arrangements for a group insurance plan at reasonable student-age group rates. The current plan is a basic comprehensive plan with an optional major medical available. The plan provides year-round coverage wherever the student may be as long as the semi-annual premium payments are maintained. There are two options available:

(1) Student only
(2) Student/Spouse (Maternity is covered as any other medical problem.) Dependent children may be covered based on a rate per child/dependent.

Note: All options have a nine-month waiting period before pre-existing conditions are covered.

There are definite sign-up periods for the UK Group Insurance Plan:

(1) The first 14 calendar days of the fall semester for students attending that semester.
(2) The first 14 calendar days of the spring semester for students attending that semester.
(3) The first 10 calendar days of the 8-week summer session for students attending that session AND the subsequent fall semester.

Coverage begins for new enrollees when the premium is received by either the insurance company or the delegated representative of the Student Health Service.

Continuing enrollees have a 14-day grace period for re-enrolling with no interruption of coverage.

Information is also available through the Insurance Office of the Student Health Service (606) 233-6356 and through The Graduate School Office and the International Student Office. Questions relating to eligibility for the plan should be directed to any of the offices listed above. Info Link: 233-8982.

Counseling and Testing Center

The University Counseling and Testing Center has a staff of trained psychologists whose primary function is helping students work through educational, vocational and personal concerns. Some typical concerns for graduate students include: learning to read and think more critically, time management, difficulties in decision-making, career and life planning, quality of interpersonal relationships, feelings of depression, anxiety, loneliness, and other issues of a personal nature. All

counseling sessions are voluntary and confidential. Tests of achievement, personality, vocational interests, study skills and others may be used to aid the student in self-understanding.

In addition to counseling with individuals, the Center staff provides couples and group counseling. Groups are arranged each semester and include both general counseling groups, in which students may work on a variety of issues, and special focus groups (eating disorders, for example).

The services of the Center are available by appointment to fee-paying students enrolled for at least six semester hours. Graduate students enrolled for thesis or dissertation hours also are eligible. There are no fees for the testing or counseling of University undergraduate or graduate students. Appointments and further information may be obtained by calling 257-8701 or by coming to the Center, 301 Frazee Hall.

Housing

General Information

The University of Kentucky Housing Office operates over 700 apartments for full-time single graduate students and student families. Sixteen efficiency apartments located at 404 Linden Walk are restricted to undergraduate international students. These apartments are rented on a 12-month lease agreement basis, including academic recesses.

The apartment complexes are in six different areas. They are: Commonwealth Village; Cooperstown; Shawneetown; Linden Walk; Rose Lane and Greg Page Stadium View. These complexes consist of efficiency and one-bedroom apartments except for a limited number of tw0-bedroom apartments in Shawneetown and Greg Page Stadium View.

APPLICATION STEPS
FOR UK APARTMENT HOUSING

1. Obtain Application For Apartment Housing and return to Apartment Housing Office with $150 deposit.
2. Receive acknowledgment of deposit received.
3. Receive notification of apartment assignment or waiting list assignment from Apartment Housing Office.
4. If assigned to apartment, respond with confirmation or cancellation WITHIN TEN DAYS in order to keep assignment or receive full refund of deposit.
5. Arrive at UK Apartment Housing by specified date of occupancy. Sign 12-month Rental Agreement or Sub Lease and fulfill all terms therein. NOTE: LESSEE MUST BE ENROLLED AS A FULL-TIME UK STUDENT.

Furnishings

The one and two-bedroom units have a living room, kitchen, dining area and a bathroom. The efficiency apartments have a living room-bedroom combination, kitchen and bath.

All apartments are adequately furnished. Furnishings vary according to the complex. If an unfurnished or partially furnished partment is desired, arrangements must be approved with the Apartment Housing Office.

Waterbeds are not permitted in any UK apartments. It is recommended that students bring their own lamps and wait until moving in for other accessories.

Apartment Assignments

Apartment assignments are made according to the date the completed application is returned to the Apartment Housing Office with a $150 reservation/security deposit. Priority will be given to returning residents. *Filing an application does not guarantee an assignment, nor does it in any way coincide with or affect admission to the University. Once an assignment is confirmed with the applicant, cancellation or failure to occupy the apartment will result in forfeiture of the deposit.*

Approximately 30 days prior to the desired date of occupancy, students will be notified about the assignment.

Payments

Rent payment, which includes all utilities, is due the first day of each month. Payments must be received in the Apartment Housing Office on or before the 10th of each month, or a $15 late fee will be assessed. If a student moves in any time other than the first of the month, the rent will be pro-rated for the days occupied. Rent begins when the apartment keys are picked up.

The student renting the apartment is responsible for a complete 30-day written notice to vacate when he or she decides to move out at the expiration of the lease. Permission must be granted for the 30-day notice to be permitted during the time the lease is in effect.

Deposit

The $150 reservation/security deposit is placed in a non-interest bearing account until the termination of the lease. The deposit, less any charges for cleaning, rent, missing or damaged property, will be refunded within 30 days after the resident moves out.

Cancellations and Refunds

If an application is withdrawn prior to receiving an assignment, or within 10 days after an assignment is made, the deposit will be refunded. If an apartment is not available, the application will be cancelled and the deposit will be refunded.

Upon request, an application and deposit will be held for consideration as apartments become available. A refund of the deposit will be made if the student is

refused admission to the University and the Cooperstown Office is notified in writing within 30 days after notice of rejection from the Admissions Office.

Meal Contracts

Contracts for board only are available during fall and spring semesters from the UK Food Services Department.

Board is provided only according to the undergraduate academic year. Payment is made each semester according to the Undergraduate Housing Payment Plan. After you arrive, contact the University Housing Office for a meal contract application.

Housing Office
125 Funkhouser
University of Kentucky
Lexington, KY 40506
(606) 257-1866

Telephones

Except for residents of Rose Lane and Linden Walk, telephones (i.e., the instrument) are provided by the University. If telephone service is desired, contact Communications Services, Room 108 Parking Structure 2, (606) 257-8086 for hook-up and for information on charges.

Note: Rose Lane and Linden Walk residents must contact GTE for telephone service.

Parking

Parking is restricted in all apartment complex lots and permits may be purchased from the Public Safety Division, located at the corner of Rose Street and Euclid Avenue. You must show a copy of your lease or sublease to them in order to obtain a permit.

Custodial Service

Students are required to keep apartments in a clean and sanitary condition. University custodial staff maintains only the public areas.

Pets

Pets are not allowed in apartments or in the University housing areas.

Bus Service

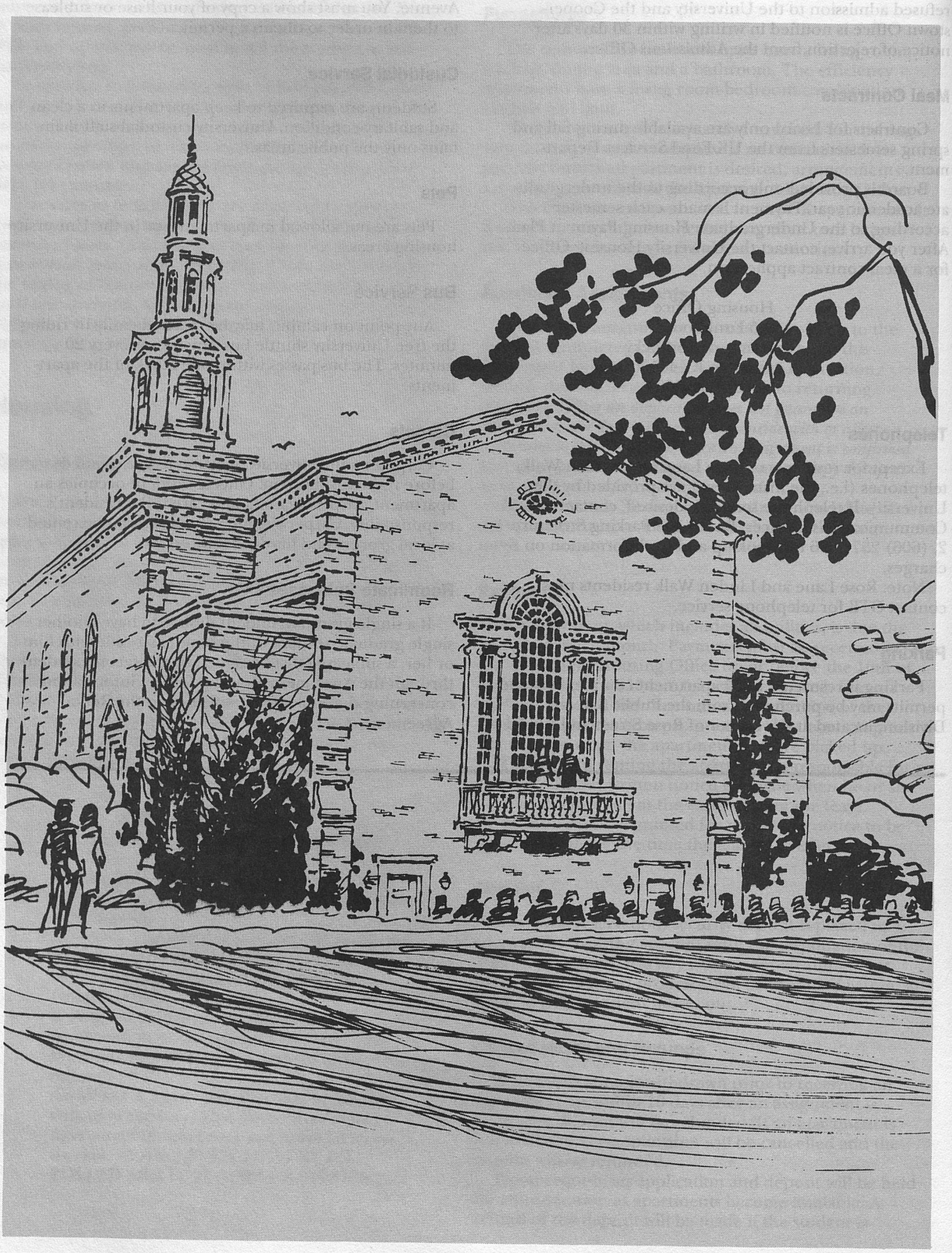
Any point on campus may be reached easily by riding the free University shuttle bus which runs every 20 minutes. The bus passes within one block of the apartments.

Carpets

Carpets in all University apartments are cleaned before residents move in. Once a resident occupies an apartment, carpet cleaning and care is the resident's responsibility. Carpet cleaning machines can be rented at local grocery and hardware stores.

Roommate Subleases

If a single graduate student desires to have another single graduate student of the same sex reside with him or her, a sublease must be signed by the second student through the Apartment Housing Office. Information concerning the sublease is explained in the Rental Agreement.



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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	Thesis Option	Non-thesis Option	Language Required	Credit Hours Required
Accounting	Master of Science in Accounting		X		30
Administration and Supervision	Doctor of Education (Instruction and Administration)	X			*
	Specialist in Education		X		30*
Agricultural Economics	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science		X		36
	Master of Science in Agriculture	X			24
	Master of Science in Agriculture		X		36
Agricultural Engineering	Doctor of Philosophy	X		One	*
	Master of Science in Agricultural Engineering	X			24
	Master of Science in Agricultural Engineering		X		30
Anatomy	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science		X		30
Animal Sciences	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science		X		36
	Master of Science in Agriculture	X			24
	Master of Science in Agriculture		X		36
Anthropology	Doctor of Philosophy	X		Two	*
General Anthropology	Master of Arts	X		One	24
Applied Anthropology	Master of Arts		X		33*
Art (Studio)	Master of Fine Arts		X		60*
Art (Education)	Master of Arts	X			30
Art (Education)	Master of Arts		X		36
Art (History)	Master of Arts	X		Two	24
Biochemistry	Doctor of Philosophy	X			*
Biology	Doctor of Philosophy	X			*
	Master of Science	X			24
Biomedical Engineering	Doctor of Philosophy	X			*
	Master of Science in Biomedical Engineering	X			26
	Master of Science in Biomedical Engineering		X		26
Business Administration	Doctor of Philosophy	X			*
	Master of Business Administration		X		48
Chemical Engineering	Doctor of Philosophy	X			*
	Master of Science in Chemical Engineering	X			24
	Master of Science in Chemical Engineering		X		30
Chemistry	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science		X		30

PROGRAM	DEGREE	Thesis Option	Non-thesis Option	Language Required	Credit Hours Required
Civil Engineering	Doctor of Philosophy	X		One	*
	Master of Science in Civil Engineering	X			24
	Master of Science in Civil Engineering		X		36
	Master of Civil Engineering		X		30*
Classical Languages and Literatures	Master of Arts	X		One	24
	Master of Arts		X	One	30
Clinical Nutrition	Master of Science in Clinical Nutrition		X		30
Communication	Doctor of Philosophy	X			*
	Master of Arts	X			24
	Master of Arts		X		30*
Communication Disorders	Master of Science in Communication Disorders		X		*
Computer Science	Doctor of Philosophy	X		One	*
	Master of Science	X			24
	Master of Science		X		30
Crop Science (Agronomy)	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science in Agriculture	X			24
	Master of Science in Agriculture		X		36
Curriculum and Instruction	Doctor of Education (Instruction and Administration)	X			*
	Specialist in Education		X		30*
Reading	Master of Arts in Education		X		30
Secondary Education	Master of Arts in Education	X			24
Elementary Education	Master of Arts in Education		X		30
Secondary Education	Master of Science in Education	X			24*
	Master of Science in Education		X		30*
Early Childhood Education	Master of Arts in Education	X			30
	Master of Arts in Education		X		36
Instructional Systems Design	Master of Science in Education		X		36
Dentistry	Master of Science in Dentistry	X			24
Diplomacy and International Commerce	Master of Arts	X		One	24
	Master of Arts		X	One	30
Economics	Doctor of Philosophy	X			*
	Master of Arts		X	One	30
	Master of Science		X		30
Educational and Counseling Psychology	Doctor of Philosophy	X			*
	Doctor of Education	X			*
	Specialist in Education		X		30*
	Master of Arts in Education	X			30*
	Master of Arts in Education		X		36*
	Master of Science in Education	X			30*
	Master of Science in Education		X		36*
Educational Policy Studies and Evaluation	Doctor of Philosophy	X		One	*
	Doctor of Education	X			*
	Specialist in Education		X		30*
	Master of Science in Education		X		30*
Electrical Engineering	Doctor of Philosophy	X		One	*
	Master of Science in Electrical Engineering	X			24
	Master of Science in Electrical Engineering		X		30

PROGRAM	DEGREE	Thesis Option	Non-thesis Option	Language Required	Credit Hours Required
Engineering Mechanics	Doctor of Philosophy	X			*
	Master of Science in Engineering Mechanics	X			24
	Master of Science in Engineering Mechanics		X		30
English	Doctor of Philosophy	X		Two	*
	Master of Arts	X		One	24
	Master of Arts		X	One	30
Entomology	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science in Agriculture	X			24
Family Studies	Master of Science in Family Studies	X			30
	Master of Science in Family Studies		X		36
Forestry	Master of Science in Forestry	X			24
	Master of Science in Agriculture	X			24
French	Master of Arts		X	One	30
Geography	Doctor of Philosophy	X		One	*
	Master of Arts	X			24
	Master of Arts		X		30
Geology	Doctor of Philosophy	X		One	*
	Master of Science	X			24
German	Master of Arts	X		One	24
	Master of Arts		X	One	30
Health, Physical Education and Recreation	Doctor of Education	X			*
	Master of Science	X			24
	Master of Science		X		30
History	Doctor of Philosophy	X		One*	*
	Master of Arts	X		One*	24
	Master of Arts		X	One	36
Human Environment: Design and Textiles	Master of Arts in Interior Design	X			24
	Master of Arts in Interior Design		X		36
	Master of Science in Merchandising, Apparel and Textiles	X			24
	Master of Science in Merchandising, Apparel and Textiles		X		36
Horticulture and Landscape Architecture	Master of Science in Agriculture	X			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
Materials Science and Engineering	Doctor of Philosophy	X			*
	Master of Science in Materials Science and Engineering	X			24
	Master of Science in Materials Science and Engineering		X		30
Mathematics	Doctor of Philosophy	X		One	*
	Master of Science		X		36
	Master of Arts	X			30
	Master of Arts		X		30
Mechanical Engineering	Doctor of Philosophy	X			*
	Master of Science in Mechanical Engineering	X			24
	Master of Science in Mechanical Engineering		X		36*

PROGRAM	DEGREE	Thesis Option	Non-thesis Option	Language Required	Credit Hours Required
Microbiology	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science		X		30
Mining Engineering	Doctor of Philosophy	X		One	*
	Master of Science in Mining Engineering	X			24
	Master of Science in Mining Engineering		X		30
	Master of Mining Engineering		X		30
School of Music	Doctor of Philosophy	X		*	*
	Doctor of Musical Arts	X		One	*
	Master of Music	X			24
	Master of Music		X		30
	Master of Arts	X		One	24
Nursing	Doctor of Philosophy	X			*
	Master of Science in Nursing	X			33
	Master of Science in Nursing		X		33
Nutritional Sciences	Doctor of Philosophy	X			*
Nutrition and Food Science	Master of Science	X			24
	Master of Science		X		30
Operations Research	Master of Science in Operations Research		X		36
Pharmaceutical Sciences	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science		X		30
Pharmacology	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science		X		30
Philosophy	Doctor of Philosophy	X		One	*
	Master of Arts		X	One	30
Physical Therapy	Master of Science in Physical Therapy	X			24
Physics and Astronomy	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science		X		30
Physiology and Biophysics	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science		X		30
Plant Pathology	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science in Agriculture	X			24
	Master of Science in Agriculture		X		36
Plant Physiology	Doctor of Philosophy	X			*
	Master of Science	X			24
Political Science	Doctor of Philosophy	X		*	*
	Master of Arts	X		*	24
	Master of Arts		X	*	30
Psychology	Doctor of Philosophy	X			*
	Master of Arts	X			24
	Master of Science	X			24

PROGRAM	DEGREE	Thesis Option	Non-thesis Option	Language Required	Credit Hours Required
Public Administration	Doctor of Philosophy	X			42
	Master of Health Administration		X		48
	Master of Public Administration		X		45
Public Health	Master of Science in Public Health	X			24
	Master of Science in Public Health		X		30
Radiation Sciences	Master of Science in Radiological Medical Physics		X		30
	Master of Science in Health Physics		X		30
Rehabilitation Counseling	Master of Rehabilitation Counseling		X		*
Social Work	Master of Social Work		X		54
Sociology	Doctor of Philosophy	X			*
	Master of Arts	X			24
	Master of Arts		X		30
	Master of Science in Agriculture	X			24
	Master of Science in Agriculture		X		36
Soil Science (Agronomy)	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science in Agriculture	X			24
	Master of Science in Agriculture		X		36
Spanish and Italian Languages and Literatures	Doctor of Philosophy	X		Two	*
	Master of Arts	X		One	24
	Master of Arts		X	One	30
Special Education	Doctor of Education	X			*
	Specialist in Education		X		30*
	Master of Arts in Education	X			24*
	Master of Arts in Education		X		30*
	Master of Science in Education	X			24*
	Master of Science in Education		X		30*
Statistics	Doctor of Philosophy	X			*
	Master of Science	X			29
	Master of Science		X		35
Theatre Arts	Master of Arts		X		30
Toxicology	Doctor of Philosophy	X			*
	Master of Science	X			24
	Master of Science		X		31
Veterinary Science	Doctor of Philosophy	X			*
	Master of Science	X			24
Vocational Education	Doctor of Education	X			42*
	Specialist in Education		X		30*
Business Education Distributive Education	Master of Arts in Education	X			24
	Master of Arts in Education		X		30
Agricultural Education Home Economics Education Industrial Education Vocational Education	Master of Science in Education	X			24
	Master of Science in Education		X		30

Programs and Directors of Graduate Studies

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Associate Dean for Research and Graduate Studies—James Boling

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Vincent Gallicchio

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Clinical Nutrition 62
Director of Graduate Studies—
Gilbert Boissonneault
Communication Disorders 64
Director of Graduate Studies—
Judith L. Page
Physical Therapy 93
Director of Graduate Studies—
A. Joseph Threlkeld
Radiation Sciences 99
Director of Graduate Studies—
Joseph Sayeg

COLLEGE OF ARTS AND SCIENCES

Dean—Richard Edwards
Associate Dean for Advanced Studies—
Kumble Subbaswamy

PROGRAMS

Anthropology 53
Chair—Susan Abbott-Jamieson
Director of Graduate Studies—
John van Willigen
Thomas H. Morgan School of Biological Sciences 55
Director—John M. Rawls, Jr.
Biology 56
Chair and Acting Director of Graduate Studies—John M. Rawls, Jr.
Chemistry 60
Chair—Robert Guthrie
Director of Graduate Studies—
James E. O'Reilly
Classical Languages and Literature 61
Chair—Jane E. Phillips
Director of Graduate Studies—Robert J. Rabel
Computer Science 64
Chair—Yuri Breitbart
Director of Graduate Studies—
Raphael A. Finkel
English 73
Chair—David Durant
Director of Graduate Studies—
Stephen Manning
French 75
Chair—Rupert Pickens
Director of Graduate Studies—
Raymond C. LaCharite
Geography 76
Chair—Richard Ulack
Director of Graduate Studies—John Pickles
Geology 77
Chair—William A. Thomas
Director of Graduate Studies—
Susan M. Rimmer
German 77
Chair—Phillip S. McKnight
Director of Graduate Studies—Bernd Kratz
History 79
Chair—George C. Herring
Director of Graduate Studies—
David E. Hamilton
Mathematics 83
Chair—James Wells
Director of Graduate Studies—
J. Brauch Fugate
Operations Research 91
Director of Graduate Studies—Carl Lee
Philosophy 93
Chair—Patricia Smith
Director of Graduate Studies—
Daniel H. Frank
Physics and Astronomy 94
Chair—Alan MacKellar
Director of Graduate Studies—
Jesse Weil
Plant Physiology 95
Director of Graduate Studies—
Arthur G. Hunt
Political Science 95
Acting Chair—Bradley C. Canon
Director of Graduate Studies—
Karen Mingst
Psychology 96
Chair—Michael Nietzel
Director of Graduate Studies—
Thomas R. Zentall
Russian and Eastern Studies 100
Chair—Roger Anderson
Sociology 101
Chair—James C. Hougland, Jr.
Director of Graduate Studies—
Ann R. Tickamyer
Spanish 102
Chair—Anibal A. Biglieri
Director of Graduate Studies—
Edward F. Stanton
Statistics 104
Chair—Richard Kryscio
Director of Graduate Studies—
William Griffith

COLLEGE OF BUSINESS AND ECONOMICS

Dean—Richard W. Furst
Associate Dean for Research and Graduate Studies—Donald Mullineaux

PROGRAMS

Accounting 49
Chair—Michael Tearney
Director of Graduate Studies—
William Ecton
Business Administration 57
Finance Chair —It-Keong Chew (Acting Chair)
Management Chair—James L. Gibson
Marketing Chair—Steven Skinner
Decision Science and Information Systems
Chair—James Marsden
Directors of Graduate Studies—
Donald Mullineaux (Ph.D.)
Dennis Officer (MBA)
Finance—It-Keong Chew
Management—Keith Provan
Marketing—Scott W. Kelley
Decision Science and
Information Systems—
Clyde Holsapple
Economics 68
Chair—William Stober
Director of Graduate Studies—
Richard A. Jensen

COLLEGE OF COMMUNICATIONS

Dean—Douglas Boyd

Communication 63
Chair–James Applegate
Director of Graduate Studies—
Roy Moore

COLLEGE OF DENTISTRY

Dean—David Nash
Associate Dean for Research and Graduate Studies—Gerald Roth

Dentistry 66
Director of Graduate Studies—
Gerald Roth

COLLEGE OF EDUCATION

Dean—J. John Harris, III

PROGRAMS

Administration and Supervision 50
Chair—Eddy VanMeter
Director of Graduate Studies—Susan J.Scollay
Curriculum and Instruction 65
Chairman—Peter N. Winograd
Director of Graduate Studies—
Ernest J. Middleton
Educational and Counseling Psychology 69
Chair—Emanuel Mason
Director of Graduate Studies—William Stilwell
Educational Policy Studies and Evaluation .. 70
Chair—Richard Angelo
Director of Graduate Studies—
Clinton Collins
Health, Physical Education, and Recreation 78
Chair—John Hall
Director of Graduate Studies—
Robert Shapiro
Rehabilitation Counseling 99
Director and Director of Graduate Studies—
Ralph Crystal
Special Education 103
Chair and Director of Graduate Studies—
William H. Berdine
Vocational Education 107
Chair and Director of Graduate
Studies—Clayton Omvig

COLLEGE OF ENGINEERING

Dean—Thomas W. Lester
Associate Dean for Research—John Walker

PROGRAMS

Agricultural Engineering 51
Chair—I. J. Ross
Director of Graduate Studies—Linus Walton
Chemical Engineering 59
Chair—Charles E. Hamrin, Jr.
Director of Graduate Studies—
R. I. Kermode
Civil Engineering 60
Chair—Donn E. Hancher
Director of Graduate Studies—
Shien T. Wang
Electrical Engineering 72
Chair—S. A. Nasar
Director of Graduate Studies—
Bruce L. Walcott
Engineering Mechanics 72
Chair—T. R. Tauchert
Director of Graduate Studies—
Wei-Yang Lu
Materials Science and Engineering 82
Chair—Phillip Reucroft
Director of Graduate Studies—
Lynn S. Penn
Mechanical Engineering 84
Chair—Andrew Seybert
Director of Graduate Studies—
Kaveh Tagavi
Mining Engineering 85
Chair and Director of Graduate Studies—
Lee Saperstein

COLLEGE OF FINE ARTS

Dean—Rhoda-Gale Pollack
Associate Dean for Research—Mina Miller

PROGRAMS

Art 54
Chair—R. James Foose
Directors of Graduate Studies—
Arthur F. Jones, Art History
George Szekely, Art Education
Marilyn Hamann, Art Studio
School of Music 86
Director—W. Harry Clarke
Director of Graduate Studies—
Jonathan Glixon
Theatre Arts 106
Chair—Geraldine Maschio
Director of Graduate Studies—
James W. Rodgers

COLLEGE OF HUMAN ENVIRONMENTAL SCIENCES

Dean—Peggy Meszaros
Associate Dean for Research and Graduate Education—Claudia Peck

PROGRAMS

Family Studies 74
Chair—Gregory Brock
Director of Graduate Studies—
Mary E. Edmondson
Human Environment: Design and Textiles .. 81
Chair—Terry Rothgeb
Director of Graduate Studies—
Elizabeth P. Easter
Nutrition and Food Science 90
Chair—L. Preston Mercer
Director of Graduate Studies—
Howard P. Glauert

COLLEGE OF LIBRARY SCIENCE

Dean—Thomas J. Waldhart

Library Science 82
Director of Graduate Studies—
Thomas J. Waldhart

COLLEGE OF MEDICINE

Dean—Emery A. Wilson

PROGRAMS

Anatomy 52
Chair—M. B. Nikitovitch-Winer
Director of Graduate Studies—
John Porter
Behavioral Science 55
Chair and Acting Director of Graduate
Studies—Thomas Garrity
Biochemistry 55
Chair—Thomas Vanaman
Director of Graduate Studies—
S.K. Chan
Microbiology 84
Chair—Alan M. Kaplan
Director of Graduate Studies—
E. Charles Snow
Pathology 93
Chair—Deborah E. Powell
Pharmacology 92
Chair—Philip Landfield
Director of Graduate Studies—John Carney
Physiology 94
Acting Chair—David R. Wekstein
Director of Graduate Studies—
Brian A. Jackson
Preventive Medicine 98
Chair and Director of Graduate Studies—
Arthur Frank
Radiation Medicine 100
Chair—Yosh Maruyama

COLLEGE OF NURSING

Dean—Carolyn Williams
Associate Dean for Research
and Graduate Studies–Margaret Grier

Nursing 89
Director of Graduate Studies—
Margaret Grier

COLLEGE OF PHARMACY

Dean—Jordan Cohen
Associate Dean for Research and Graduate Studies—Patrick J. McNamara

Pharmaceutical Sciences 92
Director of Graduate Studies–
Patrick J. McNamara

COLLEGE OF SOCIAL WORK

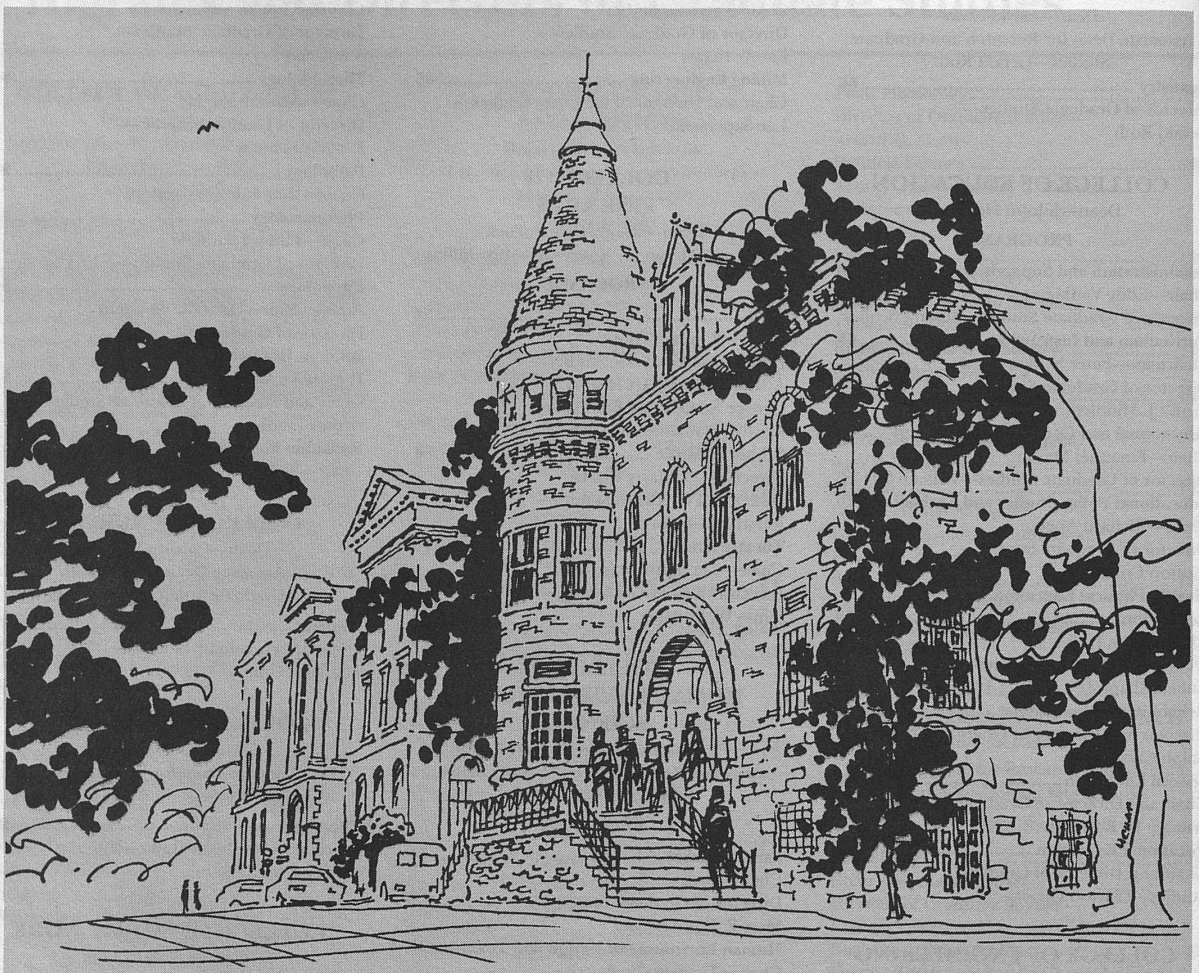
Dean—S. Zafar Hasan

Social Work 100
Director of Graduate Studies—
Constance Wilson

THE GRADUATE SCHOOL

Dean–Daniel R. Reedy

Biomedical Engineering 56
Director—Charles Knapp
Director of Graduate Studies—
Stephen J. Lai-Fook
Diplomacy and International Commerce 67
Acting Director and Director of Graduate
Studies—John Stempel
Nutritional Sciences 90
Director and Director of Graduate Studies—
Linda Chen
Public Administration 97
Director—William E. Lyons
Directors of Graduate Studies—
William E. Lyons, (Ph.D)
Edward Jennings (MPA)
James D. Suver (MHA) 78
Toxicology 106
Director and Director of Graduate Studies—
Thomas Tobin



The Graduate School Staff Directory

Daniel R. Reedy, Dean	(606) 257-1759
Melanie Collins	(606) 257-5093
Joyce McGill	(606) 257-1759
Fellowship Office	
Carole Bland, Assistant Dean	(606) 257-3261
Lottie Hammonds	(606) 257-3261
Theresa Yocum	(606) 257-3261
Admissions and Records	
Constance L. Wood, Associate Dean	(606) 257-4905
Judith Gardner, Academic Coordinator	(606) 257-4905
Sheila Day-Goodwin	(606) 257-4905
Admissions-Domestic	
Betty Floyd (A-G)	(606) 257-7129
Beverly Garner (H-O)	(606) 257-4618
Bonnie Sapp (P-Z)	(606) 257-4619
International Admissions	
Sue Slone (A-Ma)	(606) 257-4615
June Starns (Mb-Z)	(606) 257-4610
Extended Campus Programs	
Edgar Sagan, Director	(606) 257-2411
Sandy Irving	(606) 257-2411
Records	
Kaye McDaniel	(606) 257-4613
Nancy McDuffie (Final Examinations and Certification of Degrees)	(606) 257-4614
Data Processing and Mail Center	
Deborah Price	(606) 257-4617
Ellen VanHoose	(606) 257-4617
Northern Kentucky University/ University of Kentucky Graduate Center, Highland Heights, KY	
Peg Griffin	(606) 572-6370
Fiscal Affairs	
Marti Sale	(606) 257-4121

The Graduate School Programs

The course listings in The Graduate School Bulletin include all courses approved through April 30, 1992.

GS 600 Special Topical Graduate Course (1-3) 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.

School of Accountancy

Graduate Faculty: Professors William W. Ecton, James A. Knoblett, Donald L. Madden, Michael Tearney, and Relmond P. VanDaniker. Associate Professors Myrtle W. Clark, Daniel L. Fulks, James R. Holmes, Stuart Keller, C. Douglas Poe and Thomas Pope.

Associate Members: Assistant Professors J. Gregory Bushong, Jean C. Cooper, Barbara W. Scofield and Ralph E. Viator.

Master of Science in Accountancy

Plan A:

The Master of Science in Plan A is primarily for students who wish to have a program of advanced study in accounting. This program provides adequate preparation for employment in public accounting, business, government and other organizations, or for initial employment as an instructor at the college level. The program can be structured to prepare a student for further graduate work in related fields. Specifically, the program's objectives are to:

1. Develop the ability to carry out significant research and communicate results thereof.
2. Provide for greater concentration in a selected area of accounting.
3. Expand the student's knowledge of accounting theory, the significance of professional literature, and controversial concepts at an advanced level.
4. Further the student's understanding of the close relationship between accounting and other fields of business and between accounting and disciplines outside the business area.
5. Provide the opportunity to study in an area (or areas) outside the business fields, when such study is consistent with the student's educational needs and objectives.

Requirements

1. Graduate study in accounting presumes a minimum preparation of 30 hours in business and economics, including the completion of the following basic courses (examples of acceptable courses at the University of Kentucky are given in parentheses):

Principles of Economics (ECO 201, ECO202)
Principles of Accounting (ACC 201, ACC 202)
Statistical Method (STA 291, ECO 391)
Management (MGT 301)
Finance (FIN 300)
Marketing (MKT 300)
Strategic Management (MGT 499)
Business Law (MGT 340)

Prerequisites to graduate study in accounting include courses in intermediate accounting, managerial accounting, tax accounting, auditing, and systems.

2. The Graduate Management Admission Test (GMAT) must be taken prior to being admitted.

3. A minimum of 30 semester hours must be presented in courses carrying graduate credit. At least 20 semester hours must be in courses reserved exclusively for graduate students and at least 15 of these must be in accounting.

4. The course requirements are:

a. One course in each of the following fields:
Advanced Managerial Accounting
Income Taxation
Accounting Theory
Attest Function
One additional accounting course at the 600 level.
b. At least six semester hours of graduate credit outside the Department of Accounting, three of which must be production related.
c. A course in Computer Science or Data Processing.
d. The candidate must submit evidence of competence in statistics at the graduate level.

5. Minimal average of grade B in all courses attempted for graduate credit after being admitted to The Graduate School. A minimal average of grade B must similarly be achieved for all accounting courses attempted after being admitted to The Graduate School. Students obtaining two grades of C below a B average will be dropped by the School of Accountancy.

6. Successful completion of a comprehensive examination.

Note: Students interested in the five-year degree program in Accounting should consult the Director of Graduate Studies for specific information.

Master of Science in Accountancy--Five Year Program

Plan B:

This program was developed in response to the belief that the traditional baccalaureate program no longer provided the level of training and proficiency required for entry into the profession. As the admissions and retention standards indicate, students must apply for admission during the second semester, junior year and to The Graduate School prior to the beginning of the second semester, senior year, and complete the 150 semester-hour requirement. Because the program is highly structured, interested students are encouraged to (a) familiarize themselves with its requirements as early as their sophomore year so that they may plan their course work accordingly, and (b) consult with the School's Director of Graduate Studies as to class schedules each semester.

The program facilitates specialization in the areas of auditing, taxation, not-for-profit, financial, managerial, and accounting-based management information and analytical systems.

Upon completion of the program, both a bachelor's and a master's degree will be awarded.

Admission Requirements and Retention Standards

1. Application for admission into the professional program must be made during the first four weeks of the second semester, junior year.

2. Applicants shall have: (a) completed the general education component of the curriculum plus ACC 301 and ACC 408 or ACC 324; and (b) earned the following GPA:

Overall	3.00
Accounting	3.25

3. Students must be admitted to The Graduate School prior to the beginning of the second semester, senior year. To be admitted, students must have at least 1,100 points based on the following formula: 200 times upper division GPA plus the total GMAT score.

Retention Standards

Retention in the professional program requires that a student maintain a 3.0 GPA in all hours attempted throughout the five year program. The faculty will assess each student's progress after the first semester and advise the student whether he/she should continue in the professional program or change to the four-year program.

Curriculum Requirements

GENERAL EDUCATION

General Education Component 0-9
Mathematics 109 or a score > 25 on ACT
Foreign Language or 2 years of high school preparation.

Inference and Communications 10-15
English 101 and 102 or 105
Communications 181 or 287
Mathematics 123 and 162 or 113

Disciplinary Requirements 18
Natural Science (6 hours)
Social Science (Economics 201 & Political Science 101 recommended)
Humanities (HIS 108 and 109 recommended)

Cross-disciplinary Requirements (Communications 325 and Sociology 342)

Cross-cultural Requirement 3

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PRE-MAJOR REQUIREMENTS

Accounting 201 AND 202 6
Economics 202 3
Computer Science 101 3
Professional Ethics (Philosophy 330) 3
Statistics 291 3

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COLLEGE CORE REQUIREMENTS

Marketing 300 3
Management 301 3
Management 499 3
Finance 300 3
Management 340 3
Economics 485G 3
Quantitative Analysis (DIS 300)
Economics 391 (Economics and Business Statistics) 3

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ADDITIONAL PROGRAM REQUIREMENTS

Legal and Social Environment (MGT 341 and 441) 6
Computer Science (CS121) 4
Organizational Behavior (MGT 410) or Financial Decisions (FIN 445) 3
Management Information Systems (DIS 620) 3
Managerial Economics (ECO 610) 3
English 203 3
Electives 3

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ACCOUNTANCY REQUIREMENTS

Financial (ACC 301, 302 and 601) 9
Managerial (ACC 408G and 608) 6
Taxation (ACC 417G and 577 or 617) 6
Attestation (ACC 403G and 503 or 603 6
Systems (ACC 324 and 524 or 624) 6
Professional Issues (ACC 611) 3
Electives 6

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NOTE: A minimum of 150 semester hours are required for the Master of Science in Accountancy Degree. Thirty semester hours must be taken in courses carrying graduate credit. Of these thirty hours, twenty must be taken in courses reserved exclusively for graduate students, and fifteen of the twenty must be in Accountancy.

401G Accounting Theory ..... (3)
403G Auditing ..... (3)
408G Cost Accounting ..... (3)
410G Not-For-Profit Accounting ..... (3)
416G Accounting for Business Combinations .... (3)
417G Income Taxation ..... (3)
503 Advanced Auditing ..... (3)
518 Controllership ..... (3)
524 Advanced Accounting Information Systems ..... (3)
547 State and Local Tax Accounting ..... (2)
577 Taxation of Entities ..... (3)
601 Research in Accounting Theory ..... (3)
603 Attest Function ..... (3)
608 Advanced Managerial Accounting ..... (3)
610 Not-For-Profit and Regulatory Accounting (3)
611 Professional Issues in Accounting ..... (3)
615 Advanced Professional Problems ..... (3)
617 Income Tax Development ..... (3)
619 Independent Study in Accounting ..... (1-3)
624 Accountametrics ..... (3)
627 Corporate Taxation ..... (3)
628 Financial/Managerial Accounting ..... (3)
637 Taxation of Partnerships and Partners ..... (3)
647 Taxation of Estates, Gifts, and Trusts ..... (3)
700 Seminar in Accountancy ..... (3)
701 Seminar in Financial Accounting ..... (3)
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 Fenwick English, J. John Harris III and Eddy VanMeter. Associate Professors Susan Scollay and Betty Steffy.

Associate Members: Assistant Professors Patricia Dardaine-Ragguet, Richard Donelan, Jane Lindle, James S. Rinehart, Charles J. Russo and Ronald L. Threadgill

Emeritus Professors: Fred Edmonds, Charles Faber, James Kincheloe James Ogletree and Paul Street.

The Department of Administration and Supervision offers a program leading to the Specialist in Education (Ed.S.) degree. In cooperation with the Department of Curriculum and Instruction, it offers a program in Instruction and Administration leading to 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.

Course work for the Ed.D. in Instruction and Administration will consist of a minimum of 42 graduate credits beyond the master's (or equivalent) planned by the Major Professor and Advisory Committee based on the student's background, needs, and goals. All course work plans include work in the following:

a) Instruction and Administration
b) support work in education,
c) research tool courses (minimum of 9 semester hours required) and
d) support work outside of education.

For more information regarding the nature of the program, check with the Director of Graduate Studies of the respective department.

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. Instructional Leadership: Supervisor of Instruction, Grades K-12
3. Instructional Leadership: Secondary Principal, Grades 9-12
4. Instructional Leadership: Middle School Principal, Grades 5-8
5. Instructional Leadership: Early Elementary Principal, Grades K-4

All certification programs require that the candidate must have earned a master's degree in an appropriate teaching field prior to being admitted to 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.

Internships for graduate students can be arranged with public school systems and other educational agencies.

A limited number of graduate assistantships 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 Certificate and Rank I Programs
3. Requirements for the Specialist in Education degree
4. Information on Doctoral Study in Instruction and Administration.

600 Organization and Administration of American Education ..... (3)
601 Administration of Educational Organizations ..... (3)
603 Constitutional and Legal Basis of Public School Administration ..... (3)
604 School Buildings and Equipment ..... (3)
605 School Law for Teachers ..... (3)
608 Internship in Educational Administration 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)
641 Organization And Administration of School Community Relations ..... (3)
642 Microcomputer Applications in Administration ..... (3)
649 The School Superintendency ..... (3)

749 Dissertation Research ..... (0)
769 Residence Credit for the Doctor's Degree ..... (0-12)
771 Seminar in Administration ..... (1-3)
785 Independent Work in School Administration ..... (3)
792 Research in Educational Administration and Supervision ..... (3)

Agricultural Economics

Graduate Faculty: Professors Kurt R. Anschel, Robert D. Beck, Russell H. Brannon, Joe T. Davis, David L. Debertin, Harry Hall, Larry D. Jones, Angelos Pagoulatos, Michael R. Reed, and Jerry Skees. Associate Professors: Barry W. Bobst, David Freshwater and Loys L. Mather.

Associate Members: Professors Fred J. Benson, Craig Infanger, Harold Love and Steven K. Riggins. Associate Professors: A. Lee Meyer, Forrest E. Stegelin.and Lionel Williamson. Assistant Professors: Stephen Goetz, Mary Marchant, Richard Ready and William Snell.

Joint Appointments: Associate Professors Sun J. Chang and Donald H. Graves

Emeritus Professors: Dana Card, Fred E. Justus, Robert Rudd, D. Milton Shuffett.and Eldon D. Smith.

The Department of Agricultural Economics provides programs leading to the degrees of Master of Science, Master of Science in Agriculture and the Doctor of Philosophy. Graduate Faculty in the department provide for areas of emphasis in agricultural policy, price analysis, agricultural marketing, farm management, development, resource and production economics. Students must complete a core of courses in agricultural economics, economics and statistics.

The master's program is offered in either Plan A or Plan B. The thesis option (Plan A) requires a minimum of 24 hours of graduate credit and a research thesis. Plan B requires a minimum of 36 hours of graduate level credit. A final oral examination covering course work and the thesis (for students in Plan A) is also required.

In addition to the course work requirements, students in the Ph.D. program are required to take a comprehensive examination in microeconomics and macroeconomics administered by the Department of Economics. In addition students must complete qualifying examinations within the Department of Agricultural Economics in the areas of methods and methodology, conceptual analysis of current issues and a specialized field of study. The ability to conduct original research in agricultural economics, documented through the completion of a dissertation, is also required.

Graduate students have considerable flexibility to structure their program with respect to course work and research topics consistent with individual interests. Each student has a major professor and an advisory committee to assist in course work selection and in the thesis and dissertation research.

Students holding degrees in agricultural economics are employed by academic institutions; local, state, and federal agencies that deal with agriculture; private firms in the agricultural and business sectors; and agencies and governments of foreign countries. These agricultural economists conduct research, develop extension services, teach classes, and serve as managers and administrators in various types of firms and agencies.

A graduate handbook is available which provides information regarding program content, degree options and available financial assistance. Send request to:

Director of Graduate Studies
Department of Agricultural Economics
310 Agricultural Engineering Building
University of Kentucky
Lexington, KY 40506-0276

441G Agricultural Financial Management ..... (3)
445G Introduction to Resource and and Environmental Economics ..... (3)
501 Agricultural Market Organization and Performance ..... (3)
502 Advanced Farm Management ..... (3)
503 Economics of Agricultural Production and Resource Allocation ..... (3)
516 Rural Real Estate Appraisal ..... (3)
522 Cooperatives in Agribusiness ..... (3)
531 Agricultural Price Analysis ..... (3)
532 Agricultural and Food Policy ..... (3)
533 Distribution Management in Agribusiness .... (3)
545 Natural Resource and Environmental Economics ..... (3)
580 Special Problems in Agricultural Economics ..... (1-3)
590 Introduction to Quantitative Economics I .... (3)
606 Advanced Agricultural Marketing ..... (3)
610 International Trade in Agricultural Products ..... (3)
620 Advanced Production Economics I ..... (3)
621 Advanced Production Economics II ..... (3)
624 Advanced Quantitative Methods in Agricultural Economics ..... (3)
626 Agriculture and Economic Development .. (3)
627 Project Analysis for Rural Development ... (3)
640 Advanced Agricultural Policy ..... (3)
645 Natural Resource Economics ..... (3)
646 Intertemporal Allocation of Natural Resources ..... (3)
650 Advanced Agricultural Prices ..... (3)
660 Research Methods in Agricultural Economics ..... (3)
661 Programming Models in Agricultural Economics ..... (3)
662 Quantitative Methods in Renewable Resource Management ..... (3)
670 Agribusiness Master's Seminar ..... (3)
691 Structure of U.S. Agriculture ..... (3)
699 Experiential Learning in Agricultural Economics ..... (1-6)
749 Dissertation Research ..... (0)
768 Residence Credit for Master's Degree ... (1-6)
769 Residence Credit for Doctor's Degree .... (0-12)
770 Agricultural Economic Seminars ..... (0)
780 Special Problems in Agricultural Economics ..... (1-3)
796 Seminar (Subtitle Required) ..... (3)

Agricultural Engineering

Graduate Faculty: Professors Billy Barfield, Blaine Parker, Joe Ross, John Walker, Linus Walton, Larry G. Wells and Gerald White. Associate Professors Donald G. Colliver, Richard S. Gates and Frederick Payne.

Associate Members: Professors George Duncan and Robert Fehr. Associate Professors Joseph Taraba, Larry Turner, and Richard Warner. Assistant Professors: Gary K. Felton, William Eugene Murphy and Scott A. Shearer.

Emeritus Professor: Edward Smith.

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 department normally requires a grade point average of 2.8/4.0 for admission to its graduate program.

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

1. The ability to plan and conduct research and design involving the application of the engineering science to biological and agricultural systems.
2. The understanding of the math ematical, physical, and biological sciences to permit the reading and understanding of the present and future literature in these and related fields.
3. The skills required to use precision instruments, techniques and com puters in research and design.
4. The ability to make sound engineering and management decisions.
5. 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.

406G Physics of Plant and Animal Environment .... (3)
417G Introduction to Design of Agricultural Machinery ..... (3)
435G Waste Management for Biosystems ..... (3)
438G Fundamentals of Groundwater Hydrology ... (3)
480G Thermal Environmental Engineering ..... (3)
505 Engineering Analysis ..... (3)
513 Soil Dynamics in Tillage and Traction ..... (3)
515 Fluid Power Systems ..... (3)
536 Fluvial Hydraulics ..... (3)
537 Irrigation and Drainage Engineering ..... (3)
545 Engineering Hydraulics ..... (3)
549 Food and Bioprocess Engineering ..... (3)
550 Analysis and Simulation of Agricultural, Biological and Industrial Systems ..... (3)
556 Solid and Hazardous Waste Management .... (3)
569 Water Resources System Design ..... (4)
599 Topics in Agricultural Engineering ..... (2-3)

606 Micrometeorology and Atmospheric Transport ..... (3)
618 Advanced Plant, Soil, and Machinery Relationships ..... (3)
628 Advanced Design of Structures for Biological Systems ..... (3)
638 Groundwater Hydrology ..... (3)
642 Open Channel Flow ..... (3)
648 Energy and Mass Transfer in Agricultural Processing ..... (3)
653 Water Quality in Surface Waters ..... (3)
658 Instrumentation for Engineering Research .. (3)
660 Similitude in Engineering ..... (3)
661 Advanced Hydrology ..... (3)
665 Water Resources Systems ..... (3)
667 Stormwater Modeling ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
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 ..... (0)
795 Thesis ..... (0)
EGR 537 Numerical Analysis ..... (3)
EGR 599 Topics in Engineering (Subtitle Required) ..... (1-3)
EGR 611 Boundary Element Methods in Engineering ..... (3)
EGR 621 Finite Element Analysis in Engineering (3)
EGR 622 Advanced Finite Element Analysis in Engineering ..... (3)
EGR 680 Engineering Applications of Stochastic Differential Equations ..... (3)
EGR 780 Topics in Engineering (Subtitle Required) ..... (1-3)

Agronomy

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

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

Anatomy

Graduate Faculty: Professors Peter P. Bosomworth, Stephen W. Scheff, Stephen D. Smith, Harold H. Traurig and Miroslava Nikitovitch-Winer. Associate Professors Lothar H. Jennes, Brian R. MacPherson, Bruce Maley, John Porter, and Betty Sisken.

Associate Members: Assistant Professors Kathryn M. Albers, Sonia L. Carlson, Thomas E. Curry, Brian M. Davis, Marilyn J. Duncan, James W. Geddes, Kurt Hauser, James P. Herman, James Hyde, Mark Mattson, Kim B. Seroogy, Robert E. Watson and David M. Yurek.

Emeritus Professors: William B. Cotter and William K. Elwood.

Joint Appointments: Professor William R. Markesbery.

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 advanced 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 areas of specialization in gross human anatomy, microscopic human anatomy, ultrastructure, embryology, endocrinology, genetics, neuroscience, and respiratory biology. 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 Graduate 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 and Neurobiology.

503 Independent Work in Anatomy ..... (3)
511 Introduction to Human Anatomy ..... (5)
512 Microscopy and Ultrastructure ..... (4)
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 Human Anatomy ..... (2)
534 Anatomy of the Human Head and Neck ... (3)
536 Human Embryology, an Abbreviated Course ..... (1)
538 Human Neuroanatomy, an Abbreviated Course ..... (1)
600 Seminar in Anatomy ..... (1)
605 Contemporary Neurosciences ..... (3)
611 Regional Human Anatomy ..... (8)
629 Techniques of Anatomical Research ..... (2)
631 Advanced Human Anatomy ..... (3-5)
633 Advanced Developmental Anatomy ..... (2-5)
634 Advanced Endocrinology ..... (2-5)
636 Advanced Neuroanatomy ..... (3-5)
662 Ultrastructural Anatomy ..... (2-5)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for Master's Degree ... (1-6)
769 Residence Credit for Doctor's Degree . (0-12)
790 Research in Anatomy ..... (1-12)

Animal Sciences

Graduate Faculty: Professors James Boling, Neil Bradley, Gary Cromwell, Donald Ely, Robert J. Harmon, Virgil Hays, Roger Hemken, Clair L. Hicks, Bruce Langlois, Oran Little, George Mitchell, William Moody, Frederick Thrift, Ray E. Tucker and P.M. Zavos. Associate Professors Debra K. Aaron, Austin H. Cantor, Karl A. Dawson, Lee Edgerton, David L. Harmon and Keith Schillo, .

Associate Members: Professor Nelson Gay. Associate Professors James Jackson and Joseph O'Leary. Assistant Professors Eric Decker, Herbert J. Strobel and Youling L. Xiong.

Emeritus Professors: John Baker, Charles Barnhart, Ray Dutt, T.R. Freeman, Nelson Gay, James Kemp, Donald MacLaury, Durward Olds, Dwight Seath, and Patch Woolfolk.

The degrees of Master of Science, Master of Science in Agriculture (Plan A and Plan B are available) and Doctor of Philosophy are available in the animal sciences. Programs in Animal Sciences are divided into the disciplinary areas of animal nutrition, animal breeding and physiology of reproduction, genetics and physiology. Special interests in beef cattle, dairy cattle, horses, poultry, sheep and swine may be pursued within these areas. Programs in food science offer specialization in meats, muscle biology, dairy technology, anaerobic microbiology, and food microbiology.

Candidates for the Ph.D. degree are required 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.

ASC 400G Special Topics in Animal Science/Food Science ..... (1-3)
ASC 404G Sheep Science ..... (4)
ASC 406G Beef Cattle Science ..... (3)
ASC 408G Swine Science ..... (3)
ASC 410G Horse Sciences ..... (3)
ASC 412G Horse Husbandry Practices ..... (3)
ASC 420G Dairy Cattle Science ..... (3)
ASC 442G Poultry Science ..... (3)
ASC 462G Artificial Insemination and Fertility of Farm Animals ..... (2)
ASC 562 Advanced Genetics ..... (3)
ASC 564 Milk Secretion ..... (3)
ASC 580 Principles of Animal Nutrition ..... (3)
ASC 601 Mammalian Endocrinology ..... (3)
ASC 630 Advanced Meat Science ..... (4)
ASC 660 Physiology of Reproduction ..... (3)
ASC 662 Population Genetics ..... (3)
ASC 664 Advanced Animal Breeding ..... (3)
ASC 680 Laboratory Methods in Nutritional Sciences ..... (4)
ASC 681 Energy Metabolism ..... (2)
ASC 682 Microbial Ecology of Digestion ..... (4)
ASC 683 Protein Metabolism ..... (2)
ASC 684 Advanced Ruminant Nutrition ..... (3)
ASC 685 Mineral Metabolism ..... (2)
ASC 686 Advanced Nonruminant Nutrition ..... (3)
ASC 687 Vitamin Metabolism ..... (2)
ASC 688 Equine Nutrition ..... (2)
ASC 748 Master's Thesis Research ..... (0)
ASC 749 Dissertation Research ..... (0)
ASC 768 Residence Credit for the Master's Degree ..... (1-6)
ASC 769 Residence Credit for the Doctor's Degree ..... (0-12)
ASC 771 Animal Science Seminar ..... (1)
ASC 780 Special Problems in Animal Derived Foods ..... (1-4)
ASC 781 Special Problems in Genetics and Animal Breeding ..... (1-4)
ASC 782 Special Problems in Animal Nutrition ..... (1-4)
ASC 783 Special Problems in Reproductive Physiology (Subtitle Required) ..... (1-4)
ASC 790 Research in Animal Derived Foods .. (1-6)

ASC 791	Research in Genetics and Animal Breeding	(1-6)
ASC 792	Research in Animal Nutrition	(1-6)
ASC 793	Research in Reproductive Physiology (Subtitle Required)	(1-6)
FSC 400G	Special Topics in Animal Science /Food Science	(1-3)
FSC 430G	Sensory Evaluation of Foods	(3)
FSC 434G	Food Chemistry	(4)
FSC 530	Food Microbiology	(5)
FSC 535	Chemical Analysis of Foods	(4)
FSC 536	Food Processing	(4)
FSC 538	Food Fermentation and Thermal Processing	(4)
FSC 540	Food Sanitation	(3)
FSC 630	Advanced Meat Science	(4)
FSC 632	Foodborne Disease Agents	(3)
FSC 636	Food Packaging	(2)
FSC 780	Special Problems in Animal Derived Foods	(1-4)
FSC 790	Research in Animal Derived Foods	(1-6)

Anthropology

Graduate Faculty: Professors Billie R. Dewalt, Kathleen Dewalt, Tom D. Dillehay, Art Gallaher, Kenneth Hirth, Donald Hochstrasser, and John van Willigen. Associate Professors Susan Abbott-Jamieson, Sara A. Quandt, and H. Jean Wiese.

Associate Members: Assistant Professors Lee Blonder,.Thomas Hakansson, Charles Hofling, Bryan Johnson, Della McMillan, and Endre Nyerges.

Adjunct Members: Associate Professors Thomas Arcury and Rudolf Berle Clay. Assistant Professors Richard W. Jefferies, Kim McBride, Mary Powell, and Margaret Scarry.

Joint Appointment: Professors C. Milton Coughenour.and Carolyn P. Edwards.

Emeritus Professor: William Adams and Margaret Lautis.

The Department of Anthropology offers courses and research areas leading to the Ph.D. degree in the areas of applied social anthropology, archaeology, and ethnology. The applied social anthropology program offers specialization in developmental change and medical anthropology. The department offers two M.A. areas of specialization: a general anthropology degree (Plan A) certifying a broad background in anthropology, plus research competence in the collection and processing of primary data, and a non-thesis anthropology degree (Plan B) which permits more course work outside the department. The Plan A program requires a thesis and the Plan B program requires a practicum.

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 which include proseminars in each of the four subdisciplines of anthropology, a course in statistics, a course in the history of theory, and reading knowledge of one foreign language. Students who (1) excel in this program and (2) demonstrate satisfactory research competence, may petition to by-pass the master's thesis.

The Ph.D. course of study is individually planned for each student and depends on the student's interests, and the student's advisory committee's judgment of a student's needs. The student must pass a Ph.D. Qualifying Examination consisting of four days of written examinations and an oral examination. A dissertation based on original research carried out by the student is required, and a final oral examination is given based on the dissertation research. The program also requires (1) a reading knowledge of two foreign languages, or 2) a high degree of proficiency in reading, writing and speaking one foreign language. The second foreign language in option 1 may be replaced with any one of the following: 1) facility in a programming language (e.g., PL1, Fortran), 2) competence in the use of statistics and/or mathematics in anthropology, and 3) competence in linguistics sufficient to allow field work using an unwritten 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: South Asia, North Africa and the Near East, East Africa, West Africa, Europe, Latin America, and North America. Several members of the faculty have expertise in the study of rural English-speaking subcultures, including Appalachia.

The department participates in interdisciplinary research in the University's Center for Developmental Change, in the Sanders-Brown Center on Aging, in the College of Agriculture and in the College of Medicine. The Department of Behavioral Science, College of Medicine, includes anthropologists on its staff, and students with interests in medical anthropology are encouraged to take behavioral science courses. The Department of Psychiatry provides additional opportunities for students with appropriate interests. There are also anthropologists in the College of Allied Health 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 Director of Graduate Studies, Department of Anthropology, for additional information on departmental requirements and opportunities for financial assistance.

410G	Theoretical Perspectives in Anthropology	(3)
420G	Contemporary Latin American Culture	(3)
428G	Contemporary Cultures and Societies in Southeast Asia	(3)
430G	Comparative Religious Systems	(3)
431G	Cultures and Societies of Sub-Saharan Africa	(3)
450G	Symbols and Culture	(3)
470G	Regional American Ethnography	(3)
505	Ethnohistory of the Native American Southeast	(3)
510	History of Anthropological Theory	(3)
515	Phonological Analysis	(3)
516	Grammatical Analysis	(3)
518	Language in Culture	(3)
519	Historical Linguistics	(3)
524	Mythology	(3)
525	Applied Anthropology	(3)
526	Psychological Anthropology	(3)
527	Children and Family in Appalachia	(3)
528	Dimensions of Aging	(3)
529	Survey of Medical Anthropology	(3)
532	Legal and Political Anthropology	(3)
533	Social Anthropology	(3)
534	The Southern Appalachians: A Sociological Interpretation	(3)
536	Peasant Societies	(3)
538	Economic Anthropology	(3)
539	Aging in Cross-Cultural Perspective	(3)
540	The History of Archaeology	(3)
541	Archaeological Theory and Method	(3)
542	North American Archaeology	(3)
550	Field Studies in Anthropology	(1-6)
555	Eastern North American Archaeology	(3)
560	Ethnographic Research Methods	(3)
580	Topics in Anthropology	(3)
581	Independent Work in Anthropology	(1-4)
582	Senior Integrative Seminar	(3)
585	Field Laboratory in Archaeological Research	(3-6)
605	Research Design	(3)
611	Seminar in Ethnology	(3)
612	Seminar in Culture History	(3)
613	Seminar in Physical Anthropology	(3)
614	Seminar in Anthropology Linguistics	(3)
620	Topics and Methods of Evaluation	(3)
621	Advanced Topics and Methods of Evaluation	(3)
637	Sociocultural Dimensions of Economic Development	(3)
640	Science, Agriculture, and Development	(3)
641	Gender Issues In Development	(3)
664	Cultural Issues in Mental Illness	(3)
670	Seminar on Role Theory	(3)
684	Farming Systems Research Methods	(3)
690	Advanced Pre-Field Study Seminar	(3)
691	Cultural Resource Management Clerkship	(1-3)
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	(3)
741	Seminar in Regional Archaeology	(3)
742	Advanced Seminar in Culture History	(3)
748	Master's Thesis Research	(0)
749	Dissertation Research	(0)
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	(0-12)
770	Seminar	(3)
774	Behavioral and Ecological Aspects of Human Nutrition	(3)
790	Research Problems in Anthropology	(1-6)

Art

Graduate Faculty: Professors Georgia Collins, Arturo A. Sandoval and John Tuska. Associate Professors Dennis Carpenter, Donald H. Hoffman, Gerald Ferstman, Deborah Frederick, Marilyn Hamann, Christine Havice, Arthur Jones, Jane S. Peters, George Szekely, and Robert Tharsing.

Associate Members: Assistant Professors Garry Bibbs, Patricia Condon, Robert Scroggins, Melanie Walker, and Teresa Unseld.

Emeritus Professor: Clifford Amyx and Elizabeth Finkenstaedt.

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 an area of specialization in each. Studio degree recipients are awarded the M.F.A.

Master of Arts

Area of Specialization 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 (no less than 18 hours of art history and 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.

Area of Specialization 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 an area of specialization 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 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.

Master of Fine Arts

Application for admission to graduate work leading to the degree Master of Fine Arts (MFA), including application for graduate assistantships, must be accompanied by a portfolio of recent studio work in the form of at least twenty 35mm slides of such work. This work must be submitted to the Art Department by March 15. 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 MFA degree will be awarded on the completion of sixty (60) hours of graduate course work. Of these, thirty hours must be at or above the 600 level and forty hours must be in regular courses (not independent study). In addition, the sixty credit hours will include thirty to thirty-six credit hours in Art Studio courses (including Graduate Studio Seminar and Studio Thesis Project), six to twelve credit hours in Art History and/or Art Education (a total of twenty-four credit hours or undergraduate and graduate Art History study is required), and up to eighteen credit hours in related graduate courses which may be taken outside the Department of Art in the College of Fine Arts or elsewhere in the University.

Students must also complete successfully a final one-person MFA exhibition of studio work and a visual documentation of that work together with an explanatory essay which is to be filed with the department prior to the exhibition. A total of six credits of A-S 767 (Studio Thesis Project) is required for the preparation of the exhibition and essay. Work toward the one-person exhibition will begin at a time determined by the department.

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 twelve hours in that area under the guidance of one professor selected as an adviser. A foreign language is not required, and the MFA degree is offered only according to Plan B.

Candidates for the MFA degree who hold an MA degree in studio work from another school will be required to complete a year's residence and eighteen credit hours of graduate work at the University of Kentucky, including two semesters of Graduate Studio Seminar and all other requirements for the degree. Total hours toward the MFA degree must equal sixty credit hours of graduate work.

ART	501	Basic Museum Training: Historical Art	(3)
ART	502	Basic Museum Training: Contemporary Art	(3)
ART	748	Master's Thesis Research	(0)
ART	768	Residence Credit for Master's	(1-6)
A-E	515	Introduction to Art Therapy	(3)
A-E	525	The Elderly and the Arts	(3)
A-E	538	Advanced Arts and Crafts in the Elementary School	(3)
A-E	545	Topical Studies in Art Education (Subtitle required)	(3)
A-E	572	Art Education Workshop	(1-6)
A-E	577	Art in Secondary Schools	(3)
A-E	578	Art in Elementary Schools	(3)
A-E	579	Seminar in Art Education	(2)
A-E	645	Topical Research in Art Education (Subtitle Required)	(3)
A-E	670	School and Community Art	(3)
A-E	695	Independent Work: Art Education	(1-3)
A-H	510	Studies in Ancient Art	(3)
A-H	511	Prehistoric Egypt	(3)
A-H	520	Studies in Medieval Art	(3)
A-H	530	Studies in Renaissance Art	(3)
A-H	540	Studies in Modern Art	(3)
A-H	550	Selected Topics in the History of Photography	(3)
A-H	560	Art History Seminar	(3)
A-H	580	Historical Techniques of Drawing, Painting and Printmaking	(3)
A-H	590	Topical Studies in Art History	(3)
A-H	592	Aesthetics	(3)
A-H	598	Coordinate Study	(3)
A-H	610	Problems in Ancient Art	(3)
A-H	620	Problems in Medieval Art	(3)
A-H	630	Problems in Renaissance Art	(3)
A-H	640	Problems in Modern Art	(3)
A-H	690	Topical Problems in Art History	(3)
A-H	780	Independent Work: Art History	(1-3)
A-S	510	Painting III	(3)
A-S	511	Painting IV	(3)
A-S	520	Printmaking III	(3)
A-S	521	Printmaking IV	(3)
A-S	530	Advanced Drawing	(3)
A-S	540	Graphic Design III	(3)
A-S	550	Fiber III	(3)
A-S	551	Fiber IV	(3)
A-S	560	Sculpture III	(3)
A-S	561	Sculpture IV	(3)
A-S	570	Ceramics III	(3)
A-S	571	Ceramics IV	(3)
A-S	580	Photography III	(3)
A-S	581	Photography IV	(3)
A-S	584	Color Photography II	(3)
A-S	586	Nonsilver Photography II	(3)

A-S	596	Workshop	(1-6)
A-S	610	Painting V	(3)
A-S	611	Painting VI	(3)
A-S	620	Printmaking V	(3)
A-S	621	Printmaking VI	(3)
A-S	650	Fiber V	(3)
A-S	651	Fiber VI	(3)
A-S	660	Sculpture V	(3)
A-S	661	Sculpture VI	(3)
A-S	670	Ceramics V	(3)
A-S	671	Ceramics VI	(3)
A-S	680	Photography V	(3)
A-S	681	Photography VI	(3)
A-S	740	Problems in Fiber	(3)
A-S	750	Problems in Sculpture	(3)
A-S	767	M.F.A. Studio Thesis Project	(1-6)
A-S	770	Problems in Ceramics	(3)
A-S	779	Problems in Photography	(3)
A-S	780	Problems in Design	(3)
A-S	790	Topical Studies (Subtitle Required)	(3)
A-S	793	Graduate Studio Seminar	(1)
A-S	799	Problems in Painting and Printmaking	(3)
FA	501	Arts-Study Tour	(3)

Behavioral Science

Graduate Faculty: Professor John Haley. Associate Professor John F. Wilson.

Joint Appointments: Professors Kathleen M. DeWalt, Eugene B. Gallagher, Thomas F. Garrity, Gary W. Shannon, John van Willigen and Doris Wilkinson. Associate Professors Susan Abbott-Jamieson, Lynne A. Hall and H. Jean Wiese.

Professor Emeritus: Thomas Ford, Phillip M. Moody and Robert Straus.

The Department of Behavioral Science in the College of Medicine offers a certificate of study and a minor in Medical Behavioral Science for doctoral students in sociology, anthropology, psychology, other behavioral science disciplines, and nursing. The certificate and minor have three objectives:

1. Provide students with a multi-disciplinary approach incorporating their basic discipline with other social and behavioral sciences with identification of areas of convergence and interrelation in content, theories and methods;
2. Orient students to health and medical settings, including an enculturation to the attitudes, values, professional interrelationships and educational objectives of health personnel and organizations and the nature of behavioral science research in these areas;
3. Train students in research to equip them with basic skills and approaches to research design, data acquisition, and data analysis, manuscript and research grant preparation in medical behavioral science through collaboration with ongoing research projects.

Students interested in pursuing the certificate and/or minor should consult with the Director of Graduate Studies for requirements.

The certificate and minor are partially supported by a training grant from the National Institute of Mental Health, which provides support for pre- and postdoctoral trainee stipends. A limited number of departmental 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)
620	Orientation Medical Behavioral Sciences	(1)
626	Survey of Health Psychology	(3)
664	Cultural Issues in Mental Illness	(3)
670	Seminar on Role Theory	(3)
745	Research Methods in Medical Behavioral Science	(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	(3)
770	Psychosocial Issues in Health and Aging	(3)
772	Topical Seminar in Medical Behavioral Science	(1-3)
773	Psychosocial Oncology	(3)
774	Behavioral and Ecological Aspects of Human Nutrition	(3)
775	Human Response to Stress	(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)
785	Comparative Health Care Systems	(3)
790	Research in Medical Behavioral Science	(1-6)

Biochemistry

Graduate Faculty: Professors S.K. Chan, Delwood C. Collins, Robert C. Dickson, Alfred Hu, Robert Lester, Robert E. Rhoads, Salvatore Turco, Thomas Vanaman and Charles Waechter. Associate Professors John R. Glenney and Alfred Winer.

Associate Members: Assistant Professors M.S. Kindy, Isabel Mellon, M.D. Mendenhall, and Judith C. Shelling.

Emeritus Professor: George Schwert.

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. Master's degrees are awarded 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.

Research interests of faculty members can be divided into the broad categories of (a) nucleic acids and molecular biology: protein synthesis, DNA enzymes, messenger RNA, DNA-drug interactions, yeast genetics, recombinant DNA, plant viruses, physical chemistry of DNA, somatic cell genetics, purine metabolism, and transformation of plant cells; (b) cell surfaces: inositol-containing phospholipids, glycoprotein biosynthesis, cell surfaces of parasites; and (c) enzymes and proteins: transition state enzyme inhibitors, enzyme kinetics, emphysema-regulated proteins, and calcium-regulated proteins.

Inquiries concerning availability of financial support for graduate students should be addressed to the Director of Graduate Studies.

401G	Fundamentals of Biochemistry	(3)
501	General Biochemistry	(3)
502	General Biochemistry	(3)
503	Plant Biochemistry	(3)
504	Physical Biochemistry	(3)
517	Experimental Methods in Biochemistry	(4)
601	Special Topics in Molecular and Cellular Genetics	(1)
605	Contemporary Neurosciences	(4)
610	Biochemistry of Lipids and Membranes	(3)
611	Biochemistry and Cell Biology of Nucleic Acids	(3)
612	Structure and Function of Proteins and Enzymes	(3)
613	Biochemistry of Carbohydrates	(3)
615	Molecular Biology	(3)
618	Seminar in Biochemistry	(1)
619	Seminar in Biochemistry	(1)
640	Research in Biochemistry	(1-15)
749	Dissertation Research	(0)
769	Residence Credit for Doctor's Degree	(0-12)
779	Membrane Science Colloquium	(1)
780	Topics in Biochemistry	(1-3)

Thomas Hunt Morgan School of Biological Sciences

The Thomas Hunt Morgan School of Biological Sciences was formed in 1966 from the Departments of Botany, Microbiology, and Zoology. Since 1971, the School has been subdivided according to major fields of contemporary biological research: cell and molecular biology, ecology and evolution, and neurobiology and physiology. Graduate training in these areas within School research laboratories is now focused in the Biology Graduate Program (see below). Some School faculty members are also members of other graduate faculties and train a few students in the Microbiology, Plant Physiology, and Toxicology Programs.

The School of Biological Sciences has excellent facilities to support graduate research in contemporary biology. These include a biology library, greenhouses, an aquatic research facility, a microcomputer room, an herbarium, a zoological museum, environmental control rooms, a microorganism culture facility, a molecular-biology analytical facility, and good access to the university's main-frame computers, microscopy and imaging facility, and field research sites.

Students considering graduate training in the biological sciences should contact the Biology Graduate Program or one of the other related programs mentioned elsewhere in this bulletin.

Biology

Graduate Faculty: Professors M. I. H. Aleem, T.C. Barr, Jerry M. Baskin, W.J. Birge, Branley Branson, E.C. Crawford, Philip H. Crowley, W.H. Davis, Judith A. Lesnaw, Willem Meijer, J.M. Rawls, G. A. Rosenthal, Andrew Sih, J.E. Sisken, Sheldon Steiner and G.L. Uglem. Associate Professors P. Bonner, J.D. Clark, W. Cohen, D.O. Harris, and J.J. Just. Adjunct Professor John Harley.

Associate Members: Associate Professor R. Craig Sargent. Adjunct Professor W.H. Martin. Assistant Professors Elizabeth Debski, Michael S. Dekin, Scott K. Gleeson, Grace Jones, Brian C. Rymond, Charles A. Staben and David Westneat.

Joint Appointment: Associate Professor Robert N. Muller.

Emeritus Professors: R.W. Barbour, John Carpenter, Lester Goldstein and James Edney.

The Biology Graduate Program is closely aligned with the Thomas Hunt Morgan School of Biological Sciences, and the program administers the training toward Ph.D. and M.S. degrees in biology sought by most graduate students associated with School research laboratories. The Biology Program emphasizes doctoral research training in three broad areas of contemporary biology (cell and molecular biology, ecology and evolution, and neurobiology and physiology). Some Plan A master's students are also accepted in these areas.

Within the cell and molecular biology area, students commonly conduct research in development and differentiation, molecular genetics, RNA synthesis and processing, the cell cycle, and virology. Ecology and evolution students often focus on aquatic, behavioral, chemical, community, evolutionary, plant, population, or theoretical ecology; evolutionary biology; or systematics. In neurobiology and physiology, student research typically emphasizes comparative animal physiology, endocrinology, metabolism, neural and neuromuscular development, neuroanatomical bases of behavior, or temperature regulation. A few student projects are conducted in other biological areas as well.

Currently, all students admitted to the program are offered financial support in the form of a teaching assistantship, research assistantship, fellowship, or combination of these. Coursework and research projects in the program are tailored to the background and interests of each student, under the guidance of the student's committee. Excellent facilities and support for graduate research are available through the Biology Graduate Faculty and the T.H. Morgan School of Biological Sciences (see above).

Requests for application forms and inquiries about the Biology Graduate Program should be directed to the Staff Coordinator, Biology Graduate Program, 101 Morgan Building, T.H. Morgan School of Biological Sciences, University of Kentucky,Lexington, KY 40506-0225 (606-257-3255).

404G	Principles of Genetics	(3)
411G	Models in Mathematical Biology	(3)
430G	Plant Physiology	(3)
431G	Lab in Plant Physiology	(2)
451G	Introductory Ecology	(4)
452G	Laboratory in Ecology	(1)
465G	Economic Botany	(3)
476G	General Microbial Physiology	(4)
494G	Immunobiology	(3)
502	Principles of Physiology Lecture	(5)
508	Evolution	(3)
510	Recombinant DNA Techniques Laboratory	(4)
514	Microbial Genetics	(3)
515	General Cell Biology	(3)
522	Independent Work in Zoology	(3)
523	Zoology Seminar	(1)
524	Botany Seminar	(1)
525	Independent Work in Botany	(1-3)
529	Developmental Biology	(3)
535	Comparative Neurobiology and Behavior	(3)
537	Behavior and Neurobiology of Marine Animals	(4)
540	Fundamentals of Radiation Biology	(2)
541	Radioisotope Methodology	(2)
542	Histology	(5)
544	Embryology	(5)
549	Comparative Endocrinology	(3)
550	Comparative Physiology	(5)
551	Plant Autecology	(4)
552	Taxonomy of Vascular Plants	(4)
553	Fish Biology	(4)
554	Mammalogy	(3)
555	Vertebrate Zoology	(4)
556	Marine Vertebrate Zoology and Ichthyology	(6)
557	Herpetology	(4)
558	Early Life History of Fishes	(4)
559	Ornithology	(4)
560	Biology of Insects	(4)
561	Medical Entomology	(4)
562	External Morphology of Insects	(4)
563	Parasitology	(4)
564	Insect Taxonomy	(4)
565	Limnology	(4)
566	Marine Ecology	(5)
567	Salt Marsh Plant Ecology	(4)
568	Insect Behavior	(3)
569	Marine Invertebrate Zoology	(6)
570	Invertebrate Zoology	(4)
571	Algology	(4)
572	Marine Botany	(4)
573	Mycology	(4)
574	Anatomy of Vascular Plants	(4)
576	Industrial Microbiology	(4)
578	Marine Microbiology	(5)
580	Metabolism of Microorganisms	(4)
582	Virology	(3)
585	Pathogenic Microbiology	(3)
586	Laboratory in Pathogenic Microbiology	(2)
590	Gnotobiotic Methodology	(2)
593	Comparative Histology of Marine Organisms	(1-6)
595	Immunology Laboratory	(2)
596	Parasites of Marine Animals	(6)
597	Aquaculture	(6)
598	Fauna and Faunistic Ecology of Tidal Marshes	(4)
599	Coastal Vegetation	(3)
601	Special Topics in Molecular and Cellular Genetics	(1)
608	Behavioral Ecology	(3)
609	Community and Ecosystem Ecology	(3)
610	Population Ecology	(3)
611	Biopathology	(3)
612	Biology of Aging	(3)
615	Molecular Biology	(3)
617	Advanced Microtechnique	(3)
619	Cytogenetics	(4)
620	Plant Molecular Biology	(2)
621	Topics in Modern Biology (Subtitle Required)	(1-3)
622	Physiology of Plants I	(3)
623	Physiology of Plants II	(3)
627	Special Problems in Marine Biology	(1-6)
628	Special Topics in Marine Biology	(1-6)
630	Experimental Techniques in Plant Physiology	(3)
632	Advanced Cell Biology I	(3)
633	Advanced Cell Biology II	(3)
635	Insect Physiology and Internal Morphology	(4)
639	Research Projects in Biological Modeling	(3)
645	Special Topics in Endocrinology	(2)
655	Vertebrate Natural History	(4)
660	Advanced Animal Ecology	(3)
665	Insect Ecology	(3)
667	Principles of Animal Systematics	(3)
670	Speciation	(3)
673	Experimental Mycology	(4)
685	Advanced Immunobiology	(4)
690	Bacteriology of Water and Sewage	(4)
707	Contemporary Topics in Immunology	(2)
716	Metabolism of Microorganisms	(4)
720	Microbial Structure and Function	(4)
728	Developmental Genetics	(3)
732	Mineral Nutrition of Plants	(3)
734	Physiology of Growth and Development	(3)
735	Advanced Plant Physiology	(3)
740	Mammalian Radiation Biology	(2)
748	Master's Thesis Research	(0)
749	Dissertation Research	(0)
766	Graduate Research in Marine Biology Master's	(1-6)
767	Graduate Research in Marine Biology-Doctor's	(1-6)
768	Residence Credit for Master's Degree	(1-6)
769	Residence Credit for Doctor's Degree	(0-12)
770	Seminar in Biology	(1)
772	Seminar in Microbiology	(0-1)
773	Seminar in Plant Physiology	(1)
774	Seminar in Genetics	(1)
776	Seminar in Marine Science	(1)
782	Advanced Virology	(3)
795	Research in Biology	(1-9)
798	Research in Microbiology	(1-9)
BOT 768	Residence Credit for Master's Degree	(1-6)
ZOO 768	Residence Credit for Master's Degree	(1-6)
MB 749	Dissertation Research	(0)
MB 768	Residence Credit for the Master's Degree	(1-6)
MB 769	Residence Credit for the Doctor's Degree	(0-12)

Biomedical Engineering

Graduate Faculty: Professors Eugene N. Bruce, Charles F. Knapp, Stephen Lai-Fook and Val M. Runge.

Joint Appointments: Professors Donald T. Frazier, David R. Gross, David C. Randall and Stephen D. Smith. Associate Professors Betty F. Sisken, Robert Shapiro and A. Joseph Threlkeld. Joint Associate Member: Assistant Professor Kimberly Ward Anderson.

Associate Members: Associate Research Professor Billy J. Barber. Assistant Professors David R. Brown, John E. Kirsch, David Pienkowski and David A. Puleo.

Emeritus Professor: Professor James F. Lafferty.

The Center for Biomedical Engineering offers M.S. and Ph.D. degrees in Biomedical Engineering. This graduate program emphasizes the application of engineering principles to the areas of medicine and biology and covers the broad aspects of mechanics, fluids, mass transfer, instrumentation, signal processing, systems analysis, materials and laboratory experimentation. The course work also stresses the application of these techniques to specific areas in rehabilitation engineering, sports medicine, artificial organ design, medical instrumen-

tation, tissue regeneration and image processing. The program at the M.S. level provides the student with a combination of experiences in basic research, design, development, and practical applications. At the Ph.D. level, the focus is primarily on basic research. Students in the program are provided with excellent research opportunities through the facilities of the Center's Wenner-Gren Research Laboratory and its close ties with other colleges of the University such as Medicine and Engineering.

Qualified students enroll in the graduate program through the Center for Biomedical Engineering and establish a course of study with the Center's core faculty and others from engineering and the life sciences. Entering students are expected to have an ABET accredited degree in engineering with some course work in the biological sciences. Applicants with degrees in physical or biological sciences may be accepted but are required to complete some course work in the undergraduate engineering curriculum before being admitted into the graduate program. The time required to complete the undergraduate courses typically is one to four semesters, depending upon the applicant's background. The M.S. program can be completed in three to four semesters. The Ph.D. program normally requires three to four years to complete. Acceptance in the Ph.D. program requires that students pass a qualifying examination administered by their special committee. Candidates for either degree must also successfully defend their thesis or dissertation before the degree is awarded.

The research and teaching activities of the program are concentrated at the Wenner-Gren Research Laboratory but also include facilities and faculty in the Departments of Physiology and Biophysics, Anatomy and Neurobiology, Cardiology, Surgery, Pharmacy, Pharmacology, Neurology, Physical Therapy, and Physical Education as well as the Departments of Chemical, Electrical and Mechanical Engineering. The Wenner-Gren Laboratory is a highly multidisciplinary facility employing a full time staff whose members support senior investigators in biomedical engineering research. The laboratory is well equipped with bio-instrumentation, surgical facilities, and electronic and machine shops. It houses specialized facilities for biological material testing, rheology measurements, ultrasonic tissue characterization, instrumentation development, whole-body vibration and acceleration, image processing, and studies in biodynamics.

Further information may be obtained by writing to the Director of Graduate Studies, Center for Biomedical Engineering, Wenner-Gren Research Laboratory, University of Kentucky, Lexington, KY 40506-0070.

The Master of Science Degree in Biomedical Engineering requires successful completion of the core curriculum plus an acceptable thesis. A non-thesis option is also available with the approval of the Director of Graduate Studies.

CORE CURRICULUM

PGY	502	Principles of Physiology	(5)
BME	530	Biomedical Instrumentation	(3)
		Math Elective	(3)
BME	540	Biomedical Signal Processing I	(3)
BME	650	Musculoskeletal Biodynamics	(3)
BME	685	Biofluid Mechanics	(3)
BME	610	Biological System Analysis	(3)
		Technical Elective	(3)
BME	768	Residence Credit for Master's Degree	(1-6)

The Ph.D. is a research degree granted on the basis of a broad knowledge of engineering applications in biology and medicine and an in-depth study in a specific area leading to an acceptable dissertation. Courses for advanced study may be selected from the areas of mathematics, life sciences, engineering and chemistry. The following courses have specific applicability to Biomedical Engineering.

BME	652	Biomechanics of Trauma	(3)
BME	640	Biomedical Signal Processing II	(3)
BME	660	Biomedical Application of Ultrasound	(3)
BME	680	Pulmonary Mechanics	(3)
BME	748	Master's Thesis Research	(0)
BME	749	Dissertation Research	(0)
BME	781	Special Problems in BME	(3)
BME	769	Residence Credit for the Ph.D. Degree	(0-12)
CME	637	Biological Transport Phenomena	(3)
CME	680	Biochemical Engineering	(3)
MA	411G	Models in Mathematical Biology I	(3)
MA	511	Models in Mathematical Biology II	(3)
MA	639	Research Projects in Biological Modeling	(3)
PGY	660	System Physiology	(3)
EE	530	Robotics	(3)

Business Administration

Graduate Faculty: Professors John J. Bernardo, Chenhua Chung, James Donnelly, Richard Furst, James Gibson, Andrew J. Grimes, Merlin Hackbart, Charles Haywood, Clyde Holsapple, James Marsden, Donald J. Mullineaux, Steven J. Skinner and Marc J. Wallace Jr. Associate Professors Keong Chew, James W. Freeman, Keith H. Johnson, Dennis T. Officer, Keith G. Provan and Tommy E. Whittler.

Associate Members: Associate Professor Michael Carpenter. Assistant Professors David A. Baucus, Melissa S. Baucus, Mark A. Davis, Roger F. Dahlstrom, Brian T. Ellis, Jule Gassenheimer, Chon-Huat Goh, Diane M. Halstead, Nancy Brown Johnson, Michael Kane, William W. Keep, Scott Kelley, Anita Lee-Post, Willard McIntosh, Ramakrishnan Pakath, Bennett J. Tepper and Kelly L. Tepper.

Joint Appointment: Professor Philip K. Berger.

Emeritus Professor: Joseph Massie.

Business Administration Graduate Programs

Through the cooperation of the Departments of Accounting, Decision Science and Information Systems, Economics, Finance, Management, and Marketing, the College of Business and Economics offers the Master of Business Administration and the Doctor of Philosophy degrees. Faculty offering the MBA and Ph.D. degree programs are members of the Departments of Accounting, Decision Science and Information Systems, Economics, Finance, Management, and Marketing. A description of the graduate programs and graduate faculty of the Accounting and Economics Departments can be found in those sections of this bulletin.

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 for the development of socially responsible business management and administration practices and (2) to equip the student for professional employment in an appropriate 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:

1. An understanding of the processes of business administration and the methods needed by business administrators to effectively cope with uncertainty.
2. A knowledge of the economics of business enterprise and of the dynamic environment and cultures in which business firms operate.
3. An understanding of quantitative methods of analysis in business decision making, including the use of mathematical, statistical, and accounting approaches.
4. A knowledge of organizational relationships and behavior in business enterprises and of ways for promoting effective human relations.
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, and the ability to present these findings effectively in both written and oral reports.
6. An understanding of the functional problems involved in operating a business enterprise, including production, marketing and finance, and an in-depth knowledge of the concepts, research findings, and currently useful generalizations within a functional area.

Requirements

1. The Graduate Management Admission Test (GMAT) must be taken prior to being admitted. Information on dates and

locations where this national examination is given may be obtained from the Counseling and Testing Center, Frazee Hall, University of Kentucky, (606) 257-8701 or the Business and Economics MBA Center, (606) 257-3592.

2. Admission to the MBA program presumes minimal prerequisite course work in the following areas (examples of acceptable courses at the University of Kentucky are given in parentheses):

Principles of Accounting (ACC 201, and ACC 202)
Introduction to Calculus (MA 123 or MA 113)

The prerequisites to the MBA program listed above may be satisfied by any of the following methods: (1) by taking the courses at the University of Kentucky or at another accredited institution; (2) by College Level Examination Program (CLEP) (proficiency) examinations, or (3) by correspondence. Prerequisites must be satisfied prior to admission to the MBA program.

3. The MBA program consists of the following 30-hour core and 18 hours of electives:

If a student does not have the prerequisite to DIS 651, one elective must be DIS 650—Data Analysis for Decisions (3)

			Credits
MGT	611	Organizational Behavior	3
ECO	610	Managerial Economics	3
ACC	628	Financial/Managerial Accounting	3
MKT	600	Marketing Management	3
ECO	611	Business Conditions Analysis	3
FIN	600	Corporate Financial Policy	3
DIS	651	Quantitative Analysis for Decisions	3
MGT	640	Legal and Regulatory Environment	3
DIS	600	Production Management	3
MGT	699	Business Policy and Strategy	3
			30
		Electives	18
		Total	48

The 18 hours of electives beyond the core consist of approved elective courses providing in-depth study in a functional area of business. Specialization elective courses are offered in marketing, finance and banking, health care, decision science and information systems, and international business. Other specializations may be developed in the student's area of interest.

With the approval of the Director of Graduate Studies, students with undergraduate degrees in business may waive up to 12 hours of core courses or electives.

4. Minimal average of grade B in all courses attempted for graduate credit after being admitted to The Graduate School. Students receiving two grades of C below a B average or one grade of E will be subject to dismissal from the MBA program.

5. Successful completion of a comprehensive final examination.

It is possible to earn the MBA degree as a full-time or as a part-time student. Generally, full-time students attend day classes and take twelve hours each semester, and part-time students attend evening classes and take six hours each semester.

Application for Admission

Students who wish to apply for admission to the MBA program in the College of Business and Economics should (a) write to The Graduate School, University of Kentucky, Lexington, Kentucky 40506, and request application forms for admission and financial aid together with the Graduate Bulletin, and (b) write The MBA Center, College of Business and Economics, University of Kentucky, Lexington, Ky., 40506-0034 and request program applications and information.

MBA/JD Option

The College of Business and Economics and the College of Law offer the opportunity to obtain the Master of Business Administration (MBA) and Juris Doctor (JD) degrees in a dual degree program. Because both schools recognize that some aspects of business and law are compatible and interrelated, students can usually obtain both degrees in four or four and one-half years instead of five required if the degrees were pursued separately. As a result, students gain marketable skills and specialized employment opportunities in less time than might otherwise be required. Students interested in the MBA/JD program must apply to the College of Law, The Graduate School and the MBA program.

The Doctor of Philosophy Degree

The mission of the doctoral program is to prepare students for successful academic careers. To accomplish this mission, the program prepares graduates to comprehend and evaluate research, to perform research which advances knowledge and to provide effective instruction, all within a business-related discipline. Specifically, the program is designed to provide:

- an understanding of the philosophies and basic methodological issues of academic inquiry;
- an understanding of the theoretical foundations and state-of-the-art research methods in a specific discipline; and,
- the ability to design and execute substantive research projects.

Requirements

1. Background Training in Business and Business Related Areas. The PhD is designed to provide specialization beyond the master's level. The educational background of each candidate will be reviewed by the faculty in the student's major area, who identify any deficiencies. In most cases, an MBA from an AACSB accredited institution provides the necessary background.

   Applicants with previous graduate credits are evaluated generally according to the following rules, but each case is individually examined by the faculty of the appropriate business department. A minimal grade point average of 3.2/4.0 is required on all previous graduate credits. Also, students without GMAT scores must take the exam before admission, reporting no less than a minimal score of 500.

2. Core Requirements (18 credit hours):

   a. BA 762 Research Methodology ..... (3)
   b. Theoretical Foundations—Six Hours Selected by the Student From Among:
      MGT 700 Administrative Science ..... (3)
      ECO 660 Microeconomic Theory ..... (3)
      ECO 661 Macroeconomic Theory ..... (3)
      MGT 751 Management Science II ..... (3)
      PSY 624 Social Psychology ..... (3)
   c. Research Tools—Nine Hours Selected by the Student From Among:
      Six hours statistics sequence ..... (6)
      Research tools elective ..... (3)

3. Major Field Requirements:
   The major field will consist of at least 21 hours of graduate credit course work including at least 12 credit hours of 700 level courses exclusive of the core. Currently available major fields include:

   Accounting
   Finance
   Management and Organizational Behavior
   Decision Science and Management Information Systems
   Marketing

   All course work must be approved by the student's Director of Graduate Studies.

4. Written and oral comprehensive examinations are required in the major field.
5. The dissertation will be based on original research on a significant topic. The dissertation will be defended in an oral examination.
6. Minimum average of grade of B for graduate credit and in all courses attempted after being admitted to The Graduate School. Students obtaining two grades of C below a B average will be dropped by the department.

For application forms and information, please write or call:
The Office of the Associate Dean for Academic Affairs
College of Business and Economics
University of Kentucky
Lexington, KY 40506-0034
(606) 257-3024

BA 600 Fundamentals of Business Administration ..... (12)
BA 749 Dissertation Research ..... (0)
BA 762 Research Methodology ..... (3)
BA 768 Residence Credit for the Master's Degree ..... (1-6)
BA 769 Residence Credit for Doctor's Degree ..... (0-12)
BUS 519 Records Management ..... (3)
BUS 556 Business Reports and Communications ..... (3)
DIS 506 Productivity and Quality Control .... (3)
DIS 520 Advanced Business Data Processing and Information ..... (3)
DIS 600 Production Management ..... (3)
DIS 611 Management of Computer Integrated Manufacturing ..... (3)
DIS 612 Advanced Project Management ..... (3)
DIS 615 Production/Inventory Management ... (3)
DIS 620 Management Information Systems in Decision Making ..... (3)
DIS 621 Business Expert Systems ..... (3)
DIS 622 Business Data System Analysis and Design ..... (3)
DIS 623 Business Decision Support System .. (3)
DIS 650 Data Analysis for Decision ..... (3)
DIS 651 Quantitative Analysis for Decisions .... (3)
DIS 700 Topics in Operations Management .... (3)
DIS 720 Management Information Systems Theory ..... (3)
DIS 750 Management Science I ..... (3)
DIS 751 Management Science II ..... (3)
DIS 752 Topics in Optimization ..... (3)
DIS 753 Seminar in Management Science .. (3-6)
DIS 760 Research Methods in Decision Systems ..... (3)
DIS 780 Studies in Decision Science ..... (3)
DIS 790 Special Topics in ManagementDecision Systems (Subtitle Required) ..... (3)
FIN 584 Financial Markets and Institutions .. (3)
FIN 585 Bank Management ..... (3)
FIN 600 Corporate Financial Policy ..... (3)
FIN 623 International Financial Management .. (3)
FIN 637 Health Finance ..... (3)
FIN 645 Corporate Investment and Financing Policy ..... (3)
FIN 647 Working Capital Policy ..... (3)
FIN 650 Investment Management ..... (3)
FIN 656 Portfolio Management ..... (3)
FIN 664 Real Estate Finance ..... (3)
FIN 680 Money, Interest and Capital ..... (3)
FIN 695 Individual Work in Finance ..... (1-6)
FIN 700 Seminar in Financial Theory ..... (3)
FIN 710 Decision Models in Finance ..... (3)
FIN 745 Seminar in Managerial Finance ..... (3)
FIN 750 Seminar in Investment Theory ..... (3)
FIN 763 Research, Design and Analysis ..... (3)
FIN 780 Seminar in Financial Institutions ..... (3)
FIN 791 Seminar in Finance ..... (3)
FIN 795 Independent Work in Finance ..... (1-6)
MGT 408G World Business ..... (3)
MGT 429G Personnel Planning/Strategy/Policy (3)
MGT 508 International Commercial Policy .... (3)
MGT 528 Contemporary Problems in Industrial Relations ..... (3)
MGT 601 Research and Report Writing ..... (3)
MGT 608 Comparative International Management ..... (3)
MGT 611 Organizational Behavior ..... (3)
MGT 612 Advanced Project Management ..... (3)
MGT 620 Personnel and Industrial Relations .... (3)
MGT 640 Legal and Regulatory Environment .... (3)
MGT 660 Seminar in Ethical Issues in Business ..... (3)
MGT 680 Special Topics in Management ..... (3)
MGT 695 Individual Work in Management ..... (1-6)
MGT 698 Business Policy and Strategy I ..... (3)
MGT 699 Business Policy and Strategy II ..... (3)
MGT 700 Administrative Science ..... (3)
MGT 711 Organizations and External Systems .. (3)
MGT 712 Organizations and Individual Behavior ..... (3)
MGT 713 Seminar in Advanced Organization Theory ..... (3)
MGT 714 Seminar in Management Theory and Policy ..... (3)
MGT 720 Seminar in Human Resource Management ..... (3)
MGT 763 Research, Design and Analysis ..... (3)
MGT 780 Special Topics in Management (Subtitle Required) ..... (3)
MGT 781 Independent Work in Management ..... (1-6)
MKT 600 Marketing Management ..... (3)
MKT 601 Marketing Research ..... (3)
MKT 620 Distribution Channel Systems ..... (3)
MKT 621 Product Management ..... (3)
MKT 622 Sales Management ..... (3)
MKT 623 Marketing in Service and Nonprofit Organizations ..... (3)
MKT 624 International Marketing Management ..... (3)
MKT 695 Individual Work in Marketing ..... (1-6)
MKT 700 Seminar in Marketing Management ... (3)
MKT 710 Seminar in Consumer Behavior ..... (3)
MKT 720 Seminar in Marketing Theory ..... (3)
MKT 763 Research, Design and Analysis ..... (3)
MKT 771 Seminar in Business Administration (3)
MKT 781 Independent Work in Marketing ..... (1-6)

Chemical Engineering

Graduate Faculty: Professors Dibakar Bhattacharyya, Frank J. Derbyshire, Charles E. Hamrin Jr., Gerald P. Huffman, Richard Kermode, Edward D. Moorhead, Leonard Peters, Asit K. Ray and James T. Schrodt. Associate Professor Tate T. H. Tsang

Associate Members: Assistant Professors Kimberly Ward Anderson and Douglass S. Kalika.

The Department of Chemical Engineering provides programs leading to the M.S. in Chemical Engineering and Ph.D. degrees. For admission to either program, a G.P.A. of 2.8/4.0 on all undergraduate work is required. For the M.S. in Chemical Engineering, 24 hours of course work plus an acceptable thesis are required (Plan A). In certain exceptional cases as determined by the faculty, the thesis may be replaced by six additional hours of course work.

Unique and highly specialized M.S. areas of concentrated study are available in energy engineering, electrochemical engineering, air quality engineering, and environment pollution control. There is no language requirement for the M.S. and Ph.D. in Chemical Engineering.

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

Aerosol Chemistry and Physics
Atmospheric pollution control
Biomedical engineering
Chemical reactor design
Coal conversion processes
Computational transport phenomena
Electrochemical engineering/
electrode processes
Mathematical modeling
Membrane separation
Phase transformation
Polymer Science and Engineering
Process control
Thermodynamics
Transport 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 Director of Graduate Studies.

505 Analysis of Chemical Engineering Problems ..... (3)
515 Air Pollution Control ..... (3)
550 Chemical Reactor Design ..... (3)
552 Polymeric Materials ..... (3)
554 Chemical and Physical Processing of Polymer Systems ..... (3)
555 Advanced Chemical Engineering Process Design I ..... (3)
560 Non-Newtonian Flow and Heat Transfer .. (3)
565 Energy Engineering ..... (3)
570 Chemical Separation and Measurement for Chemical Engineers ..... (4)
580 Design of Rate and Equilibrium Processes for Water Pollution Control ..... (3)
599 Topics in Chemical Engineering ..... (3)
606 Micrometeorology and Atmospheric Transport ..... (3)
615 Advanced Air Pollution Control ..... (3)
620 Equilibrium Thermodynamics ..... (3)
621 Nonequilibrium Thermodynamics ..... (3)
625 Properties of Gases and Liquids ..... (3)
630 Transport I ..... (3)
631 Transport II ..... (3)
633 Diffusional Mass Transfer Operations ..... (3)
635 Staged Mass Transfer Operations ..... (3)
637 Biological Transport Phenomena ..... (3)
638 Transport Phenomena in Packed and Fluidized Beds ..... (3)
642 Advanced Process Control I ..... (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)
748 Master's Thesis Research ..... (3)
749 Dissertation Research ..... (0)
768 Residence Credit for the Master's Degree ..... (1-6)
769 Residence Credit for the Doctor's Degree ..... (0-12)
771 Seminar ..... (0)
779 Membrane Science Colloquium ..... (1)
780 Special Problems in Chemical Engineering ..... (1-3)
EGR 537 Numerical Analysis ..... (3)
EGR 599 Topics in Engineering (Subtitle Required) ..... (1-3)
EGR 611 Boundary Element Methods in Engineering ..... (3)
EGR 621 Finite Element Analysis in Engineering ..... (3)
EGR 622 Advanced Finite Element Analysis in Engineering ..... (3)
EGR 680 Engineering Applications of Stochastic Differential Equations ..... (3)
EGR 780 Topics in Engineering (Subtitle Required) ..... (1-3)

Chemistry

Graduate Faculty: Professors Carolyn Brock, D. Allan Butterfield, Audrey Companion, Paul Corio, William Ehmann, Robert Guthrie, Robert Kiser, Linda J. Magid, William Markesbery, John Patterson, Donald Sands, John P. Selegue, Stanford L. Smith, David Watt and Steven W. Yates. Associate Professors Leonidas G. Bachas, Dennis Clouthier, F. James Holler, James O'Reilly, John P. Richard and Joseph Wilson.

Associate Members: Assistant Professors Jeffrey R. Appling, Thomas F. Guarr, Vahid Majidi, Mark Meier, and J. David Robertson.

Emeritus Professors: R.E. Black, E.V. Brown, J.R. Meadow, Kurt Niedenzu, W.K. Plucknett, Paul Sears, Walter T. Smith and W.F. Wagner.

The Department of Chemistry offers the Master of Science and the Doctor of Philosophy degrees. Plan A or B may be used to satisfy the requirements for the M.S. degree. Areas of specialization in chemistry offered are analytical, biological, 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 a modern foreign language is recommended for the M.S. and the Ph.D. degrees.

As part of the course requirements for both the M.S. and the Ph.D. degrees, all students must normally take four "core" courses. The student selects one course which best meets career objectives in each of the four traditional areas of chemistry (analytical, inorganic, organic , and physical) from a pair of such courses: CHE 524 or 626, CHE 510 or 514, CHE 535 or 538, CHE 547 or 548.

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.

Master of Science Degree-Plan A (Thesis)

All Graduate School requirements must be met. In addition to four "core"courses, advanced or specialty courses relevant to a student's career objectives are taken to total up to a minimum of 24 credits. Successful defense of a thesis describing original research of a caliber that could result in publication in refereed scientific journals is required by all M.S. Plan A students.

Master of Science Degree-Plan B

Students in the Department of Chemistry may satisfy the requirements for an M.S. degree by using Plan B, a course work M.S. Students wishing to follow this plan shall present for the approval of the Graduate Program Committee a program of courses that satisfies the Committee and meets all Graduate School requirements. This program of courses must meet distribution requirements within the four traditional areas of chemistry, and include 6 or more credits of courses outside of Chemistry that are relevant to career goals.

Doctor of Philosophy Degree

Doctoral degrees are earned in the Department of Chemistry after a student has carried out productive and independent research on a problem that is of significant chemical interest. It is expected that the results of the dissertation work will be published in refereed scientific journals. All Graduate School requirements must be met. Subject to approval of the student's Advisory Committee, course work for the Ph.D. degree shall normally include four "core" courses and eight credits of advanced or specialty courses. At least three credit hours must be in courses outside of the Department of Chemistry.

The Qualifying Examination consists of a written and an oral part. The written component of the Qualifying Examination consists of a series of cumulative examinations designed to test the application of fundamental principles and reasoning to literature or research problems. Scores of 3, 2, 1, or 0 may be obtained on each examination. Eight examinations per year in the areas of Analytical, Inorganic, Organic, and Physical Chemistry and four examinations per year in Biological and Radio-nuclear Chemistry are given. A Ph.D. student normally must attain a minimum of eight points within two years in order to take the oral part of the Qualifying Examination.

For further information on any degree program in Chemistry, please contact the Director of Graduate Studies.

440G	Physical Chemistry	(3)
441G	Physical Chemistry Laboratory	(2)
442G	Physical Chemistry	(3)
443G	Physical Chemistry Laboratory	(3)
444G	Physical Chemistry	(4)
450G	Practical Inorganic Chemistry	(3)
490G	Chemistry for High School Teachers	(3)
510	Advanced Inorganic Chemistry	(3)
514	Descriptive Inorganic Chemistry	(3)
520	Radiochemistry	(3)
521	Radiochemistry Laboratory	(1-2)
522	Instrumental Analysis	(4)
524	Chemical Instrumentation	(4)
526	Chemical Separations	(2)
532	Spectrometric Identification of Organic Compounds	(2)
533	Qualitative Organic Analysis Laboratory	(2)
535	Synthetic Organic Chemistry	(3)
538	Principles of Organic Chemistry	(3)
547	Principles of Physical Chemistry I	(3)
548	Principles of Physical Chemistry II	(3)
550	Physiological Chemistry	(4)
552	Physiological Chemistry	(4)
572	Seminar	(1)
580	Topics in Chemistry	(1-3)
602	Short Topics in Chemistry	(1-3)
610	Chemistry of the Transition Metals	(3)
612	Inorganic Chemistry of the Non-Metals	(3)
614	Organotransition Metal Chemistry	(3)
616	Nuclear Chemistry	(3)
620	Electrochemical Methods of Analysis	(3)
625	Optical Methods of Analysis	(3)
626	Advanced Analytical Chemistry	(3)
633	Physical Organic Chemistry	(3)
643	Spectroscopy and Photophysics	(3)
645	Chemical Thermodynamics	(3)
647	Advanced Quantum Chemistry	(3)
648	Chemical Thermodynamics	(3)
646	Chemical Kinetics	(3)
710	Topics in Inorganic Chemistry	(2-4)
726	Topics in Analytical Chemistry	(1-3)
736	Topics in Organic Chemistry	(2-4)
744	Statistical Thermodynamics	(3)
746	Topics in Physical Chemistry	(2-4)
748	Master's Thesis Research	(0)
749	Dissertation Research	(0)
768	Residence Credit for the Master's Degree	(1-6)
769	Residence Credit for the Doctor's Degree	(0-12)
776	Graduate Seminar	(1)
779	Membrane Science Colloquium	(1)
780	Individual Work in Chemistry	(1-5)
790	Research in Chemistry	(1-12)

Civil Engineering

Graduate Faculty: Professors Michael A. Cassaro, Louis F. Cohn, J.A. Deacon, H. Gesund, D. Joseph Haggerty, Donn E. Hancher, B.O. Hardin, Y.H. Huang, C. Eugene Miller, Mario Paz, Jerry G. Rose, S.T. Wang and D.J. Wood. Associate Professors George E. Blandford, Issam E. Harik, Roswell H. Harris, Lindell Ormsbee, Sergio Serrano, Charles R. Ullrich.and Yi-Tin Wang.

Associate Members: Associate Professors James D. Stevens and Terrence Weigel. Assistant Professors N.R. Bhaskar, Thomas E. Fenske, David C. Froehlich, Kamyar Mahboub, Paul M. McGinley and Nikiforos Stamatiadis.

Emeritus Professor: S.F. Adams, J.A. Dearinger, J.W. Hutchinson, R.A. Lauderdale and Samuel A. Mory.

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 areas:

Civil Engineering Materials
Construction engineering (MS in Engineering only)
Fluid mechanics and applied hydraulics
Geotechnical engineering
Structural engineering
Surveying and photogrammetry (M.S. only)
Transportation engineering
Water resources engineering
Environmental engineering

These areas utilize courses from other departments and such inter-departmental programs are encouraged. Engineering Mechanics, Mechanical Engineering, Chemical Engineering, Agricultural Engineering, Mining Engineering, Mathematics, Computer Science, 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 (a GPA of 2.8/4.0 on all undergraduate work is normally required), 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 Accrediting Board for Engineering and Technology, ABET.

This requirement may be waived for applicants who have been awarded bachelor's 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.C.E, 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.

It is also required that all applicants for admission must have a combined score on the verbal and quantitative portions of the Graduate Record Examination in excess of 1000. Foreign applicants whose native language is other than English must take the Test of English as a Foreign Language (TOEFL) and score at least 550 on it before they can be admitted.

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 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 Engineering.

461G Hydrology ..... (3)
471G Soil Mechanics ..... (3)
485G Design of Timber Structures, Formwork and Falsework ..... (3)
486G Reinforced Concrete ..... (3)
487G Steel Structures ..... (3)
503 Construction Estimating ..... (3)
505 Construction Project Planning and Management ..... (3)
506 The Engineer, The Law, and the Environment ..... (3)
511 Photogrammetry ..... (3)
517 Boundary Location Principles ..... (3)
518 Advanced Surveying ..... (3)
521 Engineering Economy ..... (3)
531 Transportation Systems Operations ..... (3)
533 Railroad Facilities Design and Analysis ..... (3)
534 Pavement Analysis and Design ..... (3)
539 Transportation Systems Design ..... (4)
541 Hydraulic Structures ..... (3)
542 Applied Fluid Mechanics ..... (3)
549 Engineering Hydraulics ..... (3)
552 Water Quality Control Laboratory I ..... (3)
556 Solid and Hazardous Waste Management ..... (3)
559 Water Quality Control Facilities Design ..... (3)
561 Urban Hydrology ..... (3)
569 Water Resources System Design ..... (4)
579 Geotechnical Engineering ..... (3)
580 Bituminous Materials and Mixtures ..... (3)
581 Transportation Engineering Materials ..... (3)
582 Advanced Structural Mechanics ..... (3)
583 Suspension Bridges ..... (3)
586 Prestressed Concrete ..... (3)
589 Design of Structural Systems ..... (4)
599 Topics in Civil Engineering (Subtitle Required) ..... (1-4)
601 Construction Equipment ..... (3)
602 Construction Administration ..... (3)
612 Terrain Analysis ..... (3)
630 Transportation Administration, Economics and Finance ..... (3)
631 Urban Transportation Planning ..... (3)
632 Traffic Law, Ordinances and Controls ..... (3)
633 Air Transport Engineering ..... (3)
634 Traffic Characteristics ..... (3)
636 Operational Effects of Geometrics in Transportation ..... (3)
637 Transportation Systems Modeling ..... (3)
638 Multidisciplinary Accident Investigation and Reconstruction ..... (3)
641 Mechanics of Liquid Flow in Pipes ..... (3)
642 Open Channel Flow ..... (3)
645 Highway Design, Construction and Maintenance ..... (3)
651 Fundamentals of Water Quality Control I ..... (3)
652 Fundamentals of Water Quality Control II ..... (3)
653 Water Quality in Surface Waters ..... (3)
654 Principles of Water and Waste Water Treatment Processes ..... (3)
660 Ground Water Hydrology ..... (3)
661 Advanced Hydrology ..... (3)
662 Stochastic Hydrology ..... (3)
663 Water Quality Control Laboratory II ..... (3)
664 Water Resources Planning ..... (3)
665 Water Resources Systems ..... (3)
667 Stormwater Modeling ..... (3)
671 Advanced Soil Mechanics ..... (3)
673 Finite Element Applications in Engineering ..... (3)
676 Groundwater and Seepage ..... (3)
678 Fluid Dynamics of Multiphase Systems ..... (3)
679 Soil-Structure Dynamics and Earthquake Engineering ..... (4)
681 Advanced Civil Engineering Materials ..... (3)
682 Advanced Structural Analysis ..... (3)
683 Experimental Structural Analysis ..... (3)
684 Slab and Folded Plate Structures ..... (3)
686 Advanced Reinforced Concrete Theory ..... (3)
687 Advanced Metal Structures ..... (3)
699 Topics in Civil Engineering (Subtitle Required) ..... (1-4)
709 Computer Applications Construction ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for Master's Degree ..... (1-6)
769 Residence Credit for Doctor's Degree ..... (0-12)
772 Experimental Methods in Soil Mechanics ..... (3)
779 Advanced Geotechnical Engineering ..... (3)
782 Dynamics of Structures ..... (3)
784 Shell Structures ..... (3)
789 Advanced Computer Aided Structural Analysis and Design ..... (3)
790 Special Research Problems in Civil Engineering ..... (1-6)
791 Special Design Problems in Civil Engineering ..... (1-6)
EGR 537 Numerical Analysis ..... (3)
EGR 599 Topics in Engineering (Subtitle Required) ..... (1-3)
EGR 611 Boundary Element Methods in Engineering ..... (3)
EGR 621 Finite Element Analysis in Engineering ..... (3)
EGR 622 Advanced Finite Element Analysis in Engineering ..... (3)
EGR 680 Engineering Applications of Stochastic Differential Equations ..... (3)
EGR 780 Topics in Engineering (Subtitle Required) ..... (1-3)

Classical Languages and Literatures

Graduate Faculty: Professors Hubert Martin, Jane Phillips and Louis Swift. Associate Professor Robert Rabel.

Associate Member: Assistant Professor Terence Tunberg.

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. A program of courses will be selected from the list below with the advice of the Director of Graduate Studies. Appropriate courses in other areas of graduate study outside of the Department may be added with the approval of the Director of Graduate Studies. Individualized course programs are arranged for students who are preparing for secondary school teaching or who have additional interests in fields other than Classics. A comprehensive examination over the Greek and Roman authors specified in the Department's graduate reading list is required of all degree candidates. All students are expected to demonstrate a reading knowledge of a

modern foreign language or a substitute skill approved by the Department. Normally the M.A. program is completed in two years of full-time study.

For additional information and details about graduate study in the Department, contact the Director of Graduate Studies.

425G	The Heroic Ideal: Greek and Roman Epic	(3)
426G	Classical Drama: Tragedy and Comedy in Greece and Rome	(3)
450G	Special Topics in Classical Literature in Translation (Subtitle required)	(3)
509	Roman Law	(3)
511	Studies in Roman Philology	(3)
512	Studies in Roman Philology	(3)
522	Roman Republican Prose (Subtitle Required)	(3)
523	Roman Republican Poetry (Subtitle Required)	(3)
526	Roman Imperial Prose (Subtitle Required)	(3)
527	Roman Imperial Poetry (Subtitle Required)	(3)
530	The Teaching of Latin	(3)
552	Greek Epic and Lyric Poetry	(3)
553	Greek Philosophical Literature	(3)
556	Greek Dramatic Literature	(3)
557	Greek Historical Literature	(3)
561	Studies in Greek Philology	(3)
562	Studies in Greek Philology	(3)
580	Independent Work in Classics	(3)
600	Bibliography of Classical Scholarship	(3)
601	Studies in Greek Literature I (Subtitle Required)	(3)
602	Studies in Greek Literature II (Subtitle Required)	(3)
603	Studies in Latin Literature of the Republic (Subtitle Required)	(3)
604	Studies in Latin Literature of the Empire (Subtitle Required)	(3)
748	Master's Thesis Research	(0)
768	Residence Credit for Master's Degree	(1-6)
790	Research in the Teaching of Classical Languages	(3)

Clinical Nutrition

Graduate Faculty: Professor James W. Anderson. Associate Professors Gilbert Boissonneault and Geza Bruckner.

Associate Member: Assistant Professor: Maria Boosalis.

Emeritus Professor: Paul Thornton.

The goal of the Division of Clinical Nutrition is to develop nutrition specialists knowledgeable in the metabolic changes that occur in normal and various pathophysiological states. The Division of Clinical Nutrition offers a Plan B degree program resulting in the award of a Master of Science (MS) in Clinical Nutrition. Opportunities for specialization are available in the areas of nutrition support, wellness and health maintenance, and management/administration. In addition, concurrent participation in an American Dietetic Association (ADA) approved dietetic internship and/or Physician Assistant program is possible. Continued graduate study in Clinical Nutrition is possible through the Multidisciplinary Ph.D. Program in Nutritional Sciences.

The core courses provide the student with in-depth knowledge of nutrient metabolism, the physiology of organ systems, and the role of nutrition in the pathophysiology of specific disease states. Elective course selections provide program focus while allowing maximum flexibility to meet individual needs. A minimum of 30 credit hours of course work is required for graduation. Core requirements are listed below; elective courses are selected to complete the degree requirements. The program generally requires 1.5 to 2 years for completion. It is expected that students entering this program shall have completed the necessary courses which are prerequisites for course work offered within the program.

REQUIRED COURSES

CNU 601	Clinical Nutrition	(4)
CNU 602	Current Topics in Clinical Nutrition	(1)
CNU 701	Advanced Clinical Nutrition	(3)
CNU 702	Advanced Clinical Nutrition Internship	(4)
CNU 780	Clinical Nutrition Research	(1-5)
CNU 781	Clinical Nutrition Seminar	(1)
CNU 782	Independent Study	(1)
	Total Credit Hours:	15-19

OPPORTUNITIES FOR SPECIALIZATION

Nutrition Support. For students wishing practical experience in nutrition in the treatment of illness and the maintenance of health, specialization in the area of nutritional support may be desirable. Specialization in this area is useful for those who wish to undertake careers in clinical nutrition in university hospitals and medical centers; for those who intend to teach in the field of clinical nutrition; and for those who plan careers as members of a research team in clinical nutrition and metabolism. Elective courses can be selected to provide expertise in the areas of immunology, biochemistry, physiology, biopathology, nutrient metabolism, and behavioral sciences.

Wellness and Health Maintenance. Another possible area of concentration is in the rapidly growing field of wellness and health maintenance. Specialization in this area may be achieved by selecting elective course areas such as statistical concepts, management, physiology and exercise physiology, and/or health psychology.

Management/Administration. Supplemental course work in management and administration may be taken to provide a background in planning, coordinating, and managing finances and personnel in the health field. Specialization in this area is useful for those who wish to expand their career potential into management and administrative aspects of the fields of nutrition and dietetics. Elective course selections can provide expertise in the areas of financial, personnel, and organizational management, statistical concepts, and legal and other aspects of the health care system, among others.

Dietetic Internship. In cooperation with the University of Kentucky hospital, special opportunities to participate in an ADA-approved dietetic internship is available on a competitive basis to a limited number of students. American Dietetic Program in Dietetics requirements must be met and MS course requirements completed before entry into the internship. Completion of the MS program and the internship experience requires a minimum of 2 to 2.5 years.

Physician Assistant (PA) Program. An opportunity exists for completion of the MS degree in Clinical Nutrition and the PA program in a minimum of 3 years. Physician Assistants function under the supervision and responsibility of a physician in the provision of routine health care. The graduate of these Programs holds the MS degree and eligibility to take the National Certifying Examination for Physician Assistants. Both programs require that prerequisite courses be completed before beginning in these areas of study. A minimum of 3 years is required for completion of both programs.

Suggested Courses

BCH	401G	Fundamentals of Biochemistry	(3)
BSC	775	Human Response to Stress	(3)
CNU	603	Nutritional Immunology	(2)
CNU	604	Lipid Metabolism	(2)
HA	601	Overview of the Health Care Delivery System	(3)
HPR	621	Exercise and Coronary Heart Disease	(3)
NS	651	Topics in Nutritional Sciences I	(2)
NS	652	Topics in Nutritional Sciences II	(2)
PGY	412G	Principles of Human Physiology	(4)
STA	570	Basic Statistical Analysis	(4)
590		Gnotobiotic Methodology	(2)
601		Clinical Nutrition	(4)
602		Current Topics in Clinical Nutrition	(1)
603		Nutritional Immunology	(1-2)
604		Lipid Metabolism	(1-2)
701		Advanced Clinical Nutrition	(3)
702		Advanced Clinical Nutrition Internship	(4)
780		Clinical Nutrition Research	(1-5)
781		Clinical Nutrition Seminar	(1)
782		Independent Study	(1)

Clinical Pastoral Counseling

Graduate studies in areas relevant to Clinical Pastoral Counseling are possible. Coordination is facilitated by faculty in the Department of Health Services, College of Allied Health Professions.

For further information, contact the Director of Clinical Pastoral Education, College of Allied Health Professions.

501 Perspectives in Religion and Health ..... (3)

Communication

Graduate Faculty: Professors James L. Applegate, Robert Bostrom, Douglas Boyd, Lewis Donohew, Philip C. Palmgreen and Ramona Rush. Associate Professors John Baseheart, Thomas R. Lindlof, Roy Moore and Norman Van Tubergen.

Associate Members: Assistant Professors James Hertog, Pamela J. Kalbfleisch, Haeryon Kim, Joachim Knuf, Carmen Manning-Miller, Nancy Reynolds, Edward S. Scheiner and Vincent R. Waldron.

Emeritus Professors: Robert Murphy and Joseph Ripley.

The College of Communications offers programs leading to the Master of Arts (either Plan A or Plan B) and Doctor of Philosophy degrees. Emphasis is on the study of communication behavior at various levels, including interpersonal processes, interpersonal and small group communication, communication in organizations, 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 communication careers in the media or other organizations. Students with no previous course work in a communication area may be required to take undergraduate work without graduate credit.

Master of Arts

All students will be required to take 12 core credit hours consisting of Proseminar in Communication (CJT 601), Communication Theory (CJT 651), and Communication Research Methods (CJT 665), plus Statistics 570 or its equivalent as determined by the Director of Graduate Studies.

Students must complete 30 credit hours of course work, including six credit hours of CJT 768 (Residence Credit for the Master's Degree), and a thesis (Plan A) or 30 hours of course work with no thesis (Plan B). Plan A students are required to complete an oral and/or written final examination, while Plan B students complete both a written and an oral examination, in the semester in which the degree is to be awarded.

At least 21 credit hours of the minimum requirements for the master's degree must be from offerings within the College of Communications (both Plan A and Plan B). Plan A students may include six hours of CJT 768 in the 21 hours, since the thesis involves work in an area of communication. Also, at least 21 credit hours of the minimum requirements must be in courses at the 600 or 700 levels (both Plan A and Plan B). Plan A students may include six hours of CJT 768 in the 21 hours. No more than 3 credit hours in Plan A and 6 credit hours in Plan B (of the minimum requirements) may be earned in directed study, directed reading, or internship courses (e.g., CJT 696, CJT 700, CJT 781, CJT 790).

Doctor of Philosophy

The Ph.D. program emphasizes communication as a social science. Graduates are prepared for university positions and careers in government, the media and other organizations as researchers, consultants and policy makers. Students must demonstrate general knowledge of communication, as well as competence in a core area of specialization. Current core communication areas include interpersonal; intrapersonal; organizational; mass communications; communication perspectives, including legal and historical aspects; communication technologies; international and intercultural communication; and political communication.

Students also must demonstrate a thorough grasp of research methods and statistics, and must take course work in a cognate area outside the College of Communications. Proficiency in a foreign language is no longer required for successful completion of the Ph.D. in Communication. A student's advisory committee may stipulate certain graduate-level courses in another language for the student's program that are consistent with the objectives of the student's program.

Each student works with a major professor and an advisory committee to plan course work and complete the dissertation. The committee also administers the qualifying examination and the final oral examination. The qualifying examination consists of a written and oral examination over general communication, the core area of specialization, research methods/statistics, and the cognate area.

Standards for admission to the doctoral program are similar to those of The Graduate School, including satisfactory scores on the verbal and quantitative portions of the Graduate Record Examination. For additional information about program requirements and opportunities for financial assistance write to the Director of Graduate Studies, College of Communications.

COM	525	Organizational Communication ..... (3)
COM	571	Health Communication ..... (3)
COM	581	Studies in Small Group Communication Contexts ..... (3)
COM	584	Teaching of Speech Communication .. (3)
COM	591	Special Topics in Communication (Subtitle Required) ..... (1)
CJT	601	Proseminar in Communication ..... (3)
CJT	607	Evaluating and Communicating Information ..... (3)
CJT	608	Mass Communications and Society .... (3)
CJT	614	Information Storage and Retrieval Systems ..... (3)
CJT	615	Information Systems Design ..... (3)
CJT	619	Global Communication and Information Perspective ..... (3)
CJT	631	Proseminar in Interpersonal Communication ..... (3)
CJT	645	Mass Communications Theory Research ..... (3)
CJT	650	Signs and Sign Behavior ..... (3)
CJT	651	Communications Theory ..... (3)
CJT	665	Communications Research Methods (3)
CJT	681	Communications Historiography .... (3)
CJT	682	Communication and Persuasion ..... (3)
CJT	696	Internship in Communications ..... (3)
CJT	700	Directed Reading in Communication ..... (1-3)
CJT	701	Seminar in Communication Perspectives ..... (3)
CJT	705	Seminar: Information Sciences ..... (3)
CJT	719	Special Topics/Issues in International/ Intercultural Communications ..... (3)
CJT	721	Seminar in Intrapersonal Communication ..... (3)
CJT	725	Seminar in Organizational Communications (Subtitle Required) ..... (3)
CJT	730	Seminar in Mass Media and Public Policy ..... (3)
CJT	731	Seminar in Interpersonal Communication ..... (3)
CJT	741	Seminar in Multi-Actional Communication ..... (3)
CJT	745	Seminar in Mass Communications (Subtitle Required) ..... (3)
CJT	748	Master's Thesis Research ..... (0)
CJT	749	Dissertation Research ..... (0)
CJT	765	Communication Research Design ... (3)
CJT	767	Qualitative Methods in Communication Research ..... (3)
CJT	768	Residence Credit for the Master's Degree ..... (1-6)
CJT	769	Residence Credit for Doctor's Degree ..... (0-12)
CJT	780	Special Topics in Communication (Subtitle Required) ..... (3)
CJT	781	Directed Study in Communication (1-6)
CJT	790	Research Problems in Communication ..... (1-6)
JOU	485G	Community Journalism ..... (3)
JOU	511	Editorial Writing ..... (3)
JOU	513	Supervision of High School Publications ..... (1-3)
JOU	531	Law of the Press ..... (3)
JOU	532	Ethics of Journalism and Mass Communication ..... (3)
JOU	535	History of Journalism ..... (3)
JOU	537	Seminar in Public Opinion ..... (3)
JOU	543	Advertising Regulation ..... (3)
TEL	504	Telecommunications Management .. (3)
TEL	505	Advance Topics in Telecommunications Policy ..... (3)
TEL	508	Advanced Research Methods ..... (3)
TEL	510	Advertising and Electronic Media ... (3)
TEL	511	Telecommunications Instructional Systems ..... (3)
TEL	513	Social Effects of Telecommunications (3)
TEL	520	Economics of Information ..... (3)
TEL	530	Proseminar in Telecommunications (3)
TEL	545	Entertainment Functions of the Mass Media ..... (3)
TEL	599	Telecommunications Topical Seminar (3)

Communication Disorders

Graduate Faculty: Associate Professor Judith L. Page

Associate Members: Assistant Professors Lori S. Gonzalez and John E. Pickering, Jr.

The Division of Communication Disorders at the University of Kentucky offers a two-year master's degree program in speech-language pathology. The program is a joint effort of the University and the Lexington Veterans' Affairs Medical Center. Students who complete the program will typically meet the academic and clinical training requirements for the American Speech-Language-Hearing Association's (ASHA) Certificate of Clinical Competence in Speech-Language Pathology and for licensure in Kentucky and most states with licensure requirements. Students seeking to fulfil ASHA certification requirements and those desiring certification for school employment should consult with the Director of Graduate Studies.

The length of a student's program depends upon the certification options selected, the student's educational background, and the number of credits completed each semester. Students with an undergraduate major in communication disorders will typically complete the program in two years of full-time study. Students entering without an undergraduate major in communication disorders should plan on an additional year to complete prerequisite undergraduate content courses.

During the first full year of the graduate program students typically complete coursework and clinical practicum at the UK Speech-Language-Hearing Clinic. During the second year, students may be assigned to clinical externship rotations in a variety of clinical settings, including the Lexington Veterans' Affairs Medical Center, agencies providing services to children (e.g., public school, preschool, clinic), and agencies in one of Kentucky's Area Health Education Centers (AHECs). Successful completion of a comprehensive examination is required for all degree candidates.

To be considered for admission, a student must have at least a 2.5 undergraduate GPA and submit Graduate Record Examination scores (verbal, quantitative and analytical). Admissions are competitive so interested students are encouraged to apply by March 1.

Financial assistance may be available on a competitive basis. Students should apply directly to the program for graduate assistantships.

511 Speech-Language Development and Disorders for the Severely Handicapped .. (3)
512 Speech-Language Development and Disorders for the Mildly Handicapped ..... (3)
521 Nonspeech Communication ..... (3)
587 Audiometry ..... (3)
588 Disorders of Articulation ..... (3)
589 Cleft Palate ..... (3)
591 Aural Rehabilitation ..... (3)
592 Problems and Needs of the Hearing Impaired ..... (3)
647 Language Disorders II ..... (3)
656 Clinical Laboratory in Diagnostic Procedures for Speech and Language ..... (2)
657 Clinical Laboratory in Speech and Language ..... (1-4)
658 Clinical Laboratory in Audiology ..... (1)
659 Clinical Externship in Speech Pathology .. (1-12)
670 Disorders of Phonation ..... (3)
673 Neurogenic Disorders of Speech and Language ..... (3)
674 Disorders of Fluency ..... (3)
702 Seminar in Speech Pathology (Variable Topic) ..... (1-3)

Computer Science

Graduate Faculty: Professors Yuri Breitbart, Raphael A. Finkel, Forbes Lewis, Wiktor Marek, Miroslaw Truszczynski.and Grzegorz W. Wasilkowski. Associate Professors Fuhua Cheng, Jerzy Jaromczyk, and Rajiv Mehrotra.

Associate Members: Associate Professor Anthony Q. Baxter. Assistant Professors James N. Griffioen, Yijie Han, Arcot Rajasekar and Rajendra Yavatkar.

Joint Appointments: Professors Kenneth K. Kubota and James Wells.

Emeritus Professor: A.R. Newbery and Henry Thacher, Jr.

The Department of Computer Science offers programs of study leading to the Master of Science and Doctor of Philosophy degrees. Admission to these programs is highly competitive and based upon academic record, GRE scores, and letters of recommendation. It is strongly suggested that applicants present evidence of mathematical maturity as well as competence in computer science. Full details of the requirements for degree programs are available from the department upon request.

Since very few specific courses are required for the graduate degree programs, all candidates are expected to demonstrate proficiency in the fundamental areas of computer science by passing foundational examinations in computing systems, numerical methods, and computational theory and algorithm analysis. Participation in departmental seminars is also required.

Both thesis (Plan A) and non-thesis (Plan B) options are available in the program leading to the Master of Science degree. A project is required of non-thesis candidates. No language requirement (other than proficiency in English) is mandated.

The doctoral program in Computer Science is a research degree granted primarily on the presentation of a substantial research achievement. To be admitted to candidacy for this degree, candidates must satisfy the requirements of the Graduate School, present evidence of proficiency in a language which is not their native tongue, and pass the qualifying examination. This examination consists of written and oral sections covering breadth in computer science as well as depth in a specific area.

Areas of research actively pursued by faculty and students within the department include: artificial intelligence, numerical methods, operating systems, theory of computation, data base technology, design and analysis of algorithms, graphics, CAD methods for VLSI systems, parallel processing, and software engineering. Courses in these and other areas are available to permit students to complete studies of sufficient breadth and depth prior to engaging in independent research.

415G Graph Theory ..... (3)
416G Principles of Operations Research I ..... (3)
420G Compilers for Algorithmic Languages ..... (3)
450G Fundamentals of Programming Languages ..... (3)
460G Immigration into Computer Science ..... (3)
461G Minicomputers ..... (3)
470G Systems Software ..... (3)
505 Data Base Management Systems ..... (3)
510 Discrete Computer Mathematics I ..... (3)
522 Matrix Theory and Numerical Linear Algebra I ..... (3)
532 Finite Precision Arithmetic ..... (3)
537 Numerical Analysis ..... (3)
538 Numerical Analysis II ..... (3)
540 Systems Simulation ..... (3)
541 Advanced Compiler Design I ..... (3)
545 Computer Graphics ..... (3)
550 Introduction to Coding Theory ..... (3)
555 Logic for Computer Science ..... (3)
560 Artificial Intelligence ..... (3)
570 Operating Systems Design ..... (3)
575 Theoretical Aspects of Computing ..... (3)
580 Algorithm Design ..... (3)
585 Intermediate Topics in Computer Science (Subtitle Required) ..... (3)
587 Microcomputer Systems Design ..... (3)
605 Advanced Information Processing ..... (3)
610 Masters Project ..... (3)
612 Independent Work in Computer Science (1-3)
615 Computer Architecture and Microprogramming ..... (3)
620 Numerical Approximation and Curve-Fitting ..... (3)
622 Matrix Theory and Numerical Linear Algebra II ..... (3)
630 Geometric Modeling ..... (3)
631 Error Analysis and Certification ..... (3)
635 Image Processing ..... (3)
636 Computer Vision ..... (3)
641 Advanced Compiler Design II ..... (3)
645 Computer Networks ..... (3)
650 Problem Seminar ..... (3)
655 Design of Programming Languages ..... (3)
660 Topics in Artificial Intelligence (Subtitle Required) ..... (3)
670 Natural Language Processing ..... (3)
674 Heuristic Algorithms ..... (3)
675 Theory of Computation ..... (3)
676 Parallel Algorithms ..... (3)
677 Computational Geometry ..... (3)
679 Advanced Graph Algorithms ..... (3)
680 Seminar in Computer Science ..... (2)
682 Switching Theory ..... (3)
683 Finite-State Machines ..... (3)
685 Special Topics in Computer Science (Subtitle Required) ..... (3)
686 Special Topics in Theory of Computation (Subtitle Required) ..... (3)
687 Special Topics in Software (Subtitle Required) ..... (3)
689 Special Topics in Numerical Computing (Subtitle Required) ..... (3)
690 Operating Systems Theory ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for Master's Degree ... (1-6)
769 Residence Credit for Doctor's Degree .... (0-12)

Crop Science

Graduate Faculty: Professors Glenn B. Collins, Michael Collins, Paul L. Cornelius, Charles D. Dougherty, Dennis B. Egli, A. J. Hiatt, Paul Legg, Mark T. Nielsen, Charles G. Poneleit, Norman L. Taylor, Dennis M. Tekrony and William W. Witt.. Associate Professors Michael Barrett, Harold R. Burton, Larry Grabau, David Hildebrand, Todd Pfeiffer and David A. VanSanford Adjunct Associate Professor Charles T. MacKown.

Associate Members: Adjunct Associate Professors Steven Crafts-Brandner and Georgia C. Eizinga. Extension Professors Morris J. Bitzer, Andrew J. Powell and Jones H. Smiley. Associate Extension Professor: James R. Martin. Assistant Extension Professor Jonathan D. Green.

Joint Appointments: Professors Lowell P. Bush, George M. Cheniae, Dewayne L. Ingram and George Wagner. Extension Professor: Robert Anderson. Associate Professors Jack W. Buxton, Robert L. Geneve, Arthur G. Hunt, John C. Snyder and Leslie Weston. Assistant Professors Joseph Chappell and David B. Wagner. Adjunct Assistant Professor Michael E. Salvucci.

Emeritus Professors: Robert C. Buckner, Joseph Freeman, Dean E. Knavel, G. W. Schneider, T. H. Taylor, William Templeton, and G. T. Webster.

The interdepartmental Crop Science graduate program offers graduate work leading to the Master of Science, Master of Science in Agriculture, and Doctor of Philosophy degrees with areas in plant breeding and genetics, crop physiology and management, turf science, cellular and molecular genetics, seed science and technology and weed science. Faculty are from the Departments of Agronomy, Forestry and Horticulture in the College of Agriculture. For the M.S. degree, 24 hours of course work plus an acceptable thesis are required (Plan A). In certain cases, the requirements may be satisfied by substituting 12 additional hours of course work for the thesis (Plan B). Work leading to advanced degrees must conform to the general rules and regulations of The Graduate School.

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 for all degree candidates.

A Crop Science minor is offered and must be administered by a member of the Graduate Faculty and requires a minimum of 9 credit hours of graduate level plant science courses.

502 Ecology of Economic Plants ..... (3)
510 Ecology and Utilization of Grassland ..... (4)
515 Turf Management ..... (3)
556 Seed Technology ..... (2)
560 Soil-Plant Relationships ..... (3)
562 Advanced Genetics ..... (3)
597 Special Topics in Agronomy (Subtitle Required) ..... (1-3)
599 Special Problems in Agronomy ..... (1-4)
601 Special Topics in Molecular and Cellular Genetics ..... (1)
602 Principles of Yield Physiology ..... (3)
619 Cytogenetics ..... (4)
620 Plant Molecular Biology ..... (2)
622 Physiology of Plants I ..... (3)
623 Physiology of Plants II ..... (3)
630 Experimental Techniques in Plant Physiology ..... (3)
654 Crop Physiology ..... (3)
657 Seed Biology ..... (3)
658 Advanced Weed Science ..... (3)
664 Plant Breeding I ..... (3)
666 Advanced Plant Breeding ..... (3)
676 Quantitative Inheritance in Plant Populations ..... (3)
678 Statistical Genetics ..... (3)
697 Special Topics in Agronomy (Subtitle Required) ..... (1-3)
732 Mineral Nutrition of Plants ..... (3)
734 Physiology of Growth and Development .. (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for the Master's Degree ..... (1-6)
769 Residence Credit for the Doctor's Degree ..... (0-12)
770 Agronomy Seminar ..... (1)
799 Research in Agronomy ..... (1-4)

Curriculum and Instruction

Graduate Faculty: Professors Ronald Atwood, Virginia Atwood, Connie A. Bridge, and Angene Wilson. Associate Professors Gary J. Anglin, Frank Bickel, Linda S. Levstik, Ernest J. Middleton, Phil Nacke, J.T. Stevens, George Szekely, and Peter Winograd.

Associate Members: Associate Professor Jane M. Emanuel. Assistant Professors John Buckner, William S. Bush, Lenora Finn Paradis, Lea Jean Perritt, Mary C. Shake, and Alan Zollman.

Joint Appointments: Associate Professors Georgia C. Collins and Donald Hoffman.

Emeritus Professors: Harry Barnard, Lyman Ginger, James Moore and Leland Smith.

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 levels. The doctoral programs prepare leaders for public schools, universities and other educational agencies. Specialization is available in several graduate areas.

In cooperation with the Department of Administration and Supervision, the department offers a program leading to the Doctor of Education (Ed.D) degree in Instruction and Administration.

Course work for the Ed.D. in Instruction and Administration will consist of a minimum of 42 graduate credits beyond the master's degree planned by the Major Professor and Advisory Committee based on the student's background, needs and goals. All course work plans will include work in the following:

a) Instruction and administration
b) support work in education,
c) research tool courses (minimum of 9 semester hours required), and
d) support work outside of education.

For more information regarding the nature and effective date of the proposed program check with the Director of Graduate Studies of the respective department.

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 areas of professional education. Consult the Director of Graduate Studies for specific recommendations within this broad framework. The program qualifies teachers for a Standard Certificate if they have completed the appropriate undergraduate curriculum.

MASTER OF ARTS IN EDUCATION
(EARLY CHILDHOOD EDUCATION)

This is a cooperative degree program offered through the Department of Curriculum and Instruction and Family Studies. The Master of Arts in Education is offered through Curriculum and Instruction; the Master of Science in Family Studies through Home Economics. Admission to either program requires submission of a departmental application, in addition to The Graduate School application. The program requires a minimum of 36 graduate hours, or 30 hours and a thesis. Course work will be selected from the following areas. Consult the Director of Graduate Studies for specific course recommendations within this framework. This program qualifies teachers for a standard certificate if they have completed the appropriate undergraduate curriculum.

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 areas of professional education. Consult the Director of Graduate Studies for specific recommendations within the broad framework. The program qualifies teachers for a Standard Certificate if they have completed the four-year undergraduate curriculum.

MASTER OF SCIENCE IN EDUCATION
(SECONDARY EDUCATION OPTION)

The general requirements for the Master of Science in Education, secondary education area, 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 Education includes at least 12 semester hours in mathematics and/or science.

MASTER OF ARTS IN EDUCATION AND MASTER OF SCIENCE IN EDUCATION
(INITIAL CERTIFICATION OPTION—SECONDARY EDUCATION)

This program is designed for students having a bachelor's degree in selected subject areas. Students may meet state certification requirements while completing degree requirements. A minimum of six semester hours of graduate work must be completed outside the College of Education in the teaching specialty area. Dependent upon the student's background, one may need to complete undergraduate deficiencies to meet degree and certification requirements. Consult the Director of Graduate Studies for specific information regarding degree requirements.

MASTER OF SCIENCE IN EDUCATION
(INSTRUCTIONAL SYSTEMS DESIGN OPTION)

The Instructional Systems Design area is a 36-semester hour program designed for individuals who are not seeking public school certification but wish to develop their instructional design and curricular development skills and who will perform in an instructional capacity outside K-12 school settings. Persons choosing this area are frequently preparing for instructional systems design responsibilities in business and industry, government and various training organizations. Three areas of specialization are offered: 1) Instructional Design and Technology, 2) Clinical Teaching, and 3) College Teaching.

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 a faculty advisor subject to 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 an area of concentration 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).

The curriculum shall include a minimum of 33 semester hours of preparation according to the following distribution:

a. A minimum of 18 semester hours credit in graduate level reading courses to include EDC 619, EDC 620, EDC 642, EDC 641 or 643. An additional 6 hours to be selected with the approval of an adviser.

b. Six to nine semester hours credit in the College of Education, selected to extend the humanistic, behavioral, multicultural and research components of the program, based on the student's educational background, with adviser approval.

c. Six to nine semester hours credit selected from appropriate support areas outside the College of Education, with adviser approval.

Completion of the Master of Arts in Education with Reading as an area of concentration will fulfill the academic requirements for certification as a reading specialist. A minimum of three years of successful classroom teaching is an additional requirement for this certification.

500 Clinical and Laboratory Teaching ..... (3)
501 Teaching Internship ..... (1-12)
511 Special Topics in Early Childhood Education ..... (1-3)
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 ..... (3)
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 ..... (3)
540 Problems in Teaching Reading ..... (3)
542 Children's Literature ..... (3)
544 Utilization of Educational Media ..... (3)
545 Preparation of Instructional Materials ..... (3)
547 Microcomputers in Instruction ..... (3)
550 Teaching the Culturally Different ..... (3)
552 Modern Educational Problems ..... (3)
565 Modern Educational Problems (General Curriculum) ..... (3)
575 Modern Educational Problems (Unclassified) ..... (3)
576 Modern Educational Problems. (Unclassified) ..... (3)
577 Art in Secondary Schools ..... (3)
578 Art in Elementary Schools ..... (3)
580 Introduction to Gifted Education ..... (3)
600 Workshop in Reading ..... (1-3)
601 Practicum—Secondary Education ..... (1-9)
602 Curricula and Programming for the Gifted .. (3)
606 Instructional Television in the Classroom (3)
607 Basic Instructional Design ..... (1-3)
608 Applications of Instructional Design ..... (3)
610 Discipline and Classroom Management .... (3)
615 Advanced Instructional Applications for the Early Adolescent Learner ..... (3)
616 The Middle School ..... (3)
618 Advanced Study in the Teaching of Reading ..... (3)
619 Assessment of Reading Growth and Development ..... (3)
620 Design and Implementation of Reading Instruction ..... (3)
621 Linguistic and Cognitive Foundations of Reading in Early Childhood ..... (3)
641 Research and Theory in Teaching Reading in the Elementary School ..... (3)
642 Research and Theory in Teaching Language Arts in the Elementary School ..... (3)
643 Research and Theory in Teaching Reading in Secondary Schools ..... (3)
646 Organizing Reading Programs ..... (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)
676 Practicum in Gifted Education ..... (3)
710 Advanced Topics in Instructional Design ..... (3)
712 The Elementary School ..... (3)
713 Curriculum Trends in Early Childhood Education ..... (3)
714 The Secondary School ..... (3)
724 Organization and Supervision of Student Teaching ..... (3)
730 Problems of the School Curriculum ..... (3)
732 Principles of Curriculum Construction .... (3)
740 Practicum in Teaching Reading and Related Language Arts ..... (3)
746 Motion Pictures in Education ..... (3)
747 Seminar in Reading and Language ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
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)
781 Independent Study in Curriculum and Instruction ..... (1-3)
791 Research Problems in Curriculum and Instruction ..... (1-3)

Dentistry

Graduate Faculty: Professors Gerald A. Ferretti, Harold Laswell, James Matheny, David Nash, Jeffrey P. Okeson, Gerald Roth and Stanley Saxe. Associate Professors Herbert Abrams, Larry C. Breeding, J. David Hardison, Samuel J. Jasper and Richard J. Mitchell.

Associate Members: Associate Professor E. Preston Hicks. Assistant Professors Cynthia S. Beeman, Jan E. Kronmiller, Craig S. Miller and William C. Shellhart.

The goal of the program leading to the Master of Science degree in Dentistry is to produce graduates who are clinically adept, well-grounded in research and the biological basis of their specialties, and prepared to function at a high level of accomplishment in specialty practice and academic dentistry.

At the present time, students pursuing specialty training in orthodontics, periodontics, geriatric dentistry, orofacial pain, and pediatric dentistry are eligible for the Master of Science in Dentistry degree.

Only dental graduates of high academic standing will be accepted into this program, which requires three years of didactic, clinical, and research training. All of these

elements are integrated throughout the three years of the program. All students will receive teaching experience, in anticipation of full- or part-time academic involvement after graduation.

The program is interdisciplinary in scope. The participating faculty is from all the clinical and graduate faculty of the College of Dentistry, from the Medical Center Departments of Anatomy, Pediatrics, Psychiatry and Behavioral Science, and from appropriate departments on the Lexington Campus.

Specific requirements for the Master of Science degree in Dentistry are: (1) satisfactory completion of all program requirements; (2) 24 hours graduate credit, at least half of which must be from a "core" curriculum; (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. Successful completion of the M.S. degree in prerequisite to the award of the specialty certificate.

ORT	610	Cranio-Facial Form	(3)
ORT	620	Oral-Pharyngeal Function I	(2)
ORT	621	Oral-Pharyngeal Function II	(2)
ORT	660	Orthodontic Diagnosis	(1)
ORT	661	Orthodontic Seminar-Clinic	(3)
ORT	662	Orthodontic Technique	(3)
ORT	664	Biomechanics	(1)
ORT	710	Management of Complex Orofacial Deformities	(1)
ORT	748	Master's Thesis Research	(0)
ORT	768	Residence Credit for Master's Degree	(1-6)
ORT	770	Orthodontic Seminar	(1)
ORT	790	Research in Orthodontics	(1-5)
CDS	550	Research Methodology and Instrumentation	(2)
CDS	611	Child Growth and Development I	(2)
CDS	612	Child Growth and Development II	(2)
CDS	620	Current Concepts in Geriatric Health Care	(2)
CDS	622	Constructional Skills in Geriatric Health Care	(3)
CDS	624	Issues in Geriatric Health Care Administration	(1)
CDS	631	Principles of Dental Occlusion	(2)
CDS	748	Master's Thesis Research	(0)
CDS	768	Residence Credit for Master's Degree	(1-6)
CDS	770	Geriatric Dentistry Seminar—Clinic	(2)
CDS	790	Research in Geriatrics	(1-4)
CDE	655	Health Care Organization	(1)
OBI	650	Oral Biology for Postdoctoral Dental Students	(4)
OBI	720	Microbial Structure and Function	(4)
OPT	651	Graduate Oral Pathology	(3)
OSG	651	Anatomical Relationships in Surgery	(1)
PER	610	Introduction to Geriatric/ Gerontologic Health Care	(1)
PER	626	Advanced Concepts in General Dentistry	(1)
PER	661	Modern Concepts in Periodontics	(2)
PER	748	Master's Thesis Research	(0)
PER	768	Residence Credit for the Master's Degree	(1-6)
PER	770	Treatment Planning Seminar	(2)
PER	772	Periodontal Biology and Pathology	(2)
PER	774	Periodontics Surgical Seminar	(1)
PER	776	Periodontal Therapy Seminar	(1)
PER	790	Research in Periodontics	(1-3)
PDO	631	Dental Care for the Chronically Ill and Handicapped Child	(2)

Diplomacy and International Commerce

Graduate Faculty: Professors Vincent Davis and John D. Stempel.

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 several departments historically most closely associated with the Patterson School. These include most of the social science departments in the College of Arts and Sciences (especially History and Political Science), and most of the departments in the College of Business and Economics (especially Economics, Finance, Management, and Marketing), plus a few others elsewhere on campus such as Agricultural (Development) Economics.

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 commerce, 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 departments historically most closely associated with the Patterson School. Each student is expected, in the absence of special circumstances, to take a methodology course such as accounting, statistics or computer science at the graduate level. Most students will need three semesters to complete the 30 minimum hours for the M.A. degree; however, some elect to remain for four semesters, going well beyond the 30-hours minimum, in order to obtain more breadth and/or depth in their desired fields of professional preparation. Students are encouraged to serve a career-related internship obtained with the Patterson School's assistance. This internship will typically be scheduled in the summer between the first and second academic years in residence, but there is enough flexibility for it to occur at other times and in some cases to extend beyond the normal ten-weeks limit.

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. Coursework may be concentrated in a specific geographical area such as Latin America, Asia, Europe, etc., or more broadly focused in certain topical or functional aspects of international affairs.

The student must pass a written and an oral 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.

The M.A. degree offered by the Patterson School matches up well with other graduate and professional programs such as a law degree, for those students who might desire extended postgraduate career preparation. However, the Patterson School M.A. degree does not match up well with a doctoral degree. Students who contemplate obtaining a Ph.D. are advised to proceed directly toward that goal.

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 assistance should be requested from the Dean of The Graduate School and returned to the Dean of The Graduate School. GRE scores and official transcripts from each college or university attended are required by The Graduate School as part of the application procedure. In addition, each applicant is required to submit a brief statement (two or three pages, at most) explaining the special interest in the Patterson School program in terms of career goals, along with three academic letters of reference and three letters of character or employment reference to be mailed directly to the Director of the Patterson School.

720	Economic Statecraft	(3)
748	Master's Thesis Research	(0)
768	Residence Credit for the Master's Degree	(1-6)
777	Research Problems in International Relations	(3)
795	Special Problems in Diplomacy and International Commerce	(3)

Economics

Graduate Faculty: Professors M.M. Ali, Mark Berger, Dan Black, Glenn C. Blomquist, James Fackler, Richard Gift, Curtis Harvey, Charles Hultman, Richard Jensen, Joseph Krislov and William Stober. Associate Professors John Garen, John Madden, Frank Scott, Mark Toma and Michael Webb. Extension Professor Randolph McGee.

Associate Members: Assistant Professors Steven Holland, William Hoyt, Donna Ingram, Gonyung Park, Sharmila Vishwasrao and Weiren Wang.

Joint Appointment: Associate Professor Eugenia Toma.

Emeritus Professors: Carl Cabe, Cecil Carpenter, Carl C. Erwin, H. W. Hargreaves, James W. Martin, Walter Pearce, David Ross, Don Soule, and Robert Stroup.

MASTER OF SCIENCE

Objectives

The M.S. in Economics is primarily for students who wish to have 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 and related fields, but it is also highly suitable for students with strong interdisciplinary interests. Plan B is offered.

Requirements

Recommended minimal undergraduate preparation: six hours of intermediate theory, 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 are:

1. A minimum of 30 hours of graduate credit courses.
   a. 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.
   b. At least 15 hours of the total of 30 must be in courses reserved exclusively for graduate students.
   c. The 30 hours must include ECO 660 or 760 and ECO 661 or 761, Economic Theory.
2. Success in a final examination.
3. Minimal average of grade B in all courses attempted for graduate credit after being admitted to Graduate School. Students obtaining six quality points 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 provide 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

1. A minimum of 30 hours of graduate credit courses, including:

ECO	**760**	**Neoclassical Microeconomic Theory**
ECO	**762**	**General Equilibrium Analysis and Welfare Economics**
ECO	**761**	**Advanced Macroeconomic Theory**
ECO	**763**	**Seminar in Macroeconomic Theory**
STA	**424G**	**Probability and Distribution Theory**
ECO	**691**	**Introduction to Econometrics I**
ECO	**692**	**Introduction to Econometrics II**

Two courses in an elective area of the PH.D. Program

2. Successful examination in one modern foreign language.
3. Minimal average of Grade B in all courses attempted for graduate credit after being admitted to The Graduate School. Students obtaining six quality points below a B average will be dropped by the department.
4. Success in a final examination.

THE PH.D. DEGREE

Objectives

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 private sector 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:

1. An understanding of economic theory.
2. Skill in the use of quantitative techniques, specifically mathematics and statistics.
3. Specialization in a limited number of areas.
4. A knowledge of the broad social and political background of the economic environment.
5. Experience in the development of research projects throughout their entire program.
6. Research and writing skills that would lead to the publication of original research.
7. Competence in communicating economic knowledge to broad and diverse audiences.
8. 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 are:

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 spring semester and the eight-week summer sesion. Students failing the ex-amination 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 660 Advanced Microeconomic Theory
   ECO 661 Macroeconomic Theory
   ECO 760 Neoclassical Microeconomic Theory
   ECO 761 Advanced 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.
   In addition the student must satisfactorily complete ECO 762 and ECO 763.
2. 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 424G Probability and Distribution Theory
ECO 691 Introduction to Econometrics
ECO 692 Introduction to Econometrics II
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: econometrics,international economics, monetaryeconomics,labor economics,economic development and public, urban and regional economics. What constitutes minimum course preparation in each field shall be determined by the student's Advisory Committee. The student may also take elective areas in other disciplines, including Agricultural Economics, Finance, Marketing, Management, and Mathematics, or in any discipline approved by his/her 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.
5. Grades. Minimal average of grade B in all courses attempted for graduate credit after being admitted to The Graduate School.

   Students obtaining six quality points below a B average will automatically be dropped by the department.
6. Qualifying Examinations.
   a. 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 ofthe spring semester and the eight-week summer session, 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 Examinations: 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.
7. 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.
8. Internship. The department will require of all candidates an internship. This internship will usually consist of teaching (3-6 semester hours),though upon approval of the Director of Graduate Studies, the student may select some other activity appropriate to his professional expectations.
9. 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.

465G Comparative Economic Systems ..... (3)
473G Economic Development ..... (3)
475G The Latin American Economies ..... (3)
481G Collective Bargaining ..... (3)
485G Monetary Economics ..... (3)
487G Intermediate Macroeconomic Theory ..... (3)
488G Intermediate Microeconomic Theory ..... (3)
492G Economic Modeling and Data Analysis ..... (3)
590 Introduction to Quantitative Economics I ..... (3)
610 Managerial Economics ..... (3)
611 Business Conditions Analysis ..... (3)
626 Time Series Analysis ..... (3)
636 Health Economics ..... (3)
652 Public Policy II: Economic Analysis ..... (3)
660 Advanced Microeconomic Theory ..... (3)
661 Macroeconomic Theory ..... (3)
662 Research Methods and Procedures in Economics ..... (3)
665 History of Economic Thought I ..... (3)
666 History of Economic Thought II ..... (3)
670 Economics of International Financial Institutions ..... (3)
671 International Economics Seminar I ..... (3)
672 World Trade and Commercial Policy ..... (3)
673 Seminar in Economic Development I ..... (3)
674 Agriculture and Economic Development ..... (3)
676 Labor Economics I ..... (3)
679 Public Economics ..... (3)
683 Urban Regional Economics ..... (3)
684 Environmental Economics, Regulation and Policy ..... (3)
686 Monetary Economics: Theory ..... (3)
687 Monetary Economics: Policy ..... (3)
688 Optimization and Economic Theory I ..... (3)
691 Introduction to Econometrics I ..... (3)
692 Introduction to Econometrics II ..... (3)
741 Theory of the Firm and Market Structure ..... (3)
742 Industrial Organization ..... (3)
749 Dissertation Research ..... (0)
760 Neoclassical Microeconomic Theory ..... (3)
761 Advanced Macroeconomic Theory ..... (3)
762 General Equilibrium Analysis and Welfare Economics ..... (3)
763 Seminar in Macroeconomic Theory ..... (3)
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 Labor Economics II ..... (3)
779 Seminar in Public, Urban and Regional Economics ..... (3)
786 Seminar in Monetary Theory and Policy ... (3)
788 Optimization and Economic Theory II ..... (3)
791 Problems in Econometrics ..... (3)
792 Econometrics I ..... (3)
793 Econometrics II ..... (3)
796 Seminar ..... (1-6)
797 Research Problems in Economics ..... (1-6)

Educational and Counseling Psychology

Graduate Faculty: Professors Henry Cole,, Emanuel Mason, Timothy Smith, William Stilwell and Judith Worell. Associate Professors Dwight Auvenshine, Charlotte R. Clark, Fred Danner, Stephen DeMers, Pamela Remer and Rory Remer.

Associate Members: Professor Lane J. Veltkamp. Associate Professor Phyllis Nash. Assistant Professors Paul deMesquita and Duvon G. Winborne. Adjunct Assistant Professor Michael Nichols.

Joint Appointments: Associate Professor Ralph M. Crystal. Assistant Professor Reginald Alston.

Emeritus Professors: James Barclay, Lisa Barclay, Gordon Liddle, Harriet Rose.

The Department of Educational and Counseling Psychology 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 January 15 for summer/fall beginning. All other degree applications are considered shortly after March 1.

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 includes not only demonstrated skills in the academic area, but a judgment by the faculty of the area program that the candidate demonstrates the personal and social characteristics as well as the professional commitment and ethical standards requisite for providing the skills associated with the program and the advanced degree.

For further information on specific program guidelines, contact the Director of

Graduate Studies in the Department of Educational and Counseling Psychology.

MASTER OF ARTS IN EDUCATION DEGREE
(GUIDANCE AND COUNSELING)

Two areas of concentration 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 SCIENCE IN EDUCATION DEGREE

The Master of Science in Education degree is offered by the department for individuals who will not meet state certification requirements in counseling or school psychology immediately upon completion. The work completed for this degree is applicable toward certification in either counseling or school psychology, but does not fulfill state certification requirements. Individuals who are interested in specializing in educational psychology, human development, measurement, or research in education may obtain this degree. The educational psychology program, planned in consultation with an adviser, is flexible and tailored to individual needs. It consists of 36 hours of graduate work without a thesis or 30 hours with a thesis. The counseling program prerequisites include psychological testing and abnormal psychology. 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 Board of Psychology Certification Examination in Counseling Psychology. The requirements for the State Board of Education certification in School Psychology include the work for the Master of Science in Education Degree plus the additional Educational Specialist degree requirements.

SPECIALIST IN EDUCATION DEGREE

The Educational Specialist degree is offered in the areas of educational psychology, guidance, counseling psychology and school psychology. Programs in this department follow the general guidelines of the College of Education programs as specified earlier. (see Advanced Degrees Section of Bulletin)

DOCTOR OF EDUCATION DEGREE

The Doctor of Education degree is offered in the areas of educational and of school psychology. Programs in this department follow the general guidelines of the College of Education program as specified earlier. (See Advanced Degrees 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. Both the Counseling Psychology Ph.D. and School Psychology Ph.D. programs are fully accredited by the American Psychological Association. A full-time, supervised one-year internship is required for all areas.

Various concentrations are 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.

(See Advanced Degrees section of the Bulletin.)

518 **Mental Hygiene** ..... (3)
520 **The Secondary School Pupil** ..... (3)
522 **Educational Tests and Measurements** ..... (3)
548 **Educational Psychology** ..... (3)
557 **Educational Statistics** ..... (3)
570 **Introduction to Psychological Services in Schools** ..... (3)
580 **Introduction to Gifted Education** ..... (3)
600 **Life Span Human Development and Behavior** ..... (3)
601 **Human Social Development** ..... (3)
603 **Human Cognitive Development** ..... (3)
604 **Development of Psychological Sex Roles** . (3)
605 **Introduction to Counseling: Techniques I** (3)
606 **Professional Issues in Counseling Psychology** ..... (2)
610 **Theories of Learning in Education** ..... (3)
611 **Human Cognitive Learning** ..... (3)
612 **Development of Creativity and Critical Thinking** ..... (3)
613 **Social Psychology Issues in Education** ..... (3)
615 **Proseminar in History and Systems of Psychology** ..... (3)
620 **Topics and Methods of Evaluation** ..... (3)
621 **Advanced Topics and Methods of Evaluation** ..... (3)
630 **Principles of Psychological Assessment** .... (3)
640 **Individual Assessment of Cognitive Functioning** ..... (3)
642 **Individual Assessment of Personality Functioning** ..... (3)
649 **Group Counseling** ..... (3)
650 **Diagnosis/Psychopathology in Counseling Psychology** ..... (3)
652 **Theories of Counseling** ..... (3)
653 **Psychological Appraisal of Children and Youth** ..... (3)
656 **Methodology of Educational Research** ..... (3)
658 **Problems in Educational Psychology** ..... (1-3)
659 **Advanced Educational Measurement** ..... (3)
660 **Research Design and Analysis in Education** ..... (3)
661 **Techniques of Counseling II** ..... (3)
665 **Practicum in Counseling Psychology** ..... (1-6)
666 **Psychology of Career Counseling** ..... (3)
669 **Diagnostic Classification in School Psychology** ..... (3)
670 **Psychoeducational Strategies of Intervention** ..... (3)
671 **Seminar in Psychoeducational Consultation in Schools** ..... (3)
675 **Practicum in School Psychology** ..... (3-6)
676 **Practicum in Gifted Education** ..... (3)
677 **Advanced Studies in Community Mental Health** ..... (3)
680 **Parent and Child Counseling** ..... (3)
683 **Topics in Counseling Psychology** ..... (1-3)
685 **Issues and Techniques in the Counseling of Women** ..... (3)
686 **Theory and Methods in Marriage and Family Therapy** ..... (3)
690 **Advanced Studies in Psychological Assessment** ..... (3-6)
701 **Cognitive-Behavioral Counseling** ..... (3)
702 **Career Development: Research, Theories and Practices** ..... (2-3)
703 **Seminar in Clinical Supervision** ..... (1-3)
707 **Multivariate Analysis in Educational Research** ..... (3)
708 **Internship in Educational Psychology and Counseling** ..... (3-9
748 **Master's Thesis Research** ..... (0)
749 **Dissertation Research** ..... (0)
762 **Organization and Operation of Pupil Services** ..... (3)
763 **Research and Evaluation in Guidance** ..... (3)
765 **Independent Study in Counseling Psychology** ..... (1-4)
768 **Residence Credit for the Master's Degree** ..... (1-6)
769 **Residence Credit for the Doctor's Degree** ..... (0-12)
776 **Seminar in School Psychology (Subtitle Required)** ..... (3)
777 **Seminar in Counseling Psychology** ..... (1-3)
778 **Seminar in Educational Psychology (Subtitle Required)** ..... (3)
782 **Independent Study in Educational Psychology** ..... (1-3)

Educational Policy Studies and Evaluation

Graduate Faculty: Professors Leonard L. Baird, David E. Denton, Alan J. DeYoung, Thomas R. Guskey and Edward W. Kifer. Associate Professors Richard Angelo, Clinton Collins, Virginia Davis-Nordin, Richard T. LaBrecque and Edgar L. Sagan.

Associate Members: Assistant Professors Jeffery P. Bieber and Beth Leah Goldstein.

Joint Appointment: Juanita Fleming

Emeritus Professors: Collins W. Burnett, Charles F. Elton, Willis H. Griffin and Leslie L. Martin.

The Department of Educational Policy Studies and Evaluation provides a unique

opportunity for students who wish to develop the knowledge, judgment, and research skill required to address educational issues with flexibility and imagination. Although methodological finesse is prized within the department, degree programs do not emphasize 'methods' per se. The premium is placed on understanding questions of policy within the broader, often overlapping contexts in which they arise. Every effort is made to face the issues in ways which credit rather than ignore those contexts and their subtlety.

There are four broad areas of concentration. Higher Education focuses upon research concerning higher education policies, programs, and services. History and Philosophy of Education treats educational issues, problems, ideas, and institutions, using the tools of historical inquiry and philosophical analysis. The Socio-Cultural Study of Education provides sociological, anthropological, and comparative international perspectives. Evaluation focuses upon the relationships among ethics and education, policy analysis, and the development of evaluation systems for educational policies and programs.

The department's faculty represents a wide spectrum of intellectual orientations, professional commitments, and experience. No less importantly, an uncommon degree of respect for both the difficulties and the necessities of interdisciplinary conversation prevails. These factors, together with substantial flexibility in program planning at the course work stage (which includes opportunities for independent study, affiliations with faculty from other departments in the College and the University, as well as extramural internships), help to create an environment congenial to students with a variety of backgrounds and future goals. Some of the department's graduates pursue traditional academic careers as faculty members or administrators. Others serve as policy analysts or evaluation specialists in school systems, state departments of education, or in other arenas outside the university.

DEGREE PROGRAMS

Master of Science in Education (MS in Education)

The master's degree is available for those who wish to explore topics in educational policy and evaluation for the first time, or to enhance what understanding they may already possess through direct experience as a teacher or as a member of an administrative staff. For some it serves as a terminal degree; others use it to lay the foundation for doctoral study.

Admission requires a minimum grade point average of 2.5 in all undergraduate course work, a 3.0 GPA for any previous graduate work, as well as satisfactory completion of the Graduate Record Examination. A total of 31 credit hours including the Proseminar (EPE 601) are required to complete the degree—full-time study for one academic year or its equivalent. No less than 19 hours of the total required must be taken within Educational Policy Studies. Planning in conjunction with an advisory committee, students choose a suitable array of courses from among the department's four areas of concentration, and then round out their programs with some appropriate support work from other departments within the College or the University.

Doctor of Education (Ed.D.)

The Ed.D. program in Educational Policy Studies and Evaluation provides advanced study for those who seek careers in the administration or evaluation of educational programs in schools, colleges, or other institutional settings. The program is also ideally suited for those who wish to develop the scholarly competence needed to serve as faculty members in colleges of education.

Admission to the program requires a master's degree (or thirty graduate credits applicable to an appropriate master's degree) and satisfactory completion of the Graduate Record Examination. Course work is planned by the student's advisory committee based on their assessment of his or her background and goals. All programs include the Proseminar (EPE 601) and course work chosen from the department's four general areas of concentration as well as support work in related fields within or outside the College of Education. Although some students' programs may require competency in a foreign language, there is no general foreign language requirement.

Doctor of Philosophy (Ph.D.) Studies in Higher Education

For methodological and cultural reasons, proficiency in a foreign language is required of all Ph.D. candidates in Educational Policy Studies and Evaluation. The language may be modern or classical. The choice of foreign language, as well as the means of demonstrating proficiency, must be approved by the student's advisory committee and by the Graduate School. Apart from this requirement, the degree of Doctor of Philosophy represents the same level of attainment as the Doctor of Education. Graduate students are held to a uniformly high standard of intellectual accomplishment at both the course work and dissertation stages, no matter what degree option they may pursue. Unlike the Ed.D. program, however, where students are free to choose the topic of research, the department's Ph.D. requires intensive research on some aspect of higher education. After taking the Proseminar, the student selects an area of concentration in either the history and philosophy of higher education, the socio-cultural study of higher education, or research and evaluation in higher education. The requirements for admission are a minimum of 24 hours of graduate work (a master's degree in a discipline outside of Education is preferred) and satisfactory scores on the Graduate Record Examination.

Joint Doctoral Program

The department participates in the joint Ed.D. program with 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.

525	Special Topics Seminar in Educational Policy Studies and Evaluation (Subtitle Required)	(3)
532	Race and Ethnic Relations	(3)
533	Introduction to the Philosophic Study of Education	(3)
555	Comparative Education	(3)
570	Gathering, Analyzing and Using Educational Data	(3)
601	Proseminar	(1)
602	Social Policy Issues and Education	(3)
603	Educational Policy Analysis: An Introduction	(3)
620	Topics and Methods of Evaluation	(3)
621	Advanced Topics and Methods of Evaluation	(3)
623	Action Research	(3)
628	Ethics and Educational Decision-Making	(3)
629	Futuristics and Educational Policy	(3)
640	Philosophy of Education	(3)
642	Knowledge, Ideology and Schooling	(3)
643	Values, Moral Education and Schooling	(3)
646	Analysis of Thinking	(3)
650	History of Western Education	(3)
651	History of Education in the U.S.	(3)
652	History of Educational Thought	(3)
653	History of Higher 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)
666	Multi-Cultural & International Education	(3)
670	Policy Issues in Higher Education	(3)
672	College Teaching and Learning	(3)
674	Theories of Student Development	(3)
676	Organization and Administration of Higher Education	(3)
678	Economics of Higher Education	(3)
679	Multi-measures Education and Evaluation	(3)
680	Politics of Higher Education	(3)
748	Master's Thesis Research	(0)
749	Dissertation Research	(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 Educational Policy Studies and Evaluation	(1-3)
778	Seminar in History of Education in Kentucky	(3)
785	Independent Studies in Educational Policy Studies and Evaluation	(3)
790	Internship in Educational Policy Studies and Evaluation	(6)
798	Seminar in Higher Education	(3)
799	Research Problems in Higher Education	(3)

Electrical Engineering

Graduate Faculty: Professors Eugene B. Bradley, Jimmie J. Cathey, Prasad Kadaba, Syed A. Nasar, Clayton R. Paul and Frederick C. Trutt. Associate Professors Raymond J. Distler, J. Robert Heath and Bruce L. Walcott.

Associate Members: Assistant Professors Tae-Sang Chung, T. Damarla, Kevin D. Donohue, Stephen D. Gedney, William R. Grise, Laurence G. Hassebrook, Hassan A. Hejase, Lawrence E. Holloway, Ratnesh Kumar, Jian Li, William T. Smith and Keith W. Whites.

Emeritus Professor: Earl L. Steele.

The Department of Electrical Engineering offers advanced studies leading to either a Master of Science in Electrical Engineering or a Doctor of Philosophy in Electrical Engineering. A minimum grade point average of 3.0/4.0 on all undergraduate work is required for admission to the graduate program. A minimum GRE general test score of 1100 (combination of verbal and quantitative sections) must be obtained. An undergraduate degree in electrical engineering is preferred. Those applicants without a BSEE degree from an ABET accredited EE program should develop competence and demonstrate ability in the fundamentals of electrical engineering. Such students, before being admitted to full graduate standing within the department, must take (or have taken an equivalent of) a set of prescribed electrical engineering remedial courses. A minimum grade of C (2.0/4.0) must be made in these courses.

For the MSEE degree, both the thesis and non-thesis options are available. The thesis option requires 24 hours of acceptable graduate level work plus the satisfying of the usual requirements for the thesis. The non-thesis option, Plan B, requires 30 hours of acceptable graduate work plus an additional three hours of EE 784, the special problems project. All students in their first semester of regular graduate work must select an academic adviser who will assist the student in formulating a graduate plan of study leading to their particular degree. This plan, which must receive the approval of the Director of Graduate Studies, must contain specific courses and a proposed thesis area or specialized project topic.

In order to assure a minimum breadth and level of understanding at the graduate level, all EE graduate students must take three of five specified courses from the major areas of electrical engineering. These courses are: EE611 — Stochastic Systems, EE621 — Electromagnetic Systems, EE640 — Stochastic Systems, EE661 — Solid State Electronics, EE685 — Digital Computer Structure. Although no formal course requirements exist for the Ph.D. program, students must satisfy the above mentioned core course requirements as well as the selection of an adviser and the formulation of the graduate plan of study.

The Department of Electrical Engineering has active research programs in the following areas: electric machines and drives, power electronics, computer engineering, power systems, robotics, control systems, electromagnetic compatibility, electromagnetic field theory, signal processing, communication systems, circuit theory, solid state electronics, and laser Raman spectroscopy. Departmental laboratories are well-equipped for students' research. In addition, the Center for Robotics and Manufacturing Systems at the University of Kentucky provides additional research opportunities in the area of robotics.

402G Electronic Instrumentation and Measurements ..... (3)
403G Advanced Electrical Engineering Laboratory I ..... (2)
415G Magnetics and Electromechanics ..... (3)
416G Energy Conversion Laboratory ..... (2)
421G Signals and Systems I ..... (3)
422G Signals and Systems II ..... (3)
461G Introduction to Electronics ..... (3)
462G Electronic Circuits Laboratory ..... (2)
468G Fields and Waves ..... (3)
511 Introduction to Communication Systems . (3)
512 Digital Communication Systems ..... (3)
517 Advanced Electromechanics ..... (3)
518 Electric Drives ..... (3)
522 Antenna Design ..... (3)
523 Microwave Circuit Design ..... (3)
527 Electromagnetic Compatibility ..... (3)
530 Robotics ..... (3)
537 Electric Power Systems I ..... (3)
538 Electric Power Systems II ..... (3)
560 Semiconductor Device Design ..... (3)
561 Electric and Magnetic Properties of Materials ..... (3)
562 Analog Electronic Circuits ..... (3)
564 Digital Electronic Circuits ..... (3)
565 Circuit Design with Analog Integrated Circuits ..... (3)
567 Introduction to Lasers and Masers ..... (3)
568 Fiber Optics ..... (3)
571 Feedback Control Design ..... (3)
572 Digital Control of Dynamic Systems ..... (3)
581 Advanced Logical Design ..... (3)
583 Microprocessors ..... (3)
585 Fault Tolerant Computing ..... (3)
587 Microcomputer Systems Design ..... (3)
595 Independent Problems ..... (1-3)
599 Topics in Electrical Engineering (Subtitle Required) ..... (2-3)
601 Electromagnetic Energy Conversion I ..... (3)
602 Electromagnetic Energy Conversion II ..... (3)
603 Power Electronics ..... (3)
604 Switch Mode Converters ..... (3)
605 Systems for Factory Information and Control ..... (3)
606 Seminar and Project in Manufacturing Systems Engineering ..... (3)
607 Electric Machine Design ..... (3)
608 Advanced Topics in Power Electronics (Subtitle Required) ..... (3)
611 Deterministic Systems ..... (3)
612 Computational Aspects of Robotics ..... (3)
613 Optimal Control Theory ..... (3)
614 Sampled-Data Control Systems ..... (3)
619 Problems Seminar in Operations Research ..... (3)
621 Electromagnetic Fields ..... (3)
622 Advanced Electrodynamics ..... (3)
623 Field Theory of Guided Waves ..... (3)
627 Multiconductor Transmission Lines ..... (3)
629 Research Topics in Electromagnetics ..... (3)
630 Digital Signal Processing ..... (3)
635 Image Processing ..... (3)
639 Advanced Topics in Signal Processing and Communications ..... (3)
640 Stochastic Systems ..... (3)
650 Electro-Optical Properties of Materials .... (3)
660 Electronic Device Design ..... (3)
661 Solid-State Electronics ..... (3)
662 MOS Device Design and Modeling ..... (3)
663 Microwave Properties of Materials ..... (3)
664 Saw Device Design, Modeling and Applications ..... (3)
665 Integrated Circuits ..... (3)
666 Advanced Topics in Solid State Electronics ..... (3)
670 Quantum Electronics ..... (3)
672 Molecular Properties in Electronic Devices .. (3)
681 Digital Processors ..... (3)
682 Switching Theory ..... (3)
683 Finite-State Machines ..... (3)
684 Introduction to Computer Aided Design of VLSI Circuits ..... (3)
685 Digital Computer Structure ..... (3)
686 Advanced Computer Architecture Design ..... (3)
699 Topics in Electrical Engineering (Subtitle Required) ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for the Master's Degree ..... (1-6)
769 Residence Credit for the Doctor's Degree ..... (0-12)
771 Seminar ..... (0)
783 Special Problems in Electrical Engineering ..... (1-3)
784 Research Project in Electrical Engineering ..... (3)

EGR 537 Numerical Analysis ..... (3)
EGR 599 Topics in Engineering (Subtitle Required) ..... (1-3)
EGR 611 Boundary Element Methods in Engineering ..... (3)
EGR 621 Finite Element Analysis in Engineering ..... (3)
EGR 622 Advanced Finite Element Analysis in Engineering ..... (3)
EGR 680 Engineering Applications of Stochastic Differential Equations ..... (3)
EGR 780 Topics in Engineering (Subtitle Required) ..... (1-3)

Engineering Mechanics

Graduate Faculty: Professors L.M. Brock, Oscar W. Dillon, Donald C. Leigh, David J. Shippy and Theodore Tauchert. Associate Professor Wei Yang Lu.

Associate Member: Assistant Professors Mark T. Hanson and Suzanne W. Smith.

Joint Appointment: Professor Graeme Fairweather.

Emeritus Professor: Millard F. Beatty.

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. To be admitted to the master's degree program, a student normally must have at least an overall grade-point average of 3.0 and Graduate Record Examination scores of 700 (Quantitative) and 500 (Analytical).

The master's degree requires 24 credit hours of course work and a thesis (Plan A), or, with departmental approval, 30 hours of course work and a research paper instead of a thesis (Plan B).

Most engineering disciplines serve society directly. Engineering Mechanics, on

the other hand, serves all engineering disciplines by concerning itself with the fundamental laws, mathematical formulation and solution, and experimental methods common to all those phases of engineering which involve mechanics. Students enter the graduate program in Engineering Mechanics from all branches of engineering and from mathematics and physics.

Areas of concentration for study are continuum mechanics, basic concepts of mechanical design and analysis, computational stress analysis, mechanical behavior of solids, and experimental methods in solid mechanics. Typical areas in which research has been carried out in the department include linear and nonlinear elasticity, plasticity, wave propagation, mechanical system stability, tribiology, fracture mechanics, boundary-integral-equation methods, pressure-vessel analysis, space structure dynamics, and composite materials. Investigations in these areas have included theoretical, experimental and numerical approaches.

For further information contact the Director of Graduate Studies.

503 Introduction to Continuum Mechanics ..... (3)
506 Mechanics of Composite Materials ..... (3)
510 Dynamics and Design of Robotic Manipulators ..... (3)
513 Mechanical Vibrations ..... (3)
527 Applied Mathematics in the Natural Sciences I ..... (3)
531 Advanced Strength of Materials ..... (3)
533 Aircraft and Missile Structural Analysis .... (3)
545 Advanced Kinematics ..... (3)
585 Fourier Series and Boundary Value Problems ..... (3)
599 Topics in Engineering Mechanics (Subtitle Required) ..... (1-3)
603 Mechanics of Plastic Solids I ..... (3)
613 Nonlinear Oscillations ..... (3)
628 Applied Mathematics in the Natural Sciences II ..... (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)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
760 Research Project in Engineering Mechanics ..... (0)
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 ..... (3)

EGR 537 Numerical Analysis ..... (3)
EGR 599 Topics in Engineering (Subtitle) Required) ..... (1-3)
EGR 611 Boundary Element Methods in Engineering ..... (3)
EGR 621 Finite Element Analysis in Engineering ..... (3)
EGR 622 Advanced Finite Element Analysis in Engineering ..... (3)
EGR 680 Engineering Applications of Stochastic Differential Equations ..... (3)
EGR 780 Topics in Engineering (Subtitle Required) ..... (1-3)

English

Graduate Faculty: Professors Wendell Berry, John Cawelti, John L. Clubbe, Oscar Ronald Dathorne, Joseph Gardner, James Baker Hall, Joan Hartwig, Robert E. Hemenway, Kevin Kiernan, Stephen Manning, Jerome Meckier, Donald Ringe, John Shawcross and Larry Swingle. Associate Professors R. Gerald Alvey, Thomas Blues, William Campbell, Lee Elioseff, Walter Foreman, John L. Greenway, Armando Prats, Ellen B. Rosenman, Gregory T. Stump, Gregory A. Waller, Steven Weisenburger and Arthur Wrobel.

Associate Members: Associate Professor David Durant. Assistant Professors Jonathan Allison, Peter L. Mortensen, Lance Olsen and Patricia Troxel.

Emeritus Professors: Joseph A. Bryant, Guy Davenport, William Gordon, 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 on the Aptitude test. 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, instructors' recommendations, and GRE scores on the Aptitude test.

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)
420G Studies in Medieval English Literature ..... (3)
421G Chaucer ..... (3)
422G English Renaissance: 1500-1600 ..... (3)
423G English Renaissance: 1600-1660 ..... (3)
425G Shakespeare Survey ..... (3)
426G Shakespeare Studies (Subtitle Required) . (3)
428G Milton ..... (3)
430G The Restoration and Early 18th Century: 1660-1730 ..... (3)
431G The Later 18th Century: 1730-1780 ..... (3)
435G The Romantic Movement: 1780-1815 ..... (3)
436G The Romantic Movement: 1815-1830 ..... (3)
438G Victorian Period: 1830-1860 ..... (3)
439G Victorian Period: 1860-1900 ..... (3)
440G The Eighteenth Century English Novel .... (3)
441G The Nineteenth Century English Novel .... (3)
442G The Twentieth Century English Novel ..... (3)
446G Twentieth Century British Literature ..... (3)
448G English Drama: (Subtitle Required) ..... (3)
451G Studies in American Literature before 1860: (Subtitle Required) ..... (3)
452G Studies in American Literature: 1860-1920 (3)
453G Studies in American Literature Since 1900 (3)
454G American Novel Before 1900 ..... (3)
455G Modern American Novel ..... (3)
466G Modern Drama ..... (3)
472G Special Topics in Folklore: (Subtitle Required) ..... (3)
473G Survey of World Folklore ..... (3)
475G British and American Ballad and Folksong (3)
476G Folklife and Material Folk Culture ..... (3)
477G Regional, Occupational, and Ethnic Folklore of the United States ..... (3)
478G Appalachian Folklore ..... (3)
479G The Folktale ..... (3)
480G Special Studies in Film (Subtitle Required) ..... (3)
490G Topics of Gender in Literary Studies (Subtitle Required) ..... (3)
507 Advanced Workshop in Imaginative Writing (Subtitle Required) ..... (3)
509 Composition for Teachers ..... (3)
510 American English ..... (3)
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)
519 Introduction to Old English ..... (3)
560 Comparative Literature: Grecian and Roman ..... (3)
561 Comparative Literature: Medieval and Renaissance ..... (3)
562 Comparative Literature: Seventeenth Through Nineteenth Century ..... (3)
563 Comparative Literature: Twentieth Century ..... (3)
568 History of Literary Criticism I ..... (3)
569 History of Literary Criticism II ..... (3)
570 Selected Topics for Advanced Studies in Literature (Subtitle Required) ..... (3)
572 Studies in English for Teachers (Subtitle Required) ..... (3)
579 Oral Narration in Folk Cultures ..... (3)
581 Aesthetics of Film ..... (3)
600 Bibliography and Methods of Research .... (3)
607 Graduate Writing Workshop (Subtitle Required) ..... (3)
609 Composition for Teachers ..... (3)
610 Studies in Rhetoric ..... (3)
618 History of the English Language ..... (3)
619 Beowulf ..... (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: 1720-1780 .. (3)

635 Studies in Literature: 1780-1815 ..... (3)
636 Studies in Literature: 1815-1830 ..... (3)
638 Studies in English Literature: 1830-1860 .. (3)
639 Studies in English Literature: 1860-1900 .. (3)
640 Studies in the 19th Century British Novel . (3)
642 Studies in Modern British Literature ..... (3)
643 Studies in Modern British and American Poetry ..... (3)
651 Studies in American Literature Before 1860 . (3)
652 Studies in American Literature: 1860-1900 (3)
653 Studies in American Literature since 1900 (3)
656 Black American Literature ..... (3)
660 Modern Critical Theory ..... (3)
673 Studies in Folklore ..... (3)
681 Studies in Film ..... (3)
682 Studies in Fiction ..... (3)
683 Studies in Drama ..... (3)
684 Studies in Poetry ..... (3)
700 Tutorial for Ph.D. Candidates ..... (3)
720 Seminar in Medieval Literature ..... (3)
722 Seminar in 16th Century Literature ..... (3)
723 Seminar in 17th Century Literature ..... (3)
726 Seminar in Shakespeare (3)
730 Seminar in 18th Century Literature ..... (3)
735 Seminar in Romantic Literature ..... (3)
738 Seminar in Victorian Literature ..... (3)
740 Seminar in 20th Century British Literature (3)
748 Master's Thesis Research ..... (3)
749 Dissertation Research ..... (0)
750 Seminar in Colonial Literature ..... (3)
751 Seminar in American Literature: 1800-1860 .. (3)
752 Seminar in American Literature: 1860-1900 .. (3)
753 Seminar in American Literature since 1900 .. (3)
768 Residence Credit for the Master's Degree ..... (1-6)
769 Residence Credit for the Doctor's Degree ..... (0-12)
771 Seminar in Special Topics ..... (3)
780 Directed Studies ..... (1-6)
781 Seminar in Film (Subtitle Required ..... (3)

Entomology

Graduate Faculty: Professors Douglas L. Dahlman, Paul H. Freytag, Fred W. Knapp, Gerald L. Nordin, Bobby C. Pass, Daniel A. Potter and Kenneth V. Yeargan. Associate Professors Grayson C. Brown and Kenneth F. Haynes.

Associate Members: Assistant Professor Allen J. Moore. Adjunct Assistant Professors Robert J. Barney, John D. Sedlacek and Paul A. Weston. Assistant Research Professor Randy E. Hunt. Extension Professor Lee H. Townsend. Extension Assistant Professor Ricardo T. Bessin.

Emeritus Professors: Juan G. Rodriguez and Richard Thurston.

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 students in consultation with their 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, ecology genetics, molecular biology, pathology, immature insects, medical and veterinary entomology, biochemistry, physiology, taxonomy and acarology. Plan A is offered for the master's degree.

530 Integrated Pest Management ..... (3)
561 Medical Entomology ..... (4)
562 External Morphology of Insects ..... (4)
563 Parasitology ..... (4)
564 Insect Taxonomy ..... (4)
568 Insect Behavior ..... (3)
606 Insecticide Chemistry and Toxicology ..... (3)
608 Behavioral Ecology ..... (3)
609 Community and Ecosystem Ecology ..... (3)
610 Population Ecology ..... (3)
626 Insect Pathology ..... (3)
635 Insect Physiology and Internal Morphology ..... (4)
645 Theory and Practice of Extension Entomology ..... (3)
660 Immature Insects ..... (3)
665 Insect Ecology ..... (3)
670 Experimental Methods in Entomology-Field ..... (2)
671 Experimental Methods in Entomology-Laboratory ..... (2)
680 Biological Control of Insects ..... (3)
695 Special Topics in Entomology (Subtitle Required) ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
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

Graduate Faculty: Professors Carolyn Edwards, Peggy Meszaros, Claudia Peck and O'Neal Weeks. Associate Professors Darla Botkin, Gregory Brock, Mary E. Edmondson, Raymond E. Forgue, David Payne and Stephan Wilson.

Associate Members: Associate Professors Ruth Ann Crum and Donna Quick. Assistant Professors Donna Ford-Harris, B. Jan McCulloch, Kimberley F. Townley and William Turner. Extension Professor Samuel Quick. Extension Associate Professor Robert Flashman.

Emeritus Professors: Lisa Barclay and John Crosby.

The Department of Family Studies offers the Master of Science in Family Studies. Application deadlines are February 15 for Fall Semester and August 1 for Spring Semester. (There is no Spring admission for the Marriage and Family Therapy Program.)

There are four areas of concentration: early childhood education; family economics and management; individual development; and family development. Within family development students must apply for either the general option or the marriage and family therapy option (see below). Specific core courses are required for each area of concentration.

The Master of Science in Family Studies requires 36 credit hours. At least two-thirds of the minimum requirements must be in regular courses, and at least half of the minimum requirements must be in courses numbered on the 600 or 700 level. A minimum of 18 hours must be within the Department. Plan A requires 36 hours, six of which are thesis credit hours; Plan B requires 36 class hours. Additional hours may be necessary for students desiring subsequent certification by professional governing bodies. Plan A is encouraged for students who may wish to emphasize theory and research and/or who plan to enter another advanced degree program. Electives within each area of concentration are available in the social sciences and in other supporting disciplines.

Family Development focuses on the development and dynamics of family systems throughout history. It deals with the formation, development and dynamics of families in various cultures and subcultures, and with the dynamics of particular family systems. Students are prepared to work with families through programs of prevention, enrichment and intervention.

Concentration Requirements: 9 credit hours

FAM 652 FAM 654 FAM 690
Plus Plan A: FAM 768 - 6 thesis hours

Major Electives: 9 credit hours chosen from among FAM 509, FAM 551, FAM 553, FAM 554, FAM 563, FAM 573, FAM 624, FAM 655, FAM 656, FAM 657, FAM 686, FAM 687

Individual Development Within the Family focuses on developmental theory, process, and dynamics in infancy, childhood, adolescence, and adulthood. This core is typically supplemented with additional developmental, family, and research courses to complete the Master's Degree requirements.

Concentration Requirements: 12 credit hours

FAM 652 FAM 654 FAM 655 FAM 690
Plus Plan A: FAM 768 - 6 thesis hours

Major electives: 6 credit hours chosen from among FAM 553, FAM 555, FAM 557, FAM 558, FAM 656, FAM 658

Family Economics and Management focuses on the economic functioning of families and households as they attempt to maximize resources, output, and satisfaction. The economic and managerial interrelations within the family and with the public and private sectors are important elements of the program.

Concentration Requirements: 15 credit hours

FAM 602, FAM 603, FAM 684, FAM 690, FAM 773 OR FAM 786
Plus Plan A: FAM 768 - 6 thesis hours

Early Childhood Education is currently being revised to reflect changes in the certification requirements for early childhood education resulting from the Kentucky Education Reform Act. Please consult with the Director of Graduate Studies.

Marriage and Family Therapy Program

The Department of Family Studies offers a program of prescribed courses in marriage and family therapy. The course work is designed to meet the educational requirements for membership with the American Association for Marriage and Family Therapy.

Areas of Study and Courses

Theoretical Foundations of Marital & Family Therapy
FAM 657*

Assessment & Treatment in Marital and Family Therapy
FAM 686*, FAM 687*, FAM 688, FAM 693

Human Development & Family Studies
FAM 652*, FAM 653*, FAM 654, FAM 655, FAM 656, FAM 658

Ethics and Professional Issues
FAM 685

Research
FAM 690

Supervised Clinical Practice
FAM 787**

*Required for FAM 787

**Required three consecutive semesters

501 Systemic Family Development ..... (3)
503 Family Housing Issues ..... (3)
507 Assessment of Young Children ..... (2)
509 The U.S. Family in Historical Perspective (3)
510 Socialization in the Family ..... (3)
550 Child Development and Family Life in Appalachia ..... (3)
551 Woman in Contemporary Society ..... (3)
552 Administration and Supervision in Early Childhood Education Programs ..... (3)
553 The Child in His/Her Family ..... (3)
554 Working with Parents ..... (3)
555 Fostering Cognitive Development in Children ..... (3)
557 Infant Development ..... (3)
558 Advanced Child Development ..... (3)
561 Management for Families with Limited Resources ..... (3)
562 Management for Multi-Roles ..... (3)
563 Families, Legislation and Public Policy ..... (3)
573 Family Life Education ..... (3)
585 Aging and Environment ..... (3)
586 Field Experience in Family Economics and Management ..... (1-6)
595 Special Problems in Individual and Family Development ..... (1-3)
596 Special Problems in Family Economics and Management ..... (1-3)
599 Field Experiences ..... (3)
602 Consumer Economics ..... (3)
603 Theory and Research in Family Economics and Management ..... (3)
604 Culturally Different Children and Families ..... (3)
605 Practicum in Directing Early Childhood Programs ..... (4)
624 Perspectives on Human Sexuality ..... (3)
652 Readings in Family Relations ..... (3)
653 Family Theory ..... (3)
654 Life Span Human Development and Behavior ..... (3)
655 Theory and Dynamics of Human Development ..... (3)
656 Adult Development in the Family ..... (3)
657 Family Systems Theory ..... (3)
658 Adolescent Development ..... (3)
662 Social and Economic Decision Making in the Family ..... (3)
668 Allocation of Family Resources ..... (3)
684 Family Management Analysis ..... (3)
685 Professional Issues in Marriage and Family Intervention ..... (3)
686 Theory and Methods in Marriage and Family Therapy ..... (3)
687 Treatment Modalities in Marriage and Family Therapy ..... (3)
688 Family Stress and Therapeutic Intervention ..... (3)
689 Perspectives on Divorce and Remarriage . (3)
690 Family Development Research Methods ... (3)
693 Family Systems Approach to Sex Problems ..... (3)
748 Master's Thesis Research ..... (0)
768 Residence Credit for the Masters Degree ..... (1-6)
773 Seminar in Family Economics and Management ..... (3)
775 Seminar in Human Development and Family Relations ..... (3)
785 Advanced Problems in Individual and Family Development ..... (1-3)
786 Advanced Problems in Family Economics and Management ..... (1-3)
787 Supervised Experience in the Practice of Marriage and Family Therapy ..... (6)
HES 596 Special Problems in Human Environmental Sciences ..... (1-3)
HES 600 Research Methodology in Human Environmental Sciences ..... (3)
HES 786 Advanced Problems in Human Environmental Sciences ..... (1-3)

Forestry

Graduate Faculty: Associate Professors George Coltharp, Paul J. Kalisz, Thomas W. Kimmerer, Calvin Liu, Robert Muller, James R. Olson and James M. Ringe.

Associate Members: Associate Professor Donald Graves. Assistant Professors Michael J. Lacki and David Wagner. Extension Associate Professor Deborah B. Hill. Extension Assistant Professor Thomas G. Barnes.

Joint Appointments: Professors Gerald I. Nordin and Louis Shain.

The department offers graduate work leading to the Master of Science in Forestry and Master of Science in Agriculture (Forestry area of specialization). 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 take a core of forestry courses as part of the master's program.

The study and research program may be directed to any one of the following areas; wood science, forest soils, forest hydrology and water quality, forest ecology, tree physiology, forest genetics, forest wildlife, forest biometrics, forest economics and silviculture.

Students interested in pursuing further graduate studies (Ph.D.) in the forestry area may enter one of several interdepartmental programs such as plant physiology, crop science, soil science and agricultural economics.

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

460G Forest Watershed Management ..... (3)
511 Forest Regeneration ..... (3)
512 Forest Tree Physiology ..... (3)
564 Forest Soils ..... (3)
599 Independent Work in Forestry ..... (1-3)
601 Research Methods in Forestry ..... (3)
605 Wood Quality ..... (3)
608 Behavioral Ecology ..... (3)
609 Community and Ecosystem Ecology ..... (3)
610 Population Ecology ..... (3)
611 Forest Genetics ..... (3)
612 Forest Ecosystem Analysis ..... (3)
620 Special Topics in Forestry (Subtitle Required) ..... (1-3)
622 Physiology of Plants I ..... (3)
623 Physiology of Plants II ..... (3)
628 Mechanics of Wood and Fiber Composites ..... (3)
629 Advanced Wood Physics ..... (3)
630 Wildlife Habitat Analysis ..... (3)
645 Forest Inventory Systems ..... (3)
650 Silviculture of Eastern Deciduous Forests ..... (2-3)
662 Quantitative Methods in Renewable Resource Management ..... (3)
670 Wildland Water Quality ..... (3)
768 Residence Credit for Master's Degree ... (1-6)
770 Forestry Seminar ..... (1)
781 Special Problems in Forestry ..... (1-3)
791 Research in Forestry ..... (1-3)

French Language and Literature

Graduate Faculty: Professors Jean Charron, Phillip Duncan, Raymond La Charite, Virginia La Charite and Rupert Pickens.

Associate Members: Assistant Professors Sharon L. Shelly and Jesse D. Hurlbut.

Emeritus Professors: Theodore H. Mueller and John Rea.

The Department of French Language and Literature offers a graduate program leading to the M.A. degree in French language and literature. The department offers the M.A. degree according to Plan B only. Students select a program from a variety of courses listed below in French literature, language, civilization, and literature and the arts. They are then examined over their program. The master's examination for each candidate is prepared and evaluated by a committee of three members of the French graduate faculty which will consider the candidate's course program in preparing the examination.

Candidates must also demonstrate a reading knowledge of another foreign language. The M.A. examination is administered in November, April and July. Applications for the examination should be made to the Director of Graduate Studies no later than four months prior to the date of examination.

For further information concerning the M.A. program 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.

423G French Literature in Translation: Twentieth Century ..... (3)
436G A Survey of French Literature of the Middle Ages and Renaissance ..... (3)

438G A Survey of French Literature of the 17th and 18th Centuries ..... (3)
439G A Survey of French Literature of the Nineteenth Century ..... (3)
440G A Survey of French Literature of the Twentieth Century ..... (3)
460G Masterpieces of the French Novel ..... (3)
461G Masterpieces of French Drama ..... (3)
462G Masterpieces of French Poetry ..... (3)
470G Studies in French Literature (Subtitle Required) ..... (3)
500 Introduction to French Film ..... (3)
501 French Literature and the Arts: The Middle Ages ..... (3)
502 French Literature and the Arts: La Belle Epoque ..... (3)
503 French Literature and the Arts: Surrealism ..... (3)
504 Topics in French Literature and Culture (Subtitle Required) ..... (3)
507 Interpretation and Style ..... (3)
510 Linguistic Structure of Modern French .... (3)
516 Introduction to Early French ..... (3)
550 France Today ..... (3)
553 The Teaching of French ..... (3)
600 Special Topics in French Film ..... (3)
601 Poetic Vision (Subtitle Required) ..... (3)
602 Narrative Tradition (Subtitle Required) ... (3)
603 The Development of the French Language ..... (3)
604 The Tragic Mode (Subtitle Required) ..... (3)
605 Comic Fiction (Subtitle Required) ..... (3)
606 Literature of the Middle Ages (Subtitle Required) ..... (3)
607 Studies in Renaissance Literature (Subtitle Required) ..... (3)
609 Classic Theater (Subtitle Required) ..... (3)
615 The Age of Voltaire ..... (3)
617 Romanticism ..... (3)
620 The New Avant-Garde: Literary Trends Since World War II ..... (3)
621 Contemporary French Theatre (Subtitle Required) ..... (3)
650 Cultural History of the French People ..... (3)
768 Residence Credit for Master's Degree ... (1-6)
769 Residence Credit for Doctor's Degree . (0-12)
780 Special Studies in French ..... (3)

Geography

Graduate Faculty: Professors Stanley Brunn, P.P. Karan, Thomas Leinbach, Karl Raitz, Graham Rowles, Gary Shannon and Richard Ulack. Associate Professors John Pickles and John Paul Jones.

Associate Members: Associate Professor Michael Kennedy. Assistant Professors Susan M. Roberts and John F. Watkins.

Emeritus Professors: W.A. Bladen and William Withington.

The Department of Geography offers both M.A. (Plan A and Plan B) and Ph.D. programs. Emphasis is placed on theoretical and conceptual training in the student's chosen field of interest. A variety of philosophical and methodological approaches are encouraged. The strength of the program lies in its focus upon close faculty-student interaction, flexibility in designing an appropriate plan of study, and research training in small seminar environments.

The primary objective of the graduate program is to prepare students for research-oriented careers in government, industry, and universities. Emphasis in graduate seminars is on developing the background and skills necessary for original contributions to geographic knowledge.

Major research emphases are concentrated within six clusters in which a significant number of faculty have expertise:

Urban and Economic: regional development; transportation; North American and Third World urban systems; regional economic growth and decline; internal structure of North American and Third World cities; industrial location; economic restructuring.

Development Theory and Practice: regional growth and decline; global political economy; transportation planning in the Third World; migration; rural development; squatter housing; regulation theory; Third World industrialization; newly industrializing countries; environment and development.

Social and Political: geography of the elderly; medical geography, including geography of disease and health service location; social policy, especially welfare policy; population, especially migration; political, including electoral systems and political economy; behavioral; interurban social geography; social theory.

Cultural: historical geography; historic preservation; landscape interpretation; settlement geography; race and ethnicity; geography of recreation and tourism.

Southeast and South Asia: area specialties of the faculty are concentrated in the Philippines, Indonesia, Singapore, Malaysia, India and the Himalayas.

Social Theory and Geographical Theory: history and philosophy of the discipline; political economy; poststructuralism; philosophy of science; gender theory.

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. Requirements in the Ph.D. program consist of (1) core courses (GEO 700, 702, 707) in the theory and methodology of geography; (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; (4) a written and oral qualifying examination in theory, methodology, and the student's selected topical focus; and (5) 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) required courses (GEO 600, 702, and 710); 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 student's option and with the approval of the Director of Graduate Studies, a non-thesis degree (Plan B requiring six additional credits) is permitted. The M.A. student may not take more than six hours of course work below the 600 level. The program is tailored to meet each student's particular needs and requirements, and numerous 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 theory and methodologies of the discipline.

405G Cartographic Production and Design ..... (3)
420G Urban and Regional Planning ..... (3)
475G Medical Geography ..... (3)
485G Social Geography ..... (3)
490G American Landscapes ..... (3)
505 Practicum in Cartography ..... (3)
506 Introduction to Computer Cartography ... (3)
507 Remote Sensing in Geography ..... (3)
508 Geographic Interpretation of Aerial Photography ..... (3)
542 Political Geography ..... (3)
544 Population Geography ..... (3)
545 Transportation Geography ..... (3)
546 Spatial Development and Policy ..... (3)
547 Geography of Information and Communication ..... (3)
550 Geography of Energy and Natural Resources ..... (3)
555 Industrial Geography ..... (3)
560 Independent Work in Geography ..... (3)
565 Topics in Geography ..... (3)
585 Aging and Environment ..... (3)
600 Analytic Methods in Geography ..... (3)
601 Field Methods in Geography ..... (3)
640 Transportation Analysis ..... (3)
643 Urban Transportation Planning ..... (3)
655 Special Study of Systematic Geography .... (3)
695 Social Ecology ..... (3)
700 Advanced Analytical Methods in Geography ..... (3)
702 Concepts in Geography ..... (3)
707 Seminar in Development of Geographic Thought ..... (3)
710 Research Methods and Methodology in Geography ..... (3)
716 Topical Seminar in Cultural Geography (Subtitle Required) ..... (3)
717 Topical Seminar in Economic and Urban Geography (Subtitle Required) ..... (3)
718 Topical Seminar in Geography of Environment and Resources (Subtitle Required) ..... (3)
719 Topical Seminar in Geography of Planning and Policy (Subtitle Required) ..... (3)
721 Topical Seminar in Geographic Techniques (Subtitle Required) ..... (3)
722 Topical Seminar in Social and Political Geography (Subtitle Required) ..... (3)
723 Topical Seminar in Geography of the Third World (Subtitle Required) ..... (3)
730 Seminar in Regional Geography ..... (3)
740 Internship in Applied Geography ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for the Master's Degree ..... (1-6)
769 Residence Credit for the Doctor's Degree ..... (0-12)
771 Seminar in Special Topics in Geography .. (3)
772 Special Research Problems in Geography ..... (1-6)

Geology

Graduate Faculty: Professors F.R. Ettensohn, J.C. Ferm, F.E. Huggins, N. Rast, L.V.A. Sendlein. Associate Professors B.R. Moore, S.M. Rimmer and R. Street.

Associate Members: Assistant Professor K. O'Hara. Adjunct Assistant Professors J.C. Cobb, J. Dinger and J.C. Hower.

Joint Appointment: Professor R.I. Barnhisel.

Emeritus Professors: W.R. Brown, W.H. Dennen, I.S. Fisher, W.C. MacQuown, T.G. Roberts and J. Thrailkill.

The Department of Geological Sciences offers graduate work leading to the M.S. and to the Ph.D. degrees. The department of Geological Sciences offers the M.S. under Plan A (thesis option) and the Ph.D. in all disciplines represented by Departmental faculty; and the M.S. under Plan B (nonthesis option) in the field of hydrogeology. The credentials of each applicant are considered individually and applicants from other scientific disciplines are encouraged to apply. All applicants should have demonstrated competence at the undergraduate level and a grounding in the basic sciences equivalent to that of B.S. graduates of this department. Deficiencies in geosciences, allied sciences and mathematics must be removed by such course work as the departmental committee on graduate studies may specify. Candidates for the M.S. degree under Plan A must submit a thesis that demonstrates ability to conduct sound research. Candidates for the Ph.D. must submit a dissertation based on original and significant research, demonstrate reading ability in one foreign language common to the scientific literature, and be the sole or senior author of a research article accepted for publication in a refereed journal.

The principal areas of study offered are carbonate petrology, coal geology, earthquake and exploration seismology, geochemistry, hydrogeology, igneous and metamorphic petrology, paleontology, organic petrology, sedimentology, stratigraphy, structural geology and tectonics.

Resources for the conduct of advanced studies include reference collections; an excellent library; a microcomputer laboratory; sample preparation and field equipment; portable diamond-drilling apparatus; and field vehicles. The geochemical and mineralogical laboratories include equipment for microprobe analysis; x-ray fluorescence and diffraction, Mossbauer spectrometry; spectrophometry; spectrofluorometry; gamma-ray spectrometry; fluid inclusion investigations; and laser emission spectrography. Research apparatus for image analysis; petrographic microscopy; organic petrography, including quantitative spectral fluorescence analysis; cathodoluminescence; and specialized equipment for sedimentologic and paleontologic studies are available within the department. Geophysical facilities include the ninestation Kentucky Digital Seismic Network and the western Kentucky strong-motion network, a 24-channel seismic digital reflection/refraction unit with energy source, a resistivity unit, and magnetometers.

Additional extra-departmental facilities for mainframe computing, including an IBM 3090 supercomputer; neutron activation, electron microscopy, and clay mineralogy are available.

420G	Structural Geology	(3)
450G	Stratigraphy and Sedimentation	(3)
510	Ore Deposits	(3)
511	Petroleum Geology	(3)
513	Remote Sensing and Aerial Photography	(3)
515	General Coal 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)
571	Application of Potential Methods in Applied Geophysics	(3)
572	Exploration Seismology	(3)
579	Groundwater Geophysics	(3)
585	Hydrogeology	(3)
602	Paleoecology	(3)
612	Mineral Deposits	(3)
615	Coal Mining and Exploration Geology	(3)
617	Coal Petrology	(3)
620	Tectonics	(3)
624	Mesoscopic Structures	(3)
628	Basin Analysis Seminar	(3)
640	Analytic Methods in Geology	(3)
650	Petrology/Detrital Rocks	(3)
652	Advanced Stratigraphy	(3)
653	Mesozoic and Cenozoic Stratigraphy	(3)
654	Petrology of Carbonate Rocks	(3)
660	Petrography	(3)
662	X-Ray Mineralogy	(3)
663	Metamorphic Petrology	(3)
664	Igneous Petrology	(3)
670	Selected Topics in Geophysics	(3)
671	Earthquake Seismology	(3)
673	Seismic Stratigraphy	(3)
675	Geodynamics	(3)
681	Mineralogical and Chemical Analysis of Soils	(4)
703	Paleoecology/Paleontology Seminar	(1-3)
715	Coal Geology Seminar	(2)
717	Organic Petrology Seminar	(3)
720	Graduate Tectonics Seminar	(3)
741	Clay Mineralogy	(3)
748	Master's Thesis Research	(0)
749	Dissertation Research	(0)
750	Sedimentology Strategic Seminar (Subtitle Required)	(1-3)
760	Topics in Igneous and Metamorphic Petrology	(2)
765	Igneous/Metamorphic Petrology	(3)
768	Residence Credit for Master's Degree	(1-6)
769	Residence Credit for Doctor's Degree	(0-12)
780	Modeling in Hydrogeology	(3)
782	Individual Work in Geology	(1-3)
787	Research in Hydrogeology and Low-Temperature Geochemistry	(3)

Germanic Languages and Literatures

Graduate Faculty: Professors Gerald J. Janecek and Bernd Kratz. Associate Professors Jeannine Blackwell, Theodore Fiedler, Michael T. Jones and Phillip S. McKnight.

Associate Members: Assistant Professors Deborah Janson, Geoffrey Koby, Wolfgang Natter and Linda Worley.

Emeritus Professors: J. Wesley Thomas and Paul Whitaker.

The general goal of graduate work in German is to provide students with a critical understanding of German culture, its language and literature and its relationship to western civilization as a whole. Specific courses are designed to acquaint students with the aims and methods of research in the fields of language pedagogy, literary and cultural history, literary theory, and historical linguistics. Students working as teaching assistants under faculty supervision have ample opportunity to develop effective teaching skills in a controlled setting.

The department offers a graduate program leading to the M.A. (Plan A or B) degree in German. 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, a satisfactory score on the Graduate Record Examination, and three letters of recommendation. 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.

Individual programs of study are planned with consideration of the student's competencies and interests. The department endeavors to be flexible and to accommodate career goals in teaching, government service, or research.

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 Enlightenment to the present, literary theory, women's studies, language pedagogy, and intellectual history. The department serves as the editorial 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.

415G	Major German Authors (Subtitle Required)	(3)
416G	Genres of German Literature	(3)
420G	Special Studies in German Literary and Cultural History (Subtitle Required)	(3)
507	Advanced German Composition and Conversation	(3)
510	Medieval Scandinavian Literature in Translation	(3)
511	Scandinavian Literature in Translation: Holberg to Lagerkvis	(3)
512	Introduction to Graduate Studies	(3)
515	Studies in German Literary History	(3)
517	Studies in German Cultural History	(3)
520	Special Topics Seminar	(3)
531	Structure of the German Language	(3)

532 History of the German Language ..... (3)
533 Introduction to Middle High German ..... (3)
534 Life and Works of Goethe ..... (3)
553 The Teaching of German ..... (3)
610 Old Icelandic ..... (3)
612 Studies in Literary Theory ..... (3)
615 Studies in Major Authors ..... (3)
616 Studies in Genre ..... (3)
620 Studies in the Middle Ages ..... (3)
623 Studies in the 15th and 16th Centuries ..... (3)
624 Studies in the 17th Century ..... (3)
625 Studies in the 18th Century ..... (3)
629 Studies in the 19th Century ..... (3)
630 Studies in the 20th Century ..... (3)
633 Old High German ..... (3)
635 Gothic ..... (3)
720 Special Topics in the Middle Ages ..... (3)
723 Special Topics in the 15th/16th Centuries (3)
724 Special Topics in the 17th Century ..... (3)
725 Special Topics in the 18th Century ..... (3)
729 Special Topics in the 19th Century ..... (3)
730 Special Topics in the 20th Century ..... (3)
748 Master's Thesis Research ..... (0)
768 Residence Credit for Master's Degree ... (1-6)
769 Residence Credit for Doctor's Degree . (0-12)
781 Special Studies in German ..... (3)
790 Germanic Seminar ..... (3)

Health Administration

Graduate Faculty: Professors Joseph Hamburg and James Suver. Associate Professor Joel Lee.

Associate Members: Associate Professors Joyce Beaulieu and Thomas Tucker.

Joint Appointments: Professors Philip Berger, Glenn Blomquist, Richard Furst and Donald Hochstrasser. Associate Professors Keith Provan and Phillip Roeder.

The Master of Health Administration is offered in the Martin School of Public Administration, a research, academic and service unit of The Graduate School. The MHA is a 48 credit hour program for those seeking careers in the management of a variety of health institutions, organizations and agencies.

The interdisciplinary faculty have appointments in the Martin School and in one of the academic departments of the College of Allied Health Professions, Business and Economics or Arts and Sciences.

The MHA conforms to the general rules and regulations of The Graduate School. Students applying for admission to the program are expected to have an undergraduate grade point average of 2.5 or better on all work attempted; quantitative and verbal scores on the GRE or GMAT of 1000 (GRE) or 500 (GMAT); and at least a 3.0 grade point average on previous graduate work. The final selection of students for admission will be subject to the discretion of the admissions committee of the MHA program.

Students are admitted from various academic disciplines. If not previously exposed to business disciplines, students should develop an understanding of the concepts of accounting and economics.

The MHA curriculum has an administrative core, a health service core, an internship, and electives totaling 48 credit hours. Degree requirements include the successful completion of all course work with a 3.0 or better GPA and passing oral and written comprehensive examinations.

The MHA is an Associate Graduate Member of the Association of University Programs in Health Administration.

For more information about the program, write:

Director of Graduate Studies—MHA
Department of Health Services
University of Kentucky
Medical Center Annex 2
Lexington, KY 40536-0080

Course Requirements

Completion of 48 credit hours of course work is required. (See below)

MHA Curriculum

Administrative Core (15 hours)
PA 621/HA 621 Quantitative Methods of Research (3)
HA 624 Health Care Information Systems
PA 632/HA 632 Financial Management II: Public Sector Accounting (3)
PA 642/HA 642 Public Organization Theory and Behavior (3)
PA 652/HA 652 Public Policy Economics (3)
Health Services Core (21 hours)
PA 671/HA 601 Overview of the Health Care Delivery System (3)
HA 602 Strategic Planning and Management of Health Care Organizations (3)
HA 603 Legal Aspects of Health Administration (3)
PA 636/HA 636 Health Economics (3)
PA 637/HA 637 Health Finance (3)
PA 656/HA 656 Health Program Evaluation (3)
PA 673/HA 673 Health Policy Development (3)
Electives (9 hours)
Internship for Pre-service students
HA 711 Internship (3)

HA 502 Organization and Supervision in Health Care Delivery ..... (3)
HA 510 Organization of the Long-Term Care Sector ..... (3)
HA 511 Independent Study in Health Services Administration ..... (1-3)
HA 538 Financial Management Techniques for the Clinical Manager ..... (3)
HA 600 Epidemiology ..... (3)
HA 601 Overview of the Health Care Delivery System ..... (3)
HA 602 Strategic Planning and Management of Health Care Organizations ..... (3)
HA 603 Legal Aspects of Health Administration . (3)
HA 609 Health Planning—A System Approach .. (3)
HA 610 Health Services Marketing ..... (3)
HA 611 Hospitals As An Integrated System ..... (3)
HA 612 Long Term Care/Rehabilitation Services ..... (3)
HA 613 Ambulatory Care Systems ..... (3)
HA 621 Quantitative Methods of Research ..... (3)
HA 622 Mental Health Administration ..... (3)
HA 624 Health Care Information Systems ..... (3)
HA 632 Financial Management II: Public Sector Accounting ..... (3)
HA 635 Management Accounting for Health Care Organizations ..... (3)
HA 636 Health Economics ..... (3)
HA 637 Health Finance ..... (3)
HA 642 Public Organization Theory and Behavior ..... (3)
HA 652 Public Policy Economics ..... (3)
HA 656 Health Program Evaluation ..... (3)
HA 673 Health Policy Development ..... (3)
HA 711 Internship in Health Administration .. (3)
HA 775 Special Topics in Health Administration ..... (1-3)
HA 785 Independent Study in Health Administration ..... (1-3)

Health Sciences Education (HSE)

Through a cooperative program with the College of Education and the Department of Curriculum and Instruction, Health Sciences Education (HSE) 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 the Director of Health Sciences Education, Department of Health Services, College of Allied Health Professions, and Research, Medical Center Annex 3, University of Kentucky, Lexington, Kentucky 40536-0218.

502 Performance Evaluation in the Clinic and Laboratory ..... (3)
510 Older Women and Their Health ..... (3)
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)

Health, Physical Education and Recreation

Graduate Faculty: Professor Melody P. Noland. Associate Professors Ronald Bulbulian, Richard S. Riggs, Robert Shapiro, Dennis Vinton and Andrew Weiner.

Associate Member: Associate Professor John Hall.

Joint Appointments: Associate Professors Arthur J. Nitz and Joseph Threlkeld.

Emeritus Professors: Joseph Gruber, Ernest Jokl, Earl Kauffman, Alfred Reece and Pentti Teraslinna.

The Department of Health, Physical Education and Recreation offers graduate work leading to the Master of Science and Doctor of Education degrees with areas of concentration in health education, physical education and recreation. Within these areas students may subspecialize in health education; physical education teaching/coaching; sports administration; exercise physiology; wellness; biomechanics or therapeutic recreation. In addition, an emphasis in physical therapy is offered at the doctoral level.

Doctor of Education Degree

The Ed.D. program in Health, Physical Education and Recreation provides advanced study for those who seek careers in educational, industrial or other appropri-

ate settings. Admission to the program requires a master's degree and satisfactory completion of the Graduate Record Examination. Course work is planned by the student's advisory committee based on their assessment of the student's background and goals. All programs include course work within and outside the department. Additional information about the Ed.D. can be obtained from the Director of Graduate studies.

Master of Science Degree

The master's program in health, physical education and recreation is designed to provide a high-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 use 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 electives, 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 must meet the requirements set forth in the first part of this Bulletin. Students are expected to have satisfactorily completed the Graduate Record Examination. In addition, applicants are expected to have a minimum of 21 undergraduate hours in their respective fields. Specific prerequisites for graduate study at the master's level are determined by a committee of the departmental graduate faculty based upon area of emphasis.

General Requirements

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

PLAN A
(Thesis Option)

EDP 557	Educational Statistics	3
	or	
STA 570	Basic Statistical Analysis	4
HPR 644	Research Techniques Applied to Health, Physical Education and Recreation	3
Supporting Electives		6
HPR	Area of Concentration	12
HPR	Residence Credit for the Master's Degree (768)	6
	Total	30-31

or

PLAN B
(Non-Thesis Option)

EDP 557	Educational Statistics	3
	or	
STA 570	Basic Statistical Analysis	4
HPR644	Research Techniques Applied to Health, Physical Education and Recreation	3
HPR782	Independent Research Project	3
Supporting Electives		6
HPR	Area of Concentration	15
	Total	30-31

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

420G Physiology of Exercise ... (3)
509 Workshop in Health and Safety ... (1-3)
515 Anatomical and Mechanical Kinesiology ... (3)
530 Administration of Health and Safety Education ... (3)
535 School Health Dilemmas of Special Populations ... (3)
546 Physical Education Workshop ... (1-3)
547 Psychology of Sport and Physical Activity . (3)
548 Special Topics in Recreation and Leisure Studies ... (1-3)
549 Special Topics in Physical Education ... (1-3)
560 Motor Development in Infants and Young Children ... (3)
570 Planning of Recreation Facilities and Areas .. (3)
572 Principles and Practices in Therapeutic Recreation ... (3)
573 Administration and Organization of Recreation ... (3)
575 Interpretations of Leisure and Recreation (3)
576 Intramural Programming and Administration ... (3)
577 Practicum in Recreation ... (3-9)
579 Adapted Physical Education ... (3)
592 Choreography ... (2)
593 Dance Production ... (3)
600 Exercise Stress Testing and Prescription .. (3)
609 Seminar in Health and Safety Education .. (3)
610 The Organization and Administration of Therapeutic Recreation Programs ... (3)
611 Therapeutic Applications of Recreation ... (3)
615 Biomechanics of Fundamental Movements ... (3)
616 Biomechanics of Sport ... (3)
620 Advanced Exercise Physiology ... (3)
621 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 ... (3)
650 Curriculum and Program Development ... (3)
651 Facilities, Construction, and Equipment ... (3)
676 Current Issues in Recreation ... (3)
685 Administrative Practices in Recreation ... (3)
694 Independent Study in Health Education ... (1-3)
695 Independent Study in Physical Education .. (1-3)
696 Independent Study in Recreation ... (1-3)
720 Sports Medicine ... (3)
741 Current Studies and Trends in Health and Physical Education ... (3)
748 Master's Thesis Research ... (0)
749 Dissertation Research ... (0)
768 Residence Credit for Master's Degree ... (1-6)
769 Residence Credit for Doctoral Degree ... (0-12)
770 Seminar in Physical Education ... (3)
780 Seminar in Recreation ... (3)
781 ProSeminar in HPR (Subtitle Required) (1-3)
782 Independent Research ... (3)

History

Graduate Faculty: Professors James Albisetti, Lance Banning, Raymond Betts, E. Randolph Daniel, Bruce Eastwood, George Herring, Robert Ireland, Humbert Nelli, Robert Olson, Theda Perdue, Jeremy Popkin and Mark W. Summers. Associate Professors Eric Christianson, Thomas Cogswell, Ronald Eller, David Hamilton, Donald Nugent and Daniel Smith.

Associate Members: Associate Professors Francie Chassen-Lopez, David Olster and Daniel Rowland. Assistant Professors Fon Gordon, Daniel Gargola, Kathi Kern, and Jeffrey Wasserstrom.

Emeritus Professors: William Chambliss, Thomas Clark, Carl Cone, Mary Wilma Hargreaves, James Hopkins, Robert Randall, Charles Roland, Robert Seager, Gerard Silberstein, Charles Talbert and Robert Warth.

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 recommended 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 offered.

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, and until the Qualifying Examination has been passed and has been approved by The Graduate School. Students specializing in areas other than the history of the United States must demonstrate competence in a second foreign language before the Qualifying Examination. Students specializing in the history of the United States may, upon the decision of the Advisory Committee, be required to demonstrate competence in a second foreign language or in another skill, such as statistics, computer science, or oral history. In all cases it is the right of the Advisory Committee, not the student, to determine the appropriateness of a foreign language and to decide whether

a student specializing in United States history should be required to demonstrate competence in a second foreign language or other skill.

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
Middle East
Science and Medicine

As an alternative method of satisfying the area requirement, the student may opt an area titled 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 (1770-1870)
Modern Europe (1870-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, 1700-1890
Russia and East Europe, 1890 to present
Hispanic America since 1810
History of Science
History of Medicine

Special Preparation: The student will be prepared in a fourth field. Requirements for this field may be satisfied in one of the following ways:

1. 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 Committee.
2. Achieving competence in some discipline other than history, but in one closely related to the major field of history.

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

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)
505 Ethnohistory of the Native American Southeast ..... (3)
509 Roman Law ..... (3)
510 Medieval Civilization I ..... (3)
511 Medieval Civilization II ..... (3)
512 Medieval Institutions to the Mid-Tenth Century ..... (3)
513 Medieval Institutions Since the Mid-Tenth Century ..... (3)
516 Origins of the Scientific World View ..... (3)
517 The Scientific Movement from Galileo to the Present ..... (3)
519 The Era of the Renaissance ..... (3)
520 The Era of the Reformation ..... (3)
521 European Social History 1400-1800 ..... (3)
522 The French and European Revolutions, 1760-1815 ..... (3)
523 Nineteenth Century Europe ..... (3)
524 European Diplomacy 1870-1918 ..... (3)
525 European Diplomacy Since 1918 ..... (3)
526 Europe Since World War II ..... (3)
528 Cultural and Intellectual History of Europe from the Renaissance to the French Revolution ..... (3)
529 The Cultural and Intellectual History of Europe Since 1800 ..... (3)
533 Modern European Imperialism ..... (3)
534 Russia in the Twentieth Century I ..... (3)
535 Russia in the Twentieth Century II ..... (3)
536 Intellectual and Cultural History of Russia to 1800 ..... (3)
537 Intellectual and Cultural History of Russia 1800-present ..... (3)
538 Marxism: The History of Socialism and Communism ..... (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)
546 The Byzantine Empire ..... (3)
548 History of the Middle East: 1916-1952 ..... (3)
549 History of the Middle East: 1952 to Present ..... (3)
551 English Constitutional History ..... (3)
552 British Social History During the Tudor-Stuart Period ..... (3)
553 18th Century Britain ..... (3)
554 British History 1815-1901 ..... (3)
555 British History Since 1901 ..... (3)
556 The British Empire to 1870 ..... (3)
557 The British Empire and Commonwealth after 1870 ..... (3)
558 Canadian History after 1860 ..... (3)
560 Latin America in the World ..... (3)
561 Intellectual and Cultural History of Latin America ..... (3)
562 Modern Mexico ..... (3)
570 Economic History of the United States to 1865 ..... (3)
571 Economic History of the United States since 1865 ..... (3)
572 American Legal History ..... (3)
573 American Constitutional History ..... (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)
578 History of the Old South ..... (3)
579 History of the New South ..... (3)
580 History of Appalachia ..... (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)
588 American Social History to 1865 ..... (3)
589 American Social History since 1865 ..... (3)
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)
596 The U.S. Family in Historical Perspective (3)
606 Historical Criticism ..... (3)
611 Readings in Ancient History ..... (3)
612 Readings in Ancient History ..... (3)
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 ..... (3)
616 Readings in History of Science and Medicine since the Renaissance ..... (3)
621 Readings in European History 1500-1815 ..... (3)
622 Readings in European History 1500-1815 ..... (3)
623 Readings in European Cultural History since 1815 ..... (3)
624 Readings in European Political and Diplomatic History since 1815 ..... (3)
625 Readings in British and British Empire History ..... (3)
626 Readings in British and British Empire History ..... (3)
630 Readings in American History: The Colonial Era ..... (3)
631 Readings in American History: The American Revolution and The New Republic ..... (3)
632 Readings in American History: The Age of Jackson, Civil War, and Reconstruction .... (3)
633 Readings in American History: The Gilded Age and the Progressive Era ..... (3)
634 Readings in American History: America Since 1920 ..... (3)
635 Readings in Modern Russian History I ..... (3)
636 Readings in Modern Russian History II .... (3)
637 Readings in Latin American History ..... (3)
638 Readings in Latin American History ..... (3)
639 Readings in East Asian History ..... (3)
640 Readings in East Asian History ..... (3)
650 Readings in Special Topics in History ..... (3)
695 Independent Work ..... (1-3)
700 Special Problems in History ..... (3)
705 Seminar in Ancient History ..... (3)
706 Seminar in Medieval History ..... (3)
710 Seminar in American History, 1607-1815 .. (3)

711 Seminar in American History, 1815-1865 .. (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- ..... (3)
730 Seminar in Modern British History ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for the Master's Degree ..... (1-6)
769 Residence Credit for the Doctor's Degree ..... (0-12)

Horticulture and Landscape Architecture

Graduate Faculty: Professors Dewayne L. Ingram and Thomas R. Kemp. Associate Professors Douglas D. Archbold, Jack Buxton, Robert Geneve, Robert Houtz, John C. Snyder and Leslie Weston.

Associate Members: Extension Professors Robert G. Anderson and Robert E. McNiel.

Emeritus Professors: Dean Knavel, G.W. Schneider, L. Stoltz and A.S. Williams.

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 will relate to fruit, vegetable, floral, or ornamental crops. Research problems normally involve the disciplines of genetics and/or physiology.

Students interested in working in horticulture toward a Doctor of Philosophy degree may enter the interdepartmental plant physiology or crop science programs.

400G Special Topics in Horticulture ..... (1-3)
510 Vegetable Crop Production ..... (3)
515 Turf Management ..... (3)
524 Floriculture ..... (3)
582 Special Problems in Horticulture ..... (1-4)
601 Physiological Mechanisms in Horticultural Plants ..... (3)
622 Physiology of Plants I ..... (3)
623 Physiology of Plants II ..... (3)
732 Mineral Nutrition of Plants ..... (3)
734 Physiology of Growth and Development .. (3)
736 Phylogeny of Cultivated Plants ..... (3)
748 Master's Thesis Research ..... (0)
768 Residence Credit for Master's Degree ... (1-6)
770 Seminar ..... (1)
790 Research in Horticulture ..... (1-4)

Human Environment: Design and Textiles

Graduate Faculty: Associate Professors Allison Carll-White and Elizabeth Pratt Easter.

Associate Members: Associate Professors Ann Whiteside Dickson and Terry D. Rothgeb. Assistant Professors Kimberly A. Miller, Margaret B. Portillo and Shannon Tew.

The Department of Human Environment: Design and Textiles offers the Master of Arts in Interior Design and the Master of Science in Merchandising, Apparel and Textiles. Both Plan A, 24 credits plus thesis, and Plan B, 36 credits, are offered.

The graduate program in the Department of Human Environment: Design and Textiles is philosophically committed to the well-being of individuals in their immediate environment. Each program of study is designed to meet individual interests and career objectives.

Interior Design

The graduate program in interior design leads to a post-professional Master of Arts in Interior Design. A combination of course work, independent study, and research experience is available to provide students with a program of study designed for career goals. Graduate emphasis is individualized to meet each student's career interests. Course work can focus on historic preservation, restoration, design practice, design education, and man-environment relations. The student works with an advising committee in selection of a thesis or non-thesis option and the appropriate courses at 500, 600 and 700 levels. It is essential that the applicant have an undergraduate degree in interior design or a related subject matter. Supplementary course work may be required of applicants without first professional undergraduate interior design degrees.

Merchandising, Apparel and Textiles

The graduate program in merchandising, apparel and textiles leads to a Master of Science in Merchandising, Apparel and Textiles. A combination of course work, independent study and research experience is available to provide students with a program of study designed for career goals. Graduate courses are available in textile economics, textile science, historic textiles and costume, apparel production, merchandising and social psychological aspects of apparel. Students are encouraged to take additional support courses outside the Department. The student works with an advising committee in selection of a thesis or non-thesis option and the appropriate courses at 500, 600 and 700 levels. It is expected that the applicant have an undergraduate degree in the major area of interest or a closely related field.

HED 508 Interior Design Studio VI: Research/Experimentation/Creativity ..... (3)
HED 557 Interior Design Studio 3 ..... (5)
HED 558 Interior Design Studio 4 ..... (5)
HED 568 Interior Design Professional Practice ..... (3)
HED 569 Computer-Aided Design ..... (3)
HED 589 Res/Pres I: Introductory Concepts of Restoration and Preservation ..... (3)
HED 590 Pro/Prac II: Professional Practice and Field Experience ..... (3)
HED 599 Special Problems in Shelter and Interior Design ..... (1-3)
HED 600 Survey of Current Theories and Literature ..... (3)
HED 641 Regional Variations in Colonial American Design ..... (3)
HED 642 Historic American Interiors ..... (3)
HED 646 Current Research Issues in Environmental Design ..... (3)
HED 659 Interior Design Studio 5 ..... (3)
HED 660 Interior Design Studio 6 ..... (3)
HED 665 Environmental Issues Related to Interior Design ..... (3)
HED 739 Special Problems in Interior Design ..... (1-3)
HED 748 Master's Thesis Research ..... (0)
HED 768 Residence Credit for the Masters Degree ..... (1-6)
HED 772 Seminar in Human Environment ..... (2)
HET 430G Tailoring ..... (3)
HET 435G Advanced Apparel Production Studio (Subtitle Required) ..... (3)
HET 500 Introduction to Behavioral Research in Merchandising, Apparel and Textiles . (3)
HET 520 Evaluation of Textiles ..... (3)
HET 522 History of Textiles ..... (3)
HET 525 Economics of Apparel and Textile Industry ..... (3)
HET 533 History of Costume ..... (3)
HET 545 Clothing for Specific Needs ..... (3)
HET 547 Social and Psychological Aspects of Apparel ..... (3)
HET 590 Merchandising, Apparel and Textiles Internship ..... (6-9)
HET 592 Special Problems in Apparel ..... (1-3)
HET 595 Special Problems in Merchandising ..... (1-3)
HET 597 Special Problems in Textiles ..... (1-3)
HET 600 Survey of Current Theories and Literature ..... (3)
HET 748 Master's Thesis Research ..... (0)
HET 768 Residence Credit for the Masters Degree ..... (1-6)
HET 772 Seminar in Human Environment (Subtitle Required) ..... (1-3)
HET 782 Special Problems in Apparel ..... (1-3)
HET 785 Special Problems in Merchandising ..... (1-3)
HET 787 Special Problems in Textiles ..... (1-3)
HES 596 Special Problems in Human Environmental Sciences ..... (1-3)
HES 600 Research Methodology in Human Environmental Sciences ..... (3)
HES 786 Advanced Problems in Human Environmental Sciences ..... (1-3)

Human Environmental Sciences

The College of Human Environmental Sciences offers a program leading to the Master of Arts degree in Interior Design. Master of Science degree options are offered in Merchandising, Apparel and Textiles; in Nutrition and Food Science; and in Family Studies. Plan A, the thesis option, is offered in each area and requires 24 credit hours of course work plus a six-hour thesis except in the Department of Family Studies which requires 30 hours plus the thesis. Plan B, the non-thesis option, requires 36 credit hours of course work. There is no foreign language requirement for either option. Because prerequisites vary for each program area, the prospective student is advised to contact the appropriate Director of Graduate Studies, College of Human Environmental Sciences, University of Kentucky.

Additionally, the College of Human Environmental Sciences participates in the multidisciplinary Doctor of Philosophy degree in Nutritional Sciences.

For a detailed description of departments and graduate majors offered see the following sections of the *Bulletin*: Family Studies, Human Environment: Design and Textiles, and Nutrition and Food Science. For Home Economics Education see the Vocational Education section of the *Bulletin*.

HES	596	Special Problems in Human Environmental Sciences ..... (1-3)
HES	600	Research Methodology in Human Environmental Sciences ..... (3)
HES	786	Advanced Problems in Human Environmental Sciences ..... (1-3)

Library Science

Graduate Faculty: Professors Lawrence A. Allen, Lois Chan, Michael Harris, JoAnn V. Rogers and Timothy Sineath. Associate Professor Thomas Waldhart.

Emeritus Professor: Robert E. Cazden.

Master's Program

The College of Library and Information Science offers a program that conforms to the University of Kentucky Graduate School in offering three forms of the master's degree. Most students elect the MSLS degree which requires 12 hours of core courses, 24 hours of electives, and the final examination. Required core courses are LIS 504, Information in Society; LIS 530, Information Sources and Services; LIS 535, Information Storage and Retrieval; and LIS 560, Management in Library and Information Science.

As many as 9 elective hours may be in a cognate area of study (subject area courses outside library and information science). Fifteen hours of electives must be at the 600 level, and a maximum of 9 hours may be transferred into the program, including any courses taken in post-baccalaureate status.

The M.A. degree Plan A requires all of the above plus satisfactory demonstration of a language competency, a minimum of six hours in a cognate area, and a thesis which substitutes for six elective hours. The M.A. plan B is the same as plan A in every respect except six hours of advanced bibliography or technical services course work may be substituted for the thesis.

Degree requirements of the program allow students considerable freedom to design the best possible programs for their individual needs. The curriculum is sufficiently varied to permit opportunities to build both breadth and depth into the course of study. The student is assisted in this endeavor by a faculty adviser who provides guidance and counsel. Adviser assignment is based, whenever possible, on student preference.

The program requires 36 hours for the master's degree with 12 of those hours in the core. The other 24 hours are electives chosen by the student in consultation with his adviser. Completion of the 36 hours of course work with an average grade of B or above, together with the satisfactory completion of the final examination, is the general requirement. No student may receive more than two Cs.

504	Information in Society	(3)
510	Children's Literature and Related Materials	(3)
513	Literature and Related Materials for Early Adolescence	(3)
514	Information Resources and Services for Young Adults	(3)
530	Information Sources and Services	(3)
535	Information Storage and Retrieval	(3)
536	Information Needs and Uses	(3)
547	Administration of School Media Centers	(3)
550	Introduction to Cataloging and Classification	(3)
560	Management in Library and Information Science	(3)
575	Professional Field Experience	(3)
576	School Media Practicum	(1-12)
602	History of Books and Printing to 1800	(3)
603	History of Books and Printing 1800 to the Present	(3)
604	History of Libraries	(3)
606	Information Technology	(3)
608	Methods of Research in Library and Information Science	(3)
609	Current Problems in Library and Information Science	(3)
610	Creative Library Programs for Children	(3)
611	Critical Analysis of Children's Literature	(3)
618	Adult Information Needs and Services	(3)
620	Historical and Analytical Bibliography	(3)
622	Social Science Information	(3)
623	Information in the Humanities	(3)
624	Information in Science and Technology	(3)
626	Government Publication	(3)
630	Computer-Based Reference Systems and Services	(3)
635	Information Storage and Retrieval Systems	(3)
636	Computer Technology in Libraries and Information Centers	(3)
640	Health Sciences Libraries	(3)
641	Law Librarianship	(3)
643	Archives and Manuscripts Management	(3)
645	Public Libraries	(3)
646	Academic Libraries	(3)
647	Current Trends in School Media Centers	(3)
650	Technical Processing Systems	(3)
651	Library and Information Networks	(3)
655	Descriptive Cataloging	(3)
656	Subject Cataloging and Classification	(3)
659	Collection Development	(3)
660	Administrative Behavior in Library Management	(3)
690	Special Topics in Library and Information Science	(1-3)
695	Independent Study in Library and Information Science	(3)
748	Master's Thesis Research	(0)
768	Residence Credit for the Masters Degree	(1-6)

Materials Science and Engineering

Graduate Faculty: Professors Peter P. Gillis, Kenji Okazaki, Lynn S. Penn and Philip J. Reucroft. Associate Professors H. Alan Fine and James G. Morris.

Joint Appointment: Professor Gerald P. Huffman.

Emeritus Professors: Robert J. DeAngelis and R.E. Swift.

The department offers programs of study leading to the Master of Science in Materials Science and Engineering, 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 microscopy, X-ray diffraction and surface analysis; metals, ceramics and polymers; extractive metallurgy; powder metallurgy and alloy synthesis. 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. The admission requirement is usually a grade point average of 2.8/4.0 on all undergraduate work. 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 and a willingness to make up some undergraduate courses on a remedial basis. The applicant must also submit GRE scores which meet the minimum requirement of 1100 (verbal & quantitative).

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 and 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 achievement of independent and comprehensive scholarship in the field. A 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 Materials Science and Engineering 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 comprehen-

sive preliminary examination, the nature of which is set by the student's Thesis Advisory Committee.

454G Polymer Engineering ..... (3)
506 Mechanics of Composite Materials ..... (3)
512 Electronic Materials and Processes ..... (3)
531 Powder Metallurgy ..... (3)
535 Mechanical Properties of Materials ..... (3)
536 Ceramic Engineering ..... (3)
538 Deformation Processing ..... (4)
541 Advanced Extractive Metallurgy ..... (3)
542 Extractive Metallurgy ..... (4)
550 Corrosion ..... (3)
551 Advanced Chemical Metallurgy ..... (3)
552 Polymeric Materials ..... (3)
553 Thermodynamics of Polymer Systems ..... (3)
554 Chemical and Physical Processing of Polymer Systems ..... (3)
561 Electric and Magnetic Properties of Materials ..... (3)
568 Fiber Optics ..... (3)
580 Material Selection and Failure Analysis .... (3)
599 Topics in Metallurgical Engineering and Materials Science ..... (2-3)
632 Advanced Materials Science ..... (3)
635 Advanced Mechanical Metallurgy ..... (3)
636 Dislocation Theory ..... (3)
650 Advanced Materials Thermodynamics ..... (3)
659 Advanced Phase Diagrams ..... (3)
661 Advanced Physical Metallurgy I ..... (3)
662 Advanced Physical Metallurgy II ..... (3)
665 Crystallography and X-Ray Metallography (4)
666 Diffraction Methods in Metallurgy ..... (4)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for the Master's Degree ..... (1-6)
769 Residence Credit for the Doctor's Degree (0-12)
771 Seminar ..... (0)
781 Special Problems, Literature and Laboratory ..... (1-3)
782 Special Problems, Literature and Laboratory ..... (3)
EGR 537 Numerical Analysis ..... (3)
EGR 599 Topics in Engineering (Subtitle Required) ..... (1-3)
EGR 611 Boundary Element Methods in Engineering ..... (3)
EGR 621 Finite Element Analysis in Engineering ..... (3)
EGR 622 Advanced Finite Element Analysis in Engineering ..... (3)
EGR 680 Engineering Applications of Stochastic Differential Equations ..... (3)
EGR 780 Topics in Engineering (Subtitle Required) ..... (1-3)

Mathematics

Graduate Faculty: Professors David Adams, James C. Beidleman, James Brennan, J.D. Buckholtz, Richard Carey, Thomas Chapman, Frederick Cohen, Donald Coleman, Paul Eakin, Carl Eberhart, Edgar Enochs, Graeme Fairweather, Michael Freeman, J.B. Fugate, Ronald Gariepy, Lawrence Harris, Thomas Hayden, Henry Howard, David Johnson, Kenneth Kubota, Carl W. Lee, John Lewis, John Mack, Raymond Rishel, Avinash M. Sathaye, Ted Suffridge, Clasine van Winter and James H. Wells. Associate Professors Raymond Cox, Kurt Helmes, Peter D. Hislop, David B. Leep, Chi-Sing Man, Robert Molzon, Peter Perry and James Simpson.

Associate Members: Assistant Professors Bernard Bialecki, Carl T. Brezovec, Xiao-Chuan Cai and Arthur Heinricher.

Joint Appointment: Professor Donald Leigh.

Emeritus Professors: Wimberly Royster and 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 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 areas of algebra, analysis (classical and modern), applied mathematics, optimization, 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.

In order to be admitted to candidacy for the degree, a student must pass a proficiency examination in one foreign language 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. 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, rational approximation, operator theory, differential equations, numerical analysis and optimization and control theory.

The ability to communicate mathematics is an increasingly important professional qualification. The department requires all students to complete a teaching or research assignment during each semester of their enrollment in a graduate mathematics program. Students will be assigned to teach courses at the early undergraduate level. Entering students will normally be assigned three semester hours, and continuing ones will normally teach six semester hours. With the approval of the Director of Graduate Studies, a student may substitute an equivalent research effort for the teaching activity.

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)
432G Methods of Applied Mathematics I ..... (3)
433G Introduction to Complex Variables ..... (3)
441G Geometry I ..... (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)
506 Methods of Theoretical Physics I ..... (3)
507 Methods of Theoretical Physics II ..... (3)
511 Models in Mathematical Biology-II ..... (3)
515 Mathematical Programming and Extensions ..... (3)
522 Matrix Theory and Numerical Linear Algebra I ..... (3)
527 Applied Mathematics in the Natural Sciences I ..... (3)
532 Ordinary Differential Equations ..... (3)
533 Partial Differential Equations ..... (3)
537 Numerical Analysis ..... (3)
538 Numerical Analysis II ..... (3)
551 Topology I ..... (3)
561 Modern Algebra I ..... (3)
565 Linear Algebra ..... (3)
566 Theory of Numbers ..... (3)
570 Multivariate Calculus ..... (3)
571 Analysis I ..... (3)
601 Selected Topics in Mathematics ..... (3)
602 Topology ..... (3)
603 Algebra ..... (3)
604 Analysis ..... (3)
611 Independent Work in Mathematics ..... (3-9)
613 Problems Seminar in Operations Research ..... (3)
615 Convex Analysis and Optimization ..... (3)
616 Numerical Techniques for Nonlinear Optimization ..... (3)
617 Markovian Decision Problems ..... (3)
618 Combinatorics and Networks ..... (3)
619 Problem Seminar ..... (3)
620 Advanced Numerical Analysis ..... (3)
621 Advanced Numerical Analysis II ..... (3)
622 Matrix Theory and Numerical Linear Algebra II ..... (3)
625 Numerical Methods for Differential Equations ..... (3)
628 Applied Mathematics in the Natural Sciences II ..... (3)
630 Mathematical Foundations of Stochastic Processes and Control Theory I ..... (3)
631 Mathematical Foundations of Stochastic Processes and Control Theory II ..... (3)
632 Advanced Differential Equations ..... (3)
633 Theory of Partial Differential Equations .. (3)
637 Approximation Theory ..... (3)
639 Research Projects in Biological Modeling (3)
641 Differential Geometry ..... (3)
642 Differential Geometry ..... (3)
651 Topology II ..... (3)
654 Algebraic Topology I ..... (3)
655 Algebraic Topology II ..... (3)
661 Modern Algebra II ..... (3)
667 Group Theory ..... (3)
670 Analysis II ..... (3)
671 Functions of a Complex Variable I ..... (3)
672 Functions of a Complex Variable II ..... (3)
673 Several Complex Variables ..... (3)
678 Calculus of Variations ..... (3)
679 Mathematical Theory of Linear Control Systems ..... (3)
681 Functional Analysis I ..... (3)
682 Functional Analysis II ..... (3)
685 Fourier Analysis ..... (3)
687 Integral Equations ..... (3)
715 Selected Topics in Optimization ..... (3)
721 Selected Topics in Numerical Analysis ..... (3)
732 Selected Topics in Differential and Integral Equations ..... (3)
748 Master's Thesis Research ..... (0)

749 Dissertation Research ..... (0)
751 Selected Topics in Topology ..... (3)
752 Selected Topics in Topology ..... (3)
753 Selected Topics in Functional Analysis ..... (3)
757 Seminar in Topology ..... (3)
761 Homological Algebra ..... (3)
762 Theory of Rings ..... (3)
763 The Theory of Fields ..... (3)
764 Selected Topics in Algebra ..... (3)
765 Selected Topics in Algebra ..... (3)
768 Residence Credit for Master's Degree ... (1-6)
769 Residence Credit for Doctor's Degree . (0-12)
772 Selected Topics in the Theory of Complex Variables ..... (3)
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 L.C. Chow, Clifford Cremers, James Funk, O. J. Hahn, Thomas W. Lester, M.C. Roco, Andrew F. Seybert and Shiva N. Singh. Associate Professors I. S. Jawahir, R. Kovacevic, J. M. McDonough, M. P. Menguc, Keith Rouch, Peter Sadler, K. Saito, Kaveh A. Tagavi and H.S. Tzou.

Associate Members: Assistant Professor T. W. Wu.

Emeritus Professors: Willis Merle Carter and Orville Stewart.

The Department of Mechanical Engineering provides programs for study and research leading to the Master of Science in Mechanical Engineering and the Doctor of Philosophy.

Research and graduate studies curricula within the Department of Mechanical Engineering are concentrated in the following two major areas: 1) Systems and Design including Acoustics, Dynamics, Machine Design, Manufacturing, Robotics, Solid Mechanics, and Vibration; and 2) Thermal/Fluid Sciences including Combustion and Fire, Computational Fluid Dynamics, Experimental Fluid Mechanics, Heat and Mass Transfer, Radiative Transfer, Thermal Systems, Two-Phase and Phase-Change Heat Transfer.

Graduate study normally requires a bachelor's degree in engineering, not necessarily in mechanical engineering, a GPA of 2.8/4.0 on all undergraduate work and Graduate Record Examination scores of 700 (Quantitative) and 500 (Analytical). An undergraduate degree in chemistry or physics combined with a strong interest in engineering topics may be suitable preparation when certain required undergraduate courses are also taken.

The master's degree requires 24 credit hours of course work and a thesis (Plan A). A non-thesis option (Plan B) consisting of 36 credit hours is available to students with acceptable previous research or design experience.

The Ph.D. degree has no formal course requirement, but most students find it necessary to take course work beyond the master's degree as necessary preparation for the qualifying examination.

The department has several research laboratories: Acoustics Lab, Boiling and Phase Change Lab, Combustion and Fire Research Lab, Dynamics and Systems Lab, Engineering Metrology, Heat Transfer Lab, Manufacturing Processes Lab, Multiphase Flow Lab, Non-traditional Manufacturing Processes Lab, Nuclear Lab, Radiative Transfer and Optics Lab, Rapid Prototyping Lab, Robotics Lab, Vibrations and Rotor Dynamics Lab, and Welding Research Lab. The department laboratories are well-equipped with instrumentation, computers, and facilities for study in the areas of research in which the department is active.

475G Introduction to Nuclear Engineering ..... (3)
480G Thermal Environmental Engineering ..... (3)
501 Mechanical Design with Finite Element Methods ..... (3)
505 Modeling of Manufacturing Processes and Machines ..... (3)
506 Computer-Aided Graphics and Design ..... (3)
510 Dynamics and Design of Robot Manipulations ..... (3)
514 Nuclear Reactor Analysis and Fuel Management ..... (3)
529 Applied Fluid Mechanics ..... (3)
530 Gas Dynamics ..... (3)
531 Fluid Dynamics I ..... (3)
540 Analysis and Simulation of Dynamic Systems ..... (3)
542 Kinematic Synthesis of Mechanisms ..... (3)
543 Kinematics of Machinery ..... (3)
550 Applications of Heat Transfer ..... (3)
560 Engineering Optics ..... (3)
563 Basic Combustion Phenomena ..... (3)
564 Propulsion System Design ..... (3)
565 Energy Engineering ..... (3)
566 Direct Energy Conversion Processes ..... (3)
583 Biotechnology ..... (3)
590 Elements of Aerospace Technology ..... (3)
599 Topics in Mechanical Engineering (Subtitle Required) ..... (3)
601 Advanced CAE Applications ..... (3)
602 Dynamics of Distributed Mechanical Systems ..... (3)
604 Dynamics of Rotating Machinery ..... (3)
606 Seminar and Project in Manufacturing Systems Engineering ..... (3)
610 Engineering Acoustics ..... (3)
611 Boundary Element Methods in Engineering ..... (3)
620 Advanced Engineering Thermodynamics I ..... (3)
621 Advanced Engineering Thermodynamics II ..... (3)
625 Advanced Heat Conduction ..... (3)
626 Advanced Heat Convection ..... (3)
627 Radiation Heat Transfer ..... (3)
628 Boiling and Condensation ..... (3)
631 Fluid Dynamics II ..... (3)
632 Compressible Fluid Flow ..... (3)
634 Turbulent Flows ..... (3)
640 Advanced Analysis and Simulation of Dynamic Systems ..... (3)
645 Advanced Control System Analysis ..... (3)
647 System Optimization I ..... (3)
651 System Optimization II ..... (3)
663 Nuclear Reactor Analysis Design ..... (3)
664 Shielding and Experimental Methods in Nuclear Engineering ..... (3)
665 Nuclear Reactor Dynamics ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for the Master's Degree ..... (1-6)
769 Residence Credit for the Doctor's Degree ..... (0-12)
780 Special Problems in Mechanical Engineering ..... (3)
781 Special Problems in Bioengineering ..... (3)
783 Topics in Advanced Systems Theory ..... (3)
790 Research in Mechanical Engineering ..... (1-9)
EGR 537 Numerical Analysis ..... (3)
EGR 599 Topics in Engineering (Subtitle Required) ..... (1-3)
EGR 611 Boundary Element Methods in Engineering ..... (3)
EGR 621 Finite Element Analysis in Engineering ..... (3)
EGR 622 Advanced Finite Element Analysis in Engineering ..... (3)
EGR 680 Engineering Applications of Stochastic Differential Equations ..... (3)
EGR 780 Topics in Engineering (Subtitle Required) ..... (1-3)

Microbiology

Chair: Alan M. Kaplan

Graduate Faculty: Professors Charles T. Ambrose, Albert T. Brown, Frederick C. DeBeer, Norman L. Goodman, Alan M. Kaplan, Thomas L. Lillich, Thomas L. Roszman, Jesse E. Sisken, Susan Straley and John W. Walsh. Associate Professors: Subbarao Bondada, Robert B. Calmes Jr., Donald A. Cohen, Jeffrey Neal Davidson, Vincent Gallicchio, Charles Snow, Marion R. Steiner, Jerold G. Woodward and Stephen B. Zimmer.

Associate Members: Associate Professors Thomas C. Gray and Robert J. Jacob. Assistant Professors Donald P. Biek, L. Edward DeMoll, James Freeman, Joseph McGillis, Timothy Overman, Bin-Tao Pan, Robert D. Perry, Martha Peterson, Carol L. Pickett, Vivek M. Rangnekar, Brett Spear and Mitchell Turker.

Joint Appointments: Professors M. H. Aleem and Judith Lesnaw. Associate Professors Jimmie D. Clark and Denny O. Harris.

The Microbiology program is housed in the Department of Microbiology and Immunology in the College of Medicine and provides an interdisciplinary approach to problems concerning the basic molecular and cellular processes of eukaryotic and prokaryotic organisms. The program is designed primarily for doctoral students; however, candidates for the master's degree are accepted under unusual circumstances. As preparation for graduate work in microbiology and immunology, students should have completed courses in chemistry through organic chemistry, in mathematics through calculus, in biology and/or microbiology and should have had one year of work in physics. Physical chemistry is recommended and opportunities are available for outstanding students to make up deficiencies in their undergraduate training.

Research interests within the program are clustered in pathogenic microbiology, cancer cell and molecular biology and immunology. Specific research areas include microbial physiology, bacterial pathogenicity, cellular and molecular immunology, tumor immunology, lymphocyte differentiation, neuroimmunomodulation, membrane biology, molecular virology, molecular genetics and gene regulation, and in-

volve extensive utilization of molecular biology in genetic engineering, transgenic technology, hybridoma technology and fluorescence activated cell sorting.

The program of study is tailored to the individual background and career goals of the student and stresses an interdepartmental approach both in the selection of courses and in the pursuit of research. Students typically select courses in the Departments of Biochemistry, Pharmacology, Pathology, and Biology as well as Microbiology and Immunology and are expected to participate in graduate seminars, journal clubs, research seminars, to interact with visiting scholars and to present the results of their research at local and national meetings.

Financial support is available for highly qualified students. Inquiries regarding graduate level training in Microbiology and Immunology should be directed to the Director of Graduate Studies, Department of Microbiology and Immunology, University of Kentucky College of Medicine, Lexington, Kentucky 40536-0084.

494G	Immunobiology	(3)
512	Cellular Physiology	(4)
515	General Cell Biology	(3)
595	Immunobiology Laboratory	(2)
601	Special Topics in Molecular and Cellular Genetics	(1)
611	Biopathology	(3)
615	Molecular Biology	(3)
685	Advanced Immunobiology	(4)
698	Clinical Microbiology	(3)
707	Contemporary Topics in Immunology	(2)
710	Special Topics in Microbiology	(2)
720	Microbial Structure and Function	(4)
748	Master's Thesis Research	(0)
749	Dissertation Research	(0)
768	Residence Credit for Master's Degree	(1-6)
769	Residence Credit for the Doctor's Degree	(0-12)
772	Seminar in Microbiology	(0-1)
798	Research in Microbiology	(1-9)

Mining Engineering

Graduate Faculty: Professors Joseph Leonard, R.S. Mateer, Lee W. Saperstein and K.F. Unrug. Associate Professors G.T. Lineberry, Richard J. Sweigard and Andrzej M. Wala.

Associate Member: Assistant Professors Joseph Sottile, Jr. and Jon C. Yingling. Assistant Research Professor Xiang-Huai Wang. Adjunct Assistant Professor B. K. Parekh.

Emeritus Professor: Fred D. Wright

The programs leading to the degrees of Master of Science in Mining Engineering, Master of Mining Engineering, and Doctor of Philosophy are offered through the Department of Mining Engineering. The objectives of these programs are to provide an advanced level of applied science for use in the mining industry and to offer specified topics for research specialization.

The Master of Mining Engineering is a professionally oriented degree intended for the student who wishes to add topics to a basic baccalaureate degree for use in a working career. It is also appropriate for the returning adult student who needs more subject matter for career betterment. The Master of Science in Mining Engineering is a research-oriented degree appropriate for a career in problem solving, research, or technology development. The Doctor of Philosophy is the terminal degree in the subject and is normally required for a career in teaching and research.

The Master of Mining Engineering requires 30 credits of course work capped by a professional paper that reports on a current topic of scientific or technical interest, quite possibly connected to the student's career interests. For the Master of Science in Mining Engineering, twenty-four credit hours of course work plus an acceptable thesis (Plan A) or 30 credits of course work and a report on one or more research topics (Plan B) are required to fulfill program requirements. Plan B Master of Science degrees will be reserved normally for students who have already demonstrated their ability to conduct and report on independent research.

Enrollment in either Master's Degree degree program is open to qualified applicants with an undergraduate degree in mining engineering or other engineering and science fields. A grade-point average of 2.8/4.0 is normally required on all undergraduate work. Persons with undergraduate degrees in fields other than mining engineering are required to make up deficiencies in undergraduate mining engineering courses.

Applicants for admission must have a combined score on the verbal and quantitative portions of the Graduate Record Examination in excess of 1,000. Scores on the analytical portion are also considered. Foreign applicants whose native language is other than English must take the Test of English as a Foreign Language (TOEFL) and score at least 550 before they can be admitted.

In addition to satisfying general Graduate School and College of Engineering admissions requirements (a GPA of 2.8/4.0 on all undergraduate work is normally required), applicants for admission to the M.Min.E., M.S. in Min.E., and Ph.D. degree programs in mining engineering must have been awarded the Bachelor of Science degree prior to admission to the graduate degree status. Normally, it is expected that applicants will have graduated from an engineering program accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). For applicants from non-U.S. universities, from related but non-engineering disciplines, and from institutions that do not have accredited engineering programs, an assessment will be made of the comparability of educational background to that prescribed and appropriate remedial coursework established as a provision for admissions.

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 it necessary to take course work beyond the master's degree as necessary preparation for the qualifying examination. The language requirement for the Ph.D. may be satisfied by either German or Russian.

Current research areas include the following: rock mechanics and ground control, operations research, mine ventilation, underground construction, surface mining and reclamation, mine environmental engineering, 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 Mining Engineering.

490G		Explosives and Blasting Engineering	(3)
551		Rock Mechanics	(4)
561		Mine Construction Engineering I	(3)
563		Simulation of Mine Production Systems	(3)
572		Advanced Coal Preparation	(3)
575		Coal Preparation Design	(3)
581		Mine Valuation	(3)
591		Mine Design Project I	(1)
592		Mine Design Project II	(2)
599		Topic in Mining Engineering	(2-3)
631		Advanced Mine Systems Engineering	(3)
632		Mine Plant Machinery II	(3)
633		Advanced Underground Coal Mining Systems	(3)
634		Advanced Mine Engineering	(3)
636		Advanced Rock Mechanics	(3)
637		Rock Slope Stability and Design	(3)
641		Advanced Mine Ventilation	(3)
661		Mine Construction Engineering II	(3)
690		Advanced Mineral Beneficiation Engineering	(3)
748		Master's Thesis Research	(0)
749		Dissertation Research	(3)
768		Residence Credit for the Master's Degree	(1-6)
769		Resident Credit for Doctor's Degree	(0-12)
771		Seminar in Mining Engineering	(1)
780		Special Problems in Mining Engineering	(1-6)
790		Special Research Problems in Mining Engineering	(1-9)
EGR	537	Numerical Analysis	(3)
EGR	599	Topics in Engineering (Subtitle Required)	(1-3)
EGR	611	Boundary Element Methods in Engineering	(3)
EGR	621	Finite Element Analysis in Engineering	(3)
EGR	622	Advanced Finite Element Analysis in	

		Engineering ..... (3)
EGR	**680**	**Engineering Applications of Stochastic Differential Equations ..... (3)**
EGR	**780**	**Topics in Engineering (Subtitle Required) ..... (1-3)**

School of Music

Graduate Faculty: Professors Joseph Baber, Carl W. Guempel, Alan Hersh, Rey M. Longyear, Mina F. Miller and Lucien Stark. Associate Professors Lance Brunner, Jean Christensen, Kate Covington, Richard C. Domek, Jonathan Glixon, Allen W. Goodwin, Ronald P. Monsen, Schuyler Robinson, David W. Sogin and Cecilia H. Wang.

Associate Members: Professors Vincent DiMartino and Phyllis Jenness. Associate Professors James Campbell, Charles Lord, Daniel Mason, Phillip Miller, Patricia Montgomery and Bruce N. Morrison. Assistant Professors Noemi Lugo, Everett McCorvey, Miles Osland, Susan Parisi, Ronald Pen and Roger Wesby.

Emeritus Professors: R. Bernard Fitzgerald, Hubert Henderson, Donald Ivey, Gerhard Herz, Wesley K. Morgan, Nathaniel Patch, Robert L. Weaver 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 performance or composition; and the Doctor of Philosophy (Ph.D.) in musicology, music education or theory. The applicant for the master's degree is expected to have earned an appropriate undergraduate degree and the applicant for the doctoral degree is expected to have earned an appropriate master's degree at the University of Kentucky or an equivalent degree from a comparable institution.

Entrance Requirements

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, the first Saturday of March and the second Saturday in 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.* In special circumstances and with the consent of the Director of Graduate Studies entrance examinations may be taken *in absentia* or at times other than those stated. Audition tapes may also be sent, but D.M.A. candidates must audition in person.

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 assistantships may choose the last Saturday of January or the first Saturday of March. Those wishing to begin studies during a summer session must take the examinations no later than the first Saturday of March.

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 are expected to have taken at least one year each of undergraduate level German, French, and Italian (or the equivalent by petition to the Director of Graduate Studies in the School of Music) as a prerequisite for degree study. If deficient, a student must enroll in language courses each semester of study until the deficiency is removed.

Thesis Requirements. The Master of Arts degree requires a thesis (Plan A: see general requirements). For the Master of Music degree in Performance, a public recital acceptable to the faculty is required in lieu of a thesis. For the Master of Music degree in Composition, a composition of major proportions, acceptable to the composition-theory faculty and publicly performed, must be submitted in lieu of a thesis. 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

Prerequisites: A suitable background in music literature and music theory, and a reading knowledge of one foreign language, normally French or German.

MASTER OF ARTS (MUSICOLOGY EMPHASIS)

Music History and Literature	**9-12**
Theory (including MUS 670, 671, or 672)	**6-9**
Research Methods (MUS 618)	**3**
Directed Electives	**0-6**
Thesis	**0**
	Total 24

MASTER OF ARTS (THEORY EMPHASIS)

Theory	**9-12**
Music History and Literature	**6-9**
Research Methods (MUS 618)	**3**
Directed Electives	**0-6**
Thesis	**0**
	Total 24

MASTER OF MUSIC (THEORY)

Prerequisites: Nine hours of upper division theory, including form and analysis and counterpoint, or the equivalent.

Theory	**12**
Research Methods (MUS 618)	**3**
Music History and Literature	**6**
Pedagogy of Theory (674)	**3**
Directed Electives	**0-6**
Thesis (if desired)	**0**
	Total 24-30

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	**6**
Theory (including a minimum of one course from: MUS 670, 671, or 672)	**9**
Directed Electives	**5**
Thesis Composition	**0**
	Total 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.

Music Performance (including recital)	**9**
Music History and Literature	**6**
Theory (including MUS 670, 671 or 672)	**6**
Directed Electives	**9**
Recital	**0**
	Total 30

This degree program is offered in the following areas: piano, voice (see below), organ, violin, viola, cello, flute, oboe, clarinet, saxophone, bassoon, trumpet, French horn, trombone, euphonium, tuba, and percussion.

Wind and string majors must participate in at least one University-sponsored performing organization for two semesters.

MASTER OF MUSIC (VOICE PERFORMANCE)

Voice Performance (including recital)	**9**
Music History and Literature (must include MUS 623)	**6**
Theory (including MUS 578, 670, 671, or 672)	**6**
Physiology and Functioning of the Singing Voice (MUS 665)	**3**
Materials, Techniques, and Literature of Voice Teaching (MUS 667)	**3**
Advanced German Vocal Repertory (MUS 620)	**3**
Directed Electives	**3**
	Total 33

A minimum of three full semesters, excluding summer sessions, is necessary for an M.M. in Performance.

MASTER OF MUSIC (Music Education - Plan A)

Core Requirements	**12 hrs.**
MUS 600 Research 1	**3 hrs.**
MUS 601 Foundations of Music Education	**3 hrs.**
Music History and Literature	**3 hrs.**
Music Theory (including MUS 578, MUS 670, MUS 671, or MUS 672)	**3 hrs.**
Thesis	**0 hrs.**
Music Education Electives	**6 hrs.**

The student can select any Music Education courses 500 level or above.

Music Electives	**6 hrs.**

The student can select any Music course 500 level or above in Performance, Music History, or Music Theory/Composition.

24 hrs.

Students planning to earn a doctorate in Music Education should elect Plan A.

MASTER OF MUSIC
(Music Education - Plan B)

Core Requirements ..... 12 hrs.
- **MUS 600 Research 1 ..... 3 hrs.**
- **MUS 601 Foundations of Music Education 3 hrs.**
- **Music History and Literature ..... 3 hrs.**
- **Music Theory (including MUS 578, MUS 670, MUS 671, or MUS 672) ..... (3)**

Specialized Area of Study ..... 12 hrs.

(The student will select 12 hours from one of the four areas described below, Instrumental Teaching, Choral Teaching, General Music, and Choral or Instrumental Conducting. The student and advisor will determine the general area of emphasis and plan a set of courses which best fulfills the needs of the student).

Music or Education Electives ..... 6 hrs.

(The student can select any music or education courses 500 level or above.)

30 hrs.

Specialized areas of study for Plan B.

INSTRUMENTAL TEACHING EMPHASIS - Band or Orchestra (Student and Advisor choose twelve hours from courses below which would best fulfill the student's needs.)

MUP		Applied Performance (maximum of 4 hours)	1-3 hrs.
MUP		Secondary Applied	1-2 hrs.
MUS	680	Band History and Literature	3 hrs.
MUS	622	Symphonic Literature	3 hrs.
MUS	660	Adv. Methods: Elementary General Music	3 hrs.
MUS	681	Advanced Rehearsal Techniques	3 hrs.
MUP	558	Conducting or	
MUP	658	Conducting	1-4 hrs.
MUS	684	Advanced String Methods and Materials	3 hrs.
MUS	570	Orchestration	2 hrs.
MUS	706	Music Learning and Behavior	3 hrs.

CHORAL TEACHING EMPHASIS (Student and Advisor choose twelve hours from courses below which would best fulfill the student's needs.)

MUP		Applied Performance (Maximum of 4 hours)	1-4 hrs.
MUS	565	Vocal Pedagogy	2 hrs.
MUS	625	Choral Literature	3 hrs.
MUS	660	Adv. Methods: Elementary General Music	3 hrs.
MUS	650	Music Education Workshop	1-3 hrs.
MUS	660	Adv. Methods: Choral Techniques	3 hrs.
MUP	558	Conducting or	
MUP	658	Conducting	1-4 hrs.
MUS	706	Music Learning and Behavior	3 hrs.

GENERAL MUSIC TEACHING EMPHASIS - Elementary Music, Jr. High, Middle School General Music (Student and Advisor choose twelve hours from courses below which would best fulfill the student needs.)

MUP		Applied Performance (maximum of 4 hours)	1-4 hrs.
MUS	660	Adv. Methods: Elementary General Music	3 hrs.
MUS	560	Orff Schulwerk Workshop	1-3 hrs.
MUS	561	Orff Schulwerk Certification	2-6 hrs.
MUS	650	Music Education Workshop	1-4 hrs.
MUS	766	Seminar in Music Education	3 hrs.
MUS	563	Music in Early Childhood	3 hrs.
MUS	564	Music and Special Learners	3 hrs.
MUS	706	Music Learning and Behavior	3 hrs.

CONDUCTING EMPHASIS - Instrumental or Choral (Student and advisor choose twelve hours from courses below which would best fulfill the student's needs.)

MUP		Applied Performance (maximum of 4 hours)	1-4 hrs.
MUP		Secondary Applied Performance	1-2 hrs.
MUS	680	Band History and Literature	3 hrs.
MUS	622	Symphonic Literature	3 hrs.
MUS	681	Advanced Rehearsal Techniques - Band	3 hrs.
MUS	558	Conducting or	
MUS	658	Conducting (4 hours required)	1-4 hrs.
MUS	625	Choral Literature	3 hrs.
MUS	565	Vocal Pedagogy	2 hrs.
MUS	660	Adv. Methods: Choral Techniques	3 hrs.
MUS	570	Orchestration or	
MUS	571	Orchestration	2 hrs.
MUS	684	Adv. String Methods & Materials	3 hrs.
MUS	706	Music Learning and Behavior	3 hrs.

Each full-time resident graduate student in music education must participate in a University-sponsored performing organization for two semesters.

DOCTOR OF MUSICAL ARTS DEGREE

The Doctor of Musical Arts program offers opportunity for fullest development as a performer, composer, or teacher of music performance or composition. Technical excellence is a prerequisite for admission into the program; doctoral study emphasizes work in adjunct areas of music, related fields, and research as they enhance and support the major area.

One foreign language, normally French or German, is required for all D.M.A. students. As a prerequisite for doctoral study, voice majors must have satisfied the foreign language requirement specified above for the Master of Music (Voice Performance) degree. If deficient, a student must enroll in language courses each semester of study until the deficiency is removed.

One lecture-recital and three formal recitals are required for performance majors. The program content of the recitals will be established in cooperation with the student's Advisory Committee. With its approval, a program of chamber music, a concerto performance with orchestra, or a major role in an opera or oratorio may fulfill the requirement for one of the recitals. In lieu of a dissertation, a doctoral project will be required as an indication of the student's ability for scholarly study and research.

The Project for the D.M.A. in Performance will consist of two parts. Part 1 is a monograph that represents the culmination of a significant research project on a topic related to that of the lecture-recital. The monograph must be a well-reasoned, original contribution to the field of study, and should provide evidence of scholarly achievement. A D.M.A. monograph differs from a Ph.D. dissertation principally in that it may be of more restricted scope, and that it may take a more interpretive, synthetic, or practical approach than is usual for a dissertation. Part 2 consists of thoroughly researched and documented written discussions of the remaining repertoire used in fulfilling the performance requirements. The monograph and discussions of repertoire are to be approved by the Advisory Committee in the same manner as a Ph.D. dissertation. If the Major Professor of a student in a performance program does not hold the doctorate, another member of the Advisory Committee, who is a Full Member of the Graduate Faculty and holds the doctorate, shall be appointed as Project Director.

The Project for the D.M.A. in Composition will consist of two parts. Part 1 is a large-scale original composition. The candidate is responsible for arranging a public performance of the work. Part 2 is an in-depth analysis and discussion of the composition. The composition and in-depth written analysis and discussion are to be approved by the Advisory Committee in the same manner as a Ph.D. dissertation.

The minimum course requirements beyond the master's degree are as follows:

MUS 618 Research Methods* 3
Music History and Literature 9
Advanced Music Theory 6**
Performance Major 12
Minor (optional)* 9**

Total 30-39

DOCTOR OF MUSICAL ARTS (VOICE PERFORMANCE)

Research Methods (MUS 618)* 3
Music History and Literature (must include MUS 623*) 6
Advanced Music Theory 6**
Voice Performance 12
Performance Related Study: must include MUS 665*, 667*, and 620* and 6 credits of Directed Research in Vocal Literature (MUS 780) 6-15
Minor (Optional)* 9**

Total 33-51

*If not completed at the master's level.
**MUS 578 cannot be used to fulfill this requirement.
***The minor may be taken within or outside the School of Music, and is subject to the approval of the Advisory Committee and the chairman of the department concerned.

DOCTOR OF PHILOSOPHY DEGREE IN MUSIC

The School of Music offers courses and research opportunities leading to the Ph.D. in music. Applicants must meet the entrance requirements of The Graduate School as well as those of the School of Music, and must show evidence of competence in musical performance. Applicants must submit a master's thesis or a research paper of sufficient scope and quality to demonstrate competence in research and clarity of expression. The basic core requirements are:

Research Methods: MUS 618 (if not taken at the master's level)
Music History and Literature: 9 hours beyond the master's

Advanced Music Theory: 6 hours beyond the master's*

Three seminars (minimum) beyond the master's

There is no specific requirement in a minor area, but such work may be required by a student's Advisory Committee if it is essential to the major research or field of concentration.

Language requirements will conform to The Graduate School policy; however, specific languages required will vary with individual options.

The student must display proficiency at the keyboard.

The Ph.D. in music may be pursued in one of three areas: music education, music theory, or musicology. The program for each area beyond the core requirements is given below.

*MUS 578 cannot be used to fulfill this requirement.

MUSIC EDUCATION

Music in Higher Education (MUS 762)
Psychology of Music (MUS 770)
At least one graduate level course in statistics
A knowledge of acoustics (PHY 140 or equivalent), a knowledge of specialized research in music education (MUS 617 or equivalent). These requirements must be met by the end of the first year of doctoral study.
Additional courses in music education or adjunct subjects as recommended by the Advisory Committee.
A reading knowledge of French, German, or a language appropriate to the research interest.

MUSIC THEORY

Pedagogy of Theory (MUS 674)
Advanced Analytical Techniques (MUS 676)
History of Music Theory (MUS 678)
Additional courses in music theory or adjunct subjects as recommended by the Advisory Committee
A reading knowledge of French, German, or a language appropriate to the research interest

MUSICOLOGY

Medieval Notation (MUS 700)
Renaissance Notation (MUS 701)
Additional courses in musicology or adjunct subjects as recommended by the Advisory Committee
A reading knowledge of at least two foreign languages, normally German and either French or Italian

In all cases, the foreign language requirement(s) must be met by the end of the first full year of study in the Ph.D. program. The student's Advisory Committee must be formed and appointed by the Dean of The Graduate School prior to advance registration for the student's third semester. The dissertation topic and prospectus must be approved by the Advisory Committee; the dissertation itself must be the result of original research which adds to or modifies what has previously been known on the subject. Qualifying examinations must be taken no later than one semester after the completion of course work. A student is admitted to candidacy for the Ph.D. degree only after the language requirement(s) have been met and the Qualifying Examinations have been passed.

JOINT Ph.D. IN MUSICOLOGY
University of Kentucky
and
University of Louisville

A joint Ph.D. in Musicology is available from the University of Kentucky and the University of Louisville. The faculties and facilities of both universities are available to students on either campus. If the student is enrolled full-time at either university, courses from the other are available without charge.

Students interested in this program should contact the Associate Dean of the Graduate School, University of Louisville, or the Director of Graduate Studies at the University of Kentucky, School of Music, for further information. The general regulations for doctoral students at the University of Kentucky will apply.

Admission. Every applicant must be admitted to the graduate schools of BOTH universities. Official transcripts and GRE scores for students admitted to the University of Louisville will be sent to the Director of Graduate Studies, School of Music, University of Kentucky by the Graduate School, University of Louisville. Applicants may be admitted provisionally on the recommendation of the Director of Graduate Studies in Music at the University of Kentucky pending receipt of GRE scores and/or completion of placement examination at the University of Louisville.

Language Requirements. The University of Louisville will notify the Director of Graduate Studies, University of Kentucky, that a student has completed the language requirements.

Residence Requirements. At least three regular courses must be taken at the University of Kentucky. Residence requirements may be satisfied at the University of Louisville, University of Kentucky, or a combination of both. A student must be in residence as a full-time student or the equivalent for a minimum of four semesters beyond the master's degree. At least two of these semesters must be consecutive and precede the qualifying examination.

The University of Louisville will notify the Director of Graduate Studies, University of Kentucky, (if residency is being fulfilled at the University of Louisville) of the intent to schedule the qualifying examination and confirm that the student meets prequalifying requirements. Each candidate for the doctorate fulfilling residency at the University of Kentucky must complete two semesters of full-time dissertation study immediately after the qualifying examination by registering for a total of 18 credit hours in MUS 769. The candidate must maintain candidacy by registering for MUS 769 or Music History 769 (zero credit) each semester thereafter until the dissertation is successfully defended.

Advisory Committee. The Advisory Committee will be composed of six graduate faculty members, three from each institution.

Further information may be obtained from the University of Louisville Graduate School Bulletin.

MUSIC COURSES

All music performance courses (MUP) may be repeated three times for credit. Music ensemble courses (MUC) may be repeated indefinitely.

All music performance courses carry from one to four credits during the fall and spring semesters. (Applied music offerings during the summer are limited.)

MUC	570	Advanced Chamber Music Ensemble ..... (1)
MUC	596	Opera Workshop ..... (1-3)
MUC	675	Jazz Ensemble ..... (1)
MUC	689	Wind Ensemble ..... (1)
MUC	691	Orchestra ..... (1)
MUC	692	University Choristers ..... (1)
MUP	501	Piano ..... (1-4)
MUP	502	Voice ..... (1-4)
MUP	503	Organ ..... (1-4)
MUP	504	Violin ..... (1-4)
MUP	505	Viola ..... (1-4)
MUP	506	Cello ..... (1-4)
MUP	507	String Bass ..... (1-4)
MUP	508	Flute ..... (1-4)
MUP	509	Oboe ..... (1-4)
MUP	510	Clarinet ..... (1-3)
MUP	511	Bassoon ..... (1-3)
MUP	512	Trumpet ..... (1-3)
MUP	513	French Horn ..... (1-4)
MUP	514	Trombone ..... (1-4)
MUP	515	Euphonium ..... (1-4)
MUP	516	Tuba ..... (1-4)
MUP	517	Saxophone ..... (1-4)
MUP	518	Percussion ..... (1-4)
MUP	519	Harp ..... (1-4)
MUP	520	Harpsichord ..... (1-4)
MUP	521	English Horn ..... (1-4)
MUP	522	Historical Instruments ..... (1-4)
MUP	523	Classical Guitar ..... (1-4)
MUP	558	Conducting ..... (1-4)
MUP	601	Piano ..... (1-3)
MUP	602	Voice ..... (1-3)
MUP	603	Organ ..... (1-3)
MUP	604	Violin ..... (1-3)
MUP	605	Viola ..... (1-3)
MUP	606	Cello ..... (1-3)
MUP	607	String Bass ..... (1-3)
MUP	608	Flute ..... (1-3)
MUP	609	Oboe ..... (1-3)
MUP	610	Clarinet ..... (1-3)
MUP	611	Bassoon ..... (1-3)
MUP	612	Trumpet ..... (1-3)
MUP	613	French Horn ..... (1-4)
MUP	614	Trombone ..... (1-4)
MUP	615	Euphonium ..... (1-4)
MUP	616	Tuba ..... (1-4)
MUP	617	Saxophone ..... (1-4)
MUP	618	Percussion ..... (1-4)
MUP	619	Harp ..... (1-4)
MUP	620	Harpsichord ..... (1-4)
MUP	622	Historical Instruments ..... (1-4)
MUP	623	Classical Guitar ..... (1-4)
MUP	658	Conducting ..... (1-4)
MUP	701	Piano ..... (1-3)
MUP	702	Voice ..... (1-3)
MUP	703	Organ ..... (1-3)
MUP	704	Violin ..... (1-3)

MUP 705 Viola ..... (1-3)
MUP 706 Cello ..... (1-3)
MUP 708 Flute ..... (1-3)
MUP 709 Oboe ..... (1-3)
MUP 710 Clarinet ..... (1-3)
MUP 711 Bassoon ..... (1-3)
MUP 712 Trumpet ..... (1-4)
MUP 713 French Horn ..... (1-4)
MUP 714 Trombone ..... (1-4)
MUP 716 Tuba ..... (1-4)
MUP 717 Saxophone ..... (1-4)
MUP 718 Percussion ..... (1-4)
MUS 500 Music of the Middle Ages ..... (3)
MUS 501 Music of the Renaissance ..... (3)
MUS 502 Music of the Baroque Era ..... (3)
MUS 503 Music of the Classic Period ..... (3)
MUS 504 Music of the Nineteenth Century .... (3)
MUS 505 Music of the Twentieth Century ..... (3)
MUS 506 History of American Music ..... (3)
MUS 520 Vocal Solo Literature ..... (3)
MUS 521 Organ Literature ..... (3)
MUS 522 Piano Literature to 1830 ..... (3)
MUS 523 Piano Literature Since 1830 ..... (3)
MUS 524 String Literature ..... (3)
MUS 530 Collegium Musicum ..... (1-3)
MUS 550 Topics in Music Education (Subtitle Required) ..... (1-3)
MUS 560 Orff Schulwerk ..... (1-3)
MUS 561 Orff Certification: Level I, II, or III (2)
MUS 563 Music in Early Childhood ..... (3)
MUS 566 Piano Pedagogy ..... (3)
MUS 568 General Music in the Secondary School ..... (2)
MUS 570 Orchestration ..... (2)
MUS 571 Orchestration ..... (2)
MUS 572 Counterpoint ..... (3)
MUS 573 Counterpoint ..... (3)
MUS 574 Composition ..... (2)
MUS 575 Composition ..... (2)
MUS 578 Analysis and Style Survey ..... (3)
MUS 600 Research I ..... (3)
MUS 601 Foundations in Music Education ..... (3)
MUS 617 Research Methods ..... (3)
MUS 618 Research Methods ..... (3)
MUS 620 Advanced German Vocal Repertory (3)
MUS 621 Advanced Vocal Repertory ..... (3)
MUS 622 Symphonic Literature ..... (3)
MUS 623 Opera Literature ..... (3)
MUS 624 Chamber Music Literature ..... (3)
MUS 625 Choral Literature ..... (3)
MUS 630 Baroque Performance Practices ..... (3)
MUS 650 Music Education Workshop ..... (1-4)
MUS 660 Advanced Music Education Methods and Materials (Subtitle Required) ... (3)
MUS 664 Music and Special Learners ..... (3)
MUS 665 Physiology and Functioning of the Singing Voice ..... (3)
MUS 667 Materials, Techniques and Literature of Voice Teaching ..... (3)
MUS 670 Musical Style I ..... (3)
MUS 671 Musical Style II ..... (3)
MUS 672 Musical Style III ..... (3)
MUS 673 Advanced Composition ..... (2)
MUS 674 Pedagogy of Theory ..... (3)
MUS 676 Advanced Analytic Techniques ..... (3)
MUS 677 Contemporary Music Idioms ..... (3)
MUS 678 History of Theory ..... (3)
MUS 680 Band History and Literature ..... (3)
MUS 681 Advanced Rehearsal Techniques - Band ..... (3)
MUS 684 Advanced String Methods and Materials ..... (3)
MUS 690 Topics in Musicology (Subtitle Required) ..... (3)
MUS 700 Medieval Notation ..... (3)
MUS 701 Renaissance Notation ..... (3)
MUS 702 Seminar in Musicology ..... (3)
MUS 704 Music Technologies ..... (3)
MUS 705 Research II ..... (3)
MUS 706 Music Learning and Behavior ..... (3)
MUS 707 Tests and Measurements in Music ... (3)
MUS 718 Doctoral Seminar ..... (3)
MUS 719 Independent Work in Musicology . (1-3)
MUS 748 Master's Thesis Research ..... (0)
MUS 749 Dissertation Research ..... (0)
MUS 750 Administration and Supervision of Public School Music ..... (3)
MUS 762 Music in Higher Education ..... (3)
MUS 766 Seminar in Music Education ..... (3)
MUS 767 Independent Work in Music Education ..... (1-3)
MUS 768 Residence Credit for the Master's Degree ..... (1-6)
MUS 769 Residence Credit for Doctor's Degree ..... (0-12)
MUS 770 Psychology of Music ..... (3)
MUS 772 Seminar in Theory ..... (3)
MUS 780 Directed Research in Vocal Literature ..... (1-3)
MUS 799 Independent Work in Music Theory ..... (1-3)

Nursing

Graduate Faculty: Professors Juanita Fleming, Margaret Grier, Melva Jo Hendrix, Gretchen LaGodna, Marcia Stanhope and Carolyn Williams. Associate Professor Dorothy Brockopp, Norma J. Christman, Lynne Hall, Barbara A. Sachs, Sharon Sheahan and Mary K. Walker.

Associate Members: Associate Professor Gwendolen Lee. Assistant Professors Pamela Kidd and Pamela A. Shuler.

Joint Appointment: Associate Professor John F. Wilson.

Emeritus Professors: Loretta Denman, Virginia Lane, Dorothy Luther and Marion McKenna.

The College of Nursing offers programs of study leading to the degrees, Master of Science in Nursing and Doctor of Philosophy.

Master of Science

The Master of Science in Nursing program prepares nurses for the advanced practice of nursing in a particular specialty. The program is designed to build on the first professional degree; nursing theory, research, and practice are emphasized. Areas of study are: (a) Adult Nursing, focusing upon the care of adults across the life span, with areas of concentration in critical care, adult, oncology, and gerontological nursing; (b) Community Health Nursing/Administration which prepares nurses to assume positions in community-based agencies delivering health and nursing care services to specific populations as primary care nurse practitioners or as nurse managers; (c) Parent-Child Nursing focuses upon families and parenting practices, with components in parent-child nursing, perinatal nursing, and nurse-midwifery; (d) Psychiatric/Mental Health Nursing focuses upon preparation of clinical specialists in adult psychiatric, gero-psychiatric/mental health nursing, and substance abuse.

Applicants to the master's degree program must meet the minimum requirements of The Graduate School. Satisfactory scores on the Graduate Record Examination are expected. The minimal grade point average is 2.5 on a 4.0 grading scale. Graduation from a National League for Nursing accredited baccalaureate degree program, three references, and an interview are required. Nurse licensure in Kentucky and one year of experience as a nurse are required before enrolling in a clinical practicum. Applicants selecting the nurse-midwifery concentration are required to have two years of relevant experience in nursing prior to the application deadline.

The Master of Science in Nursing degree requires a minimum of 33 credit hours of course work. Some specialties may require more. All students are required to take concepts and theories in nursing, nursing research, roles and issues, and graduate level courses in statistics and science. In addition, each student must complete a research project or thesis, and pass a final comprehensive examination. Preparation in clinical teaching and mid-level management is optional. Students may pursue part-time study through flexible scheduling and selected evening courses. The College offers some master's degree course work at Morehead State University, Western Kentucky University, and the UK Rural Health Center.

Doctor of Philosophy

The Doctor of Philosophy in Nursing program prepares nurse scholars to contribute to the development of nursing science through clinical research and the application of knowledge to nursing practice. Graduates assume roles in research, administration, and education. Course work focuses on the development and testing of nursing theory and the acquisition of skills and experience in clinical research. The major research areas are in Adult Nursing, Community Health Nursing, Parent-Child Nursing, and Psychiatric/Mental Health Nursing.

Applicants to the doctoral program must meet the minimum requirements of The Graduate School, as well as the following requirements of the nursing program. An applicant must possess a master's degree in nursing from a National League of Nursing accredited school and a 3.3 or higher grade point average on a 4.0 scale for all master's level work. Applicants must submit scores on the Graduate Record Examination. Applicants must have a minimum of two years post-baccalaureate experience. A personal interview and three references are required.

The Doctor of Philosophy degree in nursing requires a minimum of 45 credit hours of course work beyond the master's degree, plus 18 hours of residence credit for dissertation research. A written and oral examination is required to qualify as a degree candidate. The student must engage in two semesters of full-time study (9 credit hours) prior to the qualifying examination. There is a final examination for defense of the dissertation research.

510 Older Women and Their Health ..... (3)
520 Special Topics in Nursing (Subtitle Required) ..... (2-4)
543 Gerontologic Nursing ..... (3)
560 Nursing Management of Exceptional Children ..... (3)
600 Advanced Nursing Practicum: Rules and Issues ..... (3)
610 Concepts and Theories in Nursing ..... (2)
612 Nursing Research Methods ..... (3)
613 Research Applications in Nursing ..... (3)
614 Practicum in Clinical Nursing I ..... (4)
615 Practicum in Clinical Nursing II ..... (5)
619 Teaching in Nursing ..... (3)
620 Problems in Clinical Nursing ..... (2-6)
623 Practicum in Clinical Nursing Instruction ..... (3)
628 Population Focus Practicum in the Community ..... (2)
650 Advanced Physical Health Assessment ... (2-6)
651 Diagnostic Laboratory Procedures ..... (2)
654 Common Health Problems of Young, Middle and Old Adults I ..... (3)
655 Common Health Problems of Young, Middle and Old Adults II ..... (3)
656 Health Problems of the Pediatric Client .. (2)
662 Clinical Nursing Practice in Expanded Rules I ..... (1-4)
663 Management of Clinical Nursing Practices I ..... (4)
672 Clinical Nursing Practice in Expanded Roles II ..... (3-4)
673 Management of Clinical Nursing Practice II ..... (4)
682 Clinical Nursing Practice in Expanded Roles III ..... (3-8)
683 Management of Clinical Nursing Practices III ..... (3-8)
688 Measurement of Nursing Phenomena ..... (4)
700 Behavioral Responses to Health Problems ..... (2)
701 Biological Responses to Health Problems ..... (2)
710 Advanced Parent/Child Nursing I ..... (2)
711 Advanced Parent/Child Nursing II ..... (2)
715 Perinatal Nursing: Low Risk Families ..... (2)
716 Perinatal Nursing: High Risk Mother ..... (2)
717 Perinatal Nursing: High Risk Neonate ..... (2)
720 Advanced Psychiatric/Mental Health Nursing I ..... (2)
721 Advanced Psychiatric/Mental Health Nursing II ..... (2)
730 Nursing Management in the Organization I ..... (3)
731 Nursing Management in the Organization II ..... (3)
735 Family and Community Health Promotion ..... (3)
740 Nurse-Midwifery Management: Neonate ..... (2)
741 Nurse-Midwifery Management: Well-Woman ..... (2)
742 Nurse-Midwifery Management: Antepartal Woman ..... (2)
743 Nurse-Midwifery Management: Intrapartal and Postpartal Woman ..... (2)
744 Nurse-Midwifery Management: Woman with Problems ..... (2)
745 Nurse-Midwifery Practice Organizations ..... (2)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for Master's Degree ..... (1-6)
769 Residence Credit for the Doctor's Degree ..... (0-12)
778 Proseminar in Contemporary Health and Nursing Policy Issues ..... (3)
779 Dissertation Seminar ..... (1-3)
781 Independent Study in Nursing ..... (1-3)
790 Theory Development and Research in Nursing I ..... (3)
791 Theory Development and Research in Nursing II ..... (3)
792 Theory Development and Research in Nursing III ..... (3)

Nutrition and Food Science

Graduate Faculty: Professors Linda Chen, Ching K. Chow and L. P. Mercer. Associate Professors Howard Glauert and Bernhard Hennig.

Associate Members: Assistant Professors Kwaku Addo, Margaret Barth, Hazel Forsythe and Mary A. Stuart Extension Professor Fudeko T. Maruyama. Extension Associate Professor Darlene Forester.

Joint Appointments: Professor M.H. Aleem. Associate Professor Sara Quandt.

Emeritus Professors: Abby L. Marlatt and Leonard Packett

The graduate curriculum, available within the Department of Nutrition and Food Science, leads to the Master of Science degree (M.S.). The graduate program offers three emphases: Biochemical Nutrition, Community Nutrition, and Food Science. Additionally, within the department there exist two approved/accredited dietetics programs.

With highly qualified faculty, the department forms a nucleus to provide the University of Kentucky with an educational, research and informational center in nutritional sciences. The breadth of education and training available in the laboratories of the faculty provides a background for graduate students to assume positions in academic and health care institutions, industry, business, and government. Furthermore, the Master of Science graduate program prepares the student for the Multidisciplinary Ph.D. program in Nutritional Sciences which was implemented in the fall of 1989.

Admission

To be admitted to the graduate program in Nutrition and Food Science, a student must:

1. Have been granted a baccalaureate degree in Nutrition, Food Science, or related area by an accredited institution. A minimum grade point average of 3.0 on a 4.0 scale or a total of 1,000 or more for the verbal and quantitative portions of the Graduate Record Examination is usually required.
2. Be admitted to the Graduate School of the University of Kentucky.
3. Have a TOEFL score of 550 or better if an international student.

Program Requirements

Each emphasis of the Master's degree program is tailored to meet the needs of the individual student. The specific plan of study will be designed in conjunction with the student's graduate committee. The program requires 24 credits plus a minimum of 6 credits of research (NFS 768) and a thesis (Plan A) or 36 hours with no thesis (Plan B).

All students will be required to complete course work in one of the following emphases: Biochemical Nutrition, Community Nutrition, or Food Science.

Other Requirements

All students are expected to complete all prerequisites to graduate courses.

Successful Master's degree candidates are expected to have competence in all phases of basic nutrition and food science. For students whose undergraduate major was not in nutrition, this may necessitate taking additional courses in areas of deficiencies.

All students must pass an oral final examination.

408G Seminar in Food and Nutrition ..... (1)
503 Community Nutrition ..... (3)
504 Food Science Research ..... (3)
510 Advanced Nutrition ..... (3)
511 Therapeutic Nutrition ..... (3)
514 Food Preservation ..... (3)
516 Maternal and Child Nutrition ..... (3)
517 Food for Special Occasions ..... (3)
542 Food Service Equipment and Lab ..... (3)
546 Institution Organization and Management (3)
548 Institution Administration ..... (3)
560 Food and the Consumer ..... (3)
590 Field Work in Nutrition ..... (1)
591 Special Problems in Foods and Nutrition ..... (1-3)
594 Special Problems in Institution Management ..... (1-3)
601 Research Methodology in Nutritional Sciences ..... (3)
603 Advanced Community Nutrition ..... (3)
610 Human Nutrition: Assessment ..... (3)
620 Protein and Amino Acids in Human Nutrition ..... (3)
660 Food Toxicology ..... (3)
680 Nutrition and Aging ..... (2)
685 Mineral Metabolism ..... (2)
748 Master's Thesis Research ..... (0)
768 Residence Credit for the Masters Degree ..... (1-6)
770 Seminar in Nutrition and Food Science .... (1)
772 Current Topics in Human Nutrition and Food Science ..... (2)
781 Special Problems in Foods and Nutrition ..... (1-3)
784 Special Problems in Institution Management ..... (1-3)
HES 596 Special Problems in Human Environmental Sciences ..... (1-3)
HES 600 Research Methodology in Human Environmental Sciences ..... (3)
HES 786 Advanced Problems in Human Environmental Sciences ..... (1-3)

Nutritional Sciences

Graduate Faculty: Professor James F. Drummond. Associate Professor Laurie L. Humphries.

Joint Appointments: Professors James W. Anderson, James A. Boling, Linda H. Chen, Ching K. Chow, Kathleen M. Dewalt, Thomas F. Garrity, Virgil W. Hays, Roger W. Hemken, Edward J. Kasarskis, Jr., Craig McClain, L. Preston Mercer, George E. Mitchell, Jr. and Ray E. Tucker. Associate Professors Gilbert A. Boissonneault, Geza Bruckner, Austin H. Cantor, Vincent S. Gallicchio, Howard Glauert, Bernhard Hennig, and Sara Quandt. Joint Associate Members: Assistant Professors Eric A. Decker, Hazel W. Forsythe, Bryan M. Johnstone and Mary Stuart.

Emeritus Professor: Paul Thornton.

The multidisciplinary Graduate Program in Nutritional Sciences provides opportu-

nity for advanced study leading to a Ph.D. degree. The aim of the program is to develop nutritional scientists who are able to function in a variety of sophisticated academic, industrial and professional settings. Educational opportunities exist in agricultural, biological, clinical, medical, social and basic nutritional sciences. The program is organized on an interdepartmental and intercollege basis. More than 20 faculty members from various academic units of the university including Animal Sciences, Anthropology, Behavioral Science, Clinical Sciences, Medicine, Neurology, Nutrition and Food Science, Oral Health Science, Psychiatry and Toxicology are involved in the teaching and research activities of the program. The program is diversified and systematic, yet highly flexible. Individualized professional training and extensive research opportunities are available to students.

Program faculty have basic research laboratory facilities for conducting human, animal, and cell culture studies using state-of-the-art trace mineral, vitamin, lipid, amino acid, enzyme, hormone, stable and radioactive isotope, microcirculatory, and energy assessment analysis. Clinical facilities for training and research include the University of Kentucky Hospital, Veterans Administration Hospital, Sanders-Brown Center on Aging, University of Kentucky Medical Center Outpatient Clinics, and the Markey Cancer Center. Clinical research units are present at both the University of Kentucky Medical Center and the Veterans Administration Medical Center, and on-going nutritional studies are performed at both units. All facilities are within walking distance of each other. Nutritional support teams are established at both the University and Veterans Administration Hospitals. Opportunities for community-based research exist locally, throughout the state and in international settings. Further information may be obtained by writing to the Director of Graduate Studies, Multidisciplinary Ph.D. Program in Nutritional Sciences, 212 Funkhouser Building, University of Kentucky, Lexington, KY 40506-0054.

Ph.D. Degree Requirements

Students are required to complete the core curriculum. Elective courses to be taken will be recommended by the advisory committee.

Core Curriculum

NS	**651**	**Topics in Nutritional Sciences I ..... (2)**
NS	**652**	**Topics in Nutritional Sciences II ..... (2)**
NS	**771**	**Graduate Seminar in Nutritional Sciences ..... (2)**
NS/ASC	**680**	**Laboratory Methods in Nutritional Sciences ..... (4)**
BCH	**501**	**General Biochemistry ..... (3)**
BCH	**502**	**General Biochemistry ..... (3)**
PGY	**502**	**Principles of Physiology ..... (5)**
STA	**671**	**Regression and Correlation ..... (2)**
STA	**672**	**Design and Analysis of Experiments (2)**
NS	**769**	**Residence Credit for Doctoral Students ..... (0-12)**

6 or 7 hours to be selected from:

ASC	681	Energy Metabolism ..... (2)
ASC	683	Protein Metabolism ..... (2)
ASC/NFS	685	Mineral Metabolism ..... (2)
ASC	687	Vitamin Metabolism ..... (2)
CNU	601	Clinical Nutrition ..... (4)
CNU	604	Lipid Metabolism ..... (2)
NFS	610	Human Nutrition: Assessment ..... (3)

It is assumed that students entering with M.S. Degrees will have taken some of the required courses or their equivalent. The advisory committee will determine the amount of prior course work to be credited toward specific requirements.

Possible elective courses that may be selected by the student or required by the student's Advisory Committee include but are not limited to those listed below:

NS	790	Research in Nutritional Sciences .. (0-6)
ANT	710	Seminar in Physical Anthropology .. (3)
ASC	684	Advanced Ruminant Nutrition ..... (3)
ASC	686	Advanced Nonruminant Nutrition . (3)
BCH	610	Biochemistry of Lipids and Membranes ..... (3)
BCH	613	Biochemistry of Carbohydrates ..... (3)
BCH/BIO/MI	615	Molecular Biology ..... (3)
BIO/PGY	549	Comparative Endocrinology ..... (3)
BIO	542	Histology ..... (5)
BIO	580	Metabolism of Microorganisms ..... (4)
BIO	716	Metabolism of Microorganisms ..... (4)
BSC/ANT	744	Behavioral and Ecological Aspects of Human Nutrition ..... (3)
BSC	775	Human Response to Stress ..... (3)
BSC	776	Seminar in Dependency Behavior ... (3)
BSC	778	Behavioral Factors in Selected Disease ..... (3)
CNU	602	Current Trends in Nutrition ..... (1)
CNU	603	Nutritional Immunology ..... (2)
CNU	701	Advanced Clinical Nutrition ..... (2)
CNU	702	Advanced Clinical Nutrition ..... (2)
EDP	661	Counseling Techniques ..... (3)
GRN/SW	643	Biomedical Aspect of Aging ..... (3)
NFS	603	Advanced Community Nutrition ..... (3)
NFS	680	Nutrition and Aging ..... (2)
PGY	512	Cellular Physiology ..... (4)
PGY	522	Principles of Biophysics ..... (4)
PGY	607	Hormonal Control Mechanisms ..... (3)
PGY	630/GRN 612/BIO 612	Biology of Aging ..... (3)
PHA	521	General Pharmaco- and Toxicodynamics ..... (2)
SOC	528	Dimensions of Aging ..... (3)
TOX	622	Concepts of Toxicology ..... (3)
TOX	680	Advanced Toxicology ..... (3)
NS	**651**	**Topics in Nutritional Sciences I ..... (2)**
NS	**652**	**Topics in Nutritional Sciences II ..... (2)**
NS	**680**	**Laboratory Methods in Nutritional Sciences ..... (4)**
NS	**749**	**Dissertation Research ..... (0)**
NS	**769**	**Residence Credit Doctor's Degree ..... (0-12)**
NS	**771**	**Graduate Seminar in Nutritional Sciences ..... (1)**
NS	**790**	**Research in Nutritional Sciences .. (0-6)**

Operations Research

Director of Graduate Studies: Carl Lee

The mathematical modeling of social, industrial, and military systems and the selection of preferred alternatives among many possibilities is the subject of Operations Research. The ever-increasing complexity and magnitude of the decision problems confronting modern decision-makers demand the availability of a pool of experts capable of providing professional competence in the design, analysis and optimization of large-scale systems.

The Master of Science in Operations Research is designed to equip the student with the professional competence necessary for the implementation of operations research techniques in decision problems arising in management, engineering, education, bio-sciences, etc. The curriculum consists of core courses in deterministic optimization, stochastic aspects of operations research including statistical decision making, stochastic processes and stochastic optimization, one course in computer science either in the area of programming languages or the area of large data base handling, and one problem seminar designed to integrate the material in the specific topic courses as well as involve the participant in some very specific operations research project.

In addition, the student must select a minor in an application-oriented area. This minor consists of a minimum of two courses in such departments as economics, business administration, decision science and information systems, accounting, engineering, agriculture, and biology.

CURRICULUM

Core Courses

Deterministic Optimization

OR 515	Mathematical Programming and Extensions
OR 616	Numerical Techniques for Nonlinear Optimization
OR 618	Combinatorics and Networks

Stochastic Models

OR 524	Probability Theory
OR 525	Introductory Statistical Inference
OR 624	Applied Stochastic Processes
OR 617	Markovian Decision Problems

Computer Science

The student should be well acquainted with computer programming and be competent in one procedural language and in a symbol manipulation language. In addition, the student must complete either a survey course or a more advanced computer science course on information processing depending on the student's background and interest. Examples are:

CS 540	Systems Simulation
CS 605	Advanced Information Processing Problem Seminar
OR 619	Problem Seminar in Operations Research

Minor Requirement

The student must select a minor area of specialization with the approval of the director of the program. The minor will consist of a minimum of two courses at the 500 level or above. The goal is to enable the student to converse directly with some of the prospective users of his/her skills.

Electives

Electives must be selected with the approval of the Director of Graduate Studies. There are many course offerings in mathematics, statistics, computer science, economics, electrical engineering, mechanical engineering, civil engineering, business administration, and agricultural economics which are related to specific aspects of operations research. (The completion of deficiencies or prerequisites cannot be counted as credits toward the degree requirement and thus are not considered to be electives.)

Admissions and Degree Requirements

The entering student is expected to have a strong working knowledge of linear algebra and to have had some experience with methods of proof used in mathematics. Each entering student, in addition, must have a sufficient background in at least one of the minor areas so that the prerequisites to the courses offered in that area can be met.

The usual Graduate School requirements for admission will be supplemented by a one-semester advanced calculus course, a one-semester junior-senior level course in linear algebra, and a familiarity with programming a digital computer. Lack of these prerequisites will be considered to be a deficiency which can be made up by taking one of the following courses currently offered:

Advanced Calculus:	MA 471G
Linear Algebra:	MA 321
Programming:	CS 221

No elective or other credit will be granted for such make-up work.

This program will require 36 credit hours of course work with at least 15 credit hours of this course work at the 600 level or above. In all other respects, the usual Graduate School requirements for distribution and grade point average will apply. The required major for this degree will consist of nine courses to be known as the core of the program

Each student will be required to take a minor consisting of a two-course (six credit) sequence. This will generally be in an area of application.

Each candidate for the M.S. degree in Operations Research will be required to pass a written final examination.

515 Mathematical Programming and Extensions ..... (3)
524 Probability ..... (3)
525 Introductory Statistical Inference ..... (3)
563 Simulation of Mine Production Systems ... (3)
616 Numerical Techniques for Nonlinear Optimization ..... (3)
617 Markovian Decision Problems ..... (3)
618 Combinatorics and Networks ..... (3)
619 Problems Seminar in Operations Research .. (3)
624 Applied Stochastic Processes ..... (3)
674 Heuristic Algorithms

Pathology

While there is no graduate program in pathology, the department offers several courses which are open to qualified graduate students. The permission of the department chairman is required prior to enrollment.

660 Clinical Toxicology and Drug Monitoring (3)
698 Clinical Microbiology ..... (3)

Pharmaceutical Sciences

Graduate Faculty: Professors Robert A. Blouin, Jordan L. Cohen, Peter Crooks, Patrick DeLuca, George Digenis, Lewis Dittert, Thomas S. Foster, Mark N. Gillespie, Boyd Haley, Anwar Hussain, Michael Jay, Pankaja Kadaba, Harry Kostenbauder, William Lubawy, Patrick J. McNamara, Robert Rapp, Michael C. Shannon, Harry Smith, Hsin-Hsuing Tai and Robert A. Yokel. Associate Professors Milton Kornet, Yih-Loong Lai, Jack W. Olson and Peter Wedlund.

Associate Members: Associate Research Professor Charles F. Mactutus. Assistant Professors Paul M. Bummer, Lisa Cassis, Mary Chandler, Dennis Clifton, Linda Dwoskin, Robert Kuhn, Robert Lodder, Rahul Mehta, Jan S. Pyrek, Robert Riggs and Edward Soltis.

Joint Appointment: Professor David Watt.

Emeritus Professors: Charles Lesshafft, Mark M. Luckens and Joseph Swintosky.

The College of Pharmacy offers M.S. and Ph.D. programs in pharmaceutical sciences, with concentration in pharmaceutics, pharmacology and medicinal chemistry. Specific areas of interest include pharmaceutical analysis, physical pharmacy, drug delivery, pharmaceutical technology, pharmacokinetics, pulmonary and cardiovascular pharmacology, neuropharmacology, clinical pharmaceutical sciences, drug metabolism, drug design and synthesis, natural products chemistry and nuclear pharmacy.

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.

Pharmaceutical Sciences' graduate students are typically enrolled in graduate courses in departments of chemistry, statistics, biochemistry, pharmacology, and others, depending upon the focus of the student's program. 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.

510 Modern Methods in Pharmaceutical Analysis ..... (5)
520 Special Topics in Pharmacy Law ..... (2)
525 Introduction to Sociopharmacology ..... (2)
530 Practice of Radiopharmacy ..... (3)
540 Industrial Pharmaceutical Technology ..... (4)
541 Pharmaceutical Technology Clerkship ..... (4)
545 Sterile Parenterals and Devices ..... (2-3)
595 Independent Problems in Pharmacy Administration ..... (1-3)
612 Quantitative Pharmacodynamics. Pharmacokinetics ..... (3)
620 Natural Products Chemistry ..... (3)
622 Advanced Biopharmaceutics ..... (2)
630 Pharmaceutical Rate Processes ..... (3)
631 Equilibrium Phenomena in Pharmaceutical Systems ..... (3)
640 Methods in Pharmological Research I ..... (2)
641 Methods in Pharmological Research II ..... (2)
664 Theory and Practice of Drug Metabolism . (3)
680 Research Methods in Social and Administrative Pharmacy ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
760 Topics in Pharmaceutical Sciences ..... (2-4)
762 Bioorganic Mechanisms ..... (3)
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)
779 Membrane Science Colloquium ..... (1)
780 Special Problems in Pharmaceutical Sciences ..... (1-6)
790 Research in Pharmaceutical Sciences .. (1-12)

Pharmacology

Graduate Faculty: Professors Donald F. Diedrich, James W. Flesher, William R. Martin, Mary Vore and W.J. Waddell*. Associate Professors John Carney, Edgar Iwamoto, Donald Jasinski, Michael Piascik, Norman Pedigo and John Slevin.

Associate Member: Assistant Professor Joseph R. Holtman.

Emeritus Professors: T.Z. Csaky, Helmut Gordon and Harris Isbell.

*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.

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.

522	Systems Pharmacology	(3)
541	Biological Assay	(4)
602	Neuropharmacology	(4)
603	Pharmacology of Organs and Systems	(3)
605	Contemporary Neurosciences	(3)
612	Quantitative Pharmacodynamics, Pharmacokinetics	(3)
621	Advanced Pharmacodynamics	(4)
630	Special Topics in Pharmacology	(1-3)
634	Pharmacology of Cardiovascular Drug Therapy	(3)
650	Host-Contaminant Relationships	(2)
658	Advanced Neuropharmacology	(3)
663	Drug Metabolism and Disposition	(3)
670	Chemical Carcinogenesis	(3)
672	Behavioral Pharmacology and Toxicology	(2)
748	Master's Thesis Research	(0)
749	Dissertation Research	(0)
750	Research in Pharmacology	(1-5)
768	Residence Credit for Master's Degree	(1-6)
769	Residence Credit for Doctor's Degree	(0-12)
770	Seminar in Pharmacology	(1)
779	Membrane Science Colloquium	(1)

Philosophy

Graduate Faculty: Professors Daniel Breazeale, Ronald Bruzina, James E. Force, Dallas High, Thomas Olshewsky and Alan Perreiah. Associate Professors Joan Callahan, Daniel Frank, Harmon Holcomb, Don A. Howard, James Manns, Henry Schankula, Theodore R. Schatzki and Patricia Smith. Adjunct Professor Edward Madden.

Associate Members: Adjunct Assistant Professors Denny Bradshaw and Roger Jones.

The Department of Philosophy offers programs of study leading to both the Master of Arts and the Doctor of Philosophy degrees.

The M.A. program offers students a thorough training in the history and disciplines of philosophy, while also providing them with the specific skills of research, analysis, and interpretation required for more advanced philosophical study or for professional training in other fields. The M.A. program requires the completion of a minimum of 30 semester hours of course work and the passing of three comprehensive examinations. A reading knowledge of one foreign language is required. An undergraduate major in philosophy is not required for admission, and students with a strong background in the liberal arts or the sciences are encouraged to apply. However, remedy for deficient background in the history of philosophy and logic must be undertaken upon entrance to the program.

The Ph.D. program in philosophy is designed to accommodate the needs of individual students at an advanced level. Upon entry into the program, each student declares an area of specialization. He or she pursues an individually designed program of research under the supervision of a carefully chosen advisory committee. The Ph.D. program requires the completion of at least 18 semester hours of course work, a reading knowledge of one foreign language, as well as competence in logic. A final Qualifying Examination in the student's area of specialization precedes the writing of the Ph.D. dissertation.

Students who have already earned an M.A. degree in philosophy should apply for direct admission to the Ph.D. program. Students desiring the Ph.D. degree, but who have not completed the M.A. degree, must earn the M.A. degree as a prerequisite.

GROUP A

500	Topics in Philosophy (Subtitle Required)	(3)
503	Topics in Ancient Philosophy	(3)
504	Islamic and Jewish Philosophy and the Classical Tradition	(3)
506	Topics in Medieval Philosophy	(3)
509	Topics in History of Modern Philosophy	(3)
513	Nineteenth Century Philosophy	(3)
514	American Philosophy	(3)
515	Contemporary Philosophy: The Analytic Turn	(3)
516	Contemporary Philosophy: Phenomenological Directions	(3)
517	Existentialism	(3)
520	Symbolic Logic II	(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	Philosophical Problems in Knowledge and Reality	(3)
560	Philosophy of Scientific Method	(3)
561	Philosophical Problems in the Natural Sciences (Subtitle Required)	(3)
562	Philosophical Problems in the Social and Behavioral Sciences	(3)
565	Philosophy of Language	(3)
570	Philosophy of History	(3)
575	Philosophy of Mind	(3)

GRADUATE SEMINARS

630	Seminar in Moral Philosophy	(3)
650	Seminar in Metaphysics and Epistemology (Subtitle Required)	(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)
749	Dissertation Research	(0)
750	Seminar in Interdisciplinary Issues	(3)
755	Tutorial in Interdisciplinary Issues	(1-6)
768	Residence Credit for the Master's Degree	(1-12)
769	Residence Credit for Doctoral Degree	(0-12)
790	Research in Philosophy	(3)

Physical Therapy

Graduate Faculty: Professor Dean P. Currier. Associate Professors Arthur J. Nitz and A. Joseph Threlkeld.

Associate Members: Assistant Professors Jeannette Brasseur and Stuart K. Ware.

The division of Physical Therapy offers the Master of Science in Physical Therapy degree to qualified graduate students that have already obtained an entry-level physical therapy degree. Musculoskeletal, neuromuscular and cardiopulmonary areas of concentration are available under the thesis option (Plan A). Graduates of the Master's program are prepared for advanced clinical practice in the area of concentration, to conduct and report research and to assume a leadership role in the profession. The breadth and depth of the course work will provide the student an intermediate step towards a doctoral degree if they so desire.

Prerequisites for Graduate Study in Physical Therapy

In addition to meeting all the general criteria for admission to the Graduate School at the University of Kentucky, students entering the Physical Therapy Master's Program must:

1) have completed an entry level program in physical therapy (certificate, bachelor's, or master's);

2) be licensed or eligible for licensure as a physical therapist in Kentucky or provide evidence of current licensure as a physical therapist in another of the United States;

3) have at least 2 years of clinical experience as a physical therapist before beginning full-time graduate work;

4) furnish three personal/professional references;

5) obtain a minimum combined score of 1000 on the verbal and quantitative areas of the GRE.

The final selection of students for the program will be subject to the discretion of the graduate faculty of the Division of Physical Therapy.

Degree Requirements

The degree candidate must complete 24 semester credit hours of graduate work with a grade point average of 3.0 (B) or higher standing and must write and defend a thesis. The student, in consultation with an advisor, will design a program of study suitable for his or her particular needs in the proposed area of concentration.

604 **Physical Therapy in the Educational Setting** ..... (3)
645 **Measurements in Physical Therapy** ..... (3)
650 **Dysfunction of Peripheral Joints** ..... (3)
651 **Dysfunction of Vertebral Joints** ..... (3)
652 **Pathomechanics** ..... (3)
654 **Mechanisms of Motor Control** ..... (3)
655 **Neuromotor Development** ..... (3)
660 **Advanced Clinical Practicum in Physical Therapy** ..... (1-6)
690 **Independent Research in Physical Therapy** ..... (3)
695 **Independent Study in Physical Therapy** . (1-3)
768 **Residence Credit for the Master's Degree** ..... (1-6)
770 **Seminar in Physical Therapy** ..... (3)

Physics and Astronomy

Graduate Faculty: Professors Joseph Brill, John Connolly, Peter C. Eklund, Moshe Elitzur, Michael Kovash, Bing-an Li, Keh-Fei Liu, Keith B. MacAdam, Alan MacKellar, Marcus McEllistrem, Joseph P. Straley, K.R. Subbaswamy and Jesse Weil. Associate Professors Suketu Bhavsar, John Christopher, Lance DeLong, David A. Harmin and Thomas H. Troland. Adjunct Professors Peter R. Almond, George Hurst and Robert A. Stokes.

Associate Members: Assistant Professors Michael Cavagnero, Terrence Draper, Herbert A. Fertig, Tim Gorringe, Nicholas Martin, Kwok-Wai Ng, Mark Anthony Pickar, Isaac Shlosman and Michael V. Torbett.

Joint Appointments: Professors Eugene B. Bradley, Gerald Huffman and Clasine vanWinter.

Emeritus Professors: Lewis Cochran, Marcel Coz, Fletcher Gabbard, Richard Hanau, Bernard Kern, Guy Lehman and Wasley Krogdahl.

The Department of Physics and Astronomy offers courses and research options leading to the M.S. and Ph.D. degree in the special areas of astronomy and astrophysics, atomic and molecular physics, nuclear and intermediate energy physics, theoretical particle physics and condensed matter physics. 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. Theoretical as well as experimental work is being pursued in all the above mentioned areas except particle physics.

All graduate students are required to pass a Preliminary Examination on undergraduate material. It is usually taken in the first year of graduate study.

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. The M.S. candidates must pass a departmental exam covering the core course work, and the thesis if they did one under Plan A.

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.

Candidates for doctoral degrees may perform their dissertation 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.

PHYSICS

401G **Special Topics in Physics and Astronomy for Elementary and High School Teachers** .. (2-4)
402G **Electronic Instrumentation and Measurements** ..... (3)
404G **Mechanics** ..... (3)
416G **Electricity and Magnetism** ..... (3)
417G **Electricity and Magnetism** ..... (3)
472G **Interaction of Radiation with Matter** ..... (3)
504 **Advanced Mechanics** ..... (3)
506 **Methods of Theoretical Physics I** ..... (3)
507 **Methods of Theoretical Physics II** ..... (3)
508 **Optics** ..... (3)
520 **Introduction to Quantum Mechanics** ..... (3)
522 **Heat and Thermodynamics** ..... (3)
524 **Solid State Physics** ..... (3)
525 **Solid State Physics** ..... (3)
530 **Experimental Physics: Spectroscopy** ..... (2)
535 **Experimental Physics: Atomic and Nuclear** ..... (3)
538 **Experimental Physics: Light** ..... (2)
545 **Radiation Hazards and Protection** ..... (3)
546 **General Medical Radiological Physics** ..... (3)
554 **Fundamental Atomic Physics** ..... (3)
555 **Fundamental Nuclear Physics** ..... (3)
556 **Fundamental Particle Physics** ..... (3)
567 **Introduction to Lasers and Masers** ..... (3)
591 **Astrophysics I—Stars** ..... (3)
592 **Astrophysics II—Galaxy** ..... (3)
600 **Selected Topics in Advanced Physics** ..... (2-3)
604 **Classical Mechanics** ..... (3)
611 **Electromagnetic Theory I** ..... (3)
613 **Electromagnetic Theory II** ..... (3)
614 **Quantum Mechanics I** ..... (3)
615 **Quantum Mechanics II** ..... (3)
624 **Theory of the Solid State** ..... (3)
625 **Theory of the Solid State** ..... (3)
629 **Nuclear Physics** ..... (3)
630 **Topics in Nuclear and Intermediate Energy Physics (Subtitle Required)** ..... (3)
632 **Statistical Mechanics** ..... (3)
639 **Physical Processes in Astrophysics** ..... (3)
640 **Galaxies and Cosmology** ..... (3)
651 **Atomic Physics** ..... (3)
716 **Advanced Quantum Mechanics** ..... (3)
748 **Master's Thesis Research** ..... (0)
749 **Dissertation Research** ..... (0)
756 **Particle Physics** ..... (3)
768 **Residence Credit for the Master's Degree** ..... (1-6)
769 **Residence Credit for the Doctor's Degree** ..... (0-12)
770 **Colloquium** ..... (1)
781 **Independent Work in Physics** ..... (3)
790 **Research in Physics** ..... (3)
791 **Research in Physics** ..... (5)

ASTRONOMY

591 **Astrophysics I/Stars** ..... (3)
592 **Astrophysics II/Galaxy** ..... (3)
639 **Physical Processes in Astrophysics** ..... (3)
640 **Galaxies and Cosmology** ..... (3)

Physiology and Biophysics

Graduate Faculty: Professors Nausherwan Burki, John Diana, Russell Dowell, Joseph Engelberg, Donald Frazier, Thomas Getchell, David R. Gross, Henry Hirsch, Lu-Yuan Lee, Sandra Legan, Bertram Peretz, David Randall, Daniel Richardson, David Wekstein, and James Zolman. Associate Professors Ronald Fiscus, Brian Jackson, Cobern Ott, Dexter Speck and Michael Vernon.

Associate Members: Assistant Professors Kenneth B. Ain, David R. Brown and Douglas G. McMahon.

Joint Appointments: Professors Eugene Crawford, James Lafferty, Jesse Sisken. Assistant Professor Michael Dekin.

Emeritus Professors: Louis Boyarsky and Fred Zechman.

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.

412G **Principles of Human Physiology Lectures** .... (4)
502 **Principles of Physiology Lecture** ..... (5)
504 **Independent Work in Physiology** ..... (2-4)
512 **Cellular Physiology** ..... (4)
520 **Theoretical Biophysics** ..... (3)

522 Quantitative Physiology ..... (4)
535 Comparative Neurobiology and Behavior (3)
549 Comparative Endocrinology ..... (3)
550 An Introduction to Integrative Thought ... (3)
601 Mammalian Endocrinology ..... (3)
604 Advanced Cardiovascular Physiology ..... (3)
605 Contemporary Neurosciences ..... (4)
606 Advanced Neurophysiology ..... (3)
607 Hormonal Control Mechanisms (Subtitle Required) ..... (3)
608 Advanced Renal Physiology ..... (3)
609 Advanced Respiratory Physiology ..... (3)
611 Advanced Medical Physiology ..... (9)
627 Proseminar in Physiological Psychology ... (3)
630 Advanced Topics in Physiology and Biophysics ..... (1-3)
660 Systems Physiology ..... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
767 Topical 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)
774 Graduate Seminar in Physiology ..... (1)
791 Research in Physiology ..... (1-15)

Plant Pathology

Graduate Faculty: Professors Said A. Ghabrial, James W. Hendrix, Joseph Kuc Thomas P. Pirone, Louis Shain, John G. Shaw, Robert J. Shepherd, Malcolm R. Siegel and David A. Smith. Associate Professor Christopher L. Schardl.

Associate Members: Extension Professors John R. Hartman and William C. Nesmith.

Emeritus Professors: Richard A. Chapman, Stephen Diachun, Shuh J. Sheen and Harry E. Wheeler.

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; a minor is not required.

400G Principles of Plant Pathology ..... (3)
503 Plant Biochemistry ..... (3)
595 Epidemiology and Control of Plant Diseases ..... (4)
601 Special Topics in Molecular and Cellular Genetics ..... (1)
640 Identification of Plant Diseases ..... (3)
652 Plant Pathogenic Fungi ..... (3)
656 Plant Virology ..... (3)
660 Dynamics of Plant-Pathogen Interactions . (3)
661 Genetics of Plant-Microbe Interactions .... (3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
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

Graduate Faculty: Professor L.P. Bush, George Cheniae and George Wagner. Associate Professor Arthur G. Hunt.

Associate Members: Assistant Professor Joseph Chappell. Adjunct Associate Professor Roger A. Anderson. Adjunct Assistant Professors Robert R. Klein and Michael E. Salvucci.

Joint Appointments: Professors A.J. Hiatt, Thomas R. Kemp and Joseph Kuc. Associate Professors Douglas D. Archbold, Michael Barrett, William S. Cohen, Robert Geneve, David Hildebrand, Robert Houtz, Thomas Kimmerer, Christopher L. Schardl and Leslie Weston. Assistant Professor David D. Wagner. Adjunct Associate Professors Charles MacKown and Steven Crafts-Brandner.

Emeritus Professors: R.A. Chapman, S. Diachun, William Duncan and Harry Wheeler.

The University-wide, interdepartmental graduate program offers a plan of study leading to the Master of Science and the Doctor of Philosophy degree. The aim of this program is to aid students in developing a high degree of excellence in plant physiology/biochemistry/molecular biology.

Faculty members of the program are 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 stress physiology and biochemistry, metabolism and roles of secondary products in disease resistance, biochemical and molecular basis of disease resistance, biophysics and biochemistry of photosynthesis and photorespiration, physiology of crop yield, senescence, regulation of gene expression, physiology of stress and population genetics in forest species, mineral nutrition and ion transport, alleopathy, plant morphogenesis in tissue culture, and genetic transformation of plants.

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.

Programs leading to advanced degrees must conform to the general rules and regulations of The Graduate School. Requirements for the M.S. and Ph.D. degrees (Plan A) are 24 and 30 credit hours of prescribed course work, respectively, and an acceptable thesis. A minor requires 15 credit hours of prescribed course work. Contact the Director, N212F, Agricultural Science Center—North for additional information.

630 (AGR, BIO) Experimental Techniques in Plant Physiology ..... (3)
660 (PPA) Dynamics of Plant, Pathogens Interactions ..... (3)
735 (BIO) Advanced Plant Physiology ..... (3)
732 (AGR, BIO, HOR) Mineral Nutrition of Plants ..... (3)
734 (AGR, BIO, HOR) Physiology of Growth and Development ..... (3)
769 (BIO) Residence Credit for the Doctor's Degree ..... (0-12)
773 (AGR) Seminar in Plant Physiology ..... (1)

Political Science

Graduate Faculty: Professors Bradley Canon, Vincent Davis, Malcolm Jewell, W.E. Lyons, Karen Mingst, Herbert Reid, and Ernest Yanarella. Associate Professors Charles L. Davis, Donald Gross, Chung-In Moon, Mark Peffley, Phillip Roeder and Bruce A. Williams.

Associate Members: Assistant Professors Stuart Kaufman, Ronald Langley, Patricia Pauly and Ellen Riggle.

Emeritus Professors: George Gadbois, Sidney Ulmer and Kenneth VanLandingham.

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 three 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 the Plan B master's degree must pass a foreign language requirement or an analytical skills requirement.

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 student's work is based on a program prepared with the Advisory Committee. The students take advanced work in at least two substantive fields in political science. The qualifying examination in political science consists of a written and oral examination in each of the two 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 must demonstrate proficiency in a research skill. The required research skill will consist of additional quantitative skills or proficiency in a foreign language that is directly pertinent to the student's research interests.

Additional details concerning departmental requirements may be secured from the Department of Political Science.

411G Comparative Government-Parliamentary Democracies I ... (3)
412G Comparative Government-Parliamentary Democracies II ... (3)
417G Survey of Sub-Saharan Politics ... (3)
419G The Governments and Politics of Eastern Asia ... (3)
420G Governments and Politics of South Asia ... (3)
421G Government and Politics of Southeast Asia ... (3)
427G East European Politics ... (3)
428G Latin American Government and Politics ... (3)
429G Government and Politics of the Soviet Union ... (3)
430G The Conduct of American Foreign Relations ... (3)
431G National Security Policy ... (3)
433G Politics of International Economic Relations ... (3)
436G International Organization ... (3)
437G Dynamics of International Law ... (3)
439G Contemporary International Problems ... (3)
441G Early Political Theory ... (3)
442G Modern Political Theory ... (3)
450G Rural Local Government ... (3)
452G Municipal Government ... (3)
453G Urban Government in Politics ... (3)
454G Political Land Use/Growth Management ... (3)
455G Intergovernmental Relations in the American Federal System ... (3)
456G Appalachian Politics ... (3)
461G Civil Liberties ... (3)
463G The American Judicial Process ... (3)
465G Constitutional Politics ... (3)
470G American Political Parties ... (3)
472G Political Campaigns and Elections ... (3)
473G Public Opinion ... (3)
474G Political Psychology ... (3)
476G Legislative Process ... (3)
480G Government and the Economy ... (3)
482G Food, Energy, and Ecology ... (3)
487G Introduction to Public Administration ... (3)
489G The Analysis of Public Policy ... (3)
515 Comparative Political Parties ... (3)
525 Comparative Study of Political Violence ... (3)
532 Comparative Foreign Policies ... (3)
535 Political Risk Analysis ... (3)
538 Conflict Cooperation in Latin American Relations ... (3)
539 The Foreign Policy of the Soviet Union ... (3)
545 American Political Thought ... (3)
549 Science, Technology and Political Theory (3)
557 Kentucky Government and Politics ... (3)
571 Interest Groups ... (3)
580 The Budgetary Process ... (3)
584 The American Presidency and the Federal Executive ... (3)
588 Public Personnel Administration ... (3)
611 Ethical Issues in Political Life ... (3)
612 Polling and Survey Research ... (3)
620 Comparative Politics: Theory and Method (3)
630 Proseminar in Non-Institutional Political Behavior ... (3)
654 Proseminar in Judicial Process ... (3)
671 Strategies of Inquiry in Political Science ... (3)
672 Introduction to Techniques of Political Research ... (3)
674 Proseminar in Theories of International Politics ... (3)
680 Proseminar in Political Institutions and Process ... (3)
685 Proseminar in Public Administration and Policy ... (3)
690 Contemporary Political Thought: Theoretical Foundations of Political Concepts and Issues in the Twentieth Century ... (3)
711 Topical Seminar in Political Science (Subtitle Required) ... (3)
730 American Foreign Policy ... (3)
731 International Security ... (3)
733 International Political Economy ... (3)
737 Transactional Organizations and Processes ... (3)
738 Seminar in the Politics of Economic Development (Subtitle Required) ... (3)
748 Master's Thesis Research
749 Dissertation Research ... (0)
750 Political Parties and Elections in America ... (3)
751 Seminar in Metropolitics ... (3)
752 Problems in State and Local Government (3)
757 Seminar in Comparative Democratic Political Systems ... (3)
758 Seminar in Soviet Politics, Government, and Foreign Policy ... (3)
761 The Constitution and Civil Rights ... (3)
762 Seminar in Judicial Policy Making ... (3)
763 Seminar in Administrative Politics ... (3)
764 Research in Judicial Behavior ... (3)
768 Residence Credit for the Master's Degree ... (1-6)
769 Residence Credit for the Doctor's Degree ... (0-12)
770 Seminar in Contemporary Political Theory ... (3)
772 Advanced Problems in Research Methods (3)
775 Seminar in Public Policy ... (3)
776 Seminar in Political Development ... (3)
777 Research Problems in International Relations ... (3)
778 Seminar in Comparative Foreign Policies . (3)
779 Voting Behavior ... (3)
780 Legislative Behavior ... (3)
784 Seminar in Political Socialization ... (3)
785 Psychological Bases of Political Behavior . (3)
795 Special Problems in Political Science ... (1-3)
796 Directed Research in Political Science ... (1-3)

Psychology

Graduate Faculty: Professors Richard S. Milich, Thomas W. Miller, Michael Nietzel, Thomas A. Widiger, and Thomas Zentall. Associate Professors Michael A. Andrykowski, Ruth A. Baer, Michael Bardo, David T. Berry, Elizabeth Lorch, Robert E. Lorch, Donald McCoy and James McCubbin.

Associate Members: Associate Professors John Neill, James Norton and Frederick Schmitt. Assistant Professors Melody Carswell, Charles Carlson, Alan Ellis, Jonathan Golding, Monica J. Harris, Rick Hoyle, Mitzi Johnson, Philip Kraemer, Gregory Smith, Terence Turner, Todd Van Denburg and Martha Wetter.

Joint Appointment: Associate Professor John F. Wilson.

Emeritus Professors: Billie Ables and Robert Baker.

The department offers one Ph.D. degree in psychology in two programs: clinical psychology and experimental psychology, the latter subdivided into behavioral and neural studies, cognitive and developmental studies, and social psychology. The major goal of the doctoral programs in psychology is to prepare the student for a career in teaching and research.

The area of specialization 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. Special areas of expertise among clinical faculty include psychological assessment and psychotherapy with children and adults, marital and family therapy, neuropsychology, psychodiagnosis and experimental investigations of psychopathology, psychotherapy process and outcome research, behavioral medicine, and forensic psychology. Clinical training is facilitated by early placement of students at a variety of settings including various medical settings, a federal corrections facility, community mental health centers, state and private psychiatric hospitals, and the department's own psychological clinic. The clinical program is fully accredited by the American Psychological Association.

The behavioral and neural studies area 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. 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 learning, memory, animal intelligence, psychopharmacology, developmental psychobiology, and recovery from brain damage.

The area in cognitive and developmental studies prepares students for a career in teaching and research with a concentration in either adult cognition or cognitive development. Training combines formal proseminar and seminar learning experience with supervised research and teaching experience. Although basic theory in cognitive and developmental psychology is emphasized, students wishing to apply their training in nonacademic settings (e.g., human factors) are encouraged in their interests. Current research within the program includes: memory, reading, development of attention, development of problem-solving skills, children's comprehension of television, affect and cognition, and neural network models.

The area 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. Within 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, students in all areas 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.

The M.A. or M.S. degree is awarded under Plan A only, as one component of doctoral training.

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 Director of Graduate Studies, Department of Psychology.

423G	Processes of Psychological Development	(3)
444G	Social Psychology	(3)
459G	Drugs and Behavior	(3)
500	Senior Seminar in Psychology	(3)
502	Introduction to Industrial Psychology	(3)
503	Psychology of Industrial Personnel Procedure	(3)
521	Cognitive Processes Laboratory	(1)
523	Research Methods in Developmental Psychology	(4)
525	Human Senses and Perception	(3)
526	Human Senses and Perception Laboratory	(1)
527	Cognitive Processes	(3)
528	Dimensions of Aging	(3)
529	Psycholinguistics	(3)
532	Personality	(3)
533	Abnormal Psychology	(3)
534	Child Psychopathology	(3)
535	Psychological Testing	(3)
539	Interpersonal Dynamics	(3)
545	Small Group Behavior	(3)
547	Experimental Social Psychology	(4)
548	Applied Social Psychology	(3)
550	Psychology of Learning	(3)
551	Psychology of Learning Laboratory	(1)
552	Animal Behavior	(3)
553	Animal Behavior Laboratory	(1)
556	Physiological Psychology	(3)
557	Physiological Psychology Laboratory	(1)
558	Biology of Motivation	(3)
603	Psychopathology	(3)
610	Psychometrics	(3)
611	Psychological Research	(3)
616	Research Design in Clinical Psychology	(3)
617	Experimental Approaches to Personality	(3)
618	Experimental Approaches to Psychopathology	(3)
620	Proseminar in History and Systems of Psychology	(3)
621	Proseminar in Learning	(3)
622	Proseminar in Personality	(3)
623	Proseminar in Sensation and Perception	(3)
624	Proseminar in Social Psychology	(3)
625	Proseminar in Developmental Psychology	(3)
626	Survey of Health Psychology	(3)
627	Proseminar in Physiological Psychology	(3)
628	Proseminar in Cognitive Processes	(3)
629	Introduction to Clinical Psychology	(2)
630	Clinical Methodology I	(2)
631	Practicum in Clinical Methodology I	(2)
632	Clinical Methodology II	(2)
633	Practicum in Clinical Methodology II	(2)
634	Practicum in Clinical Psychology III	(3)
636	Systems of Psychotherapy	(3)
637	Practicum in Psychotherapy and Behavior Change	(1-3)
638	Clinical Child Psychology	(3)
644	Methods of Social Psychological Inquiry	(3)
663	Practicum in Industrial Psychology	(3)
664	Cultural Issues in Mental Illness	(3)
700	Topical Seminar in Behavior Modification	(3)
701	Topical Seminar in Clinical Child Psychology	(3)
702	Topical Seminar in Community Mental Health	(3)
703	Seminar in Group Therapy	(3)
705	Research in Psychotherapy and Behavior Change	(3)
710	Topical Seminar in Clinical Psychology	(3)
713	Practicum in Group Therapy	(3)
748	Master's Thesis Research	(0)
749	Dissertation Research	(0)
767	Topical 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)
772	Topical Seminar in Learning	(3)
774	Topical Seminar in Cognitive Processes	(3)
775	Topical Seminar in Perception	(3)
776	Topical Seminar in Animal Motivation	(3)
778	Topical Seminar in Developmental Psychology	(3)
779	Topical Seminar in Social Psychology	(3)
780	Problems in Psychology	(1-3)
781	Research Participation	(1)
790	Research in Psychology	(1-12)

Public Administration

Graduate Faculty: Professors Philip K. Berger and Eugenia Toma. Associate Professors Edward T. Jennings, Jr. and Robert Rodgers.

Joint Appointments: Professors Glenn C. Blomquist, Richard W. Furst, Merlin Hackbart, Donald L. Hochstrasser, William E. Lyons, William Stober and James D. Suver. Associate Professors Joyce E. Beaulieu, David Freshwater, Phillip W. Roeder and Bruce A. Williams. Joint Associate Member: Assistant Professor Ronald E. Langley.

The Martin School of Public Administration, a research, academic and service unit of The Graduate School, offers the Ph.D., the MPA, and the MHA degrees. The Ph.D. in Public Administration is designed to prepare students to function at a high level of analytic sophistication in academic and administrative positions. The Master of Public Administration is a 45 credit hour program designed for those seeking careers in the public, quasi-public, and private sectors.

The interdisciplinary faculty have joint appointments in the Martin School and in one of the academic departments of the College of Business and Economics, the College of Arts & Sciences, the Medical Center or the College of Agriculture.

The curriculum of the Ph.D. program provides knowledge of the principles of organizational behavior, an understanding of the public policy process and policy issues, and an ability to analyze policy and administrative problems through research and analytical methods.

Students are required to take 42 hours of graduate course work beyond the master's degree or its equivalent. The program of study includes a 21-hour Core covering:

Public management
Public policy
Research methods

and a 21-hour Area of Concentration selected from one of the following:

Governmental Processes and Institutions
Organization Theory and Behavior
Public Financial Management
Systems Analysis

Areas are designed by students in conjunction with their faculty advisers.

The dissertation involves research on a public management or public policy issue. An internship is necessary for students without significant public experience.

Financial support is available to qualified students through fellowships, assistantship, and research grants.

Inquiries should be made through the Director of Graduate Studies, 415 Patterson Tower.

Core Courses

Public Policy and Management (12 hours)

PA 731 Fiscal and Budgetary Policy
PA 742 Theory of Public Organizations
PA 751 Public Policy Formulation
PA 752 The Economics of Policy Analysis

Research Methods (9 Hours)

Nine hours of research methods are chosen by the student with the approval of the advisory committee.

The MPA Program conforms with the general rules and regulations of The Graduate School. Students applying for admission to the program are expected to have an undergraduate grade point average equivalent to 2.5 or better; quantitative and verbal scores on the GRE or GMAT at approximately the 50th percentile; and a GPA of at least a 3.0 on all graduate work previously attempted.

Students are admitted from a diversity of academic disciplines. Although there are no course prerequisites, students should be familiar with concepts of economics and accounting.

Degree requirements are successful completion of 45 hours of course work with a 3.0 GPA or better and passing oral and written comprehensive examinations.

A limited number of research assistantships, scholarships and fellowships are available for full time students with high academic standings.

Generally, courses are offered in the late afternoon and evening to accommodate working students.

The Martin School MPA program is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA).

For more information, write MPA Direc-

tor of Graduate Studies, 415 Patterson Tower, University of Kentucky, Lexington, KY 40506-0027.

The MPA Program is designed to provide:

1. an Administrative Core of 27 semester hours which covers the areas of economics, finance, accounting control, management, research methods, public policy formulation and the political and legal environments of public administration; and,
2. an Area of Concentration of 9 semester hours, in one of five areas of specialization: environmental management, public financial management, health policy, policy analysis, and state, local and urban management.
3. elective course work of 6 semester hours selected to complement the area of concentration or enhance skills and knowledge acquired in the core curriculum, and
4. an administrative internship for 3 semester hours of credit. Students with significant professional experience may substitute a policy paper or an additional graduate course.

Course Requirements

Completion of a minimum of 45 semester hours of graduate work is required.

A. Administrative Core (27 semester hours)

PA 621 Quantitative Methods of Research .. (3)
PA 622 Quantitative Methods II: Evaluation Methods ..... (3)
PA 623 Quantitative Methods III: Decision Science Methods ..... (3)
PA 631 Financial Management I: Finance and Budgeting ..... (3)
PA 632 Financial Management II: Public Sector Accounting ..... (3)
PA 641 Public Organizations I: Political Environment ..... (3)
PA 642 Public Organizations II: Theory and Behavior ..... (3)
PA 651 Public Policy I: The Policy Process . (3)
PA 652 Public Policy II: Economic Analysis (3)

B. Area of Concentration (9 semester hours)

State, Local and Urban Management

This area of concentration is designed to prepare generalists in local, state, and urban government administration.
Select 9 hours from:

PS 453G Urban Government and Politics
PS 455G Intergovernmental Relations in the American Federal System
PS 476G Legislative Process
PS 557 Kentucky Government andPolitics
PS 571 Interest Groups
PS 752 Problems in State and Local Government

Health Policy

The health policy concentration prepares students for careers as managers and analysts of health policy in federal, state, and local agencies, not-for-profit organizations, and the private sector.
Select 9 hours from:

PA 636 Health Economics
PA 673 Health Policy Development
PA 785 Independent Study in Health Administration, or
PA 680 Benefit-Cost Analysis

Environmental Management

Martin School graduates with a concentration in environmental management will be ready to contribute to the design and implementation of environmental policy.
Complete the following 9 hours:

PA 727 Environmental Economics, . Regulation and Policy
ES 610 Engineering and Physical Science in Environmental Systems
ES 620 Natural, Biological, Medical Sciences in Environmental Systems

Public Financial Management

Students completing this specialization will be prepared for entry-level professional position in public and not-for-profit organizations.
Select 9 hours from:

ACC 410G Not for Profit Accounting
FIN 585 Bank Management
FIN 680 Money, Interest and Capital
ECO 485G Monetary Economics
ECO 611 Business Conditions Analysis

Policy Analysis

This concentration provides students the ability to analyze and interpret qualitative and quantitative data, conduct and present results of quantitative and qualitative analyses, and communicate complex ideas in a concise, straightforward manner.
Select 9 hours from:

PA 680 Benefit-Cost Analysis

a course in quantitative or qualitative methods a course in substantive policy area, PA 775, PA 796 or PA 722

C. Elective Courses (6 semester hours)

Courses are selected from lists of appropriate courses prepared by the faculty for each area of specialization or with the approval of the Director of Graduate Studies.

D. Internship (3 semester hours)

PA 711 Internship in Public Administration ..... (3)

621 Quantitative Methods of Research ..... (3)
622 Quantitative Methods II: Evaluation Methods ..... (3)
623 Quantitative Methods III: Decision Science ..... (3)
631 Financial Management I: Finance and Budgeting ..... (3)
632 Financial Management II: Public Sector Accounting ..... (3)
636 Health Economics ..... (3)
637 Health Finance ..... (3)
639 Management Control Systems in Non-Profit Organizations ..... (3)
641 Public Organizations I: Political Environment ..... (3)
642 Public Organization Theory and Behavior (3)
651 Public Policy I: The Policy Process ..... (3)
652 Public Policy Economics ..... (3)
656 Health Program Evaluation ..... (3)
671 Overview of the Health Care Delivery System ..... (3)
672 Social and Behavioral Aspects of Health Care ..... (3)
673 Health Policy Development ..... (3)
680 Benefit-Cost Analysis ..... (3)
711 Internship in Public Administration ..... (3)
721 Public Planning ..... (3)
722 Policy and Program Evaluation ..... (3)
724 Public Financial Management ..... (3)
725 Public Management Computer Applications ..... (3)
727 Environmental Economics, Regulation and Policy ..... (3)
728 Personnel Management in the Public Sector ..... (3)
731 Fiscal and Budgetary Policy ..... (3)
742 Theory of Public Organizations ..... (3)
749 Dissertation Research ..... (0)
751 Public Policy Formulation and Implementation ..... (3)
752 The Economics of Policy Analysis ..... (3)
769 Residence Credit for the Doctor's Degree (0-12)
775 Special Topics in Health Administration ..... (2-3)
785 Independent Study in Health Administration ..... (1-3)
795 Special Topics in Public Administration .... (1-3)
796 Independent Study in Public Administration ..... (1-3)

Public Health

Graduate Faculty: Professors Terence Collins, Arthur Frank and Ramesh Gupta. Associate Professors S.W. Horstman and David A. Snowdon.

Associate Member: Assistant Professor Robert McKnight.

The Department of Preventive Medicine and Environmental Health offers a program of study leading to the Master of Science in Public Health. Public health is a broad discipline and the component parts are reflected in the requirements to obtain this degree.

Entrance into the MSPH program requires a sufficient biological and mathematical background to participate in the required courses. There is no language requirement. The required courses include health care administration, epidemiology, biostatistics, and occupational/environmental health. Students may elect a Plan A or Plan B option (with or without a formal master's thesis) with the possibility of specializing in a number of areas, including health care administration, occupational/environmental health, epidemiology, toxicology, industrial hygiene and other similar areas.

Recently, the industrial hygiene program received extramural funding and new courses in ventilation and instrumentation have been established. The possibility of extended field work also exists. Field site placements are under development.

There is an active program of research ongoing in the department, with much of the departmental activities having a clinical orientation.

Admission to the graduate program is competitive and based upon academic background, performance on the Graduate Record Examination (GRE), professional experience, and interest in the field.

PM 521 Epidemiology ..... (4)
PM 601 Occupational and Environmental Health ..... (4)
PM 602 Occupational and Environmental Health ..... (4)
PM 621 Topics in Advanced Epidemiology .. (2)
PM 651 Work Place Ventilation ..... (3)
PM 661 Industrial Hygiene Sampling ..... (3)
PM 768 Residency Credit for Master's Degree ..... (1-6)
PM 770 Seminar in Preventive Medicine/ Public Health ..... (1-3)
PM 780 Special Problems in Preventive Medicine and Public Health ..... (1-3)
PM 790 Research in Preventive Medicine/ Public Health ..... (1-3)

Radiation Medicine

Graduate Faculty: Professors Yosh Maruyama. Associate Professors Joseph A. Sayeg and Guy Simmons.

Joint Appointment: Associate Professor Ralph C. Christensen.

Graduate educational programs in Radiation Medicine are closely allied with those in the Radiation Sciences Department of Clinical Sciences, College of Allied Health Professions. Course work involves study of the physical properties and characteristics of radiation, the effects of ionizing radiation upon matter and living organisms, and safety and protection considerations of radiation. Courses jointly listed with the Department of Physics and Astronomy teach the student about radiation interactions, radiation safety, and general medical physics. Courses jointly listed with Biological Sciences and Toxicology concern the biological effects of ionizing radiation. Research and clinical training in a health-medical setting provides an opportunity for the student to observe the applications of radiation in medicine.

Graduate programs are detailed under Radiation Sciences, College of Allied Health programs elsewhere in this Bulletin. Inquiries should be addressed to the Director of Graduate Studies.

472G Interaction of Radiation with Matter ..... (3)
540 Fundamentals of Radiation Biology ..... (2)
541 Radioisotope Methodology ..... (2)
545 Radiation Hazards and Protection ..... (3)
546 General Medical Radiological Physics ..... (3)
601 Advanced Radiation Dosimetry ..... (2)
647 Physics of Diagnostic Imaging I ..... (3)
648 Physics of Diagnostic Imaging II ..... (3)
649 Physics of Radiation Therapy ..... (3)
652 Advanced Laboratory in Nuclear Medical Physics ..... (1-3)
660 Graduate Practicum in Radiation Medicine ..... (1-6)
695 Research in Health-Related Radiation Sciences ..... (1-4)
740 Mammalian Radiation Biology ..... (2)

Radiation Sciences

Graduate Faculty: Associate Professor Ralph Christensen.

Associate Member: Adjunct Associate Professor Charles Coffey II.

Joint Appointments: Professor Yosh Maruyama. Associate Professor Joseph A. Sayeg.

The Division of Radiation Sciences, Department of Clinical Sciences, offers a program in Radiation Science leading to the degree of Master of Science in Health Physics or Master of Science in Radiological Medical Physics.

Graduates of accredited colleges with an appropriate baccalaureate degree (preferably a physics major or minor) may become candidates for one of these degrees. Prerequisites include physics through atomic and nuclear physics (with laboratory), one year of undergraduate biology, one year of general chemistry, mathematics through (ordinary) differential equations, and individual courses in computer science, statistics, human physiology, and human anatomy. Students lacking certain course prerequisites may be admitted while completing them, if so approved by the program director.

Both degree options are interdisciplinary. 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 options. Additional special course work is prescribed for each option as degree requirements.

CORE PROGRAM

RM/BIO 740 Mammalian Radiation Biology .... (2)
PHY/RM 472G Interaction of Radiation with Matter ..... (3)
RAS/RM/PHY 545 Radiation Hazards and Protection ..... (3)
RAS/RM/PHY 546 General Medical Radiological Physics ..... (3)
RAS/RM 601 Advanced Radiation Dosimetry ... (2)
RAS 710 Seminar in Bioradiation Science . (1)
RAS/RM 695 Research in the Health-Related Radiation Sciences ..... (2)
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Master of Science in Radiological Medical Physics

ADDITIONAL PROGRAM

RAS/RM 647 Physics of Diagnostic Imaging I ..... (3)
RAS/RM 648 Physics of Diagnostic Imaging II ..... (3)
RAS/RM 649 Physics of Radiation Therapy ..... (3)
RAS 651 Advanced Laboratory in Diagnostic Imaging Physics ..... (2)
RM 660 Graduate Practicum in Radiation Medicine ..... (3)

Total 30 (minimum)

Clinical practicum experiences are available in the second graduate year.

Master of Science in Health Physics

ADDITIONAL PROGRAM

RAS 575 Applied Health Physics Laboratory ..... (2)
CHE 520 Radiochemistry ..... (3)
Specialization Electives ..... (9)

Total 30 (minimum)

Available Specialization Electives (partial listing)

CHE 521 Radiochemistry Laboratory ..... (1-2)
PHY 402G Electronic Instrumentation and Measurements ..... (3)
PHY 416G/417G Electricity and Magnetism ..... (6)
PHY 520 Quantum Mechanics ..... (3)
PHY 554/555 Fundamental Atomic & Nuclear Physics ..... (6)
PM 601/602 Environmental and Occupational Health ..... (8)
RAS 715 Advanced Problems in Radiation Dosimetry ..... (1-4)
RAS/RM 647, 648 Physics of Diagnostic Imaging I and II ..... (6)
ME 475G Introduction to Nuclear Engineering ... (3)

540 Fundamentals of Radiation Biology ..... (2)
541 Radioisotope Methodology ..... (2)
545 Radiation Hazards and Protection ..... (3)
546 General Medical Radiological Physics ..... (3)
575 Applied Health Physics Laboratory ..... (2)
601 Advanced Radiation Dosimetry ..... (2)
647 Physics of Diagnostic Imaging I ..... (3)
648 Physics of Diagnostic Imaging II ..... (3)
649 Physics of Radiation Therapy ..... (3)
651 Advanced Laboratory in Diagnostic Imaging Physics ..... (1-3)
652 Advanced Laboratory in Nuclear Medical Physics ..... (1-3)
695 Research in Health-Related Radiation Sciences ..... (1-4)
710 Radiation Science Seminar (Subtitle Required) ..... (1)
715 Advanced Problems in Health-Related Radiation Sciences ..... (1-4)

Rehabilitation Counseling

Director: Ralph M. Crystal

Graduate Faculty: Associate Professor Ralph M. Crystal.

Associate Member: Assistant Professor Reginald J. Alston.

Joint Appointment: Associate Professor Charles D. Auvenshine.

The Graduate Program in Rehabilitation Counseling is an interdisciplinary program within The College of Education of the University of Kentucky. The curriculum, in accordance with the guidelines of certification organizations in rehabilitation counseling, provides for flexible programming in response to individual student needs and interests. The program is accredited by the Council on Rehabilitation Education and fulfills national certification requirements in rehabilitation counseling. Program graduates are eligible to sit for the Rehabilitation Counseling Certification Exam.

The program trains students to understand the physical, psychological, social, and economic needs of handicapped individuals in terms of vocational adjustment, and independent living and functioning. Rehabilitation counseling is a challenging and expanding profession. The rehabilitation counselor provides and coordinates services to persons with emotional, physical, and developmental disabilities which interfere with productive functioning and independent living. The counselor must demonstrate competencies in establishing and conducting counseling relationships, assessment procedures, vocational placement, program planning and coordination; have an awareness of professional and community resources that can be utilized in the rehabilitation process; and, understanding how rehabilitation engineering and technology can be utilized to help clients achieve their goals. Emphasis is placed on severe disability and its consequences, independent living, job development and placement, technology, business and industry, and consumer issues and rights. Graduates of the program are em-

ployed in a wide range of public and private rehabilitation settings.

Course and field work total a minimum of 45 credit hours if the student has a bachelor's degree in rehabilitation. The typical program for other students is 57 hours, up to a maximum of 60 hours. At least 75% of the credit hours must be taken at the University of Kentucky. Courses are offered in the late afternoon and early evening to accommodate full and part-time students. Students who attend the program on a full-time basis can complete the program in 16 months.

Students are admitted from a wide range of backgrounds and academic disciplines. It is anticipated however, that most students entering the program will have a background in psychology, education, sociology, rehabilitation, or other social-behavioral sciences. Students who have other educational backgrounds are also considered.

The curriculum is composed of three levels of courses: basic core, advanced core, and support areas.

Basic Core

The Basic Core courses or their equivalent are required for students without a background in the field of rehabilitation or who have not otherwise had these courses.

RC 510	Orientation to Rehabilitation Resources
RC 512	Medical Knowledge for the Social Professions
RC 520	Principles of Rehabilitation Counseling
RC 530	Psycho-Social Impact of Disability
RC 540	Rehabilitation in Business and Industry
EDP 605	Introduction to Counseling
EDP 652	Theories of Counseling
EDP 666	Psychology of Career Counseling or
EDV 702	Career Development

Advanced Core

Advanced Core courses or their equivalent are required for all students enrolled in the degree program:

RC 610	Case Management in Rehabilitation Counseling
RC 620	Vocational Evaluation/Work Adjustment of the Severely Disabled
RC 630	Placement Services and Techniques in Rehabilitation Counseling
RC 710	Practicum
RC 720	Internship
RC 740	Administration and Supervision in Rehabilitation
RC 750	Rehabilitation Research

Students who have taken any of the above courses or their equivalent may consult with faculty to request waiver of the required course and to substitute an approved elective.

Other Rehabilitation Courses

RC 540	Rehabilitation of Business and Industry
RC 550	Special Topics in Rehabilitation Counseling
RC 760	Current Issues in Rehabilitation
RC 782	Directed Independent Study

Support Areas

A support area will be chosen by the student in conjunction with a faculty adviser. Students are encouraged to use their electives to develop 'support areas.' A support area is defined as a group of three or more courses, focusing on one theme, to enhance specific skills or knowledge related to rehabilitation.

Courses comprising a support area may be offered by one or more departments. Support areas available through interdisciplinary planning include: learning disabilities, mental retardation, developmental disabilities, gerontology, mental health, administration and management, family studies, research and evaluation, group counseling, policy and planning, criminal justice, hearing impairment, visual impairment, recreation, drugs and alcoholism, business and industry, technology, and advocacy. Cooperating disciplines include Educational and Counseling Psychology, Social Work, Special Education, Sociology, Public Administration, Family Studies, Psychology, Therapeutic Recreation, and Allied Health.

Admission to Field Work

Admission to field work will be considered after the student has completed two semesters (full time) of graduate study or when the student has completed 24 hours of graduate study. The decision to advance to field work includes successful completion of the admission to field work exam, demonstrated skill in academic areas, and a judgment by the faculty that the student possesses the personal and social characteristics necessary for providing professional rehabilitation counseling services.

Field Work

The first field work component is a three credit practicum, which consists of 180 clock hours of supervised experience in a rehabilitation or rehabilitation-related setting, a weekly seminar, and individual supervision. Students who receive training support from the Rehabilitation Services Administration must have involvement with business and industry as part of the practicum. The practicum is generally taken during the eight-week summer session. A student must be admitted to field work prior to enrolling in the practicum.

In accordance with national accreditation and certification requirements, students then complete 600 clock hours of supervised internship in a rehabilitation or rehabilitation-related setting. Every intern student also participates in a weekly seminar and individual supervision. Internship is three credits per 200 clock hours, and may be taken in the summer, fall, or spring semesters following practicum. The internship may be taken in one semester, or may be divided into two semesters; it is recommended that the internship be completed in one semester.

Students must successfully complete their internship, and demonstrate competence in working with individuals with disabilities in the context of a professional rehabilitation counseling relationship in order to graduate.

A final written examination is given at the completion of all course work. Graduation is contingent upon the successful completion of this examination.

510	**Orientation to Rehabilitation Resources**	**(3)**
512	**Medical Knowledge for the Social Professions**	**(3)**
520	**Principles of Rehabilitation Counseling**	**(3)**
530	**Psycho-Social Impact of Disability**	**(3)**
540	**Rehabilitation in Business and Industry**	**(3)**
550	**Special Topics in Rehabilitation**	**(1-3)**
610	**Case Management in Rehabilitation Counseling**	**(3)**
620	**Vocational Evaluation and Work Adjustment for the Severely Handicapped**	**(3)**
630	**Placement Services and Techniques in Rehabilitation Counseling**	**(3)**
710	**Practicum in Rehabilitation Counseling**	**(3)**
720	**Internship in Rehabilitation Counseling**	**(3-9)**
740	**Administration, Supervision and Program Evaluation in Rehabilitation Counseling**	**(3)**
750	**Rehabilitation Research**	**(1-3)**
760	**Contemporary Practices in Rehabilitation**	**(1-3)**
782	**Directed Independent Study**	**(1-3)**

Russian and Eastern Studies

At present no graduate program is offered in Russian and Eastern Studies.

400G	**Seminar on Special Topics in Russian**	**(3)**
450G	**Dostoevsky (in English)**	**(3)**
460G	**Tolstoy (in English)**	**(3)**
462G	**Advanced Reading in the Sciences and Technology (in Russian)**	**(3)**
555	**Teaching of Russian**	**(3)**

Social Work

Graduate Faculty: Professors Ronda Connaway, S. Zafar Hasan, John Landon, Vernon Wiehe, and Constance P. Wilson. Associate Professors Lauretta F. Byars, Surjit S. Dhooper, David D. Royse and Kennard W. Wellons.

Associate Members: Associate Professors Richard K. Brautigam and Nathan Sullivan. Assistant Professors Janet P. Ford, Gary W. Paquin and Elizabeth L. Rompf.

Emeritus Professors: Martha Gentry, Elizabeth Kirlin, Chester A. Holmquist and Maryrhea Morelock.

The College of Social Work publishes a bulletin explaining the total program. Please write College of Social Work, Patterson Office Tower, University of Kentucky.

The College of Social Work 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 Work for the Master of Social Work degree as indicated below.

1. Earn 54 hours of credit with a grade-average of B or above. Forty-two 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 Work. The remaining 8 credits may be elected from relevant courses offered throughout the University or by the College of Social Work.

   Advanced standing of thirteen credit hours may be granted in the Master of Social Work program to graduates of undergraduate social work programs accredited by the Council on Social Work Education who have earned:

   a. grades of A or B in at least four of the five professional foundation areas of the curriculum, namely, Social Work Practice, Human Behavior and Social Environment, Social Welfare Policies and Services, Research, and Field Practicum, and
   b. an overall undergraduate GPA or 2.50 with a 3.00 GPA in social work courses.

   Advanced standing may be granted as follows:

   They may be permitted to enroll in SW 601-Social Work Practice II (2), SW 621-Human Growth and the Social Environment II (2), SW 631-Social Welfare Policies and Services II (2), and SW 651- Evaluative Re search in Social Work (2), waiving SW 600-Social Work Practice I (4), SW 62-Human Growth and the Social Environment I (4), SW 630-Social Welfare Policies and Services I (4), and SW 650-Research in Social Work (2).
2. 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, by completing the College of Social Work advancement-to-candidacy review.
4. 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 is accredited by the Council on Social Work Education.

Students are admitted to the M.S.W. degree program in the fall and spring semesters. Applications for admission to the M.S.W. program should be filed on prescribed forms both with the College of Social Work and The Graduate School.

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)
513 Integrated Services for the Handicapped . (3)
514 Alcoholism and Problem Drinking ..... (2-3)
523 Social Perspectives on Racism and Ethnic Prejudices in America ..... (2-3)
541 Administration and Supervision in the Social Professions ..... (3)
551 Public Welfare Programs ..... (3)
560 Social Work Practice in Juvenile Justice ... (3)
561 The Role of Social Work in Criminal Justice ..... (3)
571 Social Work and the Law ..... (3)
580 Topical Seminar in Social Work ..... (2-4)
600 Social Work Practice I ..... (4)
601 Social Work Practice II ..... (2)
602 Social Work Practice with Adults ..... (2)
603 Social Work Practice with Children and Youth ..... (2)
604 Social Work Practice with the Aging ..... (2-3)
605 Social Work Practice in Health Services ... (2)
606 Seminar in Criminal Justice Processes ..... (2)
607 Social Work Practice with Families ..... (2)
608 Social Work Practice for Social Reform ... (2)
609 Clinical Social Work Practice ..... (2)
610 Social Services in Black Communities ..... (3)
611 Social Work Practice in Mental Health .. (2-3)
612 Seminar on Social Work Practice with Women ..... (2-3)
613 Urban Ecology and Aging ..... (2-3)
615 Social Work in Work Settings ..... (2-3)
617 Family Violence: Social Work Interventions ..... (2-3)
620 Human Growth and the Social Environment I ..... (4)
621 Human Growth and the Social Environment II ..... (2)
622 Group Theory for Social Workers ..... (2)
623 Social Work Practice with Groups ..... (2-3)
624 Perspectives on Human Sexuality ..... (3)
625 Perspectives on Psychopathology for Social Workers ..... (2-3)
626 Forensic Mental Health: Evaluation and Treatment ..... (2-3)
627 Social Work Intervention in Family Problems ..... (2-3)
630 Social Welfare Policies and Services I ..... (4)
631 Social Welfare Policies and Services II ..... (2)
632 Social Work and the History of Social Reform ..... (2)
633 Social Welfare and the Political Processes ..... (2-3)
634 Comparative Social Welfare Policies and Programs ..... (2-3)
635 Human Service Delivery Systems ..... (3)
636 Management Skills ..... (3)
637 Task Groups in an Organizational Context ..... (2)
640 Graduate Educational Practicum I-A ..... (5)
641 Graduate Educational Practicum I-B ..... (5)
642 Psychological Aspects of Human Aging .... (3)
643 Biomedical Aspects of Aging ..... (3)
650 Research in Social Work ..... (2)
651 Evaluative Research in Social Work ..... (2)
652 Public Policy and Aging ..... (2-3)
662 Income Security and Aging ..... (2-3)
680 Special Problems in Social Work Practice ..... (2-6)
701 Advanced Practice Theory ..... (2)
703 Methods in Social Work Education ..... (3)
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-A ..... (5)
741 Graduate Educational Practicum II-B ..... (5)
745 Advanced Specialized Educational Practicum ..... (2-5)
750 Research in Practice ..... (2)
760 Pro-Seminar in Selected Service Areas ..... (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 Walter Abbott, Dwight B. Billings, Richard Clayton, C.M. Coughenour, Richard C. Edwards, Eugene Gallagher, Lorraine E. Garkovich, Thomas Garrity, James Hougland, Carl Leukefeld, Ann Tickamyer, Paul Warner and Doris Wilkinson. Associate Professors Kathleen Blee, Larry Burmeister, Patrick Mooney, William Skinner, Gerald Slatin and Louis Swanson.

Associate Members: Professor Richard C. Maurer. Associate Professors Gary Hansen, Thomas Ilvento. Assistant Professors Robert Brannon, Patricia Dyk, Thomas Greider, Rosalind Harris, Laurie Hatch, Scott Hunt, Shaunna Scott, Barbara Warner and Kristen Yount.

Joint Appointments: Professors Billie R. DeWalt and Alan J. DeYoung.

Emeritus Professors: Howard Beers, A. Lee Coleman, Thomas Ford, James W. Gladden, William Kenkel, Robert Straus, Willis A. Sutton, Jr., and George Wilbur.

The Sociology graduate program offers graduate work leading to the Master of Arts, Master of Science in Agriculture, and Doctor of Philosophy. Both Plan A and Plan B are offered for the Masters degrees, and an applied community development option is now available within Plan B.

Graduate students pursuing the Ph.D. degree are expected to choose a major area of specialization within sociology and to take work in secondary interests within either sociology or a related area. Areas of specialization in sociology currently stressed are: criminology and deviance (including the sociological study of drug abuse); medical sociology; regional and community studies (especially sociology of Appalachia); rural sociology; and work, gender, and inequality. While core seminars in these specialities are offered, indi-

vidual program flexibility is maintained so that a student's own interests may develop. In addition to passing the qualifying examinations in their specialization, doctoral students must demonstrate competence in theory and methods by passing written qualifying exams in these core areas.

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 are available to graduate students in rural sociology at the Agriculture Experiment Station and opportunities for applied sociology experience are available in the Cooperative Extension Service.

The department participates in the University's Center for Developmental Change which is devoted to interdisciplinary research and training in planned change. Faculty are also involved in interdisciplinary projects sponsored by the University's Appalachian Center. 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.

442G	Topics in Work and Society (Subtitle Required)	(3)
444G	Social Psychology	(3)
451G	Foundations of Sociological Theory	(3)
452G	Contemporary Social Theory	(3)
493G	Social and Cultural Determinants of Economic Growth and Development	(3)
501	Population Analysis	(3)
502	Methods of Demographic Analysis	(3)
509	The U.S. Family in Historical Perspective	(3)
510	Socialization in the Family	(3)
517	Rural Sociology	(3)
525	Religion, Society and Culture	(3)
527	Society and Health	(3)
528	Dimensions of Aging	(3)
532	Race and Ethnic Relations	(3)
533	Social Anthropology	(3)
534	The Southern Appalachians: A Sociological Interpretation	(3)
540	Collective Behavior and Social Movements	(3)
542	Human Relations in Administration of Organizations	(3)
545	Small Group Behavior	(3)
546	Social Factors in Mental Health	(3)
548	Applied Social Psychology	(3)
551	Concepts and Theories in Sociology	(3)
561	Comparative Sociology	(3)
565	Special Problems in Sociology	(1-3)
600	Proseminar in Community	(3)
603	Seminar in Teaching Sociology	(3)
605	Values, Research, and Public Policy	(1)
606	Applied Social Research: An Overview of Types, Uses and Designs	(1)
607	Administering Applied Social Research Programs	(1)
608	Interpreting Applied Social Research	(1)
610	Proseminar in Complex Organization	(3)
620	Sociology of Community Development	(3)
622	Topics and Methods of Evaluation	(3)
630	Proseminar in Deviant Behavior	(3)
635	Proseminar in Work, Gender, and Inequality	(3)
637	Sociocultural Dimensions of Economic Development	(3)
640	Science, Agriculture, and Development	(3)
641	Gender Issues in Development	(3)
650	Proseminar in Social Change and Development	(3)
651	Sociological Theory in Transition	(3)
653	Family Theory	(3)
660	Proseminar in Social Demography	(3)
661	Sociology of Education	(3)
670	Seminar on Role Theory	(3)
679	Proseminar in Social Interaction and Social Psychology	(3)
680	Methods of Social Investigation	(4)
681	Research Design and Analysis	(3)
682	Special Topics in Advanced Sociological Methods	(1-3)
684	Farming Systems Research Methods	(3)
686	Design of Applied Research: Prognostic Studies and Social Forecasting	(2)
687	Social Monitoring	(2)
688	Diagnostic Studies in Social Research	(2)
691	Structure of U.S. Agriculture	(3)
695	Social Ecology	(3)
700	Special Topics in Community	(1-3)
710	Special Topics in Social Organization	(1-3)
727	Seminar on Socio-Cultural Change	(3)
730	Special Topics in Deviant Behavior	(1-3)
731	Seminar in Comparative Social Organization	(3)
735	Topical Seminar in Work, Gender, and Inequality (Subtitle Required)	(3)
738	Seminar: Drug Use as Deviant Behavior	(3)
748	Master's Thesis Research	(0)
749	Dissertation Research	(0)
750	Special Topics in Social Change and Development	(1-3)
751	Seminar in Sociological Theory	(3)
760	Special Topics in Social Demography and Ecology	(1-3)
766	Concepts in Medical Sociology	(3)
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	(3)
775	Seminar in the Family	(3)
776	Seminar in Dependency Behavior	(3)
777	Seminar in Mental Illness Concepts, Research and Policy	(3)
779	Topical Seminar in Social Psychology	(3)
780	Special Problems in Sociology	(1-6)
785	Comparative Health Care Systems	(3)
790	Research in Rural Sociology	(1-3)
792	Research in Sociology	(1-6)
797	Community Development Practicum	(1-9)
798	Internship in Applied Social Research	(1-9)

Soil Science

Graduate Faculty: Professors R.I. Barnhisel, R.L. Blevins, V.P. Evangelou, Wilbur W. Frye, H.F. Massey, R.E. Phillips, J.L. Ragland, J.L. Sims, M.S. Smith and G.W. Thomas. Associate Professors J.H. Grove and A.D. Karathanasis.

Associate Members: Extension Professors Lloyd W. Murdock, Kenneth L. Wells and William O. Thom. Assistant Professor Mark S. Coyne.

Joint Appointments: Professor A.J. Hiatt. Associate Professors George B. Coltharp and Paul J. Kalisz.

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 areas of specialization 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 requirements for the M.S. in Agriculture may be satisfied by substituting twelve additional hours of course work for the thesis (Plan B).

Work leading to advanced degrees must conform to the general rules and regulations of The Graduate School.

Preparation for graduate work in soil science should include some course work in mathematics, chemistry, physical and biological sciences. Students will be expected to make up deficiencies in any of these areas early in the course of their graduate study.

468G	Soil Use and Management	(3)
470G	Fertilizers and Soil Fertility	(3)
501	Reclamation of Disturbed Land	(3)
562	Advanced Genetics	(3)
564	Forest Soils	(3)
566	Soil Microbiology	(3)
573	Soil Morphology and Classification	(3)
575	Soil Physics	(2)
576	Laboratory in Soil Physics	(1)
581	Chemical Analysis of Soils and Plants	(4)
597	Special Topics in Agronomy (Subtitle Required)	(1-3)
660	Advanced Soil Biology	(2)
671	Soil Chemistry	(4)
675	Advanced Soil Physics	(3)
681	Mineralogical and Chemical Analysis of Soils	(4)
712	Advanced Soil Fertility	(4)
721	Pedogenic Processes	(4)
741	Clay Mineralogy	(3)
748	Master's Thesis Research	(0)
749	Dissertation Research	(0)
768	Residence Credit for Master's Degree	(1-6)
769	Residence Credit for the Doctor's Degree	(0-12)
770	Agronomy Seminar	(1)
799	Research in Agronomy	(1-4)

Spanish and Italian Languages and Literatures

Graduate Faculty: Professors John Allen, Brian Dendle, Joseph Jones, Margaret Jones, Daniel Reedy and Edward Stanton. Associate Professors Anibal Biglieri, Stephen Hart and Michael Impey.

Associate Members: Assistant Professors Susan DeCarvalho and Lourdes Torres.

Emeritus Professors: John E. Keller, John Lihani and Gerardo Saenz

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. Supervised teaching experience within the department is a requirement for both the master's and doctoral degrees.

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 SPI 603 (Critical and Historical Perspectives on Medieval, Renaissance and Golden Age Literature), SPI 604 (Critical and Historical Perspectives on Modern Spanish Literature), SPI 605 (Critical and Historical Perspectives on Spanish American Literature); 9 credits in Hispanic Civilization and Linguistics; 12 hours of course work (plan B) or 6 hours of course work and an acceptable thesis (plan A), which may be selected according to a choice of options in either Hispanic Literature or Hispanic Civilization and Linguistics. The M.A. written and oral 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.

Candidates are to devise a program of studies and research around the major area of specialization in which they expect to write the dissertation. A minor area and two allied fields must be selected as support divisions for the major area. Minimum graduate credit expectations are 24 credit hours in the combined Major and Minor areas and 15 credit hours in the Allied Fields; 6 graduate credits in Hispanic Linguistics and in each of the two remaining areas not chosen as Major, Minor, or Allied Fields. Two seminars (one in the major field) are required.

Specialization by area: 1) Medieval Spanish Literature; 2) Renaissance and Golden Age Spanish Literature; 3) Eighteenth and Nineteenth Century Spanish Literature; 4) Twentieth Century Spanish Literature; 5) Colonial and Nineteenth Century Spanish American Literature; 6) Twentieth Century Spanish American Literature.

Specialization by genre or Hispanic Linguistics: 1) Hispanic poetry; 2) Hispanic prose fiction; 3) Hispanic drama; 4) Hispanic Linguistics. (The term Hispanic includes both Peninsular and Spanish American Studies.)

The qualifying examination consists of a three-hour written examination over a research area in the special field with specific concentration on the topical area of the dissertation, and two six-hour examinations. The first will cover all aspects of the major and minor areas; the second will cover aspects of the major and minor areas as well as questions on the allied fields. The two-hour oral will cover the dissertation area, the major and minor areas, and the allied fields.

438G	Literature of Social Protest in Spanish America	(3)
443G	Survey of Italian Literature I	(3)
444G	Survey of Italian Literature II	(3)
460G	Cervantes in Translation	(3)
461G	Rumanian I	(3)
462G	Rumanian II	(3)
466G	Literary Currents of 20th Century Spanish Literature in Translation	(3)
468G	Twentieth Century Spanish American Literature in Translation	(3)
501	Spanish Phonetics, Pronunciation and Phonemics	(3)
502	Survey of the Spanish Language	(3)
503	Structure of the Spanish Language	(3)
504	Advanced Spanish Grammar and Composition	(3)
506	Introduction to Comparative Spanish, Portuguese, and Italian Linguistics	(3)
512	Spanish Culture Through the 17th Century	(3)
513	Modern Spanish Culture	(3)
514	Studies in Spanish American Culture	(3)
522	Survey of the Comedia I	(3)
523	Survey of the Comedia II	(3)
532	The Generation of 1898	(3)
541	Spanish American Short Story	(3)
551	Tutorial Seminar for Majors in Spanish	(1)
553	Teaching of Spanish	(3)
561	Old Italian	(3)
563	Studies in Dante	(3)
566	Literature of the Italian Renaissance	(3)
569	Topics in Italian Language, Literature or Culture (Subtitle Required)	(3)
591	Dante in Translation	(3)
593	Modern Italian Literature in Translation	(3)
601	Old Spanish: Phonology and Paleography	(3)
602	Old Spanish: Morphology and Syntax	(3)
603	Critical and Historical Perspectives on Medieval, Renaissance and Golden Age of Spanish Literature	(3)
604	Critical and Historical Perspectives on Modern Spanish Literature	(3)
605	Critical and Historical Perspectives on Spanish American Literature	(3)
611	Medieval Spanish Literature I	(3)
612	Medieval Spanish Literature II	(3)
613	Spanish Epic and Long Narrative Poetry	(3)
614	The Spanish and Spanish American Ballad	(3)
615	Spanish Poetry of the Thirteenth, Fourteenth, and Fifteenth Centuries	(3)
616	Early Brief Narrative-Thirteenth, Fourteenth, Fifteenth Century	(3)
617	Spanish Medieval and Renaissance Drama	(3)
621	The Spanish Novel to Cervantes	(3)
622	Cervantes I	(3)
623	Cervantes II	(3)
624	The Spanish Novel from Cervantes to Romanticism	(3)
625	Mystic and Ascetic Writers of the Sixteenth and Seventeenth Centuries	(3)
626	Lope de Vega and Tirso de Molina	(3)
627	The Theatre of Tirso de Molina	(3)
628	The Theatre of Calderon de la Barca	(3)
629	Spanish Poetry of the Sixteenth and Seventeenth Centuries	(3)
631	The Romantic Movement in Spain	(3)
632	Spanish Drama from the Generation of 1898 to the Present	(3)
633	The Spanish Novel of the Nineteenth Century	(3)
634	Prose Fiction from the Generation of 1898 to the Present	(3)
635	The Spanish Essay from the Eighteenth Century to the Present	(3)
636	Spanish Poetry from the Eighteenth Century through the Generation of 1898	(3)
637	Spanish Poetry from the Generation of 1927 to the Present	(3)
641	Spanish American Drama	(3)
642	Spanish American Poetry: Colonial Period to Independence	(3)
643	Spanish American Poetry: 1800-1910	(3)
644	Spanish American Poetry: 1910 to Present	(3)
645	Spanish American Novel: 1800-1910	(3)
646	Spanish American Novel: 1910-1940	(3)
647	Spanish American Novel: 1940 to Present	(3)
648	Literary Currents in Contemporary Spanish American Fiction	(3)
649	Spanish American Essay	(3)
651	Bibliography and Methods of Research	(3)
748	Master's Thesis Research	(0)
749	Dissertation Research	(0)
768	Residence Credit for Master's Degree	(1-6)
769	Residence Credit for Doctor's Degree	(0-12)
770	Seminar in Spanish Studies	(3)
771	Seminar in Spanish Linguistics	(3)
772	Seminar in Medieval Spanish Literature	(3)
773	Seminar in Golden Age Non-Dramatic 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	(1-3)

Special Education

Graduate Faculty: Professors Edward Blackhurst, Melton Martinson and Charles M. Nelson. Associate Professors William Berdine, Donald Cross, Deborah Bott Slaton.and Kay Stevens.

Associate Members: Assistant Professors Belva C. Collins, Jo Fleming, Mary Louise Hemmeter and John Schuster.

Joint Appointment: Associate Professor Judith Page.

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. Trainable Mentally Handicapped
3. Severely/Profoundly Handicapped

4. Director 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:

1. Early Childhood Education for the Handicapped
2. Severely/Profoundly Handicapped
3. Mild Learning and Behavior Disorders
4. Severe Learning and Behavior Disorders
5. Trainable Mentally Handicapped

The degree programs that are offered lead to the Master of Arts in Education or Master of Science in Education, Specialist in Education and Doctor of Education Degrees. Within the framework of College and University requirements, all advanced 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:

1. 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.
2. Recommendation by at least one member of the Graduate Faculty.
3. A completed program plan.
4. No incomplete grades.

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

It should be noted that these are minimum requirements. Most programs of study exceed the minimums. **The Director of Graduate Studies should be contacted to obtain the specific number of courses required for each program of studies.**

At least 15 semester hours must be earned in courses at the 600-700 level (excluding practica) and a comprehensive final examination or thesis defense is required. All students are also required to take one course in statistics, methodology of educational research, or single subject research design. Students must also take a course in humanistic studies. With the exception of speech pathology students, a 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.

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.

Financial assistance is available, on a competitive basis, to graduate students in special education. Students may apply for graduate assistantships at all levels of graduate study. These are awarded from funds granted to the Department by the Office of Special Education and Rehabilitation Services, U.S. Department of Education.

Assistantships 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.

502	**Development and Evaluation of Instructional Materials in Special Education**	(3)
510	**Early Childhood Education of the Handicapped**	(3)
513	**Legal and Parental Issues in Special Education**	(3)
515	**Career Education in Special Education**	(2)
516	**Principles of Behavior Management and Instruction for Exceptional Learners**	(3)
517	**Prosthetics for Handicapped Children**	(3)
520	**Survey of Severe Developmental Disabilities**	(3)
527	**Characteristics of the Orthopedically and Neurologically Handicapped**	(3)
528	**Educational Assessment of the Mildly Handicapped**	(3)
529	**Educational Programming for the Mildly Handicapped**	(3)
530	**Characteristics of the Mentally Retarded**	(3)
549	**Practicum in the Trainable Mentally Handicapped Classroom**	(4)
558	**Problems in Special Education: (Variable Topic)**	(1-9)
570	**Behavior Disorders of Exceptional Children**	(3)
600	**Survey of Special Education**	(3)
601	**Behavioral Management of Exceptional Children**	(3)
602	**Administration and Supervision in Special Education**	(3)
603	**Behavioral Consultation in Schools**	(3)
610	**Educational Evaluation of Exceptional Children**	(3)
611	**Educational Remediation of Learning Disabilities of Exceptional Children**	(3)
612	**Advanced Practicum in Special Education**	(3-6)
616	**Vocational Programming for Handicapped Youth and Adults**	(3)
620	**Instructional Programming in Early Childhood Special Education**	(3)
621	**Issues in Early Childhood Education of the Handicapped**	(3)
623	**Practicum in Early Childhood Education of the Handicapped**	(3-9)
630	**Methods for Teaching the Severely Handicapped**	(3)
631	**Basic Skill Training for the Severely Handicapped**	(3)
632	**Advanced Practicum in Severe Developmental Disabilities**	(1-12)
633	**Single Subject Research Designs in Special Education**	(3)
701	**Proseminar for Special Education Leadership Personnel**	(1)
710	**Seminar in Mild Learning and Behavioral Disorders**	(3)
711	**Seminar in Severe Developmental Disabilities**	(3)
712	**Seminar in Special Education Professional Services**	(3)
720	**Seminar in Special Education Teacher Preparation**	(3)
721	**Practicum in Special Education Personnel Preparation**	(1-9)
730	**Seminar in Special Education Administration**	(3)
731	**Practicum in Special Education Administration**	(1-9)
748	**Master's Thesis Research**	(0)
749	**Dissertation Research**	(0)
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)**	(1-3)
789	**Independent Study in Special Education**	(1-6)
799	**Research Techniques in Special Education**	(3)

Statistics

Graduate Faculty: Professors David Allen, Vasant Bhapkar, Zakkula Govindarajulu, R.J. Kryscio, and Harlley McKean. Associate Professors William S. Griffith, Cidambi Srinivasan and Constance Wood.

Associate Members: Assistant Professors William Rayens, Richard Stockbridge, Arnold J. Stromberg, Klaus Utikal and Mai Zhou.

Joint Appointment: Professor Paul Cornelius.

Emeritus Professor: Richard L. Anderson

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 statistical theory and methods while affording options to suit the student's interests. The statistics Ph.D. is well-suited for academic, business, govern-

ment and industrial positions. In addition to formal course work and research training, the advanced student has opportunities to gain valuable practical experience by participating in consulting activities under faculty supervision.

Course work is available in areas associated with statistics such as biological modelling, computer science, control theory, econometrics, mathematics and operations research.

A student intending to pursue a master's degree 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. A graduate level course in real analysis (equivalent of Mathematics 571) is a prerequisite for the Ph.D. core curriculum. 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 degree students consists of the following courses:

STA 503 ..... (3)
STA 524 ..... (3)
STA 531 ..... (4)
STA 601 ..... (3)
STA 603 ..... (4)
STA 624 ..... (3)

Programs of study for Plan B require a total of at least 35 semester hours, which should include the equivalent of the six courses in the core curriculum and at least 15 additional credit hours. Of these 15 credit hours, at least 6 should be from the following list of statistics courses:

612, 616, 621,643, 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 requirements that at least 18 hours for Plan B and 15 hours of non-thesis courses for Plan A must be at the 600 level or higher. The free electives courses can be selected from a variety of courses both within and outside the Department of Statistics. 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 departmental written examination on the core curriculum. These exams are normally administered in August.

DOCTORAL PROGRAM

The doctorate is a research degree that demonstrates independent and comprehensive scholarship and is granted on the basis of broad statistical competence and the exhibition of creative ability. There are thus two components to the doctoral program: 1) a comprehensive program of probability, statistics and related courses, and (2) in depth research in a particular area and the preparation, under faculty supervision, of a dissertation.

The Ph.D. program requires a total of 59 credit hours of course work. The core curriculum consists of the following courses:

STA 503, STA 524, STA 531, STA 601, STA 603, STA 701, STA 702, STA 703, STA 704, MA 571 and an additional two courses selected by the Director of Graduate Studies.

A student will normally require two years of study to complete the core requirements. Beyond the core, the student must take at least 18 credit hours at the 600-700 level of which at least 9 hours must be in statistics courses including 3 hours of STA 690 but excluding STA 692.

A student must pass the master's examination at a Ph.D. level of performance to be eligible for the doctoral qualifying examination. The qualifying examination consists of two parts: Part I is a common written examination taken by all Ph.D. students, Part II is an oral examination administered to each student individually by the student's Advisory Committee. The written part of the qualifying examination consists of three areas:

Area 1: STA 524, STA 703, STA 704, MA 571
Area 2: STA 531, STA 601, STA 701, STA 702
Area 3: STA 503, STA 603 and two additional courses selected by the Director of Graduate Studies.

A student must demonstrate competence in two of the three areas.

When a student passes the qualifying examination the Advisory Committee, under the leadership of the student's Major Professor, supervises the subsequent specialized program of study that culminates in the preparation of the doctoral dissertation.

Areas of current research interest are:

a) Mathematical statistics including statistical inference, categorical data analysis, non-parametric models, asymptotic theory, sequential analysis, decision theory.
b) Statistical analysis and design including the design of experiments, variance components models, linear and non-linear models.
c) Stochastic processes including applications of probability in biology, queueing and storage systems, reliability.

All students, master's and doctoral, will be required to take part in an internship program. This will usually consist of teaching (three of six semester hours) or an equivalent amount of work in the Mathematical Sciences Laboratory.

417G Principles of Operations Research II ..... (3)
422G Basic Statistical Theory II ..... (3)
424G Basic Probability and Distribution Theory (3)
503 Introduction to Statistical Methods ..... (3)
515 Mathematical Programming and Extensions ..... (3)
524 Probability ..... (3)
525 Introductory Statistical Inference ..... (3)
531 Theory of Statistical Inference I ..... (4)
570 Basic Statistical Analysis ..... (4)
601 Theory of Statistical Inference II ..... (3)
603 Introduction to Linear Models and Experimental Design ..... (4)
612 Sequential Analysis ..... (3)
616 Design and Analysis of Sample Surveys .... (3)
619 Problems Seminar in Operations Research ..... (3)
621 Nonparametric Inference ..... (3)
624 Applied Stochastic Processes ..... (3)
626 Time Series Analysis ..... (3)
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)
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)
676 Quantitative Inheritance in Plant Populations ..... (3)
677 Applied Multivariate Methods ..... (3)
678 Statistical Genetics ..... (3)
679 Design and Analysis of Experiments II ..... (3)
681 Statistical Techniques for Engineers and Physical Scientists ..... (3)
690 Seminar in Statistics ..... (1)
691 Special Topics in the Planning and Analysis of Experiments (Subtitle Required) ..... (1-3)
692 Statistical Consulting ..... (3)
695 Special Topics in Statistical Theory (Subtitle Required) ..... (1-3)
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)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
762 Multivariate Analysis II ..... (3)
768 Residence Credit for Master's Degree ... (1-6)
769 Residence Credit for the Doctor's Degree ..... (0-12)

Theatre

Graduate Faculty: Professor James W. Rodgers. Associate Professor Geraldine Maschio.

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 will have had courses approximating those required for a B.A. 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)
524	**Dialects for the Stage**	(3)
525	**Vocal Production for the Stage II**	(3)
530	**Theatre Directing II**	(3)
590	**Production Practicum**	(1)
591	**Performance Practicum**	(1)
596	**Summer Theatre**	(1-6)
600	**Readings in Theatre**	(3)
625	**Advanced Styles of Acting**	(3)
660	**Studies in Technical Theatre: Production**	(3)
661	**Studies in Technical Theatre: Lighting**	(3)
692	**Studies in Directing**	(1-3)
730	**Directing**	(3)
770	**Seminar in Theatre**	(3)
780	**Independent Study in Theatre**	(1-3)

Toxicology

Graduate Faculty: Professors Edward J. Kasarskis, Craig McClain, Hartmut H. Malluche and Muneyasu Urano. Associate Professors Peter R. Oeltgen, Larry Robertson and Steven Shedlofsky. Adjunct Professor Abraham Hsie. Adjunct Associate Professor Gary Gairola.

Associate Members: Assistant Professors Jeffrey Black, Harry G. Enoch, S. Niranjan Goud and Daret St. Clair. Adjunct Assistant Professors Scott Hamann and Lowell Jeffrey Lawrence.

Joint Appointments: Professors M.H. Aleem, Wesley J. Birge, Jerry W. Blake, Robert Blouin, Shung K. Chan, Ching K. Chow, Peter Crooks, Douglas L.Dahlman, Donald F. Diedrich, George A. Digenis, James W. Flesher, Arthur Frank, Mark Gillespie, Ramesh Gupta, Alan Kaplan, William C. Lubawy, Gerald A. Rosenthal, Malcolm R. Siegel, Thomas Tobin, Thomas Vanaman, Mary Vore, David Watt and Robert A. Yokel. Associate Professors Gilbert Boissonneault, Geza Bruckner, John Carney, Donald Cohen, Vincent Gallicchio, Howard Glauert, Bernhard Hennig, Edgar T. Iwamoto, Yih-Loong Lai, Patrick J. McNamara, John Slevin and Peter Wedlund. Assistant Professors Lisa Cassis, Linda Dwoskin and Joseph Holtman. Adjunct Associate Professor John Dougherty.

Emeritus Professors: T. Z. Csaky and H.A. Gordon.

Toxicology is the science of poisons and their interactions with living systems. The University of Kentucky Graduate Center for Toxicology trains individuals to use 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. The center has five core and fifty jointly-appointed faculty, who are drawn from several departments and colleges including Agriculture, Biological Sciences, Chemistry, Medicine, Pharmacy, Pharmacology, Preventive Medicine and Radiation Medicine. The program offers both Ph.D. and M.S. degrees in Toxicology. The Center's primary toxicological emphases are in the areas of Environmental Toxicology, Immunotoxicology, and Molecular Mechanisms of Toxicology with areas of special study available to students in behavioral toxicology, clinical and forensic toxicology, environmental medicine and chemistry, equine toxicology, genetic and biochemical toxicology, inhalation toxicology, mammalian toxicology, neurotoxicology, nutritional toxicology, oncology, pesticide toxicology, radiation toxicology, and reproductive toxicology.

The University of Kentucky Graduate Center for Toxicology (G.C.T.) has been in existence for more than twenty years and has awarded more than 100 graduate degrees. Program trainees include the 1988 Burroughs Welcome Scholar in Toxicology. Many G.C.T. graduates have gone on to take important positions in academia, government and business.

The current student body consists of forty predoctoral fellows, three postdoctoral fellows and eight summer students. The average entering class size is approximately fifteen. Support stipends in the past have included eight full ($11,000/year) and partial fellowships per year. The Center also provides minority fellowships, National Institute of Environmental Health Sciences Pre- and Post-doctoral Fellowships, research assistantships and teaching assistantships. Outstanding candidates may also qualify for Academic Excellence Supplements which offer stipends over and above regular fellowship support.

The G.C.T. is centrally located on campus and within easy walking distance of all major research units and colleges. Excellent research facilities are available and include hybridoma and transgenic mouse facilities, a macromolecular structure facility and mass spectrometry, nuclear magnetic resonance, and electron microscopy facilities. The G.C.T. library includes word processing, computing, and slide generating capabilities.

The University of Kentucky and the Graduate Center for Toxicology have a strong commitment to cultural diversity. The programs offers excellent minority fellowships and currently has students enrolled from four under-represented groups.

Applicants should have strong undergraduate preparation in chemistry, biology and mathematics. Applicants should be graduates of accredited colleges with an appropriate baccalaureate degree (e.g. chemistry, biological sciences, etc.), hold a minimum grade-point average of 3.0 on a 4.0 scale and have a combined Graduate Record Examination score (verbal and quantitative) of 1100 or more.

The Toxicology Graduate Program is included in the Academic Common Market of the Southern Regional Education Board. Anyone interested should direct inquiries to: University of Kentucky, The Graduate Center for Toxicology, 204 Funkhouser Building, Lexington, KY 40506-0054. Telephone: (606) 257-3760, Fax: (606) 258-1059.

509	**Contemporary Toxicology**	(3)
606	**Insecticide Chemistry and Toxicology**	(3)
640	**Detoxification Mechanisms**	(3)
650	**Cellular and Histotoxicology**	(2)
660	**Clinical Toxicology and Drug Monitoring**	(3)
670	**Chemical Carcinogenesis**	(3)
672	**Behavioral Pharmacology and Toxicology**	(2)
680	**Advanced Toxicology**	(5)
690	**Practical Analytical Toxicology**	(3)
748	**Master's Thesis Research**	(0)
749	**Dissertation Research**	(0)
768	**Residence Credit for the Master's Degree**	(1-6)
769	**Residence Credit for the Doctor's Degree**	(0-12)
770	**Toxicology Seminar**	(0-1)
780	**Special Problems in Toxicology**	(2)
790	**Research in Toxicology**	(1-12)

Veterinary Science

Graduate Faculty: Professors George P. Allen, Ernest F. Bailey, Charles J. Issel, Douglas H. Leach, E.T. Lyons, W.H. McCollum, James Rooney, T.W. Swerczek, John F. Timoney, Peter Timoney and Thomas Tobin. Associate Professor Barry Fitzgerald.

Associate Members: Professors James M. Donahue, Lenn R. Harrison, C.B. Hong and Kockananda Poonacha. Associate Professors Ralph Giles and Mary L. Vickers. Associate Extension Professor David G. Powell. Assistant Professors Thomas M. Chambers, Ernest Cothran, David E. Granstrom, Karen McDowell, Marie Petrites-Murphy, Kent N. Thompson and Kathryn Trembicki.

Emeritus Professor: John Bryans.

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, immunogenetics, biomechanics, parasitology, reproductive physiology, pharmacology and toxicology, microbiology 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)
690	**Practical Analytical Toxicology**	(3)
748	**Master's Thesis Research**	(0)
749	**Dissertation Research**	(0)
768	**Residence Credit for the Master's Degree**	(1-6)
769	**Residence Credit for Doctor's Degree**	(0-12)
770	**Veterinary Science Seminar**	(1)
781	**Correlative Pathology**	(1-3)
785	**Advanced Veterinary Parasitology**	(3)
786	**Advanced Veterinary Pathology**	(3)
791	**Techniques in Veterinary Microbiology**	(1-9)
792	**Techniques in General Veterinary Pathology**	(1-9)
793	**Techniques in Veterinary Parasitology**	(1-9)

Vocational Education

Graduate Faculty: Professors Charles Byers, Sandra Miller and Clayton Omvig. Associate Professors Kawanna Simpson and Rodney Tulloch.

Associate Member: Assistant Professors Douglas Smith and Patricia I. Wilson.

Emeritus Professors: Herbert Bruce, Bernard Fagan, Carl Lamar, Leonard McDowell, David McMurtry, and Vernon Musselman.

The Department of Vocational Education offers programs leading to the Master of Arts in Education in the areas of business education and distributive education and the Master of Science in Education (agricultural education, business education, home economics education, industrial education, and vocational education). Additionally, the Department offers advanced graduate 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 vocational education in such areas as: administration, curriculum, teacher education, research, and vocational guidance.

In addition, the department offers programs leading to: (1) the professional certification for supervision and coordination of vocational education, and certification for vocational school principal, (2) Rank II classification for Kentucky teachers through the Planned Fifth-Year Program, and (3) Rank I classification for Kentucky teachers.

For further information, contact the Department of Vocational Education.

MASTER'S DEGREE PROGRAMS IN VOCATIONAL EDUCATION

The focus of the master's degree programs in vocational education is on the further development of competencies needed as a teacher. However, provisions are made to accommodate a wide variety of individuals from diverse settings such as administration, curriculum, corporate or military training, or cooperative extension.

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 is required with a minimum of 15 hours of course work at the 600 level or above. Students may choose either a thesis or a non-thesis option.

Teachers seeking a Standard Certificate must meet the above criteria and the university's approved certification program requirements which specify work in professional education and course work related to the individual's teaching specialty. (Contact the Department of Vocational Education to obtain Programs of Study and certification requirements).

THE SPECIALIST (Ed.S.) AND DOCTORAL (Ed.D.) DEGREE PROGRAMS IN VOCATIONAL EDUCATION

The specialist degree is provided to those in vocational education who desire a degree above the master's but not the doctorate. The student may specialize in a number of areas, such as: the teaching specialization, administration, curriculum, disadvantaged and handicapped learners, research, or vocational guidance. The program is planned individually with each student and consists of a minimum of 30 semester hours above the master's degree, 15 of which must be at the 600 level or above. A research paper must also be completed and defended before a faculty committee.

The doctoral program in vocational education is designed to prepare individuals for leadership positions in the field. The program is research based and provides for development of a broad knowledge of vocational education and in-depth preparation for careers in teacher education, research, curriculum development, vocational administration, and career counseling. The program requires completion of at least 42 semester hours beyond the master's degree, passage of comprehensive examinations, and the preparation and defense of a doctoral dissertation.

For specific information, contact the Director of Graduate Studies in Vocational Education.

CERTIFICATION FOR SUPERVISION AND COORDINATION, OR FOR PRINCIPAL IN VOCATIONAL EDUCATION

For either type of administrative certification in vocational education, the student must complete two years of teaching in a vocational teaching assignment, and a minimum of 15 semester hours of graduate level courses above and beyond the course requirements for the 10-year teaching certificate. Courses are to be selected from those listed below, including at least one course in each of the following four curriculum areas.

CURRICULUM AREAS AND COURSES

I. Organization and Administration of Vocational Education

EDV 535	Principles and Philosophy of Vocational Education	(3)
EDV 694	Administration of Vocational Education (Required for Principal)	(3)
EDV 779	Seminar in Vocational Education	(1-3)

II. Administration and Supervision of Education Personnel

EDA 601	Administration and Educational Programs	(3)
EDA 633	Administration and Supervision of Instructional Programs	(3)
EDA 634	Administration of Educational Personnel (Required in this Area)	(3)
EDV 608	Internship in Vocational Education	(6)
EDV 693	Supervision in Vocational Education	(3)

III. Program Planning, Research, and Evaluation in Vocational Education

EDV 529	Evaluation in Industrial and Distributive Education	(2)
EDV 695	Special Problems in Vocational Education	(3)
EDP 656	Methodology of Educational Research	(3)
EDP 660	Research Design and Analysis in Education	(3)
EPE 620 or 621	Topics and Methods of Evaluation	(3)

IV. Vocational Guidance, Industrial Psychology, Human Relations

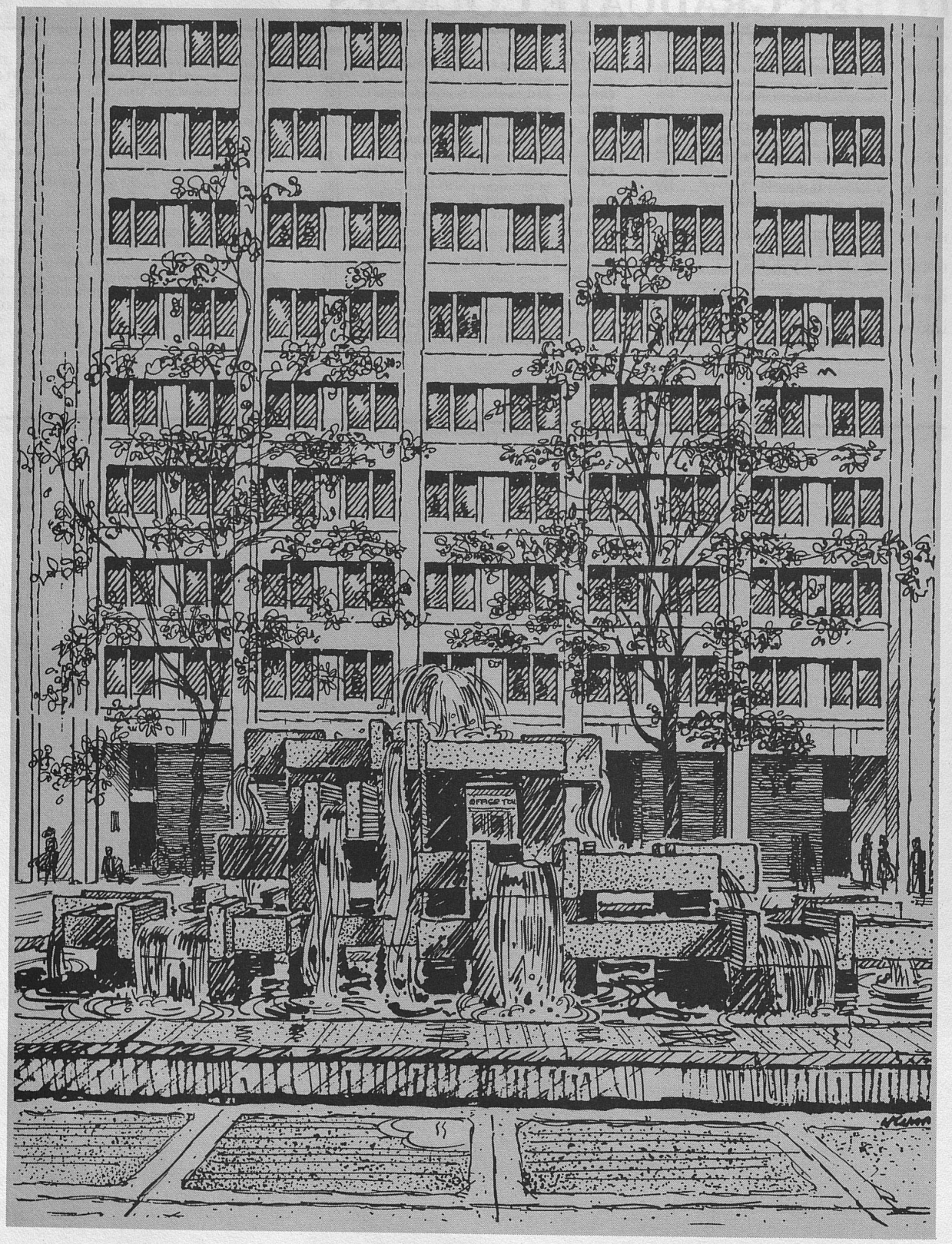
EDV 523	Vocational Guidance	(3)
EDV 702	Career Development, Research Theories and Practice	(3)
PSY 502	Introduction to Industrial Psychology	(3)
PSY 503	Psychology of Industrial Personnel Procedure	(3)
PSY 545	Small Group Behavior	(3)
SOC 542	Human Relations in Administration	(3)
EDP 666	Psychology of Career Counseling	(3)

For information about the certification program, contact the Director of Graduate Studies.

BUS 519 Records Management ..... (3)
BUS 556 Business Communications ..... (3)
IND 525 Supervised Work Experience in Business Industry ..... (3)
511 Teaching Secretarial Subjects ..... (1)
512 Teaching Accounting Subjects ..... (1)
513 Teaching Typewriting and Clerical Practice ..... (3)
514 Teaching General Business Subjects in the Secondary Schools ..... (3)
515 Problems in Distributive Education ..... (2-3)
516 Problems of the Coordinator in Vocational Education ..... (2-3)
517 Determining Teaching Content in Distributive Education ..... (2-3)
518 Methods in Industrial Education ..... (2-3)
523 Vocational Guidance ..... (2-3)
528 Technique of Teaching Distributive Education ..... (2-3)
529 Evaluation in Industrial and Distributive Education ..... (2)
535 Principles and Philosophy of Vocational Education ..... (2-3)
536 Surveys in Industrial Education ..... (2)
537 Special Problems in Industrial Education ..... (1-3)
540 Supervision of Student Teaching in Industrial Education ..... (2)
580 Materials and Methods for Teaching Vocational Agriculture ..... (3)
583 Experience Programs in Vocational Agriculture ..... (3)
586 Methods of Curriculum Development in Home Economics Education ..... (3)
588 Home Economics Education Program ..... (3)
590 Problems in Home Economics Education (3)
608 Internship in Vocational Education ..... (6)
615 Problems in Business Education ..... (3)
618 The Social Business Subjects in High School ..... (3)
623 Administration and Supervision of Business Education ..... (3)
626 Classification and Possible Use of Community Resources in Business Education ..... (3)
640 Advanced Methods in the Secretarial Subjects ..... (3)
641 Appraisal of Current Literature in Vocational Education ..... (3)
670 Method in Teaching Vocational Education .. (3)
671 Youth Organizations in Vocational Education ..... (3)
672 Determining Content in Vocational Agriculture ..... (3)
678 Selecting Teaching Materials ..... (3)
679 Adult Education in Agriculture ..... (3)
680 Directing Occupational Experience in Agriculture ..... (3)
681 Teaching Farm Shop ..... (3)
684 Current Trends in Home Economics Education ..... (3)
685 Home Economics Curriculum Construction ..... (3)
686 Evaluation in Home Economics Education ..... (3)
687 Home Economics Supervision ..... (3)
693 Supervision in Vocational Education ..... (3)
694 The Administration of Vocational Education ..... (3)
695 Special Problems in Vocational Education ..... (3)
702 Career Development: Research, Theories and Practices ..... (2-3)
748 Master's Thesis Research ..... (0)
749 Dissertation Research ..... (0)
768 Residence Credit for the Master's Degree ..... (1-6)
769 Residence Credit for the Doctor's Degree ..... (0-12)
779 Seminar in Vocational Education ..... (1-3)
789 Independent Work in Vocational Education ..... (1-3)
799 Research in Vocational Education ..... (1-3)

OTHER GRADUATE COURSES

A&S 500 Special Course (Subtitle Required) ..... (1-3)
CEX 501 Principles of Cooperative Extension ..... (3)
CLT 560 Comparative Literature: Grecian and Roman ..... (3)
CLT 561 Comparative Literature: Medieval and Renaissance ..... (3)
EGR 537 Numerical Analysis ..... (3)
EGR 599 Topics in Engineering (Subtitle Required) ..... (1-3)
EGR 611 Boundary Element Methods in Engineering ..... (3)
EGR 621 Finite Element Analysis in Engineering ..... (3)
EGR 622 Advanced Finite Element Analysis in Engineering ..... (3)
EGR 680 Engineering Applications of Stochastic Differential Equations ..... (3)
EGR 780 Topics in Engineering (Subtitle Required) ..... (1-3)
ES 600 Environmental Systems Seminar ..... (1)
ES 610 Engineering and Physical Sciences in Environmental Systems ..... (3)
ES 620 Natural, Biological and Medical Sciences in Environmental Systems ..... (3)
ES 630 Legal, Social and Economic Sciences in Environmental Systems ..... (3)
GRN 513 Geriatric Pharmacy ..... (3)
GRN 612 Biology of Aging ..... (3)
GRN 643 Biomedical Aspects of Aging ..... (3)
IND 525 Supervised Work Experience in Business or Industry ..... (3)
ISP 599 Study Abroad ..... (1)
LIN 515 Phonological Analysis ..... (3)
LIN 516 Grammatical Analysis ..... (3)
LIN 517 Special Topics in Linguistics (Subtitle Required) ..... (3)
LIN 519 Historical Linguistics ..... (3)
MD 500 Special Topics Course ..... (1-3)
MFS 505 Modeling of Manufacturing Processes and Machines ..... (3)
MFS 605 Systems for Factory Information and Control ..... (3)
MFS 606 Seminar and Project in Manufacturing Systems Engineering ..... (3)
MFS 780 Special Problems in Manufacturing Systems Engineering ..... (3)
MT 501 Seminar in Advanced Hematology ..... (2)
NEU 605 Contemporary Neurosciences ..... (4)
PAT 660 Clinical Toxicology and Drug Monitoring ..... (3)
PAT 698 Clinical Microbiology ..... (3)
WS 600 Topics in Women's Studies (Subtitle Required) ..... (3)



COUNCIL ON HIGHER EDUCATION RESIDENCY CLASSIFICATION POLICY

University Registrar
University of Kentucky
Lexington, KY 40506-0033

Council on Higher Education
Administrative Regulation
Classification of Residency for
Admission and Tuition Assessment
Purposes

13 KAR 2:045
RELATES TO: KRS 164.020
STATUTORY AUTHORITY: KRS 164.020, KRS 164.030

NECESSITY AND FUNCTION: Public institutions of higher education were established and are maintained by the Commonwealth of Kentucky primarily for the benefit of qualified residents of Kentucky. The substantial commitment of public resources to higher education is predicated on the proposition that the state benefits significantly from the existence of an educated citizenry. As a matter of policy, access to higher education is provided so far as feasible at reasonable cost to residents of the state. It is the long-standing practice of the Council on Higher Education to require students who are not Kentucky residents to meet higher admission standards and to pay a higher level of tuition than resident students. The Commonwealth of Kentucky uses residency requirements to determine items such as voting rights, income tax liability, and employment in certain occupations. The requirements vary in form and substance for each of these uses. The purpose of this regulation is to establish a process and corresponding criteria for the residency classification of students seeking admission to, or enrolled in, public institutions of higher education. Furthermore, it is the intent of the Council on Higher Education that this regulation be interpreted and applied in a uniform manner, as described herein, in determining whether students shall be classified as residents or nonresidents for admission and tuition assessment purposes.

Section 1. Definitions.

The language of this regulation on residency classification contains some legal terms as well as everyday terms which have specialized meaning in the determination of residency for admission and tuition assessment purposes. The following definitions apply in the interpretation and application of this regulation:

(1) "Academic term" means a division of the school year during which a course of studies is given, e.g., semester, quarter, or intersession.

(2) Enrollment at a college or colleges shall be deemed "continuous" if the person claiming "continuous" enrollment continues to be enrolled at the same degree level for consecutive terms (excluding summer) since the beginning of the period for which continuous enrollment is claimed. The sequence of continuous enrollment is broken if the student fails to enroll, except under extenuating circumstances beyond the student's control, e.g., serious personal illness or injury, or illness or death of parent.

(3) "Degree level" means one (1) of the following:

(a) Undergraduate (enrollment in courses or programs which result in the baccalaureate degree or lower);

(b) Graduate (enrollment in courses or programs which result in a postbaccalaureate degree other than the first-professional degrees in law, medicine, and dentistry); or

(c) Professional (enrollment in courses or programs which result in a professional degree in law, medicine, or dentistry.)

(4) The term "dependent person" means a person who is unable to meet all of the criteria listed in subsection (9) of this section.

(5) "Documentation" refers to the submission of source documents, e.g., official letters, papers, or sworn statements. As a general rule, evidence cited as the basis for domicile shall be documented, and the required documentation shall accompany the application for residency classification.

(6) The term "domicile" means a person's true, fixed, and permanent home. It is the place where the person intends to remain, and to which the person expects to return without intending to establish a new domicile elsewhere. "Legal residence" and domicile convey the same notion of permanence and are used interchangeably.

(7) "Full-time employment" means employment for at least forty-eight (48) work weeks at an average of at least thirty (30) hours per week.

(8) "Half-time enrollment" means any enrollment during an academic term which is equal to one-half (1/2) of full time as determined by the governing board of the institution.

(9) The term "independent person" means a person who meets all of the following criteria. An independent person is one:

(a) Whose parent has not claimed such person as a dependent on federal or state income tax returns for the tax year preceding the date of application for reclassification of residency status;

(b) Who demonstrates no financial dependence upon parent(s); and

(c) Whose parents' income is not taken into account by any private or governmental agency furnishing educational financial assistance to the person, including scholarships, loans, and other assistance.

(10) The terms "institution", "institution of higher education", or "college" refer to all institutions, public or private, offering instruction and conferring degrees beyond the secondary school level, such as four (4) year colleges or universities, seminaries, two (2) year institutions (community colleges and junior colleges), and postsecondary vocational-technical schools.

(11) The term "nonresident" means a person who currently maintains legal residence outside Kentucky or has not met the criteria for establishing residency as defined in this regulation.

(12) The term "parent" means one (1) of the following:

(a) a person's father or mother, or

(b) a court-appointed legal guardian.

The term "parent" shall not apply if the guardianship has been established primarily for the purpose of conferring the status of resident on a person.

(13) The term "resident" means a person who is a legal resident of Kentucky based upon fulfilling the criteria for establishing residency as set out in Section 2 of this regulation.

Section 2. Guidelines for Determination of Residency.

(1) Initial classification of residency shall be determined based upon the facts existing when the conditions governing admission for a specific academic term have been met. Initial residency determinations generally are made on the basis of information derived from admis-

sions materials. An undergraduate student whose admissions records show the student to be a graduate of an out-of-state high school is presumed to be a nonresident and shall be initially so classified. A student whose admissions records indicate the student's domicile to be outside of Kentucky at time of application is presumed to be a nonresident and shall be initially so classified.

(2) The domicile of a dependent person is that of either parent. The domicile of the parent shall be determined in the same manner as the domicile of an independent person.

(3) The domicile of a dependent person whose parents are divorced, separated, or otherwise living apart shall be presumed to be Kentucky if either parent is a resident of the Commonwealth regardless of which parent has legal custody or is entitled to claim that person as a dependent pursuant to Kentucky income tax provisions.

(4) Evidence submitted on behalf of a dependent person shall pertain to the domicile of the parent(s). A person claiming independent status shall document that proclaimed status and demonstrate that domicile in Kentucky has been established.

(5) Any dependent person whose parent(s), having domicile in this state, moves from this state shall be entitled to classification as a resident while in continuous enrollment at the degree level in which currently enrolled. When continuous enrollment is broken or the current degree level is completed, the person's residency classification shall be reassessed in accordance with the appropriate sections of this regulation.

(6) An independent person who moves to Kentucky and within twelve (12) months enrolls in an institution of higher education more than half-time shall be presumed to have come to Kentucky primarily for educational purposes rather than to establish domicile in Kentucky. Such person shall be classified as a nonresident unless establishment of a Kentucky domicile can be demonstrated in accordance with Section 3 of this regulation.

(7) Upon moving to this state, an independent person who provides clear and convincing evidence of domicile shall be eligible for resident classification of self, spouse, or dependent children, provided that any of these persons is not in this state primarily as a student. A person who moves to Kentucky primarily for the purpose of enrollment of either self, spouse, or dependent in an institution of higher education shall not be granted resident classification unless such person can demonstrate establishment of a Kentucky domicile in accordance with Section 3 of this regulation.

(8) If an independent person or the parent of a dependent person moves out-of-state, domicile, having been established in Kentucky, is retained until steps are taken to establish domicile elsewhere. The same facts and conditions which are presumed in establishing a Kentucky domicile are similarly presumed in determining when a former Kentucky domicile has been abandoned. In the absence of clear and convincing evidence as to the domicile of an independent person who at one time had domicile in Kentucky, that person is presumed to have lost Kentucky domicile upon a one (1) year absence from the state.

(9) An individual shall not be deemed to have established domicile in this state solely by reason of marriage to a Kentucky resident. However, the fact of marriage to a Kentucky resident shall be deemed relevant evidence to be considered in ascertaining domiciliary intent. A student initially classified as a nonresident who marries a Kentucky resident shall be eligible for resident reclassification if the requisite criteria listed in Section 3 of this regulation are met.

(10) Given transfer to, or matriculation in, another Kentucky public institution of higher education, the student's residency classification shall be reassessed by the receiving institution.

(11) An individual whose domicile was Kentucky at the time of induction into the military, and who maintains Kentucky as home of record and permanent address, shall be entitled to resident status if the individual returns to this state within six (6) months of the date of discharge from active duty.

(12) A member or the spouse of a member of the Armed Forces of the United States stationed in Kentucky on active military orders is considered domiciled in the state and shall be entitled to classification as a resident while the member is on active duty in this state pursuant to such orders. The spouse of the member, while in continuous attendance at the degree level in which currently enrolled, shall not lose resident status when the member is thereafter transferred on military orders. Individuals classified under this section shall be reassessed in accordance with the appropriate sections of this regulation when the qualifying condition is terminated. This regulation is invalid if the individual is stationed in Kentucky for the purpose of enrollment at an institution of higher education or on temporary assignment of less than one (1) year.

(13) A dependent person whose parent is a member of the Armed Forces and stationed in this state on active duty pursuant to military orders shall be classified as a resident. The student, while in continuous attendance at the degree level in which currently enrolled, shall not lose resident status when the parent is thereafter transferred on military orders. When continuous attendance is broken or the current degree level is completed, the person's residency classification shall be reassessed in accordance with the appropriate sections of this regulation. This subsection does not apply if the parent is stationed in Kentucky for the purpose of enrollment at an institution of higher education or on a temporary assignment of less than one (1) year.

(14) Any person holding a permanent residency visa or classified as a political refugee has the capacity to remain in Kentucky indefinitely and shall establish domicile in the same manner as any other person. Time spent in Kentucky and progress made in fulfilling conditions of domicile as stated in Section 3(1) prior to obtaining permanent status may be considered in establishing Kentucky domicile.

(15) Any person holding a nonimmigrant visa with designation A, E, G, H, I, or L may remain in Kentucky as long as the authorized purpose or established need continues and may establish domicile the same as any other person. In assessing the residency status of such a person, other sections of this regulation shall apply and the person's purpose and length of stay as well as other conditions governing presence in Kentucky shall be determined and considered. If this review justifies a resident classification, the person shall be classified as a resident for admission and tuition assessment purposes.

(16) Any person holding a nonimmigrant visa with designation B, C, D, F, J, K or M does not have the capacity to remain in Kentucky indefinitely and may not attain Kentucky resident status for admission and tuition assessment purposes.

(17) Pursuant to KRS 164A.330 and 200 KAR 16:040, beneficiaries of a Kentucky Educational Savings Plan Trust shall be granted resident classification for tuition purposes if:

(a) The beneficiary is covered under a vested participation agreement;
(b) The beneficiary has been a continuous resident of the Commonwealth of Kentucky during the eight (8) year vestment period; and
(c) The beneficiary enrolls in an institution of higher education in Kentucky prior to enrollment in any other educational institution.

(18) No independent person shall be presumed to have gained resident status while being enrolled in any institution of higher education more than half-time in the absence of clear and convincing evidence that the person has established domicile in Kentucky.

(19) Domicile shall not ordinarily be conferred by the performance of acts which are auxiliary to fulfilling educational objectives or are performed as a matter of convenience. Mere physical presence in Kentucky (including living with relatives or friends) is not sufficient evidence of domicile.

Section 3. Types of Evidence to Be Considered for Establishment of Domicile.

(1) Evidence submitted on behalf of a dependent person shall pertain to the domicile of either parent. Initial classifications generally are made on the basis of information derived from admissions materials, and individuals who enroll in college immediately following graduation from high school and remain enrolled are treated as dependent persons unless the contrary is evident from the information submitted. In such cases, domicile shall be inferred from the student's permanent address, parent's mailing address, or location of high school of graduation.

(2) A person claiming independent status shall document independent status under Section 1(5) of this regulation and shall demonstrate by clear and convincing evidence that domicile in Kentucky has been established by that person's acts. If an independent person asserts that domicile in Kentucky has been established, the person has the burden of proving that assertion by clear and convincing evidence.

(3) The determination of domicile shall be based upon verifiable circumstances or actions. No single fact is paramount, and each situation shall be evaluated to identify those facts which are essential to the determination of domicile.

(4) The following facts, although not conclusive, shall have probative value in support of a claim by an independent person for resident classification:
(a) Acceptance of an offer of full-time employment or transfer to an employer in Kentucky or contiguous area while maintaining domicile in Kentucky;
(b) Continuous physical presence in a nonstudent status for the (twelve) 12 months immediately preceding the last date for enrollment in an institution;
(c) Filing of Kentucky resident income tax return for the calendar year preceding the date of application for reclassification of residency status;
(d) Full-time employment of at least one (1) year while living in Kentucky;
(e) Attendance as a full-time, nonresident student at an out-of-state institution of higher education while determined to be a resident of Kentucky;
(f) Abandonment of a former domicile and establishing domicile in Kentucky with attendance at an institution of higher education following and only incidental to such change in domicile;
(g) Payment of occupational taxes in Kentucky;
(h) Payment of real property taxes in Kentucky;
(i) Payment of intangible personal property taxes in Kentucky;
(j) Ownership of real property in Kentucky, if the property was used by the student as a residence for at least six (6) months preceding the date of application for reclassification of residency status;
(k) Long-term lease (at least twelve (12) consecutive months) of noncollegiate housing;
(l) Kentucky automobile registration;
(m) Kentucky driver's license;
(n) Continued presence in Kentucky during vacation periods;
(o) Marriage to a Kentucky resident; and
(p) Registration as a Kentucky voter.

(5) Documentation. The determination of domicile shall be based upon verifiable circumstances or actions, and a student may be required to submit original or notarized copies of any relevant evidence pertaining to domicile. When reviewing the documentation submitted, institutions may request additional documentation to clarify the person's circumstances and to formulate a classification decision which considers all relevant facts.

(6) Submission of False Documents. A student who gives incorrect or misleading information to institution officials may be subject to criminal prosecution and to such disciplinary sanctions as may be imposed by the institution, which shall include but not necessarily be limited to the payment of nonresident tuition for each academic term attended.

Section 4. Responsibilities

(1) Institution responsibilities. Each institution shall designate an administrative office or person with delegated day-to-day responsibility for administration of this classification regulation and for evaluating and deciding student requests for reclassification. Each institution shall also establish a residency review committee (hereafter the committee) to assist and recommend action on student requests for reclassification referred to the committee by said administrative office or person having day-to-day responsibility for this regulation. To evaluate student requests for reclassification, each institution shall establish an operational policy including procedures and designated responsibilities. The Council on Higher Education Residency Classification Policy shall be published in its entirety in the official bulletin(s) of each institution.

(2) Student Responsibilities. The responsibility for registering under the proper residency classification is that of the student. It is the student's obligation to raise questions concerning residency classification and make application for change of residency classification with the administrative officials of the institution. A student classified as a resident who becomes a nonresident shall be required to notify immediately the proper institutional officials. However, if the student fails to notify institution officials of the change in status, institutional

officials may investigate and evaluate the current status of the student regardless of the source of the information. A student classified as a nonresident is considered to retain that status until the student makes written application for reclassification in the form prescribed by subsection (3) of this section and is officially reclassified by the proper administrative officials.

(3) Request for reclassification. Application for change of residency classification shall be made to the administrative office or person designated by the institution for this purpose. Such application with supporting documentation shall be made by the student not more than forty-five (45) calendar days after the first day of classes of the academic term for which reclassification is sought. A student may apply for reclassification only once during the academic term for which reclassification is requested.

(a) To support full consideration of a request for a change in residency classification, each application shall consist of a complete affidavit which includes the necessary documentation to substantiate facts cited for reclassification. Each applicant is encouraged to submit a formal statement indicating the basis for the claim of resident status. The student shall be responsible for ensuring that all necessary documentation is submitted with the affidavit. Incomplete applications may be returned to the student for completion at the discretion of appropriate institutional officials.

(b) Applications for reclassification shall be reviewed according to institutional policy. When applications for reclassification are referred to the committee, the student shall be notified in writing as to the committee's decision on the application. The committee's written decision on residency shall include findings of fact, and determination of whether the applicant is deemed to be a "dependent person" or "independent person," whether the applicant is a "resident" or "nonresident," and the reason(s) based upon this regulation for said determinations. If an application results in a change of classification from nonresident to resident, such change shall not be made retroactive beyond the academic term in which application for resident classification is made. A student denied resident classification by the committee shall have the right to appeal such decision to the Council on Higher Education.

Section 5. Procedure for Appeal to the Council On Higher Education.

(1) The Executive Director of the Council on Higher Education shall appoint a person to serve as an appeals officer. The appeals officer shall review all residency appeals from the public institutions of higher education to determine if the committee's written decision is supported by substantive evidence and in conformity with this regulation.

(2) After the student receives the decision of the committee, the student has fourteen (14) calendar days in which to appeal that decision to the Council on Higher Education. The student initiates this process by giving written notice to the chair of the committee or the person or office designated by the institution to handle such appeals. Appeals filed more than fourteen (14) calendar days after receipt of the decision of the committee shall be dismissed and the decision of the committee shall be final.

(3) The committee or its designated representative shall be responsible for forwarding to the Council on Higher Education a complete copy of the student's file within fourteen (14) calendar days of the receipt of a notice of appeal. The student may review the content of the file before it is forwarded to the Council on Higher Education.

(4) The appeal shall be considered on the written record alone and new or additional evidence shall not be considered.

(5) The appeals officer shall review the written record and the committee's written decision and shall make a recommendation to affirm, modify, or reverse the committee's decision. The appeals officer may order the appeal remanded to the committee for further proceedings before the appeals officer renders a recommendation. Within twenty-one (21) calendar days after receipt of the student's file, the recommendation of the appeals officer shall be forwarded to the Executive Director of the Council on Higher Education or designated representative. The Executive Director of the Council on Higher Education or designated representative shall promptly forward the recommendation of the appeals officer to the institutional representative designated to handle appeals for final disposition by the institution in accordance with established institutional procedures.

(6) The institutional representative shall promptly forward the recommendation of the appeals officer to the student. Each party (the institution and the student) shall have ten (10) calendar days after receipt of the appeals officer's recommendation to file written exceptions to the report with the institutional representative designated to handle final disposition of appeals. The institution shall make final disposition of the appeal and notify the student within thirty (30) calendar days after expiration of the ten (10) day period for filing exceptions.

Section 6. This regulation supersedes all previous policies and regulations of the Council relating to residency classification of students for tuition assessment purposes.

Revised Effective April 5, 1991

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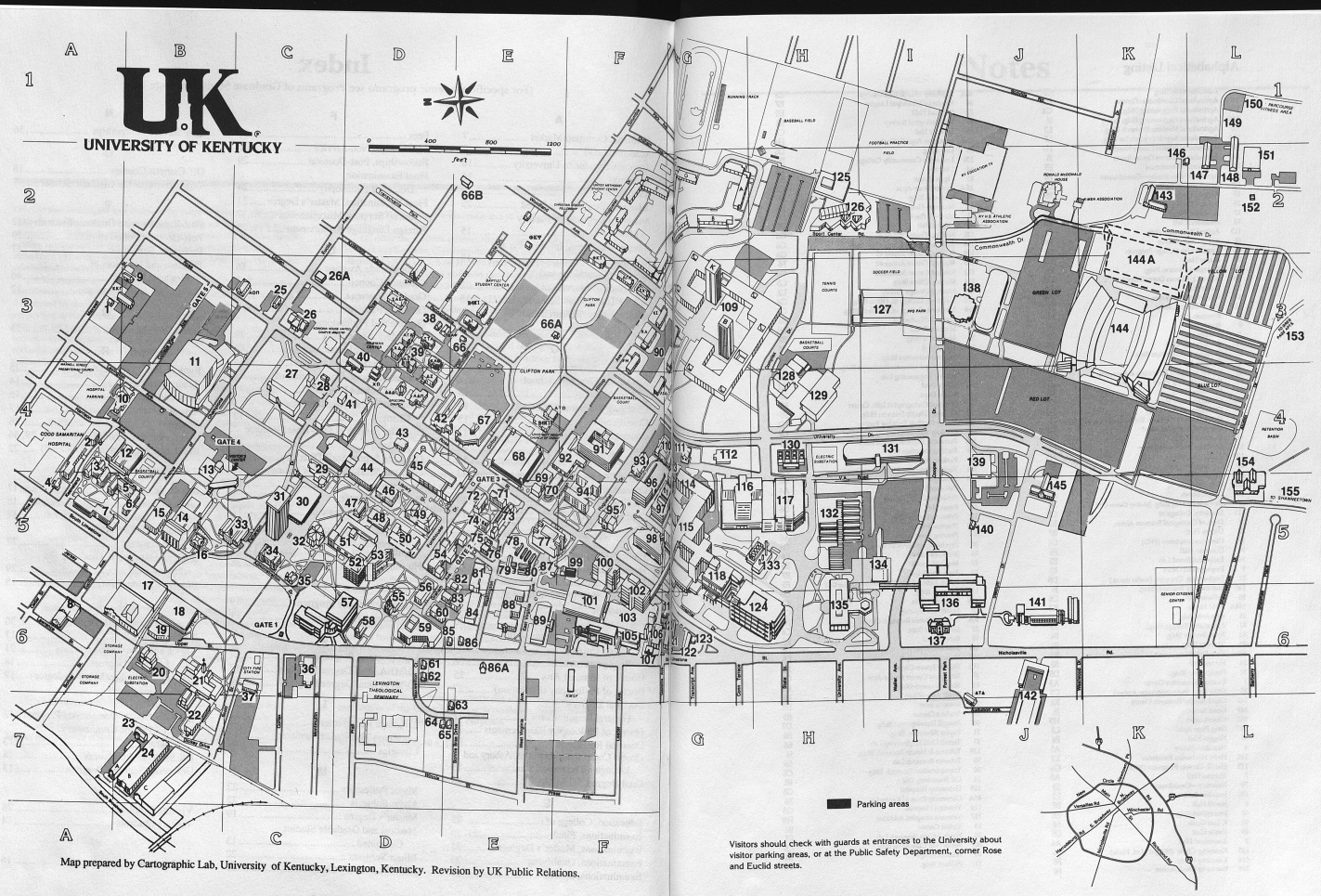

Map prepared by Cartographic Lab, University of Kentucky, Lexington, Kentucky. Revision by UK Public Relations.

Visitors should check with guards at entrances to the University about visitor parking areas, or at the Public Safety Department, corner Rose and Euclid streets.

Alphabetical Listing

34	Administration Bldg	C5
148	Agricultural Distribution Center	L2
110	Agricultural Engineering Bldg.	G4
136	Agricultural Engineering Bldg. (new)	I6
147	Agricultural Machine Research Bldg.	L2
154	Agricultural Regulatory Service Bldg.	L5
135	Agricultural Science Center North	H6
134	Agricultural Science Center South	I5
80	Agronomy Greenhouse	E5
99	Agronomy Headhouse—Greenhouses	F5
120	Allied Health, College of	G6
15	Alumni Gym	B5
26	Alumni House	C3
17	American Bldg.	B6
52	Anderson Hall	D5
113	Animal Pathology Bldg.	G4
61	Appalachian Center	D6
62	Appalachian College Program	D6
33	Barker Hall	C5
77	Biological Sciences Bldg.	E5
109	Blanding-Kirwan Dorm Complex	G3
12	Blazer Hall	B4
42	Boone Faculty Center	D4
127	Boone Tennis Center	I3
3	Bowman Hall	E5
5	Boyd Hall	B5
71	Bradley Hall	E5
74	Breckinridge Hall	E5
57	Business & Economics Bldg.	D6
25	Campus Police	C3
65	Center for Labor Education & Research	E7
19	Central Heating Plant	B6
69	Centrifuge Bldg.	E5
115	Chandler Medical Center	G5
45	Chemistry-Physics Bldg.	D4
97	Combs Cancer Research Bldg. (Markey Cancer Ctr)	F5
144	Commonwealth Stadium	K3
142	Commonwealth Village	J6
151	Communications Building	L1
130	Cooling Plant #1	H5
20	Cooling Plant #2	B6
95	Cooper Bldg.	F5
137	Cooper House	I6
108	Cooperstown	G5
96	Davis-Mills MRI Bldg. (Markey Cancer Ctr.)	F5
115	Dentistry, College of	G5
75	Dept. of Geological Sciences Annex	E5
22	Dickey Hall	B7
28	Directors Residence (PPD)	C4
94	Donovan Hall	F5
54	Early Childhood Lab	E5
9	Employment Office	B3
51	Engineering Complex (under const.)	D5
140	Entomology Research Bldg.	J5
56	Erikson Hall	D6
144A	Field House	K3
41	Fine Arts Bldg.	D4
82	Flammable Storage Bldg.	E5
92	Food Storage Bldg.	F4
93	Forestry Bldg.	F4
90	Fraternity Row	F3
16	Frazee Hall	B5
54	Funkhouser Bldg.	D5
1	Gaines Humanities Center	A3
35	Gillis Bldg. (Administration Annex)	C5
141	Gluck Equine Research Center	K6
145	Good Barn	J5
132	Greenhouses	H5
153	Greg Page Apts.	L3
91	Haggin Hall	F4
4	Hamilton House	A5
146	Head Mechanics Residence	K2
123	Health Careers Programs Office	G6
7	Holmes Hall	A5
79	Insectory—Greenhouse	E5
152	Isolation Barn	L2
6	Jewell Hall	B5
48	Journalism Bldg.	D5
92	K-Lair Grille	F4
49	Kastle Hall	D5
2	Keeneland Hall	A4
103	Kentucky Clinic (Wright Med. Plaza)	F6
104	Kentucky Clinic	F6
106	Kentucky Clinic Annex	F6
66A	Kentucky Humanities Council	E3
64	Kentucky Municipal League	E7
72	Kinkead Hall	E5
67	Ky. Geological Survey	E4
29	Lafferty Hall	C4
128	Lancaster Aquatic Center	H4
59	Law Bldg.	D6
138	Lexington Community College	J3
44	Library	D4
85	Ligon House	E6
26 A	Linden Walk Apts.	C3
58	Mathews Bldg.	D6
86	Mathews House	E6
43	Maxwell Place	D4
50	McVey Hall	D5
121	Medical Center Annex #1	G6
120	Medical Center Annex #2	G6
119	Medical Center Annex #3	G6
105	Medical Center Annex #4	F6
122	Medical Center Bookstore	G6
114	Medical Office Bldg.	G5
151	Medical Storage Facility	L2
112	Medicine, College of, Office Bldg.	G4
118	Medicine, College of, Research Bldg.	G5
11	Memorial Coliseum	B4
55	Memorial Hall	D6
23	Metal Arts Bldg.	B7
32	Miller Hall	C5
60	Mineral Industries Bldg.	D6
67	Mining and Minerals Resources Bldg.	E4
47	Mining Engineering Lab	D5
143	Motor Pool	K2
66	Music Dept.	E3
76	National Cartographic Info. Center	E5
102	Nursing/Health Sciences Bldg.	F5
126	Nutter Football Training Facility	H2
64	Outdoor Education for Handicapped	D7
150	Parcourse Physical Fitness Area	L1
131	Parking Structure #1	I4
68	Parking Structure #2	E4
101	Parking Structure #3 (Medical Plaza)	F6
124	Parking Structure #4	G6
3	Patterson Hall	A4
31	Patterson Office Tower	C5
46	Pence Hall	D5
18	Peterson Service Bldg.	B6
100	Pharmacy Bldg.	F5
8	Printing Services	A6
38	Psychological Service Center	D3
84	Research Lab #1	E6
89	Research Lab #2	E6
24	Reynolds Bldgs.	B7
98	Roach Patient Care Bldg. (Markey Cancer Ctr.)	F5
53	Robotics Bldg.	D5
66B	Rose Lane Apts.	E2
25	Safety and Security	C3
105	Sanders-Brown Research Center	F6
37	Scott Street Bldg.	C6
88	Scovell Hall	E6
129	Seaton Center	H4
155	Shawneetown Apts.	L5
125	Shively Sports Center	H2
27	Singletary Center for the Arts	C4
81	Slone Research Bldg.	E5
87	Small Animal Lab	E5
39	Sorority Row	D3
14	Student Center	B5
40	Sturgill Development Bldg.	D3
21	Taylor Education Bldg.	B6
83	Terrell Civil Engineering Lab	E6
139	Tobacco & Health Research Bldg.	J4
78	Tobacco Research Lab	E5
36	Transportation Research Bldg.	C6
13	UK Bookstore, The	B5
115	University Hospital	G5
86A	University Press of Kentucky	E6
116	Veterans Hospital	G5
117	Veterans Hospital Addition	H5
13	Visitor Center	B4
70	Wenner-Gren Research Lab	E5
30	White Hall Classroom Bldg.	C5
10	Wildcat Lodge	B4
111	Wilford Bldg.	G4

Notes

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